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NINTH ANNUAL REPORT

OF THE

INSPECTOR

OF

Factories and Workshops

OF THE

STATE OF NEW JERSEY.

1891.

OFFICERS.

CHIEF INSPECTOR.

L. T. FELL, ... Orange.

DEPUTY INSPECTORS.

E. R. WHITE, . . .	First District, ...	Vineland.
JOHN D'ARCY, . . .	Second District, . . .	Trenton.
FRANCIS SAYRE, . . .	Third District, ...	Elizabeth.
J. S. WEINTHAL, . .	Fourth District, . . .	Hoboken.
THOMAS COGAN, . . .	Fifth District, ...	Passaic.
P. CALLAN, . . .	Sixth District, . . .	Newark.

FACTORY DISTRICTS.

FIRST DISTRICT.

Camden, Atlantic, Gloucester, Salem, Cumberland and Cape May counties. Ocean county south of Toms River. Burlington county south of Beverly.

SECOND DISTRICT.

Burlington county north of Beverly. Mercer, Hunterdon, Warren and Sussex counties. Morris county west of Boonton.

THIRD DISTRICT.

Monmouth, Middlesex, Somerset and Union counties.

FOURTH DISTRICT.

Hudson county.

FIFTH DISTRICT.

Passaic and Bergen counties. Morris county east of Denville.

SIXTH DISTRICT.

Essex county.

REPORT.

OFFICE OF
L. T. FELL, INSPECTOR OF FACTORIES AND WORKSHOPS,
STATE OF NEW JERSEY.
ORANGE, N. J., October 31st, 1891.

Hon. Leon Abbett. Governor State of New Jersey:

SIR—I herewith submit my annual report as Inspector of Factories and Workshops for the year ending October 31, 1891. The reports of the Deputies by districts are herewith annexed, showing the work of the department in detail, which, in my judgment, is most satisfactory. The work has progressed without serious friction, and in a manner to give satisfaction to all parties interested. The manufacturers have, with few exceptions, cheerfully complied with the orders given, or suggestions made by the officers of the department, and I am justly proud of many of the manufacturing establishments of New Jersey, and invite the skeptical to visit them in company with the Factory Inspector.

The sanitary improvements made and the safety devices adopted, modes of egress enlarged, the better ventilation, the erection of fire escapes, cannot but convince the citizens employed in the factories that the State is looking after their interests.

The hardship of infant labor is almost entirely stopped, still the present limit of age, in my judgment, is entirely too low, (that is 12 years for boys, and 14 years for girls), and I would recommend that the age for boys be raised to 13 years, and that an educational qualification be necessary for all minors before they can be employed. No one will question the justice of compelling boys and girls seeking employment, passing a common school examination in reading, writing, spelling and arithmetic before they receive a permit to work in the industrial establishments in the State.

It is painful to meet a boy or girl fifteen or sixteen years of age,

born in America, working in a factory, who has never had an opportunity to acquire the knowledge of the primary school branches of an education, or if they did have it, failed to take advantage of it. The State should protect itself against such gross ignorance, even among the few, and I trust that the Legislature will so amend the Compulsory law, that every boy and girl will be compelled to attend some public or private school to their thirteenth or fourteenth year, and that city and township authorities be compelled to appoint officers for the enforcement of the Compulsory Education law.

In this respect, I am pleased to say, as the reports of the Deputies will show, there have been a number of additional truant officers appointed in the State, and there has been more attention given to the enforcement of the law.

In closing my introductory to the reports of the Deputies, I respectfully recommend the following legislation. That the Factory laws and all the supplements thereto be codified so that the department will act in the future under one comprehensive bill, embracing all the good features of the present laws, and that the Factory Inspectors be given power to forbid the use of unsafe buildings, as there are several now occupied for manufacturing purposes that are dangerous to the lives of those employed in them, and I am advised by counsel that we have not the authority to close them.

I would also recommend one additional officer for the department, to be designated as Mine Inspector, and to perform what other duties he may be assigned to in the department.

The interesting papers by Deputy Inspector White on "Manual Training," and by Deputy Inspector Callan on "What benefits have the working people of New Jersey derived from the passage of the Labor laws," read before the convention of Factory Inspectors of North America, held at Cleveland, Ohio, August 12, 1891; also the paper by John H. Cooper, of the Society of Mechanical Engineers on "Accident-preventive devices applied to machines," I deem worthy of a place in this report, and have added them to the appendix.

Respectfully submitted,

L. T. FELL,

Inspector Factories and Workshops.

APPENDIX.

FIRST DISTRICT.

L. T. Fell, Chief Inspector of Factories and Workshops:

In submitting my annual report, I would call your attention to the fact that in all towns and cities in this district where truant officers have been appointed, under the provisions of the Compulsory Education Law, and a regular system organized, there has been a decided increase in the attendance at day and night school, notably Vineland, Glassboro, Woodbury, Clayton, Elmer, Williamstown and Egg Harbor City. Other towns and cities where there are no truant officers, the law is practically a dead letter, as in the city of Bridgeton, where 234 children between the ages of 12 and 15 years, attended no school during the past year. The law should be so amended that a truant officer would be appointed in every school district in the state. The manufacturers are becoming more familiar with the factory laws, and see that the requirements are such that it is to their benefit, and they, as a rule, willingly comply with all orders issued. During the past year there have been 10 permits granted to orphan children, who were under the legal age, to be employed in several of the mills.

There have been twenty-four accidents reported and investigated, and 119 orders issued, necessitating 503 changes, as follows:

Belts boxed	67
Pieces of shafting boxed	19
Large pulleys guarded	5
Large couplings with projecting set screws covered	4
Balance wheels guarded	20
Flour counter shafts guarded	13
Oil barrel and tanks removed from dangerous places	5
Gear wheels covered	5
Stairways railed	20
Fire buckets filled with water ready for use	48
Extra door for workroom	1
Step tread repaired	1
Iron bars in front of 36 windows, second and third stories	72

Earth closets cleaned and whitewashed	9
Extra earth closets to build	8
Elevator doors or gates	8
Fire escapes	4
Doors to swing outward	11
Boys discharged, under age	14
Girls discharged, under age	34
Boys discharged for not attending school	47
Affidavits of age and schooling	38
Certificates of age and schooling	50
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The disposition of all changes ordered will be found in the Appendix to this report.

Respectfully submitted,

E. R. WHITE,

Deputy Inspector First District.

FACTORIES INSPECTED—FIRST DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Atlantic City	Atlantic Lumber Co.	Sash, doors and blinds	22			
"	Wm. C. Sharp	Plaining mill	4		1	
"	Samuel Somers & Son	Sash, doors and blinds	35			
Atco	The Atco Glass Works	Window glass	50			
Beverly	Law Leach	Shoes	19	1	1	
"	A. C. McElroy	Bed spreads	19	1	1	
"	T. Birkhead	Hosiery	75	80	4	
"	George Birkhead	Shirts	6	44	3	
Bridgeton	West Jersey Packing Co.	Canned goods	60	115	3	
"	More, Jonas & More	Glass	220		30	1 boy.
"	Cumberland Glass Works	"	323		51	1 boy.
"	R. B. & M. Shirt Co.	Shirts	2	23		
"	Cohansey Glass Co.	Glass	500		50	
"	Getsinger & Son	"	150		1	
"	East Lake Woolen Mill	Woolen cloth	77	53	7	
"	Parker Bros.	Glass	42		12	
"	J. L. Rice & Co.	Shoes	42	18	2	
"	East Lake Glass Co.	Glass	80		5	
"	Cumberland Nail and Iron Works	Nails and iron pipe	300		6	
"	Sol Miller & Co.	Shirts	2	50		
"	Chas. D. Crickler	Bottle moulds	12			
"	Cox & Son	Machine works	100			
"	Cohanzey Stain Paper Co.	Paper	18	2		
"	Canners' Supply Co.	Canning machinery	25			
"	Bridgeton Iron Works	Iron fences and bottle moulds	12			
"	Ferricute Machine Co.	Presses and dies	76	1		
"	Bridgeton Mills	Table oil cloth	35	6		
"	J. F. Braidy & Co.	Canned goods	35	130	6	
"	John W. Stout	" "	30	100	10	
"	B. S. Ayres	" "	40	100	10	
"	Probasco & Lanning	" "	50	100	5	
Camden	Shimmer & Boyer	Woolen yarns	14	19		
"	Ackroyd & Schull	" "	46	54	15	
"	Esterbrook Steel Pen Co.	Steel pens	40	320	3	
"	Clay's & Torbinson	Electric machinery	14			
"	Segal Mfg. and Paper Co.	Waxed paper	20		2	
"	Cook Mining Machine Co.	Gold amalgamators	20			
"	Chas. F. Hollingshead	Wrought iron fences	30			
"	Overbrook Mills	Woolen cloth	75	100	6	
"	Montrose Metal Shingle Co.	Metal shingles and tile	6			
"	W. Wharton Fisher	Dye stuffs	40			
"	U. S Chemical Co.	Chemicals	40			
"	Howland Croft Sons	Woolen yarns	250	175	32	
"	Priestly & Co.	Woolen cloth	100	40	12	1 girl.
"	Cotrell & Wolfenden	Hosiery	35	75	14	5 girls.
"	Camden Woolen Mills	Woolen cloth	175	125	6	
"	Spraune & Birkhead	Woolen yarn	16	6	1	
"	Lobe & Wolf	Matches	34	13		
"	Lobe & Schonfeld	Embroidery	4	36		
"	E. G. Lock	Glaze paper	20			
"	J. B. VanSciver	Furniture	123	7	1	
"	N. J. Knitting Mills	Underwear	1	19	3	
"	Consolidated Electric Co.	Electric storage batteries	23			
"	J. C. Dunn	Oil cloth	75			
"	Fan & Bailey	" "	125			
"	Robt. H. Corney	Dyed straw goods	22		2	
"	Browning & Brothers	Dye stuffs	94			
"	R. H. & B. C. Reeves	Oil cloths	100			
"	C. P. Carman	Dye works	24			
"	W. H. Wilkinson	Sash and blinds	50			
"	Wm. R. Read	Ladies' wear	1	19		
"	George Martin	Shoes	35	10		

FACTORIES INSPECTED—FIRST DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Camden	Albert T. Gerkie	Brushes	3	2		
"	Sil Crustia Mfg Co.	Electric supplies	6	1		
"	M. A. Farbush & Son	Woolen machinery	100			
"	Camden Chemical Works	Chemicals	95			
"	Highland Woolen Mills	Woolen yarn	150	200	50	
"	Pacific Steam Laundry	Laundry	8	22		
"	D. B. Murphy	Files	7	1		
"	Samuel P. Wright	Printers' ink	9			
"	T. S. Wheatley	Shoes	40	18		
"	American Dredging Co.	Steam dredges	65			
"	Brighton Mills	Elastic webing	53	17	3	
"	Camden Glass Works	Glass bottles	175		35	
"	Francis J. McAdams		47	13		
"	Thomas R. Anison	Sash and blinds	33			
"	P. J. Murphy	Oil cloths	34			
"	Burnett Betts	Beer bottler	10			
"	C. P. Coles	Sash and blinds	50			
"	Kifferly Moroco Mfg. Co.	Moroco	100	2		
"	Joseph Raspene & Co.	Shoddy	25	2		
"	Isaac Ferris, Jr.	Shoes	46	21		
"	H. B. Anthony Shoe Co.	"	108	42	2	
"	Camden Iron Works	Iron pipe and gas holders	650			
"	N. J. Chemical Co.	Fertilizers	25			
"	Keystone Chemical Works	Chemicals	45			
"	Wm. A. Butcher	Shoes	26	13		
"	American Wax Bag Mfg. Co.	Wax bags	5	4		
"	Stockton Paper Mill Co.	Paper	13			
"	West Jersey Mfg. Co.	"	30	2		
"	I. L. Cragin	Soap	13	5		
"	Conserve & Pickling Co.	Preserving and pickling	4	1		
"	Richter Electric Light Co.	Dynamos	7	1		
"	Joseph Campbell & Co.	Preserves and canned goods	150	50	20	
"	Anderson Preserving Co.	Preserves	50	200	25	
"	Wm. S. Scull & Co.	Teas, coffee and spices	8	4		
"	A. J. Milliet	Job printer	14	4		
"	Dowler Mfg. Co.	Coffee compound	8	14		
"	Fries & Brisling	Smyrna rugs	85	15	4	
"	Dorrell & Seymour	Shoes	37	15	2	
"	W. D. Williamson	Dental equipments	6			
"	Wm. Conlin	Shoes	5	4	1	
"	Francis & Taylor	Last Blocks	8			
"	American Nickle Works	Nickle	35			
Clayton	More Bros.	Glass bottles	375	50		
"	F. M. Pierce & Co.	" "	100	24		
Cedarville	W. L. Stevens	Canned tomatoes	50	75	8	
"	John E. Diament	" "	42	108	8	
Cambridge	Cambridge Mfg. Co.	Umbrella fittings	37	14	10	{2 boys 3 girls
Carmel	Co-Operative Shirt Factory		45	30	18	12 girls.
Egg Harbor	B. Bollman	Clothing	2	4		
" "	George Steigauf	"	3	1		
" "	Ferd Bergman	"	2	4		1 girl.
" "	Jacob Ructsceb	"	3	6		
" "	George Schueler	"	3	5		
" "	Joseph Huttenger	"	3	4		
" "	Wm Hafner	"	2	3		
" "	I. Bernstine	"	3	7		
" "	G. Fordtren	"	3	7		
" "	Selig & Son	"	3	7		
" "	William Morgenweck	"	2	3		
" "	Crouse & Son	Canned tomatoes	4	17	5	
" "	{Egg Harbor Parchment Paper Mfg. Co.	Parchment paper	5			

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FACTORIES INSPECTED—FIRST DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Egg Harbor	James Ramsy	Cigars	13	4		
" "	George Muller	Clothing	3	10		
" "	Bernhard Wennemer	"	3	2		
" "	Andrew Beck	"	3	5		
" "	Jacob Oberst	"	2	6		
" "	Adolph Muller	"	3	6		
" "	George Roesch	"	6	9		
" "	Chas. Winterberg	"	3	5		
" "	Fred Schuchardt	"	8	11		
Elmer	Robt. K. Greenwood	Spindles	12		2	
"	C. S. Colling	"	14			
"	Thomas W. Brooks	Shoes	55	25	4	
"	Butcher & Wadington	Glass	45			
"	Luke F. Smith	Canned tomatoes	25	100	15	
Fairton	Gibson, Horton & Co.	Glass bottles	95		22	
Gloucester	Gloucester Mfg. Co	Print calico	240	60	1	
"	Novel Wrench Co.	Novel wrenches	15			
"	Hesler Electric Co.	Dynamos	54	3		
"	Semns Lungren	Gas lamps	48	2		
"	Welsbach Incandescent Gas Light Co.	Incandencent Walshback Mantles	45	15		
"	Gloucester Iron Co.	Cast iron pipe	200			
"	Washington Mfg. Co.	Cotton goods	351	358	61	
"	Gloucester Gingham Mills	Ginghams	175	225	45	1 boy.
Grenlock	E. S. & F. Bateman	Agriculture implements	61		5	
Glassboro	Warrick Glass Works	Glass	170			
"	Whitney Glass Works	"	425		60	
"	Paper Bottle Co.	Paper bottles	8	12		
Greenwich	Job Bacon	Canned tomatoes	155	120	1	
"	B. F. Maul	" "	40	75	4	1 boy.
Hammondton	John T. French	Paints	10			
"	Whiffen Bros. & Co.	Shoes	50	30	1	
"	C. F. Osgood & Co.	"	39	16	1	
"	Wm. Burnshouse	Sash doors and blinds	27		3	
Janvear	Joseph Cook	Smyrna Rugs	42	8	3	
Malaga	Fries & Brisling	" "	48	17	1	
"	A. B. Richmond	Hosiery	15	45	16	
"	Union Window Glass Works	Glass	40			
Masonville	J. J. Allen & Sons	Chemicals	30			
Moorestown	Moorestown Canning Factory	Canned goods				
"	Stanwick Carpet Works	Carpets	175	25		
May's Landing	Mays Landing W. P. Co.	"	186	88	31	
Mount Holly	Burlington Carpet Co.	"	240	125	14	
" "	Wm. Holt	Paper boxes	3	13		
" "	Kiner Bros. & Co.	Shoes	17	17		
" "	Mount Holly Shoe Co.	"	39	34		
" "	F. S. Davis & Co.	"	15	15	1	
" "	R. W. Bowker	"	35	25	3	
Millville	R. D. Wood & Co.	Iron pipe	160			
"	Whital, Tatum & Co.	Glass	1594	48	75	
"	G. S. Benitt & Co.	"	38	1	1	
"	Millville Mfg. Co.	Cotton Goods	105	220	25	
"	T. C. Wheaton & Co.	Glass		10	15	
"	Manantico Bleach and Dye Works	Bleach and dye works	180	20	9	
Newport	Stathen, Cosier & Co.	Canned goods	50	100	4	
Newfield	R. J. Morrell	Ratan baby coaches	20	2		
Pleasantville	Composing Machine Co		15			
Quinton	Hires & Co.	Glass	103			
"	Kelty & Ayres	Canned tomatoes	75	65	10	2 girls.
"	Fogg & Hires	" "	75	125	3	1 girl.
"	S. L. Kelty	" "	65	60	8	
Rosenhayn	Isaac Polokow	Ladies' cloaks	55	25	10	

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FACTORIES INSPECTED—FIRST DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females	Under sixteen years.	Children discharged.
Rosenhayn	Albert Markland	Pearl Buttons	5	2	2	
Riverside	Pfaw Bros.	Shoes	18	12	6	
"	Christian Dick	Hosiery	28	17	3	
"	Lambert & Crammer	Shoes	70	30	4	
"	F. Pfeifer & Son	Hosiery	6	8	2	1 girl.
"	Tauble Bros.	"	70	90	25	
"	Theo. Haas	Pocket books and leather goods	5	30	2	1 girl.
"	Leach Bros.	Shoes	20	8	2	
"	James Bramall, Jr.	Paper boxes	2	8	1	1 girl.
"	Francis H. Leggett	Canned tomatoes	25	100	10	
Salem	Craven Bros.	Glass	280		45	1 boy.
"	John Gaynor	"	100	2	3	
"	Alva Glass Works	"	35		3	
"	Salem Oil Cloth Works	Oil cloth	70			
"	Salem Knitting Mills	Hosiery	3	47	5	
"	Thomas Vaughn	Shirts	4	38		
"	C. A. Blessing	Plumbers' supplies	50			
"	Hiles & Hilliar	Canned tomatoes	50	150	8	
"	Harry Lambert	" "	47	128	5	
"	Jones & Ayers	" "	75	150	8	
"	Chew & Bilderback	" "	60	120	5	
"	Starr & Bros.	" "	45	180		
Smithville	Smithville Carpet Mills	Carpets	7	4		
"	H. B. Smith Machine Co.	Woodworking machinery	245			
Swedesboro	Whitlock, Diehl & Gaige	Glass	65		6	
Williamstown	Monroe Glass Works	"	40		2	
"	Bodine, Thomas & Co.	"	300		50	
"	John V. Sharp	Canned tomatoes	50	100	8	
Woodbury	John Wyth & Bro.	Extract of malt	9	12		
"	G. G. Green	Green's August Flower	50	25		
"	Woodbury Glass Works	Glass	206	59	59	10 boys*
"	Woodbury Planing Mill	Sash, doors and blinds	15			
"	Hope Mfg. Co	Lithographers	150	75	8	
"	Woodbury Mfg. Co	Sockets and castors	20	1		
"	American Bottle Co.	Glass	47	1	4	2 boys*
"	Standard Window Glass Works	"	100		2	1 boy*
Vineland	Wm. P. Procter	Shoes	15	10		
"	Leach Bros.	Lumber	10			
"	George Cheever	Paper boxes	2	10		
"	Harry Chandler	Shoes	55	20		
"	Adam Weaber	Brass foundry	6			
"	Philadelphia Fire Proof Brick Co.	Fire proof brick	80	1		
"	E. O. Miles & Co.	Pearl buttons	38	3		
"	Wm. R. White, Jr.	" "	15	3		
"	Chas. Keighley	Shoes	100	31	1	
"	Kimble, Prince & Co.	Sash, doors and blinds	14			
"	Tyllier Bros.	Glass	100			
"	Armstrong Sons	Iron Foundry	14			
"	Daggett & Co.	Daggett baking pan	14			
"	Joseph Mason	Shoes	20	15	2	
"	Gage Tool Co.	Gage planes	12	1	1	
"	John Northrop	Shoes	18	19		
"	Holmes, Prince & Co.	"	23	16		
"	Thomas Hirst	Smyrna rugs	100	50	5	
"	A. H. Blaisdell	Machine works	7			
"	Vineland Glass Mfg. Co.	Glass	70		15	
Winslow	Winslow Glass Works	Glass	220		25	1 boy.
"	Eastern Hydraulic Press Brick Co.	Pressed brick	35		3	

* To be sent to school.

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT.

Location and Name of Company.	Changes Ordered.	Disposition of previous orders.	Health and safety.
Bridgeton City—			
Cumberland Glass Co. 2	Guard belt on fan; clean and whitewash privies	Complied with.	Good.
More, Jonas & More 1	Clean and whitewash privies; discharge one boy	Complied with.	Good.
F. H. Burgess Sert Co. 1	Box shaft of sewing machine bench	Complied with.	Good.
Getsinger & Son 1	Clean and whitewash privies	Complied with.	Good.
East Lake Woolen Mills 3	Box two drive belts	Complied with.	Good.
Parker Bros. 1	½ doz. buckets in packing room filled with water in case of fire	Complied with.	Good.
Cohansey Glass	Have certificate on file for five boys	Complied with.	Good.
Cumberland Nail and Iron Co. 3	Rail in front of passageway between grinding stones; box two belts in back nail mill	Complied with.	Good.
Sol. Miller & Co. 1	½ doz. buckets with water to be used in case of fire	Complied with.	Good.
J. L. Rice & Co. 3	Cover set screw on counter shaft of McKey sewing machine; box main belt; put rail on stairway.	Complied with.	Good.
Cohanzey Stain Paper Co. 2	Put rail on stairway leading to finishing room: post danger cards and factory laws	Complied with.	Good.
Bridgeton Iron Works 2	Rail on steps leading to second story; guard rail around balance wheel of engine.	Complied with.	Good.
Beverly—			
A. C. McElroy 2	Put rail around balance wheel of engine, and have ½ doz. buckets filled with water, in case of fire	Complied with.	Fair.
Atlantic City—			
Samuel Somers & Son 1	Box driving belt on sand papering machine	Complied with.	Good.
Wm. C. Sharp 1	Box driving belt on engine balance wheel	Complied with.	Good.
Atlantic Lumber Co. 1	Guard rail front and back of engine balance wheel	----------	Good.
Smithville—			
Smithville Mfg. Co. 3	Rail around counter shaft of circular saw, and rail on two stairways	Complied with.	Fair.
Cambridge—			
Cambridge Mfg. Co. 3	Box driving belt; remove oil tank; box twist belt; discharge three boys and two girls	Complied with.	Good.
Winslow—			
Winslow Glass Works 1	Cover shafting and gear wheels in yard; certificate of age and schooling for all boys employed under 16 years of age	Complied with.	Good.
Moorestown—			
Stanwick Carpet Mills 2	Put rail around balance wheel and box driving belt over passage way	Engine and belt removed.	Good.
Masonville—			
J. J. Allen's Sons 1	Box driving belt in mill room	Complied with.	Good.
Elmer—			
C. S. Cotting 1	Box driving belt over stairway	Complied with.	Good.
Thomas Brooks	Certificates for four boys	Complied with.	Good.
Butcher & Wadington 1	Remove oil barrel near driving belt	Complied with.	Good.
Robert K. Greenwood 1	Box drive belt	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT—Continued.

LOCATION AND NAER OF COMPANY.		CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Williamstown—				
Bodine, Thomas & Co,		Affidavits for 36 boys	Complied with.	Good.
John V. Sharp		Post Factory Laws	Complied with.	Good.
Mount Holly—				
Burlington Carpet Co.	2	Cut off projecting key head on shaft of engine and rail in front of elevator doors	Complied with.	Excellent.
F. S. Davis & Co.	5	Erect fire escape; remove oil tank from stairway; cut off projecting key head on engine shaft; keep ½ doz. buckets filled with water in case of fire; keep stairway clean and free from obstruction	Complied with.	Fair.
R. W. Bowker	5	Move oil barrel from foot of stairway; have ½ doz. buckets filled with water in case of fire; guard two drive belts of first floor and put guard in front of pulleys on roller	Complied with.	Good.
Wm. Holt	1	Box belt on top papering machine	Complied with.	Good.
City of Camden—				
Priestly & Co.		Discharge May Stephenson, age 13 years	Complied with.	Good.
Cotrell & Wolfenden	2	Discharge six girls; box two belts that drive sewing machine shaft	Complied with.	Fair.
Camden Woolen Mills		Discharge two girls	Complied with.	Good.
Spraunce & Birkhead	1	Repair water closet	Complied with.	Fair.
Lobe & Schonfeld	1	Put rail around driving wheel of engine	Complied with.	Good.
E. G. Locke	1	Box upright shaft on grounding machine	Complied with.	Good.
J. B. Van Sciver & Co.	1	Arrange elevator doors on 3rd, 4th and 5th floors to close automatic	Complied with.	Good.
Clay & Torbinson	1	Provide sufficient water closets for employes	Complied with	Good.
N. J. Knitting Mills	1	Cover coupling on shaft under knitting bench	Complied with.	Good.
Over Brook Mills	1	Arrange door to swing outward; discharge John McGee	Complied with.	Good.
Camden Chemical Works	1	Guard drive belt on roller near stairway	Complied with.	Fair.
Pacific Steam Laundry	2	Rail around balance wheel of engine and door on second floor to swing outward	Complied with.	Fair.
Camden Glass Mfg. Co.	1	Rail around balance wheel of engine	Complied with.	Good.
F. J. McAdams	1	Box end of engine shaft	Complied with.	Fair.
Keystone Chemical Works	4	Box belt in mixing room; rail on steps leading to mill room; box end of engine shaft in crystal room; rail around pulley of Brockner	Complied with.	Fair.
J. C. Dunn	3	Rail on stairway in coating room, the same in printing and stock room	----------	Good.
Tarr & Bailey	4	Box two belts in third story coating room; box one belt in second story; box one belt in carpenter shop	Complied with.	Good.
Joseph Raspene & Co.	1	Build extra privy	Complied with.	Fair.
Isaac Ferris, Jr.	1	Erect fire escape	----------	Fair.

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.		CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
City of Camden—				
Thomas R. Arrison	6	Rail in counter shaft of jointer; box belt on circular saw; box belt on blind slat machine; box belts back of turning lathes; box belts on tennant machine; clean and whitewash privies	Partly complied with	Fair.
P. J. Murphy	1	Put rail around driving belt of engine	Complied with.	Good.
Burnett Betts	1	Rail around landing leading to cellar stairway	Complied with.	Fair.
Kifferly Morocco Mfg. Co.	4	Erect rails on four stairways	Complied with.	Fair.
Camden Iron Works	2	Cover back gears of drill two press	Complied with.	Fair.
N. J. Chemical Works	3	Box belt in mill room; put rail on stairway leading to drying room; rail around belt pit	Complied with.	Fair.
Browning Brothers	1	Post danger cards back of gear wheels in clipping room	Complied with.	Fair.
W. H. Wilkinson & Co.	3	Rail around engine balance wheel and rail in counter shaft of turning lathe, and counter shaft of circular saw	----------	Good.
Albert T. Gerike	1	Box end of shaft under work bench	Complied with.	Good.
Fries & Brisling	2	Erect fire escape and guard in front of pulley under work bench	Complied with.	Good.
Dowler Mfg. Co.	2	Box end of shaft on burr mill; whitewash privies	Complied with.	Good.
Dorrel & Seymoure	2	One extra door in work room on third floor; arrange door on third floor to swing outward	Complied with.	Fair.
R. H. & B. C. Reeves	1	Rail on stairway	Complied with.	Good.
Francis & Taylor	1	Rail around balance wheel of engine	----------	Good.
Grenloch—				
E. S. & F. Bateman	2	Box end of shaft of grindstone; put rail on stairway; post Factory Laws	Complied with.	Good.
Greenwich—				
B. F. Maul & Co.	1	Discharge one boy; guard cog wheels on capper	Complied with.	Good.
Janvear—				
Joseph Cook	1	Box gear wheels on cutting machine	Complied with.	Good.
Riverside—				
Theo. Hass	1	Discharge one girl; box shafting under sewing bench	Complied with.	Good.
Tauble Bros.	1	Box shafting under sewing machine bench; certificate on file for all employed under 16 years of age	Complied with.	Good.
Leach Bros.	1	Box end of shaft under sewing machine	Complied with.	Good.
Lambert & Cramer	1	Box large pulley on engine shaft	Complied with.	Good.
Pfeifer & Son	2	Build extra water closets and cover shaft under knitting bench	Complied with.	Good.
James Bramall, Jr.	1	Put rail in front of driving belt; discharge one girl	Complied with.	Good.
Salem—				
Crave Bros.	1	Discharge one boy; build extra privies	Complied with.	Good.
Alva Glass Works	1	Put guard rail around balance wheel of engine	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT—Continued.

Location and Name of Company.		Changes Ordered.	Disposition of previous orders.	Health and safety.
Salem—				
Salem Knitting Works	1	Have certificate of age and schooling on file for all under 16 years of age	Complied with.	Good.
Quinton—				
Fogg & Hires		Discharge one girl	Complied with.	Good.
Kelly & Apres		Discharge four girls	Complied with.	Good.
S. L. Kelty	1	Put guard rail around balance wheel		Good.
C. A. Blessing		Post factory laws	Complied with.	Good.
Swedesborough—				
Whitlock, Diehl & Gage	1	Clean and whitewash privies	Complied with.	Good.
Vineland—				
Armstrong Sons	1	Put guard rail around elevator	Complied with.	Fair.
Joseph Mason	1	Box end of shaft under sewing machine bench	Complied with.	Good.
Dagett & Co.	1	Cover end of shaft on corner cutting machine	Complied with.	Good.
John Northrop	1	Cut off key on engine shaft	Complied with.	Good.
Thomas Hirst	1	Rail on stairway		Good.
William Procter	1	Box end of shaft under sewing machine bench	Complied with.	Good.
The Philadelphia Fire Proof Brick Co.	2	Rail around balance wheel of engine and rail around elevator counter shaft	Complied with.	Good.
Rosenhayn—				
Isaac Polokow	4	Six buckets filled with water in case of fire; build extra privies; put rail around driving wheel of engine and box driving belt	Complied with.	Good.
Clayton—				
F. M. Pierce & Co.	1	Clean and whitewash privies	Complied with.	Good.
Carmel—				
Co-operative Shirt Factory	5	Erect fire escape, have twelve buckets filled with water, in case of fire; two bars in front of twenty-six windows on second and third stories; discharge four boys and eleven girls; remove oil and waste from landing on third floor; box end of stitching shaft	Complied with.	Fair.
Malaga—				
Fries & Brisling	3	Rail on stairway of second and third floors; box gear wheels of cutting machine; rail in front of driving wheel of engine	Complied with.	Good.
Union Glass Works	2	Box shafting in cellar of engine room; box driving belt in box shop	Complied with.	Good.
A. B. Richmond	1	Cover end of shaft under knitting bench	Complied with.	Good.
Egg Harbor—				
Fred Bergman	1	Build extra privy; discharge one girl	Complied with.	Good.
Joseph Huttinger	1	Build extra privy	Complied with.	Good.
Selig & Son	1	Build extra privy	Complied with.	Good.
Egg Harbor Parchment Paper Co.	1	Put rail around balance wheel of engine		Good.
Crouse & Son	1	Put rail in front of drive belt	Complied with.	Fair.

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Glassboro—			
Whitney Glass Works	Thirty-seven boys sent to night school	Complied with.	Good.
Warrick Glass Works	Box driving belt on fan next to engine	Complied with.	Good.
Paper Bottle Co.	Box two belts in second story work room	Complied with.	Good.
May's Landing—			
May's Landing W. P. Co.	Rail around landing and steps from picking room, guard drive belts in upper card room; box driving belt in mule room; box belt in reeling room; box coupling of water wheel shaft between two buildings	Complied with.	Good.
Millville City—			
Millville Mfg. Co.	Discharge one girl; box belt in store room	Complied with.	Good.
Whital-Tatum Co.	Guard balance wheel and belt in batch house; guard balance wheel and belt in factories Nos. 1 and 2; guard balance wheel and belt in factories Nos. 3 and 4; guard balance wheel and belt in factories Nos. 5 and 6; guard balance wheel and belt in factories Nos. 9 and 10; guard wheel and belt of engine in repair shop; guard wheel and belt of engine in cutting room; guard wheel and belt of engine in carpenter shop; box belt in old engine room	Complied with.	Good
Fairton—			
Gibson, Horton & Co.	Affidavit giving correct age four boys; discharge two boys	Complied with.	Good.
Woodbury—			
Woodbury Glass Co.	Discharge ten boys to be sent to school	Complied with.	Good.
John Wyeth & Bro.	Post danger card on elevator	Complied with.	Good.
Hope Mfg. Co.	Box belt on first floor; put rail around iron cutting machine; rail around counter shaft of circular saw; rail around counter shaft of mitre saw; rail around counter shaft of rip saw; rail around counter shaft in cellar	Complied with.	Good.
Standard Window Glass Works	Rail in front of balance wheel of engine	Complied with.	Good.
American Bottle Co.	Guard rail around balance wheel; discharge three boys to be sent to school	Complied with.	Excellent.
Woodbury Planing Mill.	Rail around counter shaft of planing machine and counter shaft of circular saw; rail around drive belt of planing machine	Complied with.	Fair.
Woodbury Mfg. Co.	Put guards in front of cog wheels of six power dye presses	Complied with.	Fair.
Gloucester City—			
Gingham Mills	Discharge one boy and girl	Complied with.	Good

CHANGES ORDERED AND CONDITION OF FACTORIES—FIRST DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Gloucester City—			
Gloucester Mfg. Co. 13	Box twelve belts on the plaiting down machines and box one belt on plaiting down machine from wash tub	Complied with.	Good.
Washington Mfg. Co.	Discharge one girl	Complied with.	Good.
Gloucester Iron Co. 2	Clean an whitewash privies; repair steps back of pipe shop	Complied with.	Good.
Heisler Electric Co. 1	Box belt in cutting department and winding room	Complied with.	Good.

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REPORT OF ACCIDENTS—FIRST DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
Camden	Edward Kain	Camden Iron Works	Foot crushed in rack.
Millville	Isaac Sharp	Millville Mfg. Co	Fingers cut on combing machine.
Camden	Patrick Doran	Camden Iron Works	Second and third finger on left hand mashed between two pieces of iron.
"	Chas Mimiune	" " "	Finger on right hand mashed while unloading coal.
"	Benjamin Dilks	" " "	Rib broken by falling in casting pit.
"	Edward Russell	" " "	Finger mashed on riveter.
"	Wm. Stroud	" " "	Leg broken; bank of cinders falling on him.
Gloucester	Wm. Thompson	Gloucester Iron Works	Killed by pipe flask falling on him in the pit.
Camden	Thomas Eslack	Camden Iron Works	Fell from jib of crane; sprained hand and fractured shoulder.
"	Stephen Pierce	" " "	Cart ran over foot and broke ankle.
"	Henry Klopp	" " "	Leg mashed between two heavy iron pipes.
Vineland	M. S. Adams	Gage Tool Works	Finger cut off on a circular saw.
Camden	George Graham	Priestly Woolen Mills	Foot mashed in loom.
Gloucester	John Phillips	Gloucester Iron Works	Ankles of both feet fractured by falling down casting pit.
"	F. Biglow	The Siems Lungren Co	Finger mashed in milling machine.
Camden	Howard Horner	Anderson Preserving Co	Caught in shafting and killed.
"	Oscar Wickland	Camden Woolen Mills	Fell off loom and broke arm.
Mays Landing	Walter Ford	Mays Landing W. P. Co	Finger caught in rim pulley of mule, taking off first joint.
Gloucester	Henry Parker	Gloucester Iron Works	Flask spread and mashed his foot.
Woodbury	Fred Labrocher	Hope Mfg. Co	Foot caught between elevator and door; severe sprain.
"	Glant Sparks	Woodbury Mfg. Co	Fingers caught and mashed in gear wheels of die press.
Camden	Lena Frost	Anderson Preserve Co	Slipped on floor and plunged hands and arms in hot ketchup, making a bad scald.
"	Annie Sterling	Overbrook Mills	Hand mashed in preparing machine; had to be amputated.
"	Thomas McKinne	Acroy & Scull	Hand mashed on carding machine.

SECOND DISTRICT.

L. T. Fell, Inspector :

SIR—I herewith submit my annual report as Deputy Inspector of the Second District for the year ending October 31st, 1891.

The Second District consists of Mercer, Hunterdon, Warren, Sussex, and parts of Burlington and Morris counties. The work during the past year has been very gratifying in its results. There has been but one instance in which any opposition was exhibited to the enforcement of the law, in which case the owner of the works was adverse to allowing me to inspect his establishment because of some method in the process of manufacturing their goods which they claim to be secret, but after an explanation I was admitted. There is a mistaken idea among many manufacturers who claim to have secret processes of manufacture, that there is danger of their process being made public property by the admission of Inspectors to their works. The claim is unfounded, and the Inspectors have not time to enter into the details of processes, and invariably they would not notice anything peculiar in one factory more than another if their attention was not called to it by some person in authority in the works. There has been a marked improvemement in the enforcement of the Compulsory Education law during the past year by the municipalities, upon which much depends in enforcing that law. The Police Commissioners of Trenton have appointed a truant officer, and with the increased school facilities and five public night schools there is but little room for an evasion of the law.

Yours, etc.,

JOHN D'ARCY,

Deputy Inspector.

FACTORIES INSPECTED—SECOND DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Trenton	Dale & Davis	Pottery	110	35	11	1
"	W. Kimble	"	10	15	3	
"	Oliphant & Co.	Sanitary Pottery	200	20		
"	Capitol Cracker Co.	Crackers	12		4	
"	N. J. Church and School Furniture Co.	Furniture	40	1		
"	Skillman Lock and Hard ware Co.	Locks, etc	58	2	1	
"	Trenton Oil Cloth Co.	Oil cloth	40			
"	East Trenton Pottery Co.	Pottery	100	35	7	1
"	Israel Lacey	"	150	30	14	4
"	Enterprise Pottery Co.	Sanitary Pottery	127	15	2	
"	Chas. W. Donaghue	Stilts and pins	3	8	2	
"	John E. Thropp	Machinery	50			
"	H. Leigh	Paper boxes	3	20	2	
"	W. C. Hendrickson & Co.	China decorators	12	25	5	
"	Fell & Roberts	Bricks	90		10	
"	International Pottery Co.	Pottery	160	25	5	
"	Darlington Decorating Co.	China decorators	5	12	3	
"	Trenton Rubber Co.	Rubber hose and packing	200			
"	Applegate & Co.	Bricks	85		8	
"	B. F. Walton	"	110		15	
"	Donaghue & Nolan	"	80		9	
"	H. C. Kafer & Co.	"	80		10	
"	Jos. Crossley	Machinery	27			
"	Peter Wilkes	"	37			
"	William Thropp	Steam engines	15			
"	Murray, Whitehead & Murray	Rubber shoddy	25		3	
"	Whitehead Bros.	Rubber hose, etc.	50			
"	Thos. Maddock & Sons	Sanitary Pottery	275	70	10	
"	John Moses	Pottery	200	50	18	3
"	Greenwood Pottery Co.	Vitrified china	200	40	15	5
"	Trent Tile Co.	Glazed tile	100	35	10	2
"	Providential Tile Co.	" "	35	15	3	1
"	N. J. Agricultural Co.	Agricultural implements	20			
"	Duncan McKenzie	Machinery	75			
"	Trenton Iron Co.	Wire	900		5	
"	Home Rubber Co.	Rubber, etc	100	3	2	
"	Mercer Pottery Co.	Pottery	150	75	20	6
"	Star Rubber Works	Rubber hose, etc	200	2		
"	W. Kimble	Vitrified china	10	15	3	
"	Alpaugh & Magowan	Pottery	175	50	7	
"	N. J. Steel and Iron Co.	Structural iron	1000			
"	O. O. Bowman & Co.	Fire brick and drain pipe	60			
"	Trenton China Co.	Vitrified china	100	35	12	4
"	Joseph Mayer Pottery Co.	Majolica ware	75	30	9	3
"	Fisher & Norris	Anvils	50			
"	Ott & Brewer	Pottery	200	75	15	4
"	J. A. Roebling's Sons	Wire	1500	125	45	
"	S. K. Wilson (Factory St.)	Woolens	275	500	62	11
"	S. K. Wilson, (Fair St.)	"				
"	J. S. Thorn	Crackers	21		6	
"	A. Goldings' Sons' Co.	Ground flint and spar	35			
"	B. W. Titus & Sons	Flannels	90	65	10	2
"	N. J. Match Co.	Matches	18	90	15	7
"	Crescent Pottery Co.	Sanitary pottery	250	50	7	
"	Fell & Thropp Pottery Co.	Pottery	100	12	9	
"	W. H. Tatler Decorating Co.	China decorators	10	25	6	
"	Trenton Cracker Co.	Crackers	20		4	
"	Trenton Valve and Spring Co.	Rubber goods	13		1	
"	Willett's Mfg. Co.	Sanitary pottery	225	50	7	2
"	G. H. Stevenson & Co.	Sash and blinds	25			
"	Trenton Woolen Co.	Woolens	50	60	5	1

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FACTORIES INSPECTED—SECOND DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes - males.	Employes - females.	Under sixteen years.	Children discharged.
Trenton	Adam Exton & Co.	Crackers	50	----	22	4
"	Clark Bros. Lamp, Brass and Copper Co.	Lamps	50	30	7	----
"	Globe Rubber Co.	Rubber hose. etc	100	----	4	----
"	Trenton Malleable Iron Co.	Malleable iron	40	----	----	----
"	Fell & Heath	Bricks	85	----	12	----
"	Fell & Heil	"	110	----	18	----
"	Fell & Baker	"	75	----	8	----
"	American Saw Co.	Saws	75	----	----	----
"	Dibbie Mfg Co.	Hemacite goods	35	----	----	----
"	N. J. Wire Cloth Co.	Wire cloth	75	80	----	----
"	Trenton Watch Co.	Watches	100	100	3	----
"	Ceramic Art Co.	Belleek china, etc	20	10	2	----
"	Hamilton Rubber Co.	Rubber hose, etc	97	----	----	----
"	Pope & Lee	China decorators	12	27	5	----
"	Whitehead & Swan	Lamps	121	109	33	4
"	Dean Decorating Co.	China decorators	15	25	5	1
"	Eagle Pottery Co.	Pottery	100	50	15	3
"	Trenton Spring Mattress Co.	Spring mattresses	30	30	6	1
"	Phœnix Iron Co.	Structural iron	200	----	----	----
"	Trenton Vise and Tool Co.	Tools	80	----	----	----
"	Davis Soap and Chemical Co.	Soap and candles	10	----	----	----
"	Bloom and Godley	Mattresses and bedding	25	10	3	----
"	Stoll & Cole	" " "	8	2	----	----
"	Zimri West	Crackers	15	2	3	----
"	Equitable Pottery Co.	Sanitary pottery	105	10	1	----
"	John Watson	Machinery	35	----	----	----
Burlington	I. S. Kimble	Shoes	11	12	----	----
"	Rogers & Bros.	"	17	12	----	----
"	G. W. Lewis & Sons	"	50	50	2	----
"	R. T. Wood & Co.	"	77	75	----	----
"	W. B. Bunting Est.	"	75	35	3	----
"	J. L. Wilson & Co.	"	8	5	----	----
"	G. Y. Van Sciver	"	30	13	----	----
"	John Stokley	"	25	15	----	----
"	C. B. Spencer	"	33	17	2	----
"	S. Lippencott	"	8	8	1	----
"	G. A. Lotta	"	23	13	----	----
"	W. Adams	"	30	20	1	----
"	J. F. Budd	"	100	75	2	----
"	Burlington Iron Co.	Iron castings	30	----	----	----
"	J. R. Apple	Drain pipe	12	----	----	----
"	The McNeal Pipe and Iron Co.	Cast iron pipe	350	----	----	----
"	J. H. Birch	Carriages	125	----	----	----
Groveville	Morris Bros.	Cotton duck	75	70	20	3
Phillipsburg	American Sheet Iron Co.	Sheet iron	75	----	----	----
"	Standard Silk Co.	Silk	150	225	35	----
"	The Warren Foundry Machine Co.	Cast iron pipe	400	----	----	----
"	T. P. Howe	Bar iron	85	----	----	----
"	Phillipsburg Stove Co.	Stoves	40	----	----	----
Rockaway	C. H. Wilcox	Cardigan jackets	20	50	8	----
Dover	Geo. Singleton	Silk	65	100	32	4
"	Dover Iron Co.	Iron	135	----	----	----
"	D. L. & W. R. R. Shops	R. R. Cars	300	----	----	----
Yardville	James Vogst	Cotton batting	8	6	----	----
Bordentown	Jacob Miller's Son's Co.	Shirts	7	345	----	----
"	Springfield Worsted Co.	Worsted yarn	53	100	30	3
"	Meil & Bros.	Shirts	1	19	----	----
Hamilton Sq're	Mercer Rubber Co.	Rubber hose, etc	50	----	3	----
Port Oram	Ross & Baker	Silks	72	149	7	----
Luxemburg	Ross & Baker	Silk	14	32	3	----
Washington	Cornish & Co.	Organs	80	5	----	----

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FACTORIES INSPECTED—SECOND DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Washington	H. W. Alleger	Organs	35			
"	C. P. Bowlby	"	25			
"	The Beethoven Organ and Piano Co.	"	122	5		
Lambertville	Lambertville Spoke Mfg. Co.	Spokes, hubs and wheels	90			
"	Ben Frazer	Shoes	15	10		
"	Chadwick Copying Book Co.	Copying books	6	15		
"	O'Brien Bros.	Paper	25			
"	J. C. Weeden & Co.	"	15	5		
"	Wm. Mann & Co.	"	15	10		
"	Lambertville Rubber Co.	Rubber goods	100	50	4	
"	Rubber Reclaimer Co.	Rubber shoddy	25			
"	Lambertville Mfg. Co.	Paper	35			
Flemington	Fulper Bros.	Stoneware	20			
"	Williamsons	Baskets	27		2	
Newton	Sussex Shoe Co.	Shoes	75	35	1	
"	H. W. Merriman Shoe Co.	"	225	125	35	

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MINES INSPECTED.

MINE.	OPERATORS.	Employes.	DEPTH.
Orchard	James Cooper Lord Est	125	735 feet.
Hurd	N. J. Iron Mining Co.	78	600 feet.
Mount Pleasant	Mount Pleasant Mining Co	175	875 feet.
Andover	Andover Iron Co	225	600 feet.
Richard	Thomas Iron Co	180	Three shafts, average depth 625 feet.
Mount Hope	Mount Hope Mining Co	139	600 feet.
Glendon	Glendon Iron Co	125	Three shafts, average depth 596 feet

CHANGES ORDERED AND CONDITION OF FACTORIES—SECOND DISTRICT.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of Orders.	Health and Safety.
Trenton—			
S. K. Wilson, (Factory St.) 2	Arrange doors to swing outward; guard elevator	Complied with.	Fair.
S. K. Wilson, (Fair St.) 1	Put fire escape on building	Complied with.	Good.
Fisher & Norris 2	Guard rail across blacksmith shop door; guard driving belt	Complied with.	Good.
Bloom & Godley 2	Guard fly wheel; guard shaft on second floor	----------	Good.
Empire Rubber Co. 1	Guard mill gearing	Complied with.	Good.
Trenton Malleable Iron Co. 1	Danger card at blower pulley	Complied with.	Good.
Willetts Manufacturing Co. 1	Guard elevator	Complied with.	Good.
Globe Rubber Co. 1	Guard gearing of mills and calenders	Complied with.	Good.
Skillman Lock and Hardware Co. 1	Guard elevator	Complied with.	Good.
Thos. Maddock & Sons 2	Put fire escape on building; guard elevator	Partly complied	Fair.
J. A. Roebling's Sons 1	Guard fly wheel in rolling mill	Complied with.	Good.
Jos. Mayer Pottery Co. 1	Repair floor	Complied with.	Fair.
Home Rubber Co. 1	Guard gearing of mills	Complied with.	Good.
Skillman Lock and Hardware Co. 2	Guard belts in machine and knob rooms	----------	----------
Rubber Valve and Spring Co. 1	Guard gearings of mills	Complied with.	Good.
Star Rubber Co. 2	Guard gearings of mill and calenders	----------	----------
Hamilton Square—			
Mercer Rubber Co. 3	Guard gearing of mills; guard gearing of counter mills; put danger cards at two openings	Partly complied	Fair.
Lambertville—			
Rubber Reclaimer Co. 1	Guard gearings of mill	----------	Fair.
Bordentown—			
Springfield Worsted Co. 1	Guard elevator openings	Complied with.	Good.
Meil Bros. 1	Unlock door to fire escapes	Complied with.	Good.
Mines—			
Orchard	Put new rounds in ladder	----------	Good.
Hurd	----------	----------	The air is very light; a new shaft is being opened, which will make the mine good.
Mount Pleasant	Take down loose ground	Complied with.	Good.
Andover	Repair ladders; take down loose ground	Complied with.	The hanging wall of this mine is very heavy, but the mine is in better condition than I have ever seen it before
Richard	Take down loose ground in No. 1 shaft east and repair ladder	----------	Good.

REPORT OF ACCIDENTS—SECOND DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
Trenton	Gabel Baranyie	Fisher & Norris	Caught in an idle belt and thrown against the ceiling; killed.
"	John Kuffel	Home Rubber Co.	Caught in grinding mill; hand taken off.
"	Wm. Sheets	J. A. Roebling's Sons	Fell into a hole in the yard about two feet deep, from the effects of which he died.
Hibernia	John Skews, Jr.	Andover Iron Co.	Struck with wire rope and broke his leg.
"	John Stickle	" " "	Killed by fall of ground in the mine.
"	Paul Melanik	" " "	Toe injured by fall of rock in the mine.
"	Michael Parcel	" " "	Bruised about the body by falling in the shaft.
"	Andrew Bulcik	" " "	Injured by fall of ground in the mine.
"	Patrick Mackin	" " "	Injured while trying to cross between two pump rods, from the effects of which he died.

THIRD DISTRICT.

L. T. Fell, Esq., Chief Inspector:

DEAR SIR—In submitting my annual report ending October 31st, 1891, I beg leave to inform you of the result of the work done in my district, comprising the counties of Monmouth, Middlesex, Union and Somerset, during the year just closed. The manufacturers, as a general rule, have shown a willingness to co-operate with me in enforcing the factory laws, and especially as to the employment of children and the guarding of machinery. The result has been less accidents and more comfort for the laboring masses. As to the employment of children, I would suggest that the law be so changed as to be uniform. That is, that the ages of boys be the same, as the law now provides for girls, namely fourteen years before they are allowed to be employed at any occupation. All orders given by me have been complied with, as my report will show. The manufacturers and owners of buildings are erecting fire escapes where ordered by me in compliance with the law passed last Winter. The employers take particular pains to make their employes comfortable and safe in the discharge of their several duties. And I can safely say that the district is in much better condition every way than when my last annual report was submitted.

Total number of factories	300
Total number of visits	1,500
Number of permits to orphan children	25
Number of accidents reported and investigated	3
Number of children discharged	16
Changes ordered	163
Average visits to each factory during the year	5

Respectfully submitted,

FRANCIS SAYRE,

Deputy Inspector Third District.

FACTORIES INSPECTED—THIRD DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Asbury Park	H. J. Rogers & Rogers	Sash and blinds	38		2	
" "	Steiner & Co.	Night shirts	5	90	1	
Bloomfield	Licorice Works	Licorice	100		7	
Bound Brook	Bound Brook Woolen Mills	Woolen Goods	185	90	11	2
" "	Hickman Hose Coupling Co.	Gas Fixtures	51	18		
" "	Hartford Air Pump Co.	Air Pumps	32			
" "	Standard Paint Co.	Roofing Paint	17			
" "	W. W. Anderson	Planing mill	12			
" "	Wm. H. Bache	Carriage and axle boxes	16			
" "	American Paint Co.	Paints	14			
Carteret	Colwell Iron Works	Machinery	175		4	
"	Wm. Clark & Co.	Fertilizer	50	2	2	
"	Leibig Manufacturing Co.	"	125			
Elizabeth	Washington Rubber Works	Rubber goods	28	50	2	
"	Peter Briedt	Brewery	28			
"	Patrick Sheridan	Planing mill	30			
"	City Flour Mill	Flour and feed	14			
"	Chas. Forsyth	Drain pipe	12			
"	Pacific Rubber Co.	Rubber Goods	8	36	1	
"	Chas. F. Miller & Co.	Hardware	11			
"	Lambert Machine Works	Machinery	18			
"	J. S. Waddell	Plumbing supplies	9			
"	D. B. Churchill	Shirt manufacturer	8	51	4	1
"	Union Oil Cloth Co.	Oil cloth	17	1		
"	A. & F. Brown	Machinery	150			
"	Heywood & Co.	Clothing	8	32	3	3
"	Isaac Worrall	Machinery	13			
"	S. L. Moore & Sons	"	275			
"	Wm. H. Rankin	Felt roofing	16			
"	G. M. Graft & Co.	Stoves	40			
"	Elizabeth Oil Cloth Co.	Table oil cloth	205		2	
"	Eugene Munsell & Co.	Stoves	100			
"	Wm. O. Smith	Shears	9			
"	Rising Sun Brewing Co.	Beer	30			
"	L. B. Burbower & Co.	Pottery	100	18	16	
"	New Jersey Dry Dock Co.	Planing mill	75			
"	NewYork Fire Proof PaintCo.	Paints	10			
"	Borne Scrymser & Co	Oil refining	125			
"	Bowker Fertilizer Co.	Fertilizers	125			
"	New Jersey Extraction Works	Copper and silver	100			
"	Singer Manufacturing Co.	Sewing machines	3400	300	200	
"	Central R. R. Shops	Car repairing	500			
"	Jos. Blatz	Tannery	60	3	3	
"	Fredrick Artz	Toys	1	18	4	
"	Zululove & Co.	Shirts	18	65	3	
"	E. J. Blakely & Co	Foundry	75			
"	Howson & Son	Stair Builders	20			
"	American Gas Furnace Co.	Furnaces	20			
"	Henry Rosenbaum	Shirts	2	73	2	
"	B. & S. Strauss	Carriages	28			
"	Heidritter & Son	Planing Mill	22			
"	Heidritter & Son	Sash and blinds	50			
"	Wm. Earl	Canned goods	8	40	3	
"	Henry Mayer & Co.	Straw hats	14	32	3	
"	Samuel Rittenhouse	Saw mill	10			
"	Thacher Jones & Co.	Car wheels	12			
"	Albert Looker	Stair builder	10			
"	John Carroll	Bricks	50			
"	Albert S. Campbell	Photographer	50	75	16	3
"	Standard Chemical Co.	Chemicals	40			
Freehold	Henry Rothchild	Shirts	150	200	10	
"	J. W. Allen	Cigars	13	9		
"	Holmes & Bowden	Machinery	48	3		

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FACTORIES INSPECTED—THIRD DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Freehold	Stokes Bros.	Files	25			
"	Jos. Blakely	Canned goods	50	75	8	
"	Wm. E. Curley	Laundry	8	12	1	
"	Wm. McDermott	Stair builder	12			
Helmetta	G. W. Helm & Co.	Snuff and tobacco	100	125	3	
Jamesburg	State Reform School	Sundries	320	125		
"	Middlesex Mfg. Co.	Shirts	100	32		
"	Hoblinger & Dazian	"	80	60		
"	Chas. Buckalew	Flour and feed	10			
Keyport	Tilton & Cheny	Carriages	14			
"	C. B. Bucklin	Canned goods	25	100	9	
"	Jacob Lorillard	Bricks	350		1	
"	Keyport Brick Works	"	40			
Little Silver	E. E. Hazard	Catsup	50	30	6	
Linden	Lion Silk Mills	Silk goods	20	26	6	
Long Branch	Peddington Bros.	Sash and blinds	120		2	
" "	L. D. Edwards	" "	11		1	
" "	J. M. Davis	Stair builder	14			
" "	C. D. Reed & Co.	Carriages	20			
Menlo Park	Ceramic Works	Volkmar tile	25	3		
Matawan	J. L. Rue	Pottery	40	2		
"	R. C. Winters	Horse collars	16			
"	Dunn & Dunlap	Earthenware	32	16		
"	Wm. D. Bailey	Sash and blinds	10			
"	Bushnell & Co.	Bricks	60			
"	T. M. Amtesell & Co.	Pianos	26			
Milltown	Meyer Rubber Co.	Rubber boots and shoes	250	200	12	4
Manasquan	Wm. B. Taylor	Sash and blinds	15			
"	Thomas Vaughn	Shirts	2	34		
"	R. V. Van Shoick	Sash and blinds	12			
"	Wm. Stout & Son	Canned goods	10	20		
"	A. B. Wyckoff & Co.	Flour and feed	36			
New Brunswick	Consolidated Fruit Jar Co.	Fruit jar tops	302	48	13	
" "	N. J. Lamp and Bronze Co.	Bronze goods	73	7	1	
" "	Janeway & Co.	Wall paper	175	16	6	
" "	N. J. Rubber Co.	Rubber shoes	200	250	31	
" "	Middlesex Rubber Co.	" "	254	140	8	
" "	Janeway & Carpenter	Wall paper	225	27	18	1
" "	Adam Green	Earthenware	15			
" "	Geo. Butler & Son	Sash and blinds	42			
" "	Cronk & Voorhees	" "	37			
" "	John Guible	Shoes	17			
" "	J. B. Archer & Co.	"	18	7	1	
" "	J. Messerole	Shirts	18	21		
" "	Norfolk and New Brunswick Hosiery Co.	Knit goods	300	500	40	4
" "	L. T. Ives	Needles	50			
" "	Johnson & Johnson	Medicinal plasters	50	125	6	
" "	Middlesex Shoe Co.	Shoes	97	53	4	
" "	S. B. Van Nise	Carriages	10			
" "	J. D. Watson & Co.	Paints	8			
" "	E. F. Felter & Co.	Shoes	48	28	2	
" "	C. Hingher & Son	Pearl buttons	75	25	4	
" "	Robert Flieder	Paper boxes	14	12	1	
" "	C. L. Davis & Co.	Cigars	5	145	10	3
" "	Paradigne Iron Works	Iron railing	16			
" "	Empire Machine Co.	Machinery	16			
" "	Wm. Henderson	"	12			
Old Bridge	Tile Mfg. Co.	Tile	32	2		
Plainfield	Van Deventer & Co.	Carpets	10	45	4	
"	Pond Tool Co.	Tools	400		4	
"	Potter Printing Press Works	Printing presses	200		3	
"	Walter Scott & Co.	" "	180		3	

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FACTORIES INSPECTED—THIRD DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Plainfield	Central Company	Table oil cloth	60	----	9	----
Perth Amboy	Henry Maurer & Sons	Fire bricks	190	----	9	----
" "	Amboy Terra Cotta Works	Terra Cotta Work	400	----	6	----
" "	Arthur Buel & Co.	Paris white	25	----	1	----
" "	United Refiners and Export Co.	Oil Refinery	75	----	2	----
" "	Henry White	Foundry	14	----	----	----
" "	Rosselle & Hasbacker	Chemicals	16	----	2	----
" "	Ashland Emery Co.	Emery paper	22	----	----	----
" "	Thos. Lingle	Machinery	15	----	----	----
" "	Raritan Power Co.	Pressed brick	125	----	4	----
" "	Wm. King	Cork	17	----	----	----
" "	Mathiasson & Hansen	Terra cotta ware	45	----	2	----
" "	Gleason & Co.	Machinery	21	----	----	----
" "	Pardee Terra Cotta Works	Terra cotta ware	125	----	----	----
" "	American Fire Proof Co.	Fire brick	150	----	----	----
Red Bank	American Manufacturing Co.,	Billiard balls	16	----	----	----
" "	L. P. Conklin	Sash and blinds	12	----	----	----
" "	J. Broadmeadow	Canned goods	22	35	13	4
" "	C. L. Davis	Sash and blinds	13	----	----	----
" "	J. W. Monk & Bros.	Carriages	14	----	----	----
" "	J. W. Stout	Canned goods	10	150	8	6
" "	Rogers & Walling	Carriages	10	----	----	----
" "	E. R. Roberts	Safety boilers	36	----	----	----
" "	John Whitehead & Co.	Brick	60	----	----	----
" "	E. T. Hook	Sash and blinds	16	----	4	----
" "	Root & Gibbons	" "	10	----	----	----
" "	John N. Hoffmeyer	" "	12	----	----	----
" "	James Walsh	" "	9	----	----	----
" "	Augustus Rogers	Carriages	10	----	----	----
Raritan	Raritan Woolen Mills	Woolen goods	410	15	32	----
"	Somerset Manufacturing Co.	" "	285	75	40	----
"	Kinyon Bros.	Machinery	40	----	----	----
"	R. Veghte	Paint	13	----	----	----
"	Wm. McNair & Co.	Flour and feed	10	----	----	----
Rahway	Gordan Press Works	Printing presses	46	----	3	----
"	Henry Rothenbaum	Shirts	50	125	20	----
"	Wm. L. Mershon	Printing	105	35	2	----
"	Wm. L. Mershon	"	48	12	----	----
"	LaforgeWheel and SpokeWks.	Wheel and Spokes	20	----	----	----
"	Housman & McMamus	Carriages	12	----	----	----
"	Charles Grube	"	20	----	----	----
"	Howard & Co.	Dye works	9	----	----	----
"	Wm. S. Pickering	Carriages	5	----	----	----
"	E. Graves & Co.	"	12	----	----	----
"	Fredrick Eyer	"	10	----	----	----
"	Van Campen & Bros.	Novelties	40	50	5	----
"	E. V. Dunham & Co.	Carriages	50	----	----	----
"	Taylor & Bloodgood	Felt	170	30	9	2
"	Johnson Signal Co.	Railroad signals	40	----	3	----
"	Chas. Woodruff	Carriages	10	----	0	----
"	Berry, Ball & Smith	Embossers	28	6	2	----
"	F. T. Claden	Planing mill	14	----	----	----
"	Wm. Westervelt	Stair builder	12	----	----	----
"	Wm. Terrell & Co.	Carriages	10	----	----	----
"	Turner & Co.	Shirts	8	56	2	----
South River	John Whitehead & Co.	Bricks	60	----	----	----
" "	Mark Davison & Co.	Shirts.	6	36	----	----
" "	Herman Aukam & Co.	Handkerchiefs	100	300	20	----
" "	Thos. Willett & Co.	Bricks	100	----	----	----
" "	Yates & Bros.	"	60	----	----	----
" "	Miller & Jones	Flour and Feed	10	----	----	----
Spottswood	Hoblinger & Dazian	Shirts	14	40	6	----

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FACTORIES INSPECTED—THIRD DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Sayreville	Moses Higbie	Refining asphalt	43	----	2	----
"	Sayre & Fisher	Bricks	70	----	----	----
"	Wm. Fisher & Co.	"	260	----	4	----
"	E. & A. & C. W. Fisher	"	60	----	----	----
South Amboy	South Amboy Pottery Co.	Pottery	40	8	9	----
" "	Chas. Davis	Asphalt	65	----	----	----
" "	Chas. Simons	Shirts	2	60	3	----
Tremley	Standard Chemical Co.	Chemicals	175	----	----	----
"	Carteret Brick Works	Bricks	35	----	----	----
"	Standard Fertilizer Works	Fertilizers	50	----	----	----
Woodbridge	Salamander Works	Fire bricks	72	----	8	----
"	Wm. H. Barry	Brick	45	----	2	----
"	Valentine Bros.	Fire bricks	50	----	2	----
"	Spa Springs Brick Co	Building bricks	200	----	----	----
"	Anners & Lyle Mfg. Co.	Tile and fire bricks	25	----	20	----
"	Boynton Co	Tile	43	----	----	----

CHANGES ORDERED AND CONDITION OF FACTORIES—THIRD DISTRICT.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Asbury Park—			
H. J. Rogers & Rogers			Good.
Steiner & Co. 1	Guard sewing machine shafting		Very good.
Bloomfield—			
Licorice Works 3	Two belts and all gearing guarded		Fair.
Bound Brook—			
B. B. Woolen Mills			Good.
Hickman Hose Coupling Co. 1	Wash room and dressing room for ladies		Good.
Hartford Air Pump Co.			Good.
Standard Paint Co.			Good.
W. W. Anderson 1	Fly wheel and main belt boxed		Good.
Wm. H. Bache 2	Two belts guarded		Good.
American Paint Co. 7	Four belts on grinding machine guarded; rail on stairs; fly wheel and three belts in cellar guarded; fly wheel on engine to have rail around		Good.
Carteret—			
Colwell Iron Works			Good.
Wm. Clark & Co. 1	Main belt first floor guarded		Good.
Leibig Mfg. Co. 3	Two pulleys and belt on grinding machine guarded		Good.
Elizabeth—			
Washington Rubber Works	None	Complied with.	Good.
Peter Briedt	None	Complied with.	Good.
Patrick Sheridan	None	Complied with.	Good.
City Flour Mill	None	Complied with.	Good.
Chas. Forsythe	None	Complied with.	Good.
Pacific Rubber Works	None	Complied with.	Good.
Chas. F. Miller & Co.	None	Complied with.	Good.
Lambert Machine Works	None	Complied with.	Good.
J. S. Waddell		Complied with.	Good.
D. B. Churchill		Complied with.	Good.
Union Oil Cloth Co. 1	Guard fly wheel and main belt	Complied with.	Good.
A. & F. Brown	None	Complied with.	Good.
Heywood & Co. 2	Sewing machine shafting guarded and fire escape erected	Complied with.	Good.
Isaac Worrall & Sons	None	Complied with.	Good.
S. L. Moore & Sons	None	Complied with.	Good.
Wm. H. Rankin	None	Complied with.	Good.
G. M. Graft & Co.	None	Complied with.	Good.
Elizabeth Oil Cloth Co.	None	Complied with.	Good.
Eugene Munsell & Co.	None	Complied with.	Good.
Wm. O. Smith	None	Complied with.	Good.
Rising Sun Brewing Co.	None	Complied with.	Good.
L. B. Beerbower & Co.	None	Complied with.	Good.
N. J. Dry Dock Co.	None	Complied with.	Good.
N. Y. Fire Proof Paint Co.	None	Complied with.	Good.
Borne, Scrymser & Co	None	Complied with.	Good.
Bowker Fertilizer Co.	None	Complied with.	Good.
N. J. Extraction Co.	None	Complied with.	Good.
Singer Mfg. Co.	None	Complied with.	Good.
Central R. R. Shops	None	Complied with.	Good.
Jas. Blatz	None	Complied with.	Good.
Frederick Artz	None	Complied with.	Good.
Zululove & Co.	None	Complied with.	Good.
E. J. Blakely & Co.	None	Complied with.	Good.
Hawson & Son		Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES – THIRD DISTRICT—Continued.

Location and Name of Company.	Changes Ordered.	Disposition of previous orders.	Health and safety.
Elizabeth—			
American Gas Furnace Co. 1	Guard fly wheel	Complied with.	Good.
Henry Rosenbaum	None	Complied with.	Good.
B. & S. Strauss	None	Complied with	Good.
Heidritter & Son	None	Complied with.	Good.
Heidritter & Son	None	Complied with	Good.
Wm. Earl 1	Guard fly wheel		Good.
Henry Mayer & Co. 4	Two belts boxed; screen stairs; box sewing machine shafting	Complied with.	Good.
Samuel Kittenhouse	None	Complied with	Good.
Thatcher, Jones & Co.	None	Complied with.	Good.
Albert Looker	None	Complied with.	Good.
Albert S. Campbell 3	Outside stairs; one doz. fire buckets; all gearing guarded	Complied with.	Good.
Standard Chemical Co.	None	Complied with.	Good.
Freehold –			
Henry Rothchild	None	Complied with.	Good.
J. W. Allen	None	Complied with.	Good.
Holmes & Bowden	None	Complied with.	Good.
Stokes Bros.	None	Complied with.	Good.
Jos. Blakely 1	None	Complied with.	Good.
Wm. E. Curley 1	Fly wheel guarded	Complied with.	Good.
Wm. McDermott	None	Complied with.	Good.
Helmetta –			
G. W. Helm & Co. 1	Ventilate grinding room	Complied with.	Good.
Jamesburg—			
State Reform School 1		Complied with.	Good.
Middlesex Mf'g. 1	Shafting guarded	Complied with.	Good.
Hablinger & Dazian 2	Shafting and fly wheel guarded	Complied with.	Good.
Chas. Buckalew	None	Complied with.	Good.
Keyport—			
Tilton & Cheney	None	Complied with.	Good.
C. B. Bucklin	None	Complied with.	Good.
Jacob Lorilard	None	Complied with.	Good.
Keyport Brick Works 5	Four belts and gearing guarded	Complied with.	Good.
Little Silver –			
E. E. Hazard 2	Guard shafting on scalding machine and main belt and fly wheel	Complied with.	Good.
Linden—			
Lion Silk Mills 2	Two belts guarded	Complied with.	Good.
Long Branch—			
Peddington Bros.	None	Complied with.	Good.
L. D. Edwards	None	Complied with.	Good.
J. M. Davis	None	Complied with.	Good.
C. D. Reed & Co	None	Complied with.	Good.
Menlo Park—			
Ceramatic Works 2	One belt and fly wheel guarded	Complied with.	Good.
Matawan—			
J. L. Rue	None	Complied with.	Good.
R. C. Winters	None		Good.
Wm. D. Bailey	None		Good.
Bushnell & Co.	None		Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—THIRD DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Matawan			
T. M. Amtesell & Co. 4	Three belts and shafting guarded	Complied with.	Good.
Milltown—			
Meyer Rubber Co.	None	Complied with.	Good.
Manasquan—			
Wm. B. Taylor 1	All belts guarded	Complied with.	Good.
Thos. Vaugh	None	Complied with.	Good.
R. V. Van Sboick	None	Complied with.	Good.
Wm. Stout & Son	None	Complied with.	Good.
D. B. Wyckoff & Co.	None	Complied with.	Good.
New Brunswick			
Consolidated Fruit Jar Co.	None	Complied with.	Good.
N. J. Lamp & Bronze Co.	None	Complied with.	Good.
N. J. Rubber Co.	None	Complied with.	Good.
Middlesex Rubber Co. 4	None	Complied with.	Good.
Janeway & Carpenter 7	Seven belts boxed	Complied with.	Good.
Adam Green	None	Complied with.	Good.
Geo. Butler & Sons	None	Complied with.	Good.
Cronk & Voorhees	None	Complied with.	Good.
John Guible	None	Complied with.	Good.
J. B. Archer & Co	None	Complied with.	Good.
J. Messerole	None	Complied with.	Good.
Norfolk & New Brunswick Hosiery Co.	None	Complied with.	Good.
L. T. Ives	None	Complied with.	Good.
Johnson & Johnson	None	Complied with.	Good.
Middlesex Shoe Co.	None	Complied with.	Good.
T. B. Van Nise	None	Complied with.	Good.
J. D. Watson & Co.	None	Complied with.	Good.
E. F. Felter & Co. 1	None	Complied with.	Good.
C. Hingher & Son 1	Guard Shafting	Complied with.	Good.
Robert Flieder	None	Complied with.	Good.
Janeway & Co.	None	Complied with.	Good.
C. L. Davis & Co. 2	Main belt guarded; fire escape erected	Complied with.	Good.
Paradigne Iron Works	None	Complied with.	Good.
Empire Machine Co.	None	Complied with.	Good.
Wm. Henderson	None	Complied with.	Good.
Old Bridge—			
Tile Mf'g Co.	None	----------	Good.
Plainfield—			
Van Deventer & Co.	None	Complied with.	Good.
Pond Tool Co.	None	Complied with.	Good.
Potter Printing Press Works	None	Complied with.	Good.
Walter Scott & Co.	None	Complied with.	Good.
Central Company	None	Complied with.	Good.
Perth Amboy—			
Henry Maurer & Sons	None	Complied with.	Good.
Amboy Terra Cotta Works	None	Complied with.	Good.
Arthur Buel & Co. 6	Two pulleys and three belts and fly wheel boxed	Complied with.	Good.
United Refiners and Export Co.	None	Complied with.	Good.
Henry White	None	Complied with.	Good.
Rosseller & Hasbacker	None	Complied with.	Good.
Ashland, Emery & Co.	None	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—THIRD DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Perth Amboy—			
Thos. Lingle	None	Complied with.	Good.
Raritan Power Co.	None	Complied with.	Good.
Wm. King	None	Complied with.	Good.
Mathiasson & Hansen	None	Complied with.	Good.
Gleason & Co.	None	Complied with.	Good.
Pardee Terra Cotta Works 2	One belt and pulley on grinding machine guarded; fly wheel guarded	Complied with.	Good.
America Fire Proof Co. 1 2	Seven belts and five pulleys guarded	Complied with.	Good.
American Mfg. Co. 1	Pully fenced in	Complied with.	Good.
L. P. Conklin	None	Complied with.	Good.
J. Broadmeadow	None	Complied with.	Good.
C. L. Davis	None	Complied with.	Good.
J. W. Mount & Bros.	None	Complied with.	Good.
J. W. Stout	None	Complied with.	Good.
Rogers & Walling	None	Complied with.	Good.
E. R. Roberts	None	Complied with.	Good.
Red Bank—			
John Whitehead & Co.	None	Complied with.	Good.
E. T. Hook	None	Complied with.	Good.
Root & Gibbins	None	Complied with.	Good.
John N. Hoffmeyer	None	Complied with.	Good.
James Walsh	None	Complied with.	Good.
Augustus Rogers	None	Complied with.	Good.
Raritan—			
Raritan Woolen Mills	None	Complied with.	Good.
Somerset Mfg. Co.	None	Complied with.	Good.
Kinyon Bros.	None	Complied with.	Good.
R. Veghte	None	Complied with.	Good.
Wm. McNair & Co.	None	Complied with.	Good.
Rahway—			
Gordon Press Works	None	Complied with.	Good.
Henry Rothenbaum 1	Six fire buckets	Complied with.	Good.
Wm L. Mershon 2	Fire escape and one belt guarded	Complied with.	Good.
Wm. L. Mershon	None	Complied with.	Good.
Laforge Wheel and Spoke Works 4 4	Four belts boxed	Complied with.	Good.
Housman & McManus	None	Complied with.	Good.
Chas Grube	None	Complied with.	Good.
Howard & Co.	None	Complied with.	Good.
Wm. S. Pickering	None	Complied with.	Good.
E. Graves & Co.	None	Complied with.	Good.
Frederick Eyer	None	Complied with.	Good.
Van Campen & Bros.	None	Complied with.	Good.
E. V. Dunham & Co.	None	Complied with.	Good.
Taylor & Bloodgood 16	Thirteen belts and three pulleys guarded	Complied with.	Good.
Johnson Signal Co. 1	Guard fly wheel	Complied with.	Good.
Chas. Woodruff	None	Complied with.	Good.
Berry, Ball & Smith	None	Complied with.	Good.
F. T Claden 2	Two belts boxed	Complied with.	Good.
Wm. Westervelt	None	Complied with.	Good.
Wm. Terrell & Co.	None	Complied with.	Good.
Turner & Co. 1	One belt guarded	Complied with.	Good.
South River—			
John Whitehead & Co.	None	Complied with.	Good.
Mark, Davison & Co.	None	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—THIRD DISTRICT—Continued.

Location and Name of Company.	Changes Ordered.	Disposition of previous orders.	Health and safety.
South River—			
Herman, Aukum & Co.	None	Complied with.	Good.
Thos. Willett & Co.	None	Complied with.	Good.
Yates & Bros.	None	Complied with.	Good.
Miller & Jones	None	Complied with.	Good.
Spottswood—			
Hoblinger & Dazian	None	Complied with.	Good.
Sayreville—			
Moses Higbie	None	Complied with.	Good.
Sayre & Fisher	None	Complied with.	Good.
Wm. Fisher & Co.	None	Complied with.	Good.
E. & A. & C. W. Fisher	None	Complied with.	Good.
South Amboy—			
South Amboy Pottery Co.	None	Complied with.	Good.
Chas. Davis	None	Complied with.	Good.
Chas. Simmons	None	Complied with.	Good.
Tremley—			
Standard Chemical Co.	None	Complied with.	Good.
Carteret Brick Works	None	Complied with.	Good.
Standard Fertilizer Works	None	Complied with.	Good.
Woodbridge—			
Salamander Works	None	Complied with.	Good.
Wm. H. Barry	None	Complied with.	Good.
Valentine Bros.	None	Complied with.	Good.
Spa Spring Brick Co.	None	Complied with.	Good.
Anness & Leyle Mf'g Co.	None	Complied with.	Good.
Boynton & Co.	None	Complied with.	Good.

REPORT OF ACCIDENTS—THIRD DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
New Brunswick	George Cochrane	Janeway & Carpenter	Wrist caught in main shaft; lost two fingers.
Bloomfield	Stephen M. Montgomery.	Licorice Works	Killed by steam pipe breaking.
Elizabeth	James Moran	A. S. Cambell	Arm crushed in gearing.

FOURTH DISTRICT.

L. T. Fell, Inspector :

SIR—I herewith submit my annual report as Deputy Inspector for the Fourth District, comprising Jersey City, Hoboken, Bayonne, and the Town of Arlington, Town of Union, West Hoboken, Guttenberg, West New York, to the boundary line of Bergen County. I have during the year inspected 300 factories and paid each one of them on an average of four visits. I have granted 30 permits to half orphans under the legal age to work in factories. I have discharged 60 children under the legal age, whom I found at work, which shows a decrease of that of last year. The various changes that I recommended to the manufacturers have been complied with, without resorting to any litigation. During the past year I have received numerous complaints from members of labor organizations as to certain evils existing in certain factories. In each of these cases I made a personal examination into the matter and had the evils complained of remedied at once, to the entire satisfaction of all concerned. I find that the factory laws in this district are being invariably complied with by the manufacturers in every respect, and find that they are always willing to make such changes as I recommend so to make it safe for life and limb, and more pleasant for those who are compelled to toil in our factories and workshops. I would suggest to you that you recommend to the Legislature the enactment of a law that will compel manufacturers to allow those who they employ to eat their noon day meal in a room set apart for that purpose. In a great many factories they have that accommodation and in some they have not. I have seen men last Winter eat their meals on the public highways, and on inquiry I learned that the mills are closed from 12 to 1 o'clock and that all are compelled to leave the building. This is a very serious matter and should receive some consideration from

the Legislature, which I know it will if such a bill is introduced, so as to reach such manufacturers who care little or nothing for the comforts of those whom they employ. Ten (10) accidents were reported to me, and in each case I made a personal investigation and submitted the facts to you. I have ordered 75 changes, which changes in most cases were complied with.

Yours Very Truly,

J. S. WEINTHAL,

Deputy Inspector.

FACTORIES INSPECTED—FOURTH DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Jersey City	Lorrillard & Co.	Tobacco and snuff	500	2500	250	----
" "	Mathiesen & Weichers	Sugar	1000	----	----	----
" "	Brooklyn Cooperage Co.	Barrels	225	----	25	4
" "	N. J. Wheel Co.	Wheels	100	----	----	----
" "	L. and M. Rubber Co.	Rubber	75	10	----	1
" "	Pattberg Bros.	Brass goods	125	75	35	----
" "	Heppenheimer's	Lithographing	250	----	40	----
" "	Mehl & Co.	Pocketbooks	225	100	50	1
" "	Waldeck & Co.	Paper boxes	5	55	10	----
" "	Standard Clothing Co.	Clothing	60	80	15	4
" "	Daft Electric Co.	Motors	140	----	----	----
" "	N. J. Standard Watch Co.	Watches	110	100	5	----
" "	James Leo	Paper boxes	25	75	10	----
" "	Dixon's Crucible Works	Lead pencils	175	150	125	5
" "	A. Goldman	Hats	15	15	5	3
" "	J. C. Wheel Co.	Wheels	40	----	----	----
" "	Passaic Zinc Co.	Zinc	225	----	----	----
" "	Steel & Condict	Machinery	25	----	----	----
" "	J. C. Galvanizing Co.	Galvanizing	25	----	----	----
" "	W. Ames & Co.	Spikes	100	----	10	2
" "	McKnight & Co.	Mouldings	30	----	----	----
" "	U. S. Machine Co.	Machinery	35	----	----	----
" "	F. G. Oth & Son	Surgical Instruments	75	----	10	----
" "	Colgate & Co.	Soap	300	3	100	1
" "	Stratford & Co.	Oakum	50	----	5	1
" "	J. C. Paper Co.	Paper	35	5	2	----
" "	B. Mills' Sons	Oakum	15	----	3	1
" "	O. Dewey	"	25	----	5	----
" "	John Karcher	Chemicals	10	----	----	----
" "	Hog Abattoir	Slaughter house	100	----	----	----
" "	U. S. Fuel Co.	Fuel	10	----	----	----
" "	N. J. Sheep and Wool Co.	Tannery	35	----	2	----
" "	H. Wilkens	Tanks	15	----	----	----
" "	Columbia Rolling Mills	Metal	10	----	----	----
" "	Corcoran & Co.	Windmills	75	----	----	----
" "	J. J. Donahue	Corsets	----	15	2	1
" "	Cockburn Mfg. Co.	Machinery	25	----	----	----
" "	N. J. Stone Crushing Co.	Crusher	10	----	2	2
" "	Emil Morel	Dyeing	15	----	----	----
" "	Winter Ball Mfg Co.	Canes, etc.	200	75	----	3
" "	N. J. Car Heating Co.	Heaters	40	----	----	----
" "	N. J. Car Lighting Co.	Lamps	10	----	----	----
" "	Bradley Metal Co.	Metal	15	----	----	----
" "	Oakley Soap Co.	Soap	25	50	10	----
" "	Thos. Stewart	Carpet cleaning	12	----	----	----
" "	N. J. Paint Co.	Paint	10	2	----	----
" "	Ribbon & March	Machinery	150	----	----	----
" "	Springer Balance Co.	Scales	50	----	----	----
" "	Geo. Mathers	Ink	35	----	----	----
" "	Douglass & Sons	Machinery	15	----	----	----
" "	Hudson Foundry	"	25	----	----	----
" "	A. Gross & Co.	Candles	25	----	----	----
" "	Charles Brannan	Paper boxes	5	15	5	----
" "	N. J. Embroidery Co.	Embroidery	1	25	5	----
" "	L. B. Shaffer	Silk	5	10	4	2
" "	John Lazier	"	5	10	2	1
" "	C. Stohn	"	35	10	----	----
" "	Chapman Bros.	Rufflings	5	5	----	----
" "	Poidabard Silk Co.	Silk	200	350	75	----
" "	A. Jonas	Machinery	15	----	----	----
" "	O. P. Brown	Medicines	5	2	----	----
" "	R. Hiller s Sons	Chemicals	25	----	----	----
" "	Garvey Bros.	Machinery	20	----	----	----

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FACTORIES INSPECTED—FOURTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Jersey City	A. Holmes	Machinery	10	----	----	----
" "	Edison Phonograph Co.	Phonographs	10	----	----	----
" "	A. B. Cushing	Machinery	35	----	----	----
" "	Wallis Bros.	"	225	----	----	----
" "	Vulcan Iron Works	"	35	----	----	----
" "	F. Smith & Bro.	"	60	----	----	----
" "	Heidt & Son	Barrels	35	----	----	----
" "	A. King	Machinery	75	----	----	----
" "	Consolidated Iron Co.	"	25	----	----	----
" "	Frazer Axel Grease Co.	Grease	10	----	----	----
" "	J. C. Iron Works	Machinery	30	----	----	----
" "	J. Taylor & Co.	Dyeing	10	----	----	----
" "	Pioneer Slate Co.	Mantels	8	----	----	----
" "	N. J. Steam Laundry Co.	Laundry	15	20	5	----
" "	H. C. Knitting Co.	Worsted goods	5	20	5	----
" "	A. Maloney	Wood turning	10	----	----	----
" "	Gould & Headley	Machinery	15	----	----	----
" "	Billington Bros.	Soap	8	----	----	----
" "	M. Beyer	Cameras	10	----	----	----
" "	R. Hiller's Sons	Licorice	10	----	----	----
" "	Hudson Steam Laundry	Laundry	40	35	10	----
" "	Barnes & Co.	Machinery	20	----	----	----
" "	Eagle Tube Co.	Tubes	25	----	----	----
" "	Fulton Boiler Co.	Boilers	15	----	----	----
" "	Delancey Spring Works	Springs	10	----	----	----
" "	J. Thorp	Woodwork	10	----	----	----
" "	J. Cranshaw	Machinery	10	----	----	----
" "	John Maslin	"	15	----	----	----
" "	C. R. James	"	15	----	----	----
" "	Wustian Dry Plate Co.	Dry plates	20	5	1	----
" "	Carnes & Collins	Machinery	50	----	----	----
" "	Woolsey Paint Co.	Paint	75	10	----	----
" "	Stool & Co.	Brooms	10	----	1	1
" "	Hyderline Soap Co.	Soap	5	2	----	----
" "	Royal Chemical Co.	Medicines	10	3	----	----
" "	R. H. Steel	Laundry	10	40	5	----
" "	Greenfield Machine Co.	Machines	50	----	----	----
" "	A. Hamil	Railings	20	----	----	----
" "	Brown & Miller	Cleats	40	----	----	----
" "	J. H. Gautier & Co.	Bricks	100	----	----	----
" "	E. Gorthberg	Brass goods	25	----	----	----
" "	O Brien & Williams	Gas fixtures	10	----	1	1
" "	Detweller & Street	Fireworks	50	75	25	----
" "	Ban-Dinivide Co.	Bookbinding	50	50	5	----
" "	Eureka Hose Co.	Hose	10	----	----	----
" "	Woodhouse & Co.	Bronze	30	----	----	----
" "	Spear & Co.	Bandages	10	5	2	----
" "	J. J. Hines	Sashes	10	----	----	----
" "	Canniste Sash Works	"	20	----	----	----
" "	Tarter Chemical Works	Chemicals	30	----	----	----
" "	A. A. Griffing Iron Works	Radiators	600	----	----	----
" "	Bergen Hair Works	Hair	3	3	3	----
" "	Boynton Furnace Co.	Stoves	150	----	----	----
" "	Hitching & Co.	Sashes	15	----	----	----
" "	Liberty Soap Co.	Soap	8	----	----	----
" "	W. M. Cosgrove	Ventilators	10	----	----	----
" "	J. Toms	Oils	8	----	----	----
" "	John C. Fox	Mantels	10	----	----	----
" "	M. Gross	Machinery	10	----	----	----
" "	Baker Castor Oil Co.	Oil	50	----	----	----
" "	Standard Wood Co.	Turning	40	----	----	----
" "	U. S. Cocoanut Co.	Essence	10	6	3	1
" "	H. Turner	Sashes	25	----	----	----

FACTORIES INSPECTED—FOURTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Jersey City	Frank Hall	Gloves	20	40	20	
" "	Dodge & Bliss	Boxes	75		25	
" "	J. McDonald	Desks	20			
" "	Hepe, Koven & Co.	Boilers	40			
" "	Reinecke Bros.	Vinegar	10			
" "	Wessels & Co.	Hats	40	30		
" "	N. J. Steel Mat Co.	Mats	15			
" "	J. C. Desk Co.	Desks	25			
" "	U. S. Brush Co.	Brushes	25	10	3	
" "	Mosley Iron Co.	Iron Sidings	10			
" "	A. Rochell	Dolls	1	15	2	1
" "	Chas. Whitman	Hair	3	2	2	1
" "	C. Tacot Mfg. Co.	Food	7	3	1	
" "	Ling Spring Co.	Thread	300	150	50	1
" "	Ajax Envelope Co.	Envelopes	25	15	3	1
" "	Phœnix Boiler Co.	Boilers	15			
" "	A. Anziere	Feathers		24	3	1
" "	Greenville Spring Co.	Springs	8			
" "	M. SeNultz & Bros.	Gold beaters	10	3	1	1
" "	N. J. Wool Hat Co.	Hats	15	10	5	1
" "	Lorillards	Box department	200		20	
" "	J. C. Pottery	Crockery	10			
Hoboken	Keuffel, Essex & Co.	Surveying instruments	100	10	15	
"	Meyenberg's Silk Co.	Silk	125	75	25	2
"	American Lead Pencil Co.	Lead pencils	125	200	50	2
"	Jas. Harksen	Laundry	3	15		
"	Wetter & Blumstelli	Embroideries	20	5	1	
"	A. Lankering	Cigars	15	5		
"	Lehman & Clark	Pocketbooks	100	75	20	
"	Barnes & Hogan	Paper	10			
"	James Reynolds	"	20	5		
"	R. Neuman	Leather	75		5	
"	Coogan & Co.	Laundry	8	8		
"	Villar Bros.	Corks	15	15	5	
"	N. Randall	Planing mill	10			
"	R. P. Francis, Jr.	" "	15			
"	Gabagan Bros.	" "	15			
"	Kitz & Grempler	Chemicals	8			
"	Mansfield Iron Co.	Iron railings	75			
"	Progressive Iron Works	" "	12			
"	Kebt. Meyer	Ink	10			
"	Chapel, Chase & Maxwell	Coffins	100	15	2	
"	John Boyle	Oil cloth	10			
"	George Fussell	Shades	15			
"	John Brown	Stone yard	200			
"	G. Hauser	Cigars	25	2		
"	Demerest & Stagg	Stairs	10			
"	Hotop & Co.	Varnish	10			
"	Geo. Focht	Iron buckets	40			
"	Fletcher & Co.	Machinery	350			
"	Wm. Schumpser	Brass goods	175	50	35	2
"	John McLaren	Boilers	75			
"	Snyder & McGraw	Tallow	10			
"	Hoboken Land & Impt. Co.	Machine and carpenter shop	100			
"	Steneck & Co.	Soap	10			
"	Penn. R. R. Shops	Boat department	125			
"	Elysian Machine Shops	Machines	25			
"	Otto Schubert	Grinder	6			
"	Klein Bros.	Wagons	15			
"	Hudson Electric Lt. Co.	Moter room	15			
"	I. Ingersoll	Wood yard	15		5	1
"	Joel Woodman	Chair seats	100		1	
"	N. J. Gun Factory	Guns	30			

FACTORIES INSPECTED—FOURTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Hoboken	Davis & Co.	Baking powder	15	30	10	
Town of Union	Swiss Embroidery Co.	Embroidery	15	25	5	
" " "	A. Baumgartner	Hats	5			
" " "	Simon Bros	Silk	200	350	40	
" " "	Clifton Silk Co.	"	35	65	15	1
" " "	Bergenwood Silk Mills	"	25	15	3	
" " "	F. Rotherman	Worsted goods		15	5	
" " "	H. Herold	Silk	10	15	5	
" " "	M. Sontag	"	5	15	4	
" " "	Union Granite Co.	Tubs	10			
" " "	B. Alt	Fishing tackle	4		4	
" " "	O. Rockpeck	Caps	3	3		
" " "	A. Haggi	Watch cases	50			
" " "	Givernaud Bros	Silk	300	300	40	
" " "	John Erskine	"	150	75	25	
" " "	Town of Union Silk Mills	"	120	100	25	
" " "	Peters Brewing Co.	Lager beer	70			
" " "	Ware & Son	Shirts	10	70	5	
" " "	L. Inderkof	"	15	15	8	1
" " "	Sangnoist Silk Mfg. Co.	Silk	40	80	20	1
" " "	Beck Bros.	"	24	6	2	
" " "	Semoeiter & Klein	Clothing	23	7	1	1
" " "	Jacob Lichtner	Shirts	30	10	2	2
" " "	Helfenstein & Wostbrock	Silk embroidery	16	30	3	
" " "	H. Kornberg	Cloaks	30	16		
West Hoboken	Givernaud Bros.	Silk	300	125	25	
" "	Olsman & Co.	"	40	50	10	
" "	John Comby	"	40	75	15	
" "	Palisade Mfg. Co.	Oil	4	4		
" "	A. H. Alexander	Feathers	2	10	3	1
" "	W. J. Alexander	"	3	10	2	
" "	J. J. Kennedy	Gloves	5	25		
" "	G. A. Helf & Son	Brushes	30			
" "	G. Rowell	Silk	5	5		
" "	Jos. Rath	"	15	25	5	1
" "	B. Fontaine	Fancy boxes	15	15	3	2
" "	A. Bondell	Shades	5	10	2	
" "	Favorite Silk Co.	Silk	25	125	20	3
" "	Schwartzenbach & Co.	"	350	125	25	
" "	Bergenwood Paper Box Co.	Paper boxes	15	25	5	
Bayonne	McFarland & Co.	Silk	45	100	40	2
"	Finch Stove Co.	Stoves	25			
"	Wm. McGregor	Plumber supplies	15			
"	Tide Water Oil Co.	Wax department	15	15		
"	" " "	Refinery "	150			
"	" " "	Paraffine "	165			
"	" " "	Barrel "	275			
"	" " "	Mechanical "	288			
"	" " "	Case "	235		10	
"	Standard Oil Co.	Shipping "	225		15	
"	" " "	Refinery "	350			
"	" " "	Paraffine "	125			
"	" " "	Mechanical "	250			
"	" " "	Barrel "	900		10	
"	Oxford Copper Co.	Copper "	325			
"	Columbia Oil Co.	Oil	25			
"	C. F. Reynolds	Paint	75			
West New York	Landrau Silk Co.	Silk	35	35	5	
" " "	Contrant & Co.	"	25	50	10	2
" " "	F. Framith	Brackets, etc.	6			
Guttenberg	Lutz & Co.	Drawing implements	20			
"	American Thread Co.	Thread	5	5		
"	L. & R. Wilcox	Lard	150		10	

FACTORIES INSPECTED—FOURTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—male.	Employes—females.	Under sixteen years.	Children discharged.
Guttenberg	Kramer Brewing Co.	Lager beer	35			
Harrison	Edison Lamp Co.	Lamps	300	125	40	
"	Lagowitz & Co.	Trunks	300	15	5	1
"	N. J. Adamant Co.	Plaster	10			
"	Durie & Davidson	Stone yard	50			
"	Kerr Thread Co.	Thread	75	30	15	1
"	Hollinsworth A Co.	Steel	100			
"	Carr & Ball	Stone yard	30			
"	Herold & Co.	Cutlery	20			
"	Stewert & Hartzsohn	Shades	150		25	1
"	Harrison Tannery	Leather	30			
"	Hancks Brewery	Lager beer	70			
"	Barrets Machine shops	Machines	30			
"	Cambell's Bark Factory	Bark	20			
Kearney	Clark's O. N. T. Thread Co.	Thread	350	1080	125	2
"	Nairn Linoleum Co.	Linoleum	225		25	
"	John Randell	Sashes	50			
"	Newark Machine Co.	Machines	50			
"	G. Winnas	Hats	40	15	2	
"	Marshall Thread Co.	Thread	250	425	60	1
"	Clark's Mile End Co.	"	250	650	50	1
"	Kearney Wire Works	Wire	25	5	2	
Arlington	Arlington Mfg. Co.	Collars and cuffs	65	25	5	
"	Hoyt Metal Co.	Metal	10			
"	Beckert's Machine Co.	Machines	90			
"	Standard Flint Co.	Flint paper	20	2		

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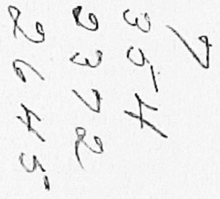

CHANGES ORDERED AND CONDITION OF FACTORIES—FOURTH DISTRICT.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Jersey City—			
C. Tacot Manufacturing Co.	Guard elevator and fly wheel	Complied with.	Good.
Oakley's Soap Co.	Erect fire escape	Complied with.	Good.
Frazer Axle Grease Co.	Guard hatch opening	Complied with.	Good.
Eagle Tube Co.	Guard belts	Complied with.	Good.
A. Gross & Co.	Guard hatch opening	Complied with.	Good.
Ames & Co.	Guard fly wheel	Partly complied with	Good.
Lings' Spinning Co.	Guard belts	Complied with.	Good.
H. Whittman	Guard fly wheel	Complied with.	Good.
N. Goldman	Clean toilet room, guard fly wheel and screen stairs	Complied with.	Bad.
Dixon's Cruible Works	Guard belts	Complied with.	Good.
Hog Abattoir	Ventilators to carry dust off	Partly complied with	Fair.
N. J. Wool Hat Factory	Clean toilet rooms	Complied with.	Fair.
Colgates Soap Works	Guard belts	Complied with.	Good.
Holmes Electric Co.	Guard belts	Complied with.	Bad.
Phonograph Co.	Guard belts	Complied with.	Bad.
United States Brush Co.	Fire escape, guard belts and erect wash room	Partly complied with	Fair.
Ajax Envelope Co.	Guard stairway openings	Complied with.	Fair.
Cushing's Iron Works	Ordered to erect three fire escapes	Complied with.	Good.
Heidt & Son	Put in new trap door over hatch opening	Complied with.	Good.
Brooklyn Cooperage Co.	Remove obstruction to fire escape	Complied with.	Good.
Columbia Rolling Mill	Guard fly wheel	Complied with.	Good.
Winter & Ball Mfg. Co.	Guard belts	Complied with.	Bad.
J. Donohue	Guard shafting	Complied with.	Good.
L. & M. Rubber Co.	Guard fly wheel	Complied with.	Good.
Greenville Hair Works	Guard fly wheel	Complied with.	Good.
A. Duziere	Open main door out	Complied with.	Good.
James Leo	Erect fire escapes	Not complied with.	Safety bad.
Lorillards, box department	Guard belts	Complied with.	Good.
Lorillards, bag department	Guard shafting	Complied with.	Good.
Dodge & Bliss	Guard belts	Complied with.	Good.
Hall & Co.	Guard shafting	Complied with.	Fair.
U. S. Cocoanut Co.	Toilet room for females	Complied with.	Fair.
N. J. Paint Works	Guard stair openings	Complied with.	Good.
Mills Oakum	Guard gearing	Complied with.	Good.
Chas. Gerhardt	Guard stair openings, screen stairs	Complied with.	Good.
John Karcher	Fan to carry dust off, etc.	Not comp i- ed with	Bad.
Mathieson & Wichers	Fire escapes	Not complied with	Safety, bad.
N. J. Standard Watch Co.	Fire escapes	Not complied with	Fair.
Daft Electric Co.	Guard belts	Not complied with	Good.
Hoboken—			
Davis Baking Powder Co.	Guard hatch openings, stair openings and belts	Complied with.	Good.
Myenberg Silk Co.	Guard belt	Complied with.	Good.
Villar Bros.	Guard fly wheel	Complied with.	Good.
R. Lowry	Erect fire escapes	Not complied with	Bad.
Klein Bros.	Guard stairs	Complied with.	Good.
Lehman & Clark	Guard shafting under sewing machine	Complied with.	Good
G. Schimpser	Guard belts	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—FOURTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.		CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Kearney—				
Marshall Thread Co.	1	Guard hatch openings	Complied with.	Good.
Nairn Linoleum Works	3	Guard belts, fire escapes	Partly complied with	Fair.
Clark's Mile End Co.	2	Guard heads of mules	Complied with.	Good.
Harrison—				
Cambell's Bark Co.	1	Guard all exposed shafting	Complied with.	Fair.
Lagowitz Trunk Co.	1	Erect fire escapes	Not complied with	Safety, bad.
Edison Lamp Co.	2	Guard belts	Complied with.	Good.
S. Hartzsohn	3	Guard belts	Complied with.	Good.
Hollingsworth	2	Guard belts	Complied with.	Good.
Town of Union—				
Clifton Silk Mills	1	Erect fire escapes	Not complied with	Safety. bad.
L. InderKoff	2	Clean toilet room and guard exposed shafting	Complied with.	Fair.
Ware & Son	1	Guard all exposed shafting	Complied with.	Good.
John Erskine & Co.	1	Guard one belt	Complied with.	Good.
Stearn & Co.	2	Guard shafting and clean toilet room	Complied with.	Fair.
Jacob Lichtner	1	Guard shafting	Complied with.	Fair.
R. & H. Simon	1	Guard belt	Complied with.	Good.
H. Kormberg	1	Toilet room for females	Complied with.	Good.
West New York—				
Landran Silk Co.	1	Guard belt	Complied with.	Good.
Contrant & Co.	1	Guard belt	Complied with.	Good.
West Hoboken—				
John Cornby	2	Guard belts	Complied with.	Good.
Oesman & Co.	1	Erect fire escapes	Complied with.	Good.
B Fontaine	1	Guard fly wheel	Complied with.	Good.
Guttenberg—				
L. & R. Wilcox	2	Guard belts	Complied with.	Good.
Lutz & Co.	2	Guard belts	Complied with.	Good.
American Thread Co.	3	Guard fly wheel; rail on stairs and guard belts.	Complied with.	Good.
Bayonne—				
Staudard Oil Co.	2	Guard Belts	Complied with.	Good.
McFarland & Co.	2	Guard belts	Complied with.	Good.
Arlington—				
Arlington Mfg. Co.	1	Guard exposed shafting	Complied with.	Good.

REPORT OF ACCIDENTS—FOURTH DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
Jersey City	Ernst Fendtner	Dixon Crucible Co.	Caught in a shaft; killed.
" "	A. Machinsky	Colgate's Soap Works	Killed by elevator.
" "	R. Bunker	N. Y. Steel Mat Co.	Burned by explosion of gas pipe.
" "	M. Staneer	" " "	Burned by explosion of gas pipe.
Hoboken	Edward Fowler	Chapel, Chase & Co.	Fell through elevator opening.
"	Henry Kraum	Schumper's Brass Works	Flesh wound; caught in shearing machine.
Kearney	Florence Lamb	Clark's O. N. T. Mills	Fingers caught in twisting machine.
"	Geo. Cattel	Marshall's Thread Mills	Arm broke in wringing machine.
Harrison	W. F. Mosley	Cambell's Bark Works	Caught in shafting; killed.
Kearney	Michael Kelly	Clark's Mile End	Loss of arm; caught in a head stock of mule.

FIFTH DISTRICT.

PASSAIC, N. J., NOV. 9th, 1891.

Hon. L. T. Fell, Chief Inspector of Factories :

DEAR SIR—I herewith respectfully submit my third annual report for the year ending October 30th, 1891, showing the number of children discharged, the number of accidents and their causes, the number of orders given to have shafting, belts, elevators and machinery in general guarded and disposition of same, and also the number of permits granted to orphan children to enable them to obtain employment..

Respectfully submitted,

THOMAS COGAN,

Deputy Factory Inspector.

FACTORIES INSPECTED—FIFTH DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes - males.	Employes females.	Under sixteen years.	Children discharged.
Paterson	R. & H. Adams	Cotton and silk.	235	430	18	----
"	Ashley & Pailey	Silk	350	350	25	----
"	Australian Knitting Co.	Hosiery	2	13	----	----
"	Wm. Blackburn	Paper boxes	5	14	3	----
"	Henry L. Butler	Silk	7	23	1	----
"	Wm. Ball	"	10	5	2	----
"	Lamloed Bros.	"	50	100	15	----
"	Butler Silk Mfg. Co.	"	10	15	3	----
"	Barbour's Mills	Thread	544	870	180	5
"	B. & J. Bannigan	Silk	25	50	7	----
"	Beggs Steam Heating Co.	Steam heaters	30	----	----	----
"	Chris. Brauns	Brewery	14	----	----	----
"	Comforth & Marx	Silk	45	20	6	----
"	Alfred Crew	"	24	8	3	----
"	Cook's Locomotive Works	Locomotives	600	----	----	----
"	Peter Casper	Silk	50	15	2	----
"	J. Crossley	Card cutter	5	----	----	----
"	Cardinal & Becker	Silk	50	50	3	----
"	Columbia Silk Co.	"	12	15	3	----
"	Clay & Groococks	"	100	100	5	----
"	Andrew Cardinal	"	100	150	6	----
"	Wm. Cochran	Card cutter	7	----	2	----
"	Domestic Tapestry Co.	Silk tapestry	39	11	3	----
"	Dexter, Lambert & Co.	Silk	200	450	25	----
"	Doherty & Wadsworth	"	175	175	3	----
"	Dolphin Mill	Jute	300	500	100	----
"	Equity Silk Co.	Silk	25	75	4	----
"	Enterprise Silk Co.	"	10	20	----	----
"	Empire Silk Co.	"	70	70	3	----
"	Benjamin Eastwood	Machinery	300	----	----	----
"	Frank & Dugan	Silk	54	56	10	1
"	Florence Silk Co.	"	50	50	4	----
"	M. Fritch.	"	10	20	3	----
"	B. Feeney	Cigars	18	----	2	----
"	Grimshaw Bros.	Silk	335	400	17	----
"	Grimshaw Mfg. Co.	"	44	31	5	----
"	M. J. Green	"	8	17	2	----
"	Gregory Silk Co.	"	18	40	3	----
"	Graham & Co.	Brewery	48	----	----	----
"	John Grish	Silk	14	4	----	----
"	A. Giannetti	"	50	30	5	1
"	Hamil Mill	"	200	80	15	----
"	Hamil & Booth	"	165	135	21	----
"	Haley & Healey	"	21	19	10	----
"	M. J. Hawkes & Co.	"	3	7	----	----
"	Hess, Goldsmith & Co.	"	50	100	7	----
"	Horand & Sons	"	75	175	11	----
"	Hopper & Scott	"	50	50	20	----
"	John Hand & Sons	"	60	60	5	----
"	Helvetia Mill	"	73	57	5	----
"	Thomas Henshall	"	30	25	3	----
"	W. D. Holmes	"	50	25	11	----
"	Hinchliffe Bros.	"	56	----	1	----
"	F. Harding	Paper boxes	8	17	12	----
"	J. A. Hall & Co.	Mill supplies	50	80	12	----
"	Hassall & Co.	Silk	4	16	2	----
"	Hayes Mfg. Co.	Copper and brass	15	----	----	----
"	Imperial Tapestry Co.	Tapestry	13	2	----	----
"	Jackson & Jacquara	Machinery	15	----	----	----
"	Johnson, Cowdin & Co.	Silk	175	175	15	2
"	Katz Bros.	Brewery	54	----	----	----
"	Kearney, Foote & Co.	Files	250	----	6	----
"	Lyons Silk Co.	Silk	25	5	1	----

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FACTORIES INSPECTED—FIFTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Paterson	David Lyndsay	Silk	5	6		
"	McKay & Rawson	"	37	23	12	
"	J. McAllister & Co.	"	40	37	6	
"	F. Ulrich	Mill supplies	11	14	1	
"	VanRiper & Co.	Silk	30	30	4	
"	VanRiper & Co.	Belting	25			
"	Naef Bros.	Silk	45	35	7	
"	Watson Machine Co.	Machinery	200			
"	J. Walder	Mill supplies	65	65	8	
"	J. B. Ward	Brushes	13			
"	Westerhoff & Co.	Silk	11	3	1	
"	Inglis & Co.	"	40	20	4	
"	M. B. Frost	"	10	7	1	
"	O'Neil & Knett	"	11	5	2	
"	Diamond & Roberts	Hemp Carpets	32	22	3	
"	J. Conahue	Dye Works	20			
"	Auger & Simon	" "	125			
"	Weidman Silk Dyeing Co.	" "	500	4	1	
"	Edward Riley	" "	75			
"	Levy Bros.	Overalls, etc.	3	12	1	
"	Augusta Silk Co.	Silk	64	30	4	
"	Pioneer Box Factory	Poper boxes	15	9	6	
"	Ivanhoe Paper Co.	Paper	23	2		
"	Paterson Lumber & Wood Co.	Saw mill	30			
"	Fairclough & VanNess	Paper boxes	5	12	3	
"	R. Mirch & Co.	Silk	120	110	11	
"	C. B. Meding & Co.	"	50	50	6	
"	Wm. F. Milton & Co.	"	7	8	4	
"	McGill & Farnburst	Silk braid	19	7	2	
"	McLaughlin Bros.	" "	3	73	5	
"	McNab & Harlan	Brass goods	238	18	12	
"	Geo. H. Meisterman	Ribbon blocks	18		8	
"	Manhattan Shirt Mills	Shirts	125	200	25	2
"	New York Silk Co.	Silk	32	3	2	
"	New York Extract Wool Co.	Shoddy	20	25	3	
"	New Jersey Silk Co	Silk	40	75	7	
"	Neuberger & Co.	"	70	85	4	
"	Oldham Fabric Co.	"	5	28		
"	Paragon Silk Co.	"	45	95	12	
"	Paris Silk Co.	"	9	5		
"	Pioneer Silk Co.	"	150	200	35	7
"	Phœnix Mill	"	300	300	50	
"	Progress Mill	"	50	50	5	
"	Pelgram & Myers	"	90	200	11	
"	Patterson Ribbon Co.	"	100	85	12	
"	Peerless Plush Co.	Plush	75	60	3	
"	Patterson Knitting Co.	Hosiery		14	12	
"	M. Price	Shirts	90	128	20	
"	Ramsay & Gore	Silk	1	50	8	
"	J. C. Ryle & Co.	"	23	53		
"	Wm. Robertson	"	40	25	3	
"	Rittger, Allen & Co.	"	6	40	3	
"	John Royle's Sons	Machinery	40			
"	Rogers Locomotive Works	Locomotives, etc.	800		8	
"	Riverside Plastic Co.	Chess, dominos, checkers, etc.	20	15	10	5
"	C. F. Richer	Silk waste	2	22	4	
"	Star Silk Co.	Silk	25	5	1	
"	Wm. Strange Co.	"	400	250	15	
"	John Simpson & Co.	"	60	20	7	
"	Shultz & Schwartz	"	15	33	2	
"	Silberman & Co.	"	100	150	10	
"	Sutherland & Edwards	Jute	22	38	3	
"	Sprattler & Menel	Brewery	19			

FACTORIES INSPECTED—FIFTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Paterson	J. C. Todd & Co.	Machinery	200			
"	J. C. Todd & Co.	Jute	15	12	3	
"	J. W. Taylor & Co.	Silk	18	28	7	
"	S. B. Thompson	Paper boxes	8	12	7	2
"	J. Tynan	Silk	8	15	3	
"	Union Silk Co.	"	20	40	6	
"	Barnet & Holden	Braid	11	5		
"	Thos. W. Bentley	Broad Silk	20	11	3	
"	American Braid Co.	Braids	10	7		
"	Dunlap & Co.	Silk	1	5	1	
"	Beck Bros.	"	3	6		
"	New York Ribbon Co.	"	9	11	3	
"	Chas. Reinhard	Carpets	40	25	6	
"	Muter Mfg. Co.	Tapestry	33	10	3	
"	Ceda Cliff Silk Co.	Silk	20	30	4	
"	See & Sheehan	Dye Works	18			
"	George Cox	Fish lines	3	5		
"	Camel Hair Belting Co.	Machine belts	7	8	4	
"	Levy Bros.	Silk	50	150	9	
Passaic	Bottany Worsted Mills	Worsteds	200	800	25	
"	A. N. Ackerman & Co.	Sash, blinds, etc.	25			
"	L. Binns	Foundry	10			
"	Dundee Chemical Works	Chemicals	40			
"	Dundee Woolen Co.	Woolens	83	35	12	5
"	A. Ehman	Cigars	16	2		
"	Manhattan Print Works	Satinets	120	5	3	
"	Andrew McLean Mill	Mosquito nets	200	50		
"	N. Y. Belting & Packing Co.	Rubber goods	160	40	10	
"	N. Y. Okonite Co.	Electric wires and cables	200	85	10	
"	J. A. Oakley	Machinery	5			
"	Passaic Print Works	Calico	390	60	10	
"	Passaic Woolen Co.	Woolens	55	60	5	
"	Passaic Electric Light and Heating Co.	Electric cars, lights, etc.	20			
"	Pitkin & Holdsworth	Worsted	135	50	10	
"	Reid & Barry	Cotton goods	635	115	11	
"	R. B. Saunders	Machinery	6			
"	Domestic Gas Machine Co.	Gas machines	11			
"	Smith Bros. Mfg. Co., Clifton, N. J.	Decorative mouldings	14			
Clifton	Goodlatti Oil Cloth Co.	Oil cloth	30		3	
"	American Washable Wall Paper Co.	Wall paper	18		2	
Hackensack	Givernaud Bros.	Silk	170	80	10	
"	Riverside Planing Mill	Saw mill	10			
"	Ackerman Planing Mill	" "	11			
"	Empire Tile Stove Co.	Stoves	10			
"	Benj. J. Cooper & Co.	Brick	55			
"	Felter Bros,	"	42			
"	J. F. Giles	"	57			
"	M. J. Gardiner	"	45			
"	J. H. Hanfield	"	38			
"	Wals & Brown	"	30			
"	S. A. Smults	"	43			
Nordoff	Opaque Cloth Co.	Cloth	15	3		
Lyndhurt	Duckert Portable House Co.	Portable houses	40			
"	McKee & Harrington	Tricycles, etc	95	15	5	
Rutherford	Jaeger & Co.	Tinware	19	5	8	1
Butler	Butler Hard Rubber Co.	Combs, etc.	375	200	50	
"	Butler Soft Rubber or Shoddy	Grinding old rubber	10		1	
Little Falls	Beaty Mfg. Co.	Carpets	75	100	8	
Boonton	Pelgram & Myers	Silk	124	101	30	
Lodi	Armitage Oil Cloth Co.	Oil cloth	10			

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FACTORIES INSPECTED—FIFTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Lodi	Burns Bros.	Bleachery	35	65	3	----
"	Alexander Dye Works	Silk furnishing	20	3	1	----
Midland Park	Holt Bros. & Co.	Silk	18	22	----	----
Midland Park	A. Hengerueldt, Jr.	"	30	75	----	----
Carlton Hill	Standard Bleachery	White goods	125	75	10	----
Wallington	Anderson Nickerson & Co.	Saw mill	30	----	----	----
Carlstadt	Carlstadt Watch Spring Co.	Watch springs	8	----	----	----
"	Christie & Neikler	Shoes	30	15	5	----
"	Klaber's Marble Works	Monuments, etc	50	----	----	----

Number of permits granted to orphan children ---------- 37

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CHANGES ORDERED AND CONDITION OF FACTORIES—FIFTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of Orders.	Health and Safety.
Paterson—			
Ashley & Bailey	To erect fire escapes	Not complied with.	Unsafe.
Progress Mill	To erect fire escapes	Not complied with.	Burned down at night.
Oldham Fabric Mill	To erect fire escape	Not complied witd.	Unsafe.
Hamil & Booth	Guard belts and elevator	Complied with.	Safe.
H. T. Harding	Guard belts and elevator	Complied with.	Safe.
Jacob Levy	Erect two fire escapes	Complied with.	Safe.
Peerless Plush Co.	Erect one fire escape	Complied with.	Unsafe.
Barnett & Holden	Extra closet	Complied with.	Safe.
Thos. W. Bently	Extra closet	Complied with.	Safe.
American Braid Co.	Guard belt	Complied with.	Safe.
McLaughlin Bros.	Guard shafting	Complied with.	Safe.
Chas. Reinhardt	Guard belt	Complied with.	Safe.
Equity Silk Co.	Erect fire escape	Complied with.	Unsafe.
Helvetia Silk Co.	Guard two belts	Complied with.	----------
" "	Erect fire escape	Not complied with	Unsafe.
Jacob Levy	Guard belts	Complied with.	Safe.
Grimshaw Mfg. Co.	Erect fire escape	Not complied with	Unsafe.
N. Y. Extract Wool Co.	Guard three belts	Promise to comply	Otherwise safe.
" " "	Guard three machines	Promise to comply	----------
Gregory Silk Co.	Guard three belts	Complied with.	Safe.
Ivanhoe Paper Co.	Guard three belts	Promise to comply	Unsafe.
Augusta Silk Co.	Guard three belts	Promise to comply	Unsafe.
Andre Cardinal	Guard one belt	Promise to comply	Safe.
Lodi—			
Alexander Dye Works	Guard belts and engine	Promise to comply	Unsafe.
Burns Bros. Bleachery	Guard belts and engine	Promise to comply	Unsafe.
Carlton Hill—			
Standard Bleachery	Guard shafting	Promise to comply	Unsafe

REPORT OF ACCIDENTS—FIFTH DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
Paterson	Thomas Miller	Dolphin Mill	Caught in breaker machine and was killed.
"	Ramson Allar	Ivanhoe Paper Mill	Caught between rollers of paper machine and killed.
"	P. Van Riper	Rogers' Locomotive Works	Arm cut off by the breaking of chain while hoisting iron plate.
"	Wm. Post	Gregory Mill	Arm caught in shafting and was amputated.
Passaic	Geo. Lucas	Rittenhouse Mfg. Co.	Head injured cleaning machine while in motion. Was foreman of department.
"	M. Flynn	Manhattan Print Works	Finger caught in winding machine

SIXTH DISTRICT.

L. T. Fell, Chief Inspector.

SIR:—I respectfully submit my annnal report as Deputy Inspector of the Sixth District, comprising Essex County, for the year ending Oct. 31st, 1891. I have found but very few children under legal age employed during the past year, and up to date I have sent a list of 153 names of minors under sixteen years to the Truant Officer, who states that they are now regularly attending evening school. Nearly all minors at work in factories are now in regular attendance, except those who have graduated, or who are excused by a doctor's certificate of disability, or who live where there are no schools or remote from them. Twenty-three permits were granted to orphan children, several of them being only a few months of 14 years.

Every owner and manufacturer whose factory comes under the Fire Escape law, has been notified to have fire escapes erected. Many of them have already complied, and the others have them in progress of erection. I feel safe in saying that by the end of this present year, all the factories in this district needing fire escapes will be supplied with them. No case had to be taken to court during the past year for non compliance with the Factory laws; and I take this opportunity to thank the manufacturers of Essex county for their courtesy and the facilities they afforded me of inspecting every department of their factories, and the great assistance rendered in compelling their minor employes to attend evening school.

Twenty-two accidents are reported. Some are of a slight nature, resulting from carelessness, four resulted in death. I would here call the attention of manufacturers to the very valuable and interesting paper appended to this report, from the pen of Mr. John H. Cooper, of Philadelphia, Pa., member of the Society of Mechanical Engineers, on "Accident-preventive Devices Applied to Machines,"

who so well explains and illustrates in it, not only how a machine should be guarded to prevent accidents to the operative, but also how it should be guarded to prevent injury and breakage to itself. Mr. Cooper is himself a manufacturer, and believes that it is just as essential to make the guards of a machine in its process of construction as it is to make any other part of it.

Number of factories inspected	705
Employing males	34 871
Employing females	11 239
Employing minors	440
Number of changes ordered	189
Complied with	131

After careful consideration I respectfully suggest that the following changes be made in the Factory laws. First, that the working age of boys be raised from 12 to 14 years; second, that nine hours should constitute a day's work for all minors under 15 years, to enable them to attend evening school; third, that all elevators shall have safety catches, and all elevator doors, bars or gates be provided with automatic attachments.

Respectfully submitted,

P. CALLAN,

Deputy Inspector.

FACTORIES INSPECTED—SIXTH DISTRICT.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	Asphaltic Roofing Co.	Asphaltic roofs	20			
"	George A. Harth	Axes	5			
"	Snedecker & Schuerman	"	28		2	
"	Electric Accumulator Co.	Accumulators	70		2	
"	Tucker Letter & File Co.	Automatic suspension cabinet	15			
"	Wm. T. Mersereau & Co.	Brass bedsteads	220	10	6	
"	C. M. Theabreath	Brass mountings	40			
"	Calhoun, Barnett & Co.	Brass saddlery hardware				
"	B. Conlan & Co.	Brass goods	30	40	10	
"	George Havell	Brass ornaments	175	75	6	
"	Riley Klotz Co.	" "	300	100	10	
"	Richard Sims	Brass and metal goods	15			
"	Thos. H. Brown	Brass castings	10			
"	James E. Mergott	Brass frames	48	2	6	
"	M. Gould & Son	Brass stair rods	60	7		
"	A. Goertz & Co.	Brass frames	100	50	6	1
"	Diffaney & Co.	Brass goods, saddlery, hardware	25	5		
"	Newark Novelty Co.	Brass novelties	20	4		
"	C. P. Gould	Brass ornaments	10	10	4	
"	Schailings	Brass frames	10			
"	Durning & Co.	" "	10			
"	Devlin Bros.	Brass castings	5			
"	Clarence Gould	Brass goods	15			
"	Newark Purse Frame Co.	Brass frames	30	8	4	
"	Blunt Manufacturing Co.	Brass castings	4	10		
"	Rosenbaum Manufacturing Co.	Brass goods	21	10		
"	Hickeys	" "	10			
"	Wm. P. Mockridge	Brass goods and jewelry	9	5		
"	R. C. Jenkinson	Bag frames	100		4	
"	Neuman & Co.	" "	80	5	3	
"	Egger's & Co.	" "	30	35	1	
"	Albert Boehme	" "	12	2		
"	Kitchell Manufacturing Co.	" "	30	5		
"	Schwartz & Co.	Buttons	25	70	6	3
"	Thos. Davis	"	55	5		
"	Hubner & Son	Buttons and pearl jewelry	38	12		
"	Henry Smith	Buttons	14	4		
"	Frank & Co.	"	30	120	8	1
"	Pearsol's Button Co.	"	50	3		
"	F. Frentz	"	13	19	4	1
"	Toms & Read	"	6	15		
"	Wm. Donovon	"	26	45		
"	New Jersey Button Co.	"	70	25	2	
"	H. M. Yates & Co.	"	12	8		
"	Finan & Matthews	"	10			
"	Thos. Webb	"	60	5		
"	James Webb	"	15	3		
"	Webb	"	18	5	1	
"	Phelphs Button Co.	"	16	50	8	
"	J. L. Somer	Button hooks	21	6	4	
"	Graham Button Co.	Buttons	50	11		
"	William Roemer	Bag frames	71	3		
"	R. Schmidt	" "	7			
"	Kaufman & Schield	" "	40	3		
"	Pressed Barrell Co.	Barrels	20			
"	Otto Breintz	Bell handles	15		5	
"	Albreight & Koch	Bookbinding and printing	25	10		
"	J. L. Hardain's	" " "	18			
"	Mathias Plum	" " "	60	30	2	
"	Van Aldstirne & Schurtz	" " "				
"	Holbrooks	" " "				
"	Godfried Kreuger Brewing Co.	Beer	100			
"	Wm. Hill Brewing Co.	"	37			

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	Ballentine & Co.	Beer	60			
"	Ballentine & Co.	Beer and ale	170			
"	Joseph Kensler	Beer	55			
"	Chas. Tretz	"	44			
"	Geo. W. Weidenmayer	"	15			
"	J. Feigenspan	"	60			
"	Home Brewing Co.	"	25			
"	Fred Lisensky	"	23			
"	Lyon & Son	"	50			
"	F. J. Kastner	"	50			
"	New's Brewery	"	10			
"	E. Zehers	"	10			
"	A. C. Buckhardts	Beer kegs	15			
"	Rosendale Belting Co.	Belts	30	2		
"	Douglass Baking Co.	Bread and crackers	24	6		
"	Maugle & Schmidt	" " "	80			
"	Fritsche's Bakery	" " "	40			
"	Adam Turke's Baking Co.	Bread	40			
"	Tuite's Bakery	Bread and cake	6			
"	Mulford & Vreeland	Bread and crackers	24	6		
"	U. S. Butter Extractor Co.	Butter extractors	22			
"	J. D. Marquett	Boxes, paper and wood	30	30		
"	Gauch Bros.	" " " "	85	65	10	3
"	Osborn's Box Factory	" " " "	15	30	1	
"	John Davidson	Boxes, paper	15	60	2	
"	Mergot, Howell & Co.	Boxes	20			
"	Hart Box Co.	Boxes, paper	13	50	1	
"	A. Goldbeig & Co.	Boxes, paper and wood	12	18		
"	Goldberg Schaffenhans	" " " "	6	5	1	
"	Wm. King	" " " "	8	15		
"	H. N. Doolittle	" " " "	6	22		
"	Chas. Appel & Son	Boxes, cigar	10	14		
"	George James	" " " "	10	5		
"	Dixon's Brush Factory	Brushes	6	20	1	
"	C. W. Conery	Brushes	5	12	1	1
"	E. W. Dixon	"	28	30	5	
"	Pollard Brush Mfg. Co.	"	4	18		
"	Joseph Baldwin	Bits and spurs	20		4	
"	Wm. Blum	Buckles	6		1	
"	Hiller & Co.	Coloring and dying	5	5		
"	Wm. A. Brintzenhoffer	Cigars	8			
"	Joseph Glutting	"	6			
"	Adam Glutting	"	24		3	
"	H. Donaldson	"	11			
"	Friedenthal & Adler	"	11			
"	Wm. Salter	"	2	5		
"	J. B. Axt	"	7			
"	Lewis Bros.	"	5	50	10	3
"	Crawford & Co.	Cigars and tobacco	5	42	3	
"	H. Howarth		8	22		
"	Wm. Kraft	Clothing	20	130	8	2
"	Henry Pheil	"	30	100		
"	Hammerslough, Bros.	"	25	65	8	
"	John B. Dieffentbaler	"	12	30		
"	Chas. H. Curtis	"	3	5		
"	Wenzel Koska	"	14	28	8	
"	Peter Geiger	"	40	100	4	
"	John Fleming	"	5	20	2	
"	A. Steiner	"	10	20	5	
"	Jacob Schmit	"	3	10		
"	George Miller	"	4	26		
"	Chris Arnold	"	3	8	1	
"	Wm. Leven	"	12	6		

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes females.	Under sixteen years.	Children discharged.
Newark	Joseph Hass	Clothing	4	8	----	----
"	Martin Singer	"	4	9	----	----
"	M. Kogel	"	2	8	----	----
"	Philip Ruttiger	"	5	15	----	----
"	George Beam	"	2	8	----	----
"	A. Brutchsman	"	5	10	1	----
"	Philip McDonell	"	5	10	----	----
"	John Heabley	"	3	8	2	----
"	M. Freeman	"	3	7	3	----
"	Chas. Hass	"	8	----	6	----
"	Jacob Frier	"	25	25	3	----
"	Philip Berz	"	2	5	----	----
"	J. Thumo	"	39	6	----	----
"	Mrs. VanRiper	"	5	19	----	----
"	John H. Wharton	"	4	16	----	----
"	J. H. Wismer	"	100	200	----	----
"	John Henning	"	5	20	----	----
"	Blumenthal Bros.	"	4	70	----	----
"	Chas. Becker	"	20	50	3	----
"	A. Louis Kruger	"	12	28	2	----
"	J. C. Stadalman	"	2	13	----	----
"	John W. Hines & Son	"	12	8	----	----
"	Joseph Heisler	"	25	20	----	----
"	A. Solomon	"	12	6	----	----
"	Wright's Corset Steel	Corset steels	5	25	8	----
"	G. W. Jackson	Corsets	5	120	1	----
"	Continental Corset Co	"	15	385	10	----
"	James Bowers & Co.	"	14	386	8	2
"	Ferris Bros.	"	12	188	----	----
"	Crotty Bros.	"	2	58	----	----
"	Weingarten Bros.	"	4	74	2	----
"	Delsarte Corset Co.	"	3	72	4	----
"	C. H. Piffer & Co.	"	2	15	2	----
"	Newark Lime and Cement Co.	Cement	80	----	----	----
"	John Kearsing	Composition	5	20	----	----
"	D. S. Plum	Clock works	30	----	----	----
"	Bannister's	Cutlery	30	20	10	----
"	Robert Meyer	Chemicals	6	----	----	----
"	Passaic Chemical Co.	"	6	----	----	----
"	Union Chemical Co.	"	17	----	----	----
"	Cass, Cooper & Co.	"	68	2	----	----
"	Brewster's Chocolate Works	Chocolate	5	7	2	----
"	Alven Mfg. Co.	Cane Handles	20	10	3	----
"	Electric Cutlery Co.	Cutlery	75	25	----	----
"	N. J. Carbon Works	Carbons	12	----	----	----
"	Central R. R. Car Works	Car repairing	100	----	----	----
"	Eureka Cement Co.	Cement	5	----	----	----
"	Golden & Port	Carriages	25	----	----	----
"	J. Colyer & Co.	"	40	----	----	----
"	James Quimby	"	100	----	----	----
"	Wm. Streby	Carriage hardware	60	----	----	----
"	Orland Greacen	" "	20	----	----	----
"	Celluloid Novelty Co.	Celluloid	200	300	----	----
"	Celluloid Manufacturing Co.	"	150	----	----	----
"	Celluloid Brush Co.	"	150	50	----	----
"	Hemmer Bros.	Desks	60	----	----	----
"	Benjamin Bros.	Dress extender	6	65	5	----
"	Strausse & Joseph	Embroidery	5	55	2	----
"	J. Ketz	"	1	7	1	----
"	Emil Geothe	"	7	4	2	----
"	H. Borneman	"	8	59	1	----
"	C. Muester	Engraving	10	----	----	----
"	Miller Funk	"	5	1	----	----

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

Location.	Name of Company.	Goods Manufactured.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	C. McEntyrl	Electric supplies	20	1	----	----
"	Newark Engraving Works	Engraving	50	----	----	----
"	A. Schleuter & Co.	"	15	----	----	----
"	U. S. Electric Light Co.	Electric light	300	60	----	----
"	Schyler Electric Light Co.	" "	5	----	----	----
"	Thompson & Hewson Electric Light Co.	" "	6	6	----	----
"	Westons	Electric supplies	150	75	----	----
"	Bradley & Craig	Engraving	20	----	----	----
"	Storm Elevator Works	Elevators	15	----	----	----
"	Elastic Hair Co.	Elastic hair	20	----	----	----
"	Spencer Optical Co.	Eye glasses	104	16	10	----
"	George D. Drake	Flour and feed mill	16	----	----	----
"	Wilkinson, Gaddis & Co.	" "	15	----	----	----
"	Sturges & Sutphen	" "	15	----	----	----
"	Thatcher Furnace Co.	Furnaces	37	----	----	----
"	Muessellach & Bros.	Fishing reels	7	----	----	----
"	Lister Bros.	Fertilizers	470	30	----	----
"	F. F. Lane	"	122	3	----	----
"	Heller Bros.	Files and rasps	75	----	----	----
"	Johnson Bros.	" "	15	----	----	----
"	John Ray	" "	30	----	----	----
"	Newark Gas Light Co.	Gas	60	----	----	----
"	Citizens' Gas Light Co.	"	50	----	----	----
"	L. Schaff & Co.	Gilt mouldings	15	3	1	----
"	E. P. Ward	Gloves	----	8	----	----
"	Baulback & Son	Gold and silver refiners	62	----	----	----
"	Le Long Bros.	Gold refiners	12	----	----	----
"	Yates & Wharton	Hats	240	60	----	----
"	Wheeler & Russell	"	175	25	----	----
"	Meyer Mercy Mfg. Co., Scott st.	"	225	40	3	----
"	Meyer Mercy Mfg. Co. Polk st.	"	100	8	1	----
"	Meyer Mercy Mfg. Co., Academy st.	"	80	20	----	----
"	Chas. Crossley	"	----	----	----	----
"	J. Rummel & Son, N. J. Railroad ave.	"	95	35	----	----
"	J. Rummel & Son	"	34	----	----	----
"	C. F. Seitz & Co.	"	90	35	----	----
"	Joseph Schuman	"	120	30	----	----
"	G. M. Espenschied	"	76	24	----	----
"	Albert Seitz	"	26	14	----	----
"	David Wolf	"	35	25	----	----
"	Wm. H. Neary	"	50	25	----	----
"	James Fleisch & Co.	"	35	25	----	----
"	James Robertson	"	35	25	----	----
"	C. M. Hedden & Co.	"	270	30	----	----
"	G. M. Mason	"	80	20	----	----
"	Bernard Daly	"	63	10	----	----
"	C. M. Hedden, Park Ave.	"	35	16	----	----
"	Tyler Parmley	"	15	5	----	----
"	T. S. Carley & Johnson	"	----	----	----	----
"	H. Fulcher	"	58	8	----	----
"	Thomas Nichols	"	30	30	----	----
"	Budich & Zudinsky	"	40	----	----	----
"	Fairchild's	"	83	35	----	----
"	Joseph Mercy	"	70	20	----	----
"	C. B. Alston	"	60	24	----	----
"	Jarvis & Co.	"	70	35	----	----
"	Geo. W. Hyde	"	28	10	----	----
"	E. M. Tichoner	"	90	10	----	----
"	Mason & Berg	Hat bodies	18	10	----	----
"	Englicth Bros.	Hats	20	----	----	----

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	A. Beesley	Hats	----	----	----	----
"	Wheeler & Russell	"	----	----	----	----
"	Chas. DeVere	Hat fur cleaning	3	3	1	----
"	Kohn & Mercy	Hats	60	15	1	----
"	P. H. Keon	"	36	12	----	----
"	Hermon's Hat Factory	"	50	20	----	----
"	George Yule	Hats and hat machinery	100	3	----	----
"	McClair & Davis	Hats (straw)	10	40	----	----
"	Mork & Romberg	" "	30	105	8	----
"	Rutan Pond & Co.	" "	14	40	----	----
"	Douglass Hat Forming Mill	Hat forming	80	10	----	----
"	Pheiffer & Co. Hat Fr'm'g Mill	" "	25	12	----	----
"	Oscar Wellgerode	" "	27	10	----	----
"	J. C. Herman & Co.	Hat blocks	18	----	----	----
"	Pierson & Herman	" "	12	----	----	----
"	Stephens & Co	" "	15	----	----	1
"	A. J. Kridel	" "	24	15	----	----
"	Peters & Calhoun Co.	Harness	235	15	----	----
"	R. C. Winter	"	80	----	4	----
"	Demerest & Co.	"	90	----	----	----
"	Wm. Crabb & Co.	"	17	----	----	----
"	E. F. Beck & Son	"	111	----	1	----
"	Crane, Calhoun, Barnett & Co.	"	----	----	----	----
"	F. W. Bonneau	"	27	3	----	----
"	S. S. Sargent	" and harness trimmings	74	26	6	----
"	Buttler & Ward	" " "	18	25	1	----
"	Henry Whitehouse	" trimmings	35	2	----	----
"	E. Egan	" "	5	----	----	----
"	P. Hayden	" "	100	7	----	----
"	A. Albright	" "	100	125	----	----
"	Chas. Hass	" "	88	----	----	----
"	H. Allen Smith	" "	----	----	----	----
"	Barber Conlet & Morris	" "	----	----	----	----
"	George Rowland	"	10	----	----	----
"	Tomkins & Mandervill	"	109	----	----	----
"	Smith Bros.	"	17	3	----	----
"	Kuhnhold & Co.	" trimmings	30	2	----	----
"	John Bea	" (collars)	28	----	----	----
"	Mehony & Clark	" trimmings	14	----	----	----
"	Wm. S. Rich & Co.	" tools	----	----	----	----
"	Beader Adamson & Co.	Hair felt	48	12	----	----
"	Wm. Crabb & Co.	Hacklepins	20	10	6	----
"	Newark Star Heel Plate Co.	Heelplates	10	4	----	----
"	Reynolds & Zahn	Harness trimmings	12	1	3	----
"	Albert Smith	Iron railings	15	----	----	----
"	Sloan & Chace	Instruments	70	----	----	----
"	Pomeroy & Son	Inks	20	----	----	----
"	Kruger Ice Co.	Ice	34	----	----	----
"	Carter, Sloan & Co.	Jewelry	185	65	----	----
"	Bippart & Co.	"	75	12	5	----
"	Krementz & Co.	"	100	25	----	----
"	Shoemaker, Pickering & Co.	"	80	6	----	----
"	M. Krauss	"	70	25	----	----
"	Durand & Co.	"	65	15	----	----
"	Day & Clark	"	78	12	----	----
"	Thos. G. Brown & Co.	"	75	25	----	----
"	Wm. Riker	"	60	15	----	----
"	Wm. C. Edge & Son	"	95	5	----	----
"	Wm. Rich & Co.	"	31	3	----	----
"	Carr & Battan	"	42	3	----	----
"	M. Huger	"	18	1	----	----
"	Chas. Schutz & Son	"	55	5	----	----
"	A. Alling Reeves	"	12	6	----	----

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	Champenos & Co.	Jewelry	35	10		
"	Meyhem & Co.	"	13			
"	Elcox & Co.	"	44	6		
"	Wm. H. Ball & Co.	"	20	5		
"	T. W. Adams & Co.	"	9	6		
"	Alsops Jewelry Factory	"	20	2	1	
"	Hayes Bros.	"	22	6		
"	Charles Knobs & Co.	"	9	6		
"	D. C. Dodd	"	20	2		
"	King & Co.	"	9			
"	James W. Miller	"	40			
"	Dorance & Long	"	14	1		
"	Uhry & Alworth	"	5	1		
"	Block & Bergfels	"	13			
"	A. Jerolemen	"	11	4		
"	Rothschilds	"	21	4		
"	T. Basset & Co.	"	7			
"	J. W. Kitchell	"	10			
"	J. C. Manderville & Co.	"	8	2		
"	J. Schwartz	"	8			
"	Schaffell & Schubacker	"	8			
"	Hayes Brothers	"	18	6		
"	D. W. Baker	"	9	1		
"	Eastwood & Park	"	15	2		
"	Long & Osborn	"	10			
"	Enos Richardson & Co.	"	92	32		
"	Albert Heintz	"	10			
"	Strobel & Crane	"				
"	John Lynck	"	7	1		
"	Pickett & Stillwell	" gold chains	12			
"	O. E. Hendricks	" " "	12	10		
"	Ehrlich & Sinnock	"	17	2		
"	Sinnock & Sherrill	Lapidary	33	2		
"	E. D. Regad	"	5	1		
"	Blanchard Bros. & Lane	Leather	150			
"	J. H. & J. W. Dawson	"	160			
"	S. Halsey & Son	"	180			
"	Cummings Brothers	"	40			
"	Hugh Smith	"	100			
"	Charles Smith	"	15			
"	C. H. & J. D. Harrison	"	110			
"	Patrick Riley	"	200			
"	R. P. Lister	"	15			
"	Conroy & Weyrach	"	10			
"	John Riley	"	40			
"	Seidenbach & Mahon	"	120			
"	M. Reardon	"	30			
"	E. S. Ward	"	55			
"	Henry Lang	"	60			
"	Meis & Egner	"	24			
"	M. Strouse	"	65			
"	Smith Bros.	"	73			
"	Louenberg	"	59			
"	T. P. Howell	"	250			
"	J. H. Halsey & Smith	"	150			
"	C. W. Meyer & Son	"	50			
"	Robert Dingwell	"	15			
"	M. J. Halpin	"	17			
"	Matthew Caffrey	"	25			
"	Reuben Trier	"	17			
"	Kanfare & Co.	"	35			
"	Cashion & Flynn	"	30			
"	J. A. Schaffer	"	25			

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	Bingham's	Leather	14			
"	John N. Moore	"	10			
"	Newark Kid Works	"	20			
"	Chas McEvoy	"	50			
"	Smith & Co.	"	15			
"	R. G. Solomon	"	252	18	7	
"	H. P. Weitzel	"	25			
"	John W. Carr	"	20			
"	Palmer & Smith	"	40			
"	Louis Meyer	"	20			
"	Schafter & Co.	"	21			
"	Albert C. Friedlander	"	10			
"	John Neider	"	16			
"	L. M. Smith & Son	"	12			
"	J. Malloy & Co.	"	10			
"	Weigand & Doerzbacher	"	6			
"	Wm. R. King	" soles	2	18		
"	Bellingham's	" "	2	10	2	
"	Fred Quimby	" sporting goods	11	14		
"	Thos. V. Johnson	"	50			
"	Newark Steam Laundry	Laundry	5	30		
"	American Steam Laundry	"				
"	Sun Laundry	"	12	18		
"	Troy City Laundry	"	10	30		
"	Union Steam Laundry	"	4	25		
"	Hansbrouck's Laundry	"	2	10		
"	Phœnix Lamp Co.	Lamps	12	12	4	
"	C. N. Lockwood	"	18			
"	B. & M. Letter Co.	Letters	20	5		
"	F. Moller	Lamps	15			
"	J. Hubel	Locks	10			
"	Romer & Co.	"	20	1		
"	Thos. Sleight	"	10			
"	Phœnix Lock Co.	"	35	3		
"	U. S. Lock Washer Co.	Lock washers	25			
"	Kellog & Douglass	Lead pipe	20			
"	Newark Licorice Works	Licorice	140			
"	Watts Campbell Co.	Machinery	175			
"	Hews & Phillips	"	300			
"	Gould & Eberhardt	"	72			
"	E. O Chace	"	10			
"	Charles Felder	"	10			
"	C. H. Redmans	"	29			
"	George Ohl	"	50			
"	Atlas Manufacturing Co.	"	25			
"	John M. Hawkens	"	18			
"	Domestic Sewing Machine Co.	Machines	1000			
"	Tirrells Gas Machine Co.	"	15			
"	John R. Williams	Machinery	18			
"	Wm. H. Chapman	"	8			
"	H. C. Clawson	Machines	30	1		
"	Skinner & Leary	Machinery	16			
"	A. B. Pierce & Co.	Machines	25			
"	Mossebatsch & Whittemore	Musical instrument cases	15	3		
"	Seymore & Whitlock	Machinery	40			
"	J. S. Monday	"	60			
"	Charles E. Green	"	18			
"	Edward Yost	"	16			
"	Smith & Landell	"	10			
"	Cyrus Currier & Sons	"	100			
"	E. C. Hay	Machine castings	32			
"	L. H. Watson	Machinery	25			
"	D. S. Plumb	"	20			

FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—male.	Employes—females.	Under sixteen years.	Children discharged.
Newark	A. M. Bowers	Machinery	20	----	----	----
"	M. Millan & Sons	"	5	----	----	----
"	Jeffrey & Thompson	"	4	----	----	----
"	Maher & Robertson	Metal castings	80	----	----	----
"	H. H. Richmond	" "	10	----	----	----
"	Crane & Co.	" "	20	----	----	----
"	Meeker & Son	" "	80	----	10	----
"	Woodside Metal Co.	Metal goods	25	5	----	----
"	Hahne & Co.	Merchants	40	200	10	----
"	H. L. Plaut	Merchant	30	100	----	----
"	Van Vliet's Malt House	Malt	20	----	----	----
"	George W. Donaldson	Metal castings	10	----	----	----
"	Henry Kuntze	(Medical supplies; rubber) goods	6	----	----	----
"	Bayley, Fisher & Eichorn	Metal castings	15	----	----	----
"	H. H. Novelty Co.	Novelties	25	----	5	----
"	Newark Nickle Plating Co.	Nickle plating	12	----	----	----
"	Albert M. Bowers	Novelette cottages	14	2	----	----
"	T. J. Preston	Oils	10	----	----	----
"	Barnett & Co.	Paints	20	----	----	----
"	Hedges'	Plumbers' supplies	30	----	----	----
"	Chamber & Ansley	" "	35	----	----	----
"	H. Bidwell	Pasteboard	6	2	----	----
"	Wheeler Manufacturing Co.	"	10	2	----	----
"	E. R. Carhuff	Potash	38	----	----	----
"	E. D. Wagner	Packing house, etc.	12	----	----	----
"	Bailey's Packing House	" " smoked meats	22	----	----	----
"	C. M. Bailey's Packing House	" " " "	20	----	----	----
"	Selby's Packing House	" " " "	20	----	----	----
"	Blatt Bros. Packing House	" " " "	10	----	----	----
"	Thos. Atchinson	" " " "	20	----	----	----
"	Newark Steam Packing Co.	Packing	37	----	----	----
"	Reitzels' Pickle Works	Pickles	12	----	1	----
"	A. Pierce & Co.	Purses	28	----	----	----
"	Prudential Printing Co.	Printing	13	----	----	----
"	Heints' Printing Co.	"	10	----	----	----
"	Schwartzs' Printing Co.	"	10	----	----	----
"	Wm. A. Baker	"	20	----	----	----
"	Greissing & Knodel	Pearl goods	8	----	----	----
"	Feddersen & Feldmeyer	" "	35	----	----	----
"	Newark Daily Journal	Printing	45	----	----	----
"	Newark Evening News	"	70	----	----	----
"	Newark Daily Advertiser	"	63	2	----	----
"	Newark Sunday Call	"	20	----	----	----
"	Newark Town Talk	"	28	----	----	----
"	New Jersey Freie Zeitung	"	40	----	----	----
"	Deutsche Zeitung	"	24	----	----	----
"	D. H. Cranford & Son	" and bookbinding	18	----	----	----
"	J. L Hardham	" " "	18	----	----	----
"	Mathias Plum	" " "	60	30	2	----
"	Geiger Bros.	" " "	18	1	1	----
"	Grover Bros.	"	20	----	----	----
"	Holbrook's	" and bookbinding	----	----	----	----
"	Van Aldstine & Shurtz	" " "	----	----	----	----
"	E. J. Brooks	Railroad supplies	23	7	----	----
"	Belcher Rule Works	Rules	12	----	----	----
"	S. D. Smith	"	6	----	----	----
"	C. Roberts	Rubber goods	20	20	----	----
"	Newark Rivet Works	Rivets	25	----	2	----
"	Tomlin Spring Co.	Springs	80	----	----	----
"	Daniel Deleney	"	20	----	----	----
"	Richardson Bros.	Saws	183	10	5	----
"	Bess & Drake	Smoothing Irons	60	----	3	----

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Newark	H. M. Richmond	Scales	9			
"	Roberston & Leher	Silver refinery	10			
"	Basch & Greenfield	Shoddy	8	42		
"	Tiffany & Co.	Silver plated ware	70			
"	Ettric Art Tile Stove Co.	Tile stoves	6			
"	Newark Pottery	Stoneware	6			
"	Zipps' Pottery	Stoneware and pipe	13			
"	F. J. Gerhardt	Stoneware	6			
"	F. Meyers	Scales	24			
"	Whitman Saddle Co.	Saddles	16			
"	Lowentront's Skates Works	Skates	100			
"	Speath Skates Works	"	12			
"	Newark Steel Works	Steel	500			
"	Harvey Steel Works	"	60			
"	Heinisch's Scissors Works	Scissors	100			
"	Weis Scissors Works	"	85		4	
"	Joseph Mayo	Silverware	20			
"	Wheeler & Shiner	Shirts and waists	10	90		
"	A. F. Meagher	"	6	24	1	
"	C. H. Booth	"	1	18		
"	Smith's Shirt Factory	"	4	26		
"	Neal's Shirt Factory	"	2	15		
"	E. E. Hogan	Shoes	140	100		
"	Johnson & Murphy	"	335	40	8	
"	Wm. Dousch & Son	"	126	30	6	
"	Ober & Miller	"	80	20		
"	James A. Bannister	"	375	75	6	
"	John Burger & Bros.	"	50	25	2	
"	Aug. Lentz	"	65	15		
"	Felter Bros.	"	20	21	3	
"	A. Schmidt & Co.	"	65	15		
"	T. Cort Jr.	"	55	8		
"	J. Durning & Co.	"	20			
"	A. S. Miller	"	6	12		
"	Thomas Wharton	"		20		
"	L. Boyden	"	125	30		
"	Fonday's Shoe Factory	"	35	15		
"	David Anderson	"	20	30		
"	Miller & Rouquett	"	18	3		
"	Atlantic Window Shade Co.	Shades	16	4		
"	Spiral Weld Co.	Spiral Tubes	120			
"	Heller Bros.	Steel Works	28			
"	Central Stamping Co.	Tinware, stamping, etc.				
"	Pheonix Stamping Co.	" " "	10			
"	Woodside Tin and Metal Co.	Tin and metal goods	24	1		
"	A. Turner & Co.	" " " "	30			
"	New Jersey Tin and Metal Co.	" " " "	24	1		
"	H. W. Woodman	" " " "	30			
"	Congar Tea Tray Co.	Tea trays	20	5		
"	Stillwell & Co.	Tools (edged)	15			
"	Dodge & Lyons	" "	15			
"	H. L. Osborn	"	30			
"	Mathias Price	" (edged)	40			
"	William Johnson	"	45		2	
"	Henry Foster	"	18			
"	Heller Bros.	"	32			
"	F. Wichelhaus	"	7			
"	C. Osborn	" (harness)	60		3	
"	Schuerman & Co.	"	20			
"	Newark Edge Tool Co.	"	80			
"	M. Einwechter	"	15			
"	J. Harding	"	20			
"	Keiffer Tool Works	"	8			

FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—male.	Employes—females.	Under sixteen years.	Children discharged.
Newark	Clark Thread Co., O. N. T.	Thread	200	1300	30	
"	George B. Jenkinson	Trunks and bags	450	20	8	
"	Simon Bros.	" " "	258	12	2	
"	Lissa & Co.	"	63	5		
"	Edgar Farmer	"	116	8		
"	Wm. O. Headley	"	245	5	8	
"	John Toler & Son	Trunk hardware	68	2	2	
"	Caille & Bolie	Traveling bags	20	3		
"	Raquett Bros.	" "	25			
"	George M. Ballard	Trunk hardware	30			
"	Oscar Barnett	" "	40			
"	Campbell, Lane & Co.	Tobacco	35	25		
"	Ladies' Undergarment Co.	Undergarments	5	150	3	
"	Ultramarine Works	Ultramarine blue	50	16		
"	Franklyn, Murphy & Co.	Varnish	50			
"	Henson Varnish Co.	"	4			
"	John L. Armitage	"	10			
"	Crescent Watch Case Co.	Watch cases	1000	60		
"	Newark Watch Case Co.	" "	30			
"	American Watch Case Co.	" "				
"	Banfield Watch Co.	Watches	103	7		
"	Pinnel, May & Co.	Watch cases	23	2		
"	Essex Watch Case Co.	" "	40	6		
"	A. Miline	Watch crowns	25			
"	Conivisier Wilcox Watch Case Co.	Watch cases	200			
"	Progress Watch Co.	Watches	40			
"	C. T. Williamson	Wire Novelties	58	2		
"	John Somers & Son	Woodware	25		5	
"	G. Hatt's Sons	Wood turning and sawing	44			
"	Dalrymple & Faitoute	" " " "	10			
"	Central Planing Mills	" " " "	35			
"	Ripley & Son	Wood sawing and planing	35			
"	Chapin Hall Lumber Co.	" " " "	160			
"	Newark Planing Co.	" " " "	20			
"	C. T. Miltz	" turning	6			
"	Wm. Kirk	Wood work (carpentering)	50			
"	M. B. Tidey	Wood turning	12			
"	F. Callowey	" "	7			
"	Walter H. VanWinkle	" "	20			
"	J. G. & A. C. Leib	Wooden articles	10			
"	M. Danklefsen	Wood and ivory turning	8			
"	William King & Co.	" turning and planing	100	1		
"	Swain & Jones	" planing	16			
"	Hedden & Sons	" " and turning	60			
"	John B. Oelkers	" articles	17	1		
"	Russell & Sayer	" turning and sawing	35			
"	George W. Reese	" " " plauing	9			
"	John Taylor	" "	6			
"	Otto Bremtz	" Articles	10		4	
"	Engelberger V. Barkhorn	" turning and planing	60			
"	Newark Door Co.	" " " "	15			
"	Weightman Bros.	" " " "	24			
"	Ph. Jones & Co.	Wheels	90			
"	Oliver Manufacturing Co.	"	15			
"	Crane & Smith	"	7			
"	National Lock Washer Co.	Washers	12			
"	Nonpareil Winker Co.	Winkers	16	4		
"	Eagle Winker Co.	"	22	8		
"	Searls, Randall & Co.	Whip sockets	43			
Orange	C. B. Rutan	Hats	240	60		
"	Cummings & Mathews	"	150	50		
"	No Name Hat Co.	"	85	15		

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Orange	McGall Bros.	Hats	350	100		
"	F. Berg & Co.	"	103	137		
"	E. V. Connett	"	170	55		
"	Austin Drew & Co.	"	150	50		
"	Puff & Yeomans	"	50	10		
"	McChesney & Fisher	"	80	20		
"	Long & Co.	"	40	10		
"	Dougherty & Co.	"	30	12		
"	Harrup, Gist & Co.	"	60	30		
"	J. J. Perrine	"	60	20		
"	Dykman & Co.	"	200	50		
"	A. Brandes	"	40	12		
"	Porter Crofcet & Co.	"	120	30		
"	Brannan & Co.	"	120	30		
"	Barry, Quinlan & Co.	"	140	30		
"	Smith & Sons	"	50	15		
"	Kearschers	"	60	20		
"	James Young & Son	"	25	15		
"	T. Walker	"	60	20		
"	Jenkins & Dodd	Boxes, paper and wood	10	20		
"	John V. Livingston	" " " "	16	10		
"	Wm. H. Bulkley	Pumps	15			
"	G. S. Carter	Wood Turning	3			
"	Orange Machine Works	Machinery	10			
"	Edison's Laboratory	Electric apparatus	65	1		
"	Edison's Phonograph Co.	Phonographs	150	30		
"	Orange Distilled Ice Co.	Ice	30			
"	Thos. Cunningham	Brushes	25	0	20	
"	S. A. Davis	Confectionery	10	2		
"	John H. Gegenheimer	Wood turning	50			
"	James Neil	" "	20			
"	Orange Chronicle	Printing	15			
"	Smith & Dodd	Jackets	4	50		
"	T. G. Barber	Sash and blinds	20			
"	T. O. Engling	Boxes, paper and wood	27	13		
"	Thos. A. Post	Wood turning	25			
"	P. B. Fairchild	" "	50			
"	Marquett Bros.	Boxes, paper and wood	40	28		
"	H. G. & H. Gill	Hat forming	40	11		
"	C. Manus & Co.	Hats	100	10		
"	Bergs	"	70	18		
"	A. G. Glover	"	60	10		
"	Stetson & Co.	"	120	18		
"	Seabury's	Medical supplies	58	167	3	
"	Gearge Cook	Builders' supplies	60			
"	H. Bulkley's	Steam pumps	22			
Bloomfield	P. Hayden	Harness mountings	78	2		
"	James Moffatt	Brass goods	15			
"	R. S. Grummon	Silver plated metal	35			
"	H. K. & T. S. Benson	Copper and metal	16			
"	J. Freeman & Co.	Shoes	80	10		
"	De Lavel Separator Co.	Machinery	25			
"	James Cresp	Sewing machine belts	10			
"	Thos. Oaks & Co.	Woolen goods	149	40	4	
"	Combination Rubber Co.	Rubber	45	2		
"	S. Gilson	Hats	29	11		
"	Ellor, Law & Co.	"	82	18		
"	Ellor Bros.	"	72	18		
"	Thompson, Ellor & Co.	"	60	20		
"	Medical and Surgical Plaster Co.	Medical supplies	14	5		
"	Essex Laundry	Laundry	10			
"	Consolidated Safety Pin Co.	Safety pins	30	115	6	

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FACTORIES INSPECTED—SIXTH DISTRICT—Continued.

LOCATION.	NAME OF COMPANY.	GOODS MANUFACTURED.	Employes—males.	Employes—females.	Under sixteen years.	Children discharged.
Franklin	Kingsland's Paper Mill	Paper	29	16	----	----
Montclair	United States Printing Co.	Printing	100	7	----	----
Millburn	H. Graves	Hats	20	15	----	----
"	F. Fourrat	"	40	20	----	----
"	Diamond Mills	Paper	14	4	----	----
"	A. L. Anderson	Pasteboard	23	1	----	----
"	Dillon's	Hats	20	----	----	----
"	Brown's	"	20	----	----	----
"	Ward's	"	24	----	----	----
"	W. F. and J. H. Wade	Pasteboard	12	----	----	----
"	J. L. Meeker	"	6	----	----	----
"	Fred Crane's Chemical Laboratory	Chemicals	15	----	----	----
"	Maplewood Paper Mills	Paper	15	----	----	----
Belleville	DeWitt Wire Co.	Wire	75	75	6	----
"	P. Hogan	Hats	35	15	----	----
"	Oscar Nenninger	Smelting metals	5	----	----	----
"	Riverside Rubber Co.	Rubber goods	35	15	6	----
"	Eastwood Chemical Co.	Chemicals	28	----	----	----
"	Eastwood Wire Co.	Wire	53	7	----	----
"	Passaic Steam Laundry	Laundry	150	75	----	----

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
Asphaltic Roofing Co.	Fly wheel to be guarded	None given.	Fair only.
Electric Accumulater Co.	No orders necessary	None given.	Good.
George A. Harth, axes	No orders necessary	None given.	Good.
Snedecker & Schurman	No orders necessary	None given.	Fair.
Tucker Letter and File Co.	No orders necessary	None given.	Good.
W. T. Mersereaux & Co.	To erect fire escape	Complied with.	Good.
Wm. Theaberath	No orders necessary	None given.	Good.
Calhoun, Barnet & Co.	To erect fire escape	None given.	Good.
B. Conlan & Co.	No orders necessary	None given.	Good.
George Haaele	No orders necessary		Good.
Riley Klotz & Co.	To erect two fire escapes	Not complied with.	Fair.
Richard Sims	No orders necessary	No orders given.	Good.
Thos. H. Brown	No orders necessary	No orders given.	Good.
James E. Mergott	No orders necessary	No orders given.	Good.
M. Gould & Son	No orders necessary	No orders given.	Good.
A. Goertz & Co.	To erect fire escape	Complied with.	Good.
Deffany & Co.	No orders necessary	None given.	Good.
Newark Novelty Co.	To erect fire escape	None given.	Fair.
C. P. Gould	To erect fire escape	None given.	Good.
Schailings	Fire escape on building	Not complied with.	Fair.
Durning & Co.	No orders necessary	No orders given.	Good.
Devlin Bros.	No orders necessary	No orders given.	Good.
Newark Purse Frame Co.	Closets to be put in order	Not complied with.	Fair.
Blunt Mfg. Co.	No orders necessary	Complied with.	Good.
Rosenbaum Mfg. Co.	Fire escape on building		Good.
Mahony & Clark	No orders necessary	Complied with.	Good.
Wm. P. Mockridge	No orders necessary	Complied with.	Good.
R. C. Jenkinson	No orders necessary		Good.
Newman & Co.	To guard shafting	Complied with.	Good.
Eggers & Co.	No orders necessary		Good.
Kitchell Mfg. Co.	A new closet ordered	Not complied with.	Good.
Schuartz & Co.	No orders necessary		Good.
Thos. Davis	To guard shafting	Complied with.	Good.
Hubner & Son	To guard shafting	Complied with.	Good.
Henry Smith	No orders necessary		Good.
Frank & Co.	To provide water closet.	Complied with.	Good.
Pearsols Button Co.	To guard shafting	Complied with.	Good.
F. Frentz	No orders necessary	Complied with.	Good.
Toms & Reed	Fire escape on building	Not complied with.	Good.
Wm. Donovon	Fire escape to be erected	Complied with.	Good.
N. J. Button Co.	No orders necessary		Good.
H. M. Yates & Co.	No orders necessary		Good.
Finan & Mathews	No orders necessary		Good.
Thomas Webb	To guard shafting	Complied with.	Good.
Graham Button Co.	To guard shaft and belts		Good.
Wm. Reomer	To guard shaft and belts		Good.
R. Schmidt	No orders necessary		Good.
Kaufman & Schield	No orders necessary		Good.
Pressed Barrel Co.	No orders necessary		Good.
Otto Breintz	No orders necessary		Good.
Albright & Koch	No orders necessary		Good.
J. L. Hardhams	No orders necessary		Good.
Mathias Plum	To erect fire escape		Fair.
Van Alstine & Shurtz			Fair.
Godfried Kruger	Belts to be guarded	Complied with.	Good.
Wm. Hill	No orders necessary		Good.

CHANGES ORDERED AND CONDITION OF FACTORIES - SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
Ballentine & Co. 2	To guard belts	Complied with.	Good.
Ballentine & Co.	No orders necessary		Good.
Joseph Heusler	No orders necessary		Good.
Chas. Trefz	No orders necessary		Good.
Geo. W. Weidenmayer	No orders necessary		Good.
J. Feigenspan 3	To guard belts and engine elevator	Partly complied with	Good.
Home Brewing Co. 1	No orders necessary		Good.
James Webb 1	To guard shafting	Complied with.	Good.
——— Webb 1	To guard shafting	Complied with.	Good.
Phelps Button Works	No order necessary		Good.
J. L. Somer	No order necessary		Good.
Fred Lisensky 2	To guard belts	Complied with.	Good.
Lyon & Son	No orders necessary		Good.
F. J. Kastner	No orders necessary		Good.
New's Brewery	No orders necessary		Good.
E. Zeber's Brewery 3	To guard pulley belts and shaft	Complied with.	Good.
A. C. Buckhart 1	To guard pulley	Complied with.	Good.
Rosendale Belting Co. 1	To guard pulley	Complied with.	Good.
Douglas Baking Co.	No orders necessary		Good.
Mangle & Schmit	No orders necessary		Good.
Fritche's Bakery	No orders necessary		Good.
Adam Turke's Baking Co.	No orders necessary		Good.
Tuite's Bakery	No orders necessary		Good.
Mulford & Vreeland 1	No orders necessary		Good.
U. S. Butter Extractor Co. 1	To guard engine	Complied with.	Good.
J. D. Marquett 1	No orders necessary		Good.
Gauch Bros. 1	To screen stairway	Complied with.	Good.
Chas. Osborn's Box Factory 1			Good.
H. N. Doolittle 1	To erect fire escape		Fair.
John Davidson 1	Fire escape on building	No orders given.	Fair.
Mergot, Howell & Co.	No orders necessary	No orders given.	Good.
E. T. Hart Box Co. 4	No orders necessary		Good.
A. Goldberg & Co. 4	To guard machines and pulleys	None given.	Good.
Goldberg & Schaffenhaus 3	To guard belt shaft and saw	None given.	Good.
Chas. Appel & Son	No orders necessary		Good.
George James	No orders necessary		Good.
Dixon's Brush Factory	No orders necessary		Good.
C. W. Conery Brush Factory	No orders necessary	No orders given.	Good.
E. W. Dixon Brush Factory 1	No orders necessary		Good.
Pollard Brush Mfg. Co. 1	Fire escape on building	Complied with.	Good.
Wm. Blum, buckles.	No orders necessary	None given.	Good.
Hiller & Co., Dyeing	No orders necessary	None given.	Fair.
Wm. A. Brintzenhoffer	No orders necessary	None given.	Good.
Joseph Glutting	No orders necessary	None given.	Good.
Adam Glutting	No orders necessary	None given.	Good.
H. Donaldson	No orders necessary	None given.	Good.
Friedenthal & Adler	No orders necessary	None given.	Good.
Wm. Salter	No orders necessary	None given.	Good.
J. B. Axt	No orders necessary	None given.	Good.
Lewis Bros.	No orders necessary	None given.	Good.
Crawford & Co.	No orders necessary	None given.	Good.
H. Howarth		None given.	Good.
Wm. Kraft		None given.	Good.
Henry Pheil 2	To erect fire escape and guard shaft	Complied with.	Good.
Hammerslough Bros 1	To erect fire escapes	Complied with.	Good.
John B. Dieffenthaler	No orders necessary	None given.	Good.
Chas. Curtis	No orders necessary	None given.	Good.
Wenzel Koska	No orders necessary	None given.	Good.
Peter Geiger	No orders necessary	None given.	Good.
John Fleming	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
A. Steiner	No orders necessary	None given.	Good.
Jacob Schmidt	No orders necessary	None given.	Good.
George Miller	No orders necessary	None given.	Good.
Chas. Arnold	No orders necessary	None given.	Good.
Wm. Leven	No orders necessary	None given.	Good.
Joseph Hess	No orders necessary	None given.	Good.
Martin Singer	No orders necessary	None given.	Good.
M. Keogel	No orders necessary	None given.	Good.
Philip Ruttiger	No orders necessary	None given.	Good.
George Braun	No orders necessary	None given.	Good.
A. Brutschman	No orders necessary	None given.	Good.
Philip McDonnell	No orders necessary	None given.	Good.
John Heable	No orders necessary	None given.	Good.
M. Freeman	No orders necessary	None given.	Good.
Jacob Frien	No orders necessary	Complied with.	Good.
Philip Berz	No orders necessary	None given.	Good.
J. Thumo	No orders necessary	None given.	Good.
Mrs. Van Riper	No orders necessary	None given.	Good.
John H. Wharton	No orders necessary	None given.	Good.
J. H. Wismer	No orders necessary	None given.	Good.
John Henning	No orders necessary	None given.	Good.
Blumenthal Bros.	To put shades on windows	Complied with.	Good.
Chas. Becker	To erect fire escape	Complied with.	Fair.
A. Louis Kruger	No orders necessary	None given.	Good.
J. C. Stadelman	No orders necessary	None given.	Good.
John W. Hines & Son	No orders necessary	None given.	Good.
Joseph Hessler	No orders necessary	None given.	Good.
A. Solomon	No orders necessary	None given.	Good.
Wright's Corset Steel Works	No orders necessary	Complied with.	Good.
G. W. Jackson	To guard shafting	Complied with.	Good.
Continental Corset Co.	No orders necessary	None given.	Good.
James Bowers & Co.	To erect fire escape	Complied with.	Good.
Ferris Bros.	No orders necessary	None given.	Very best.
Crotty Bros.	No orders necessary	None given.	Good.
Weingarten Bros.	No orders necessary	None given.	Good.
Delsarte Corset Co.	To erect fire escape and guard shaft	Complied with.	Fair.
Newark Lime and Cement Co.	None	None given.	Good.
John Kearsing	None	None given.	Good.
D. S. Plum	None	None given.	Good.
Bannister's Cutlery (old factory)	To guard shafting	Complied with.	Fair. Good.
Robert Meyer, Chemicals	None	None given.	Good.
Passaic Chemical Co.	None	None given.	Good.
Union Chemical Co.	None	None given.	Good.
Chas. Cooper & Co., Chemicals	None	None given.	Good.
Brewster's Chocolate Works	To guard belt and machine	Complied with.	Good.
Alvin Mfg. Co.	None	None given.	Good.
Electric Cutlery Co.	To guard belts and shafting	Complied with.	Good.
New Jersey Carbon Works	To guard shafting and pulleys	Complied with.	Good.
Central R. R. Car Works	To guard pulleys	Complied with.	Good.
Eureka Cement Co.	None	None given.	Good.
Golder & Post, Carriages	None	None given.	Good.
J. Colyer & Co.	None	None given.	Good.
J. Quimby	None	None given.	Good.
Wm. Streby	None	None given.	Good.
Orland Greacen	None	None given.	Good.
Celluloid Novelty Co.	None	None given.	Good.
Celluloid Mfg. Co.	None	None given.	Good.
Celluloid Brush Co.	None	None given.	Good.
Hemmer, Desks	Fire escape		Good.
Benjamin Bros.	To guard shafting	Complied with.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previ-orders.	Health and safety.
Newark—			
Strauss & Josephs 1	To erect fire escape	Two girls for evening school	Good.
J. Katz 1	To guard shafting	Complied with.	Good.
Emil Geothe	No orders necessary	Two girls for evening school	Good.
H. Borneman	No orders necessary	None given.	Good.
C. Muester	No orders necessary	None given.	Good.
Miller & Funk	No orders necessary	None given.	Good.
C. McEntyre	No orders necessary	None given.	Good.
Newark Engraving Works	No orders necessary	None given.	Good.
A. Schleuter & Co.	No orders necessary	None given.	Good.
U. S. Electric Light Co.	No orders necessary	None given.	Good.
Schuyler Electric Light Co 2	To guard driving wheel and shaft	None given.	Good.
Thompson & Hewson Electric Light Co.	No orders necessary	None given.	Good.
Bradley & Craig	No orders necessary	None given.	Good.
Storm Elevator Works 1	To guard shaft	None given.	Good.
Elastic Hair Co.	No orders necessary	None given.	Good.
Spencer Optical Co. 1	Shafting to be guarded	Complied with.	Good.
George D. Drake 17	To guard belts and pulleys	Complied with.	Good.
Wilkinson, Gaddis & Co.	To guard belts	Complied with.	Good.
Sturges & Sutphen	No orders necessary	None given.	Good.
Thatcher Furnace Co.	No orders necessary	None given.	Good.
Muessellach & Bros.	No orders necessary	None given.	Good.
Lister Bros. 4 7 3	Elevator guarded, new closet and two belts to be guarded	Complied with.	Good.
F. F. Lane 3	Three belts to be guarded	Complied with.	Good.
Heller Bros. 3	To guard shafting and belts	Complied with.	Good.
Johnson Bros.	No orders necessary	None given.	Good.
John Ray	No orders necessary	None given.	Good.
Newark Gas Light Co.	No orders necessary	None given.	Good.
Citizens' Gas Light Co.	No orders necessary	None given.	Good.
L. Schaff & Bros.	No orders necessary	None given.	Good.
E. P. Ward	No orders necessary	None given.	Good.
Baulback & Son 3	To guard shafting and belts	Complied with.	Good.
Le Long Bros. 1	To erect fire escape	None given.	Fair.
Yates & Wharton 3	To clean closets, guard shaft and fix windows	Complied with.	Good.
Wheeler & Russell 2	To guard belts	Complied with.	Good.
Meyer Mercy Mfg. Co. Polk st. 8	To guard all shafting, pulleys and belts	Complied with.	Good.
Meyer Mercy Mfg. Co., Scott st. 1	To guard shafting	Complied with.	Good.
Meyer Mercy Mfg. Co., Academy st.	No orders necessary	Complied with.	Good.
Chas. Crossley 2	One belt to be guarded, also fire escape	None given.	Good.
J. Rummel & Son	No orders necessary	None given.	Good.
J. Rummel & Son, N. J. Railroad ave.	No orders necessary	None given.	Good.
C. F. Seitz & Co. 3	To guard belts and shafting	Not complied with	Fair.
Joseph Schuman 4	To guard shaft and belts, also to erect fire escape	Not complied with	Fair.
G. M. Espenschied	No orders necessary	None given.	Good.
Albert Seitz	No orders necessary	None given.	Good.
David Wolf	No orders necessary	None given.	Good.
Wm. H. Neary	No orders necessary	None given.	Good.
James Fleisch & Co.	No orders necessary	None given.	Good.
James Robertson	No orders necessary	None given.	Good.
C. M. Hedden & Co. 7	To guard pulleys of forming machines	Complied with.	Good.
G. M. Mason	No orders necessary	None given.	Good.
Bernard Daly	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
C. M. Hedden, Park Ave.	To guard fly wheel, belts and pulleys	None given.	Good.
Tyler Parmley	No orders necessary	None given.	Good.
Carley & Johnson	To erect fire escape and guard belts	Not complied with	Fair.
H. Fulcher	No orders necessary	None given.	Good.
Thomas Nichols	To guard pulleys and belts	Complied with.	Good.
Budich & Zudinsky	No orders necessary	None given.	Good.
Fairchilds & Co.	To guard pulleys and belts	Not complied with	Good.
Joseph Mercy	To guard belts and shafting	Complied with.	Good.
C. B. Alston	No orders necessary	None given.	Good.
Jarvis & Co.	Shafting and belts to be guarded, also pulley	Not complied witd.	Fair.
Geo. W. Hyde	No orders necessary	None given.	Good.
E. M. Tichouer	No orders necessary	None given.	Good.
Mason & Berg	No orders necessary	None given.	Good.
Englicth Bros.	No orders necessary	None given.	Good.
A. Beesley	No orders necessary	None given.	Good.
Wheeler & Russell	No orders necessary	None given.	Fair.
Chas. DeVere	To guard belt and end of shaft	None given.	Fair.
Kohn & Mercy	To guard fly wheel and belt	Complied with.	Good.
P. McKeon	No orders necessary	None given.	Good.
Hermon's	No orders necessary	None given.	Fair.
George Yule	To guard shafting and belts	Complied with.	Good.
McClair & Davis	To guard shaft	Complied with.	Good.
Mork & Romberg	To guard shaft	Complied with.	Good.
Rutan Pond & Co.	No orders necessary	None given.	Good.
Douglass Hat Forming Mill	To guard pulleys and belts	Complied with.	Good.
Pheiffer & Co.	To guard pulleys and belts	Complied with.	Good.
Oscar Welligerode	To guard pulleys	Complied with.	Good.
J. C. Herman & Co.	No orders necessary	None given.	Good.
Pierson & Herman	No orders necessary	None given.	Good.
Stephens & Co	No orders necessary	None given.	Good.
A. J. Kridel	To guard shaft	Complied with.	Good.
Peters & Calhoun Co.	To erect fire escape	Not complied with	Fair.
R. C. Winter	No orders necessary	None given.	Good.
Demerest & Co.	No orders necessary	None given.	Good.
Wm. Crabb	No orders necessary	None given.	Good.
E. F. Beck & Son	No orders necessary	None given.	Good.
Crane, Calhoun, Barnett & Co.	To erect fire escape on new building	None given.	Good.
F. W. Bonneau	To erect fire escape	None given.	Fair.
S. S. Sargent	To provide belt shifters for tumbling machine	None given.	Good.
Buttler & Ward	To discharge one girl under age and guard shaft	None given.	Good.
Henry Whitehouse	To guard one belt	Complied with.	Good.
E. Egan	No orders necessary	None given.	Good.
P. Hayden	No orders necessary	None given.	Good.
A. Albright	No orders necessary	None given.	Good.
Chas. Hass	No orders necessary	None given.	Good.
H. Allen Smith	No orders necessary	None given.	Good.
Barber, Condit & Morris	No orders necessary	None given.	Good.
George Rowland	No orders necessary	None given.	Good.
Tomkins & Mandervill	To erect fire escape	None given.	Good.
Smith Bros.	No orders necessary	None given.	Good.
Kuhnhold & Co.	To guard shaft	Complied with.	Good.
John Bea	No orders necessary	None given.	Good.
Mahony & Clark	To guard main belt	Complied with.	Good.
Wm. S. Rich & Co.	No orders necessary	None given.	Good.
Beader, Adamson & Co.	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
Wm. Crabb & Co.	To guard shafting	Complied with.	Good.
Newark Star Heel Plate Co.	No orders necessary	None given.	Good.
Reynolds & Zahn	No orders necessary	None given.	Good.
Albert Smith	No orders necessary	None given.	Good.
Sloan & Chace	No orders necessary	None given.	Good.
Pomeroy & Son	To guard elevator opening	Not complied with.	Good.
Kruger Ice Co.	No orders necessrry	None given.	Good.
Carter, Sloan & Co.	To erect fire escape	Complied with.	Good.
Bippart & Co.	No orders necessary	None given.	Good.
Krementz & Co.	To guard belt	Complied with.	Good.
Shoemaker, Pickering & Co.	To erect fire escape	Complied with.	Good.
M. Krauss	To erect fire escape	None given.	Good.
Durand & Co.	No orders necessary	None given.	Good.
Day & Clark	No orders necessary	None given.	Good.
Thos. G. Brown & Co.	To erect fire escape	None given.	Good.
Wm. Riker	No orders necessary	None given.	Good.
Wm. C. Edge & Son	No orders necessary	None given.	Good.
Wm. Rich & Co.	No orders necessary	None given.	Good.
Kerr & Battan	No orders necessary	None given.	Good.
M. Huger	No orders necessary	None given.	Good.
Chas. Schutz & Son	No orders necessary	None given.	Good.
A. Alling Reeves	No orders necessary	None given.	Good.
Champenos & Co.	No orders necessary	None given.	Good.
Meyhew & Co.	No orders necessary	None given.	Good.
Elcox & Co.	No orders necessary	None given.	Good.
Wm. H. Ball & Co.	No orders necessary	None given.	Good.
T. W. Adams & Co.	No orders necessary	None given.	Good.
Alsop s Jewelry Factory	No orders necessary	None given.	Good.
Hayes Bros.	No orders necessary	None given.	Good.
Charles Knobs	No orders necessary	None given.	Good.
D. C. Dodd	No orders necessary	None given.	Good.
King & Co.	No orders necessary	None given.	Good.
James W. Miller	No orders necessary	None given.	Good.
Dorrance & Long	No orders necessary	None given.	Good.
Uhry & Alworth	No orders necessary	None given.	Good.
Block & Bergfels	No orders necessary	None given.	Good.
A. Jerolemen	No orders necessary	None given.	Good.
Rothschilds	No orders necessary	None given.	Good.
L. Basset & Co.	No orders necessary	None given.	Good.
J. W. Kitchell & Co.	No orders necessary	None given.	Good.
J. C. Manderville & Co.	No orders necdssary	None given.	Good.
J. Schwartz	No orders necessary	None given.	Good.
Schueffell & Schubacker	No orders necessary	None given.	Good.
Hays Brothers	No orders necessary	None given.	Good.
D. W. Baker	No orders necessary	None given.	Good.
Eastwood & Park	No orders necessary	None given.	Good.
Long & Osborn	No orders necessary	None given.	Good.
Enos Richardson & Co.	No orders necessary	None given.	Good.
Albert Heintz	No orders necessary	None given.	Good.
Strobel & Crane	No orders necessary	None given.	Good.
John Lynck	No orders necessary	None given.	Good.
Pickett & Stillwell	No orders necessary	None given.	Good.
O. E. Hendricks	No orders necessary	None given.	Good.
Ehrlich & Sinnock	No orders necessary	None given.	Good.
Sinnock & Sherrill	No orders necessary	None given.	Good.
E. D. Regad	No orders necessary	None given.	Good.
Blanchard Bros. & Lane	No orders necessary	None given.	Good.
J. H. & J. W. Dawson	To erect fire escapes and guard belt and shaft	Not complied with.	Fair.
S. Halsey & Son	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
Cummings Brothers	No orders neeessary	None given.	Good.
Hugh Smith	No orders necessary	None given.	Good.
Charles Smyth	No orders necessary	None given.	Good.
C. H. & J. D. Harrison	No orders necessary	None given.	Good.
Patrick Riley	No orders necessary	None given.	Good.
R. P. Lister	No orders necessary	None given.	Good.
Conroy & Weyrach	No orders necessary	None given.	Good.
John Riley	No orders necessary	None given.	Good.
Seidenbach & Mahon	No orders necessary	None given.	Good.
E. S. Ward	No orders necessary	None given.	Good.
Henry Lang	No orders necessary	None given.	Good.
Meis & Egner 2	To guard belts	Complied with.	Good.
M. Strouse	No orders necessary	None given.	Good.
Smith Bros.	No orders necessary	None given.	Good.
Loenberg	No orders necessary	None given.	Good.
T. P. Howell 3	To guard three belts	Complied with.	Good.
J. H. Halsey & Smith	No orders necessary	None given.	Good.
C. W. Meyer & Son	No orders necessary	None given.	Good.
Robert Dingwell	No orders necessary	None given.	Good.
M. J. Halpin	No orders necessary	None given.	Good.
Matthew Caffrey	No orders necessary	None given.	Good.
Reuben Trier	No orders necessary	None given.	Good.
Kanfare & Co.	No orders necessary	None given.	Good.
Cashion & Flynn	No orders necessary	None given.	Good.
J. A. Schaffer	No orders necessary	None given.	Good.
Bingham's Leather Works	No orders necessary	None given.	Good.
John Moore	No orders necessary	None given.	Good.
Newark Kid Works	No orders necessary	None given.	Good.
Chas McEvoy	No orders necessary	None given.	Good.
Smith & Co.	No orders necessary	None given.	Good.
R. G. Solomon 5	To erect fire escape and guard belts and shafts	Partly complied with	Good.
H. P. Weitzel	No orders necessary	None given.	Good.
John W. Carr 1	To guard fly wheel	Complied with.	Good.
Palmer & Smith	No orders necessary	None given.	Good.
Louis Meyer	No orders necessary	None given.	Good.
Schafter & Co.	No orders necessary	None given.	Good.
Albert C. Friedlander	No orders necessary	None given.	Good.
John Neider	No orders necessary	None given.	Good.
L. M. Smith & Son	No orders necessary	None given.	Good.
J. Malloy & Co.	No orders necessary	None given.	Good.
Weigand & Doerzbacher	No orders necessary	None given.	Good.
Wm. R. King	No orders necessary	None given.	Good.
Bellingham's Sole Leather	To guard belts	None given.	Good.
Fred Quimby 2	To erect fire escape and guard shafting	None given.	Fair.
Thos. V. Johnson	No orders necessary	None given.	Good.
Newark Steam Laundry	No orders necessary	None given.	Good.
American Steam Laundry	No orders necessary	None given.	Good.
Sun Laundry	No orders necessary	None given.	Good.
Troy City Laundry 1	To guard fly wheel	Not complied with.	Good.
Union Steam Laundry	No orders necessary	None given.	Good.
Hausbrouck's Laundry	No orders necessary	None given.	Good.
Phœnix Lamp Co.	No orders necessary	None given.	Good.
C. N. Lockwood	No orders necessary	None given.	Good.
B. & M. Letter Co.	No orders necessary	None given.	Good.
F. Moeller	No orders necessary	None given.	Good.
J. Hubel	No orders necessary	None given.	Good.
Roemer & Co.	No orders necessary	None given.	Good.
Thos. Sleight	No orders necessary	None given.	Good.
Phœnix Lock Co.	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
U. S. Lock Washer Co.	No orders necessary	None given.	Good.
Kellog & Douglass	No orders necessary	None given.	Good.
Newark Licorice Works	No orders necessary	None given.	Good.
Watts, Campbell & Co.	No orders necessary	None given.	Good.
Hews & Phillips	No orders necessary	None given.	Good.
Gould & Eberhardt	To erect fire escape	Complied with.	Good.
E. O. Chace	No orders necessary	None given.	Good.
Charles Felder	No orders necessary	None given.	Good.
C. H. Redmans	No orders necessary	None given.	Good.
George Ohl	To guard belts and shaft	None given.	Good.
Atlas Manufacturing Co.	To guard belts	Not complied with.	Good.
John M. Hawkens	No orders necessary	None given.	Good.
Domestic Sewing Machine Co.	To guard belts	Complied with.	Good.
Tirrells Gas Machine Co.	No orders necessary	None given.	Good.
John R. Williams	No orders necessary	None given.	Good.
W. H. Chapman	No orders necessary	None given.	Good.
Skinner & Leary	No orders necessary	None given.	Good.
A. B. Pierce & Co.	No orders necessary	None given.	Good.
Messelbasch & Whittemore	Fire escape ordered on building	Not complied with	Good.
H. C. Clawson	No orders necessary	None given.	Good.
A. M. Bowers	No orders necessary	None given.	Good.
Seymore & Whitlock	No orders necessary	None given.	Good.
J. S. Monday	No orders necessary	Complied with.	Good.
Charles E. Green	No orders necessary	Complied with.	Good.
Edward Yost	No orders necessary	None given.	Good.
Smith & Landell	No orders necessary	None given.	Good.
C. Currier & Sons	No orders necessary	None given.	Good.
C. C. Hay	No orders necessary	None given.	Good.
L. H. Watson	No orders necessary	None given.	Good.
D. S. Plumb	No orders necessary	None given.	Good.
M. Millan & Sons	No orders necessary	None given.	Good.
Jeffrey & Thompson	No orders necessary	None given.	Good.
Maher & Robertson	No orders necessary	None given.	Good.
H. H. Richmond	No orders necessary	None given.	Good.
Crane & Co.	No orders necessary	None given.	Good.
Meeker & Son	To guard elevator opening and door	Complied with.	Good.
Woodside Metal and Tin Co.	No orders necessary	None given.	Good.
Hahne & Co., Merchants	To provide seats for girls	Complied with.	Good.
H. L. Plaut, Merchant	To provide seats for girls	Complied with.	Good.
Van Vliet's Malt House	No orders necessary	None given.	Good.
George W. Donaldson	No orders necessary	None given.	Good.
Henry Kuntze, Rubber goods.	No orders necessary	None given.	Good.
Bayley, Fisher & Eichorn	No orders necessary	None given.	Good.
H. H. Novelty Co.	No orders necessary	None given.	Good.
Albert M. Bowers	To guard two belts	Complied with.	Good.
Newark Nickle Plating Co.	No orders necessary	None given.	Good.
T. J. Preston	No orders necessary	Complied with.	Good.
Barnett & Co.	No orders necessary	Complied with.	Good.
Hedges', Plumber's Supplies	No orders necessary	Complied with.	Good.
Chamber & Ansley	No orders necessary	Complied with.	Good.
H. Bidwell	To guard belt	Complied with.	Good.
Wheeler Manufacturing Co.	To guard belts and pulleys	Complied with.	Good.
E. R. Carhuff	No orders necessary	None given.	Good.
E. D. Wagner Packing House	No orders necessary	None given.	Good.
Bailey's Packing House	To put guard rail on elevator shaft	None given.	Good.
Selby's Packing House	To put guard rail on elevator shaft	None given.	Good.
Blatt Bros. Packing House	No orders necessary	None given.	Good.
Thos. Atchinson's Packing House	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previ-orders.	Health and safety.
Newark—			
Newark Steam Packing Co.	No orders necessary	None given.	Good.
Reitzels' Pickle Works	No orders necessary	None given.	Good.
A. Pierce & Co., Purses	No orders necessary	None given.	Good.
Prudential Printing Co.	No orders necessary	None given.	Good.
Heints' Printing Co.	No orders necessary	None given.	Good.
Schwartz Printing Co.	No orders necessary	None given.	Good.
Wm. A. Baker, Printing	No orders necessary	None given.	Good.
Greissing & Knodel	No orders necessary	None given.	Good.
Feddersen & Feldmeyer	No orders necessary	None given.	Good.
Newark Daily Journal	No orders necessary	None given.	Good.
Newark Evening News	No orders necessary	None given.	Good.
Newark Daily Advertiser	No orders necessary	None given.	Good.
Newark Sunday Call	To erect fire escape	None given.	Good.
Newark Town Talk	To erect fire escape	None given.	Good.
New Jersey Freie Zeitung	No orders necessary	None given.	Good.
Deutsche Zeitung	No orders necessary	None given.	Good.
D. H. Cranford & Son's Printing	No orders necessary	None given.	Good.
J. L Hardham, Printing	No orders necessary	None given.	Good.
Mathias Plumb, Printing	To erect fire escape	None given.	Fair.
Geiger Bros., Printing	No orders necessary	None given.	Good.
Grover Bros., Printing	No orders necessary	None given.	Good.
Holbrook's, Printing	No orders necessary	None given.	Good.
Van Aldstine & Shurtz, Printing	No orders necessary	None given.	Good.
E. J. Brooks	No orders necessary	None given.	Good.
Belcher's Rule Works	No orders necessary	None given.	Good.
S. O. Smith	No orders necessary	None given.	Good.
C. Roberts	To guard gearing	Complied with.	Good.
Newark Rivet Works	No orders necessary	Complied with.	Good.
Tomlinson Spring Co.	No orders necessary	None given.	Good.
Daniel Deleney, Springs	No orders necessary	None given.	Good.
Richardson Bros.	To erect fire escape and guard belts, pulleys and shafts	Partly complied with	Fair.
Bless & Drake	To guard belts and pulleys	Partly complied with	Fair.
H. M. Richmond	No orders necessary	None given.	Good.
Robertson & Leber	No orders necessary	None given.	Good.
Basch & Greenfield	No orders necessary	None given.	Good.
Tiffany & Co., silverware	To erect fire escape	None given.	Good.
Ettric Art Tile Stove Co.	No orders necessary	None given.	Good.
Newark Pottery	No orders necessary	None given.	Good.
Zipps' Pottery	No orders necessary	None given.	Good.
F. J. Gerhardt's pottery	No orders necessary	None given.	Good.
F. Meyers, scales	To guard fly wheel	None given.	Good.
Whitman Saddle Co.	No orders necessary	None given.	Good.
Lowentront's Skates Works	No orders necessary	None given.	Good.
Speath Skates Works	No orders necessary	None given.	Good.
Harvey Steel Works	No orders necessary	Complied with.	Good.
Newark Steel Works	No orders necessary	Complied with.	Fair.
Heinisch's Scissors Works	To guard all shafting	Complied with.	Good.
Weis & Son's Scissors Works	To guard all shafting and pulleys	Complied with.	Good.
Joseph Mayo, silverware	No orders necessary	None given.	Good.
Wheeler & Shiner, shirts	To erect fire escape	Complied with.	Good.
A. F. Meagher, shirts	No orders necessary	None given.	Good.
C. H. Booth, shirts	To guard shafting	Complied with.	Good.
Smith's Shirt Factory	No orders necessary	Complied with.	Good.
Neal's Shirt Factory	To guard shafting and fix closets	Complied with.	Good.
E. E. Hogan, shoes	No orders necessary	None given.	Good.
Johnson & Murphy	To erect fire escape and guard shaft	None given.	Good.
Ober & Miller	To erect fire escape	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT.—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark—			
James A. Bannister 2	To erect fire escape and guard shaft	Complied with.	Best.
John Burger & Bros. 1	To guard shaft	Complied with.	Good.
Aug Lentz 1	No orders necessary	None given.	Good.
Felter Bros. 1	To guard shaft	Complied with.	Good.
A. Schmidt & Co.	No orders necessary	None given.	Good.
T. Cort Jr. 1	No orders necessary	None given.	Good.
J. Durning & Co 1	To erect fire escapes	None given.	Good.
A. J. Miller 1	To guard shaft	Complied with.	Good.
Thomas Wharton 1	No orders necessary	None given.	Good.
L. Boyden, shoes 1	To guard shafting	Complied with.	Good.
Fonday's Shoe Factory 2	To guard shafting and belt	Complied with.	Good.
David Anderson 2	To guard shafting and belt		Good.
Miller & Rouquett 3	To guard shafting, gears and fly wheels	Complied with.	Good.
Atlantic Window Shade Co.	No orders necessary	None given.	Good.
Spiral Weld Co. 2	To guard belt and shaft	Partly complied with	Good.
Heller Bros.' Steeel Works 2	To guard belts	Complied with.	Good.
Central Stamping Co. 2	To guard belts	Complied with.	Good.
Pheonix Stamping Co.	No orders necessary	None given.	Good.
Woodside Tin and Metal Co.	No orders necessary	None given.	Good.
New Jersey Tin and Metal Co.	No orders necessary	None given.	Good.
H. W. Woodman	No orders necessary	None given.	Good.
Congar Tea Tray Co.	No orders necessary	None given.	Good.
Stillwell & Co.	No orders necessary	None given.	Good.
Dodge & Lyons	No orders necessary	None given.	Good.
Mathias Price 2	To guard belts	None given.	Good.
William Johnson	No orders necessary	None given.	Good.
Henry Foster	No orders necessary	None given.	Good.
Heller Bros.	No orders necessary	None given.	Good.
F. Wichelhaus	No orders necessary	None given.	Good.
C. Osborn	No orders necessary	None given.	Good.
Schuerman & Co.	No orders necessary	None given	Good.
Newark Edge Tool Co.	No orders necessary	Complied with.	Good.
M. Einwechter	No orders necessary	None given.	Good.
J. Harding 1	To guard belt	None given.	Good.
Keiffer Edge Tool Co	No orders necessary	None given.	Good.
Clark Thread Co., O. N. T. 3	To guard pulleys and set screws	Complied with.	Very good.
George B. Jenkinson, trunks 2	To provide better fire protection and guard shaft	Partly complied with	Good.
Simon Bros., trunks 2	To erect fire escape and guard shaft	Not complied with	Fair.
Lissa & Co., trunks	No orders necessary	None given.	Good.
Edgar Farmer, trunks 3	To erect fire escapes and guard shaft and belts	Partly complied with.	Good.
Wm. O. Headley, trunks	To send five boys under fifteen to evening school	None given.	Good.
John Toler & Son	To send two boys to evening school	Complied with.	Good.
Caille & Bolie	No orders necessary	None given.	Good.
Raquett Bros.	No orders necessary	None given.	Good.
George M. Ballard	No orders necessary	None given.	Good.
Oscar Barnett	No orders necessary	None given.	Good.
Campbell, Lane & Co.	No orders necessary	None given.	Good.
Ladies' Undergarment Co. 1	To erect fire escape	None given.	Fair.
Ultramarine Blue Works. 2	To guard belts	Complied with.	Good.
Franklyn Murphy Varnish Co	No orders necessary	None given.	Good.
Henson Varnish Co.	No orders necessary	None given.	Good.
John L. Armitage	No orders necessary	None given.	Good.
Crescent Watch Case Co. 13	To guard shafting, pulleys and gears	None given.	Very good.
Newark Watch Case Co. 2	No orders necessary	None given.	Good.
American Watch Case Co. 2	To erect fire escape and guard fly wheel	None given.	Good.
Benfield Watch Co.	No orders necessary	None given.	Very best.

CHANGES ORDERED AND CONDITION OF FACTORIES – SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Newark –			
Pinnel, May & Co.	No orders necessary	None given.	Good.
Essex Watch Case Co.	No orders necessary	None given.	Good.
A. Miline, watch crowns	No orders necessary	None given.	Good.
Conivisier Wilcox Watch Case Co.	To guard shafting and gears	Complied with.	Very good.
Progress Watch Co.	No orders necessary	None given.	Good.
C. T. Williamson	No orders necessary	Complied with.	Good.
John Somers & Son	No orders necessary	None given.	Good.
J. Hatt's Sons	To erect fire escape and guard belt	None given.	Good.
Dalrymple & Faitoute	No orders necessary	None given.	Good.
Central Planing Mills	To guard pulleys and belts	Complied with.	Good.
Ripley & Son	To guard belt	Complied with.	Good.
Chapin Hall Lumber Co.	To guard pulleys	Complied with.	Good.
Newark Planing Co.	No orders necessary	None given.	Good.
C. T. Miltz	No orders necessary	None given.	Good.
Wm. Kirk	No orders necessary	None given.	Good.
F. Callowey	To guard belts and shaft	None given.	Good.
Walter H. VanWinkle	No orders necessary	None given.	Good.
J. G. & A. C. Leib	No orders necessary	None given.	Good.
M. Danklefsen	No orders necessary	None given.	Good.
William King & Co.	To guard belts	Not Complied with	Fair.
Swain & Jones	No orders necessary	None given.	Good.
Hedden & Sons	No orders necessary	None given.	Good.
John B. Oelkers	No orders necessary	None given.	Good.
Russell & Sayer	No orders necessary	None given.	Good.
George W. Reeve	No orders necessary	None given.	Good.
John Taylor	No orders necessary	None given.	Good.
Otto Bremtz	No orders necessary	None given.	Good.
Chris. Bitz	No orders necessary	None given.	Good.
Engelberger V. Barkhorn	To guard one belt	None given.	Good.
Newark Door Co.	No orders necessary	None given.	Good.
Weightman Bros.	No orders necessary	None given.	Good.
Ph. Jones & Co.	No orders necessary	None given.	Good.
Oliver Manufacturing Co.	No orders necessary	None given.	Good.
Crane & Smith	No orders necessary	None given.	Good.
National Lock Washer Co.	No orders necessary	None given.	Good.
Nonpareil Winker Co.	To guard shaft	Complied with.	Good.
Eagle Winker Co.	No orders necessary	None given.	Good.
Searls, Randall & Co.	No orders necessary	None given.	Good.
Orange			
C. B. Rutan	To erect fire escape and guard pulleys		Best.
Cummings & Mathews	To erect fire escape	Complied with.	Good.
No Name Hat Co.	To erect fire escape	Complied with.	Good.
McGall Bros.	To erect fire escape	Complied with.	Good.
F. Berg & Co.	To erect fire escape	Complied with.	Good.
E. V. Connett	To erect fire escape	Complied with.	Good.
Austin Drew & Co.	To erect fire escape	Complied with.	Good.
Puff & Yeomans	No orders necessary	Complied with.	Good.
McChesney & Fisher	To provide closet for females	Complied with.	Good.
Long & Co.	No orders necessary	Complied with.	Good.
Dougherty & Co.	No orders necessary	Complied with.	Good.
Harrup, Gist & Co.	No orders necessary	Complied with.	Good.
J. J. Perrine	No orders necessary	Complied with.	Good.
Dykman & Co.	No orders necessary	None given.	Good.
A. Brandes	No orders necessary	None given.	Good.
Porter, Crofoot & Co.	No orders necessary	None given.	Good.
Brannan & Co.	To guard pulleys	Complied with.	Good.
Barry, Quinlan & Co.	To erect fire escape	None given.	Good.
Smith & Sons	No orders necessary	None given.	Good.
Kearschers	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Orange—			
James Young & Son	No orders necessary	None given.	Good.
T. Walker	No orders necessary	None given.	Good.
Stetson & Co., hats	Shafting to be guarded		Good.
Jenkins & Dodd			Good.
John V. Livingston	No orders necessary	None given.	Good.
Wm. H. Bulkley	To guard fly wheel	None given.	Good.
G. S. Carter	No orders necessary	None given.	Good.
John H. Gegenheimer	No orders necessary	None given.	Good.
James Neil	Belt and pulley to be guarded	None given.	Good.
Orange Machine Works	No orders necessary	None given.	Good.
S. A. Davis	No orders necessary	None given.	Fair.
Thos. Cunningham	No orders necessary	None given.	Good.
Edison's Laboratory	Fly wheel and belt to be guarded	None given.	Good.
Edison's Phonograph Co.	To guard one belt	None given.	Good.
Orange Distilled Ice Co.	No orders necessary	None given.	Good.
Orange Chronicle	No orders necessary	None given.	Good.
T. O. Engling	No orders necessary	None given.	Good.
F. G. Barber	No orders necessary	None given.	Good
P. B. Fairchild	No orders necessary	None given.	Good
Smith & Dodd	No orders necessary	None given.	Good.
Thos. S. Post	No orders necessary	None given.	Good.
Marquett Bros.	To erect fire escape and guard belts	None given.	
H. G. & H. Gill	To guard pulleys	Complied with.	Good.
C. Manus & Co.	No orders necessary	None given.	Good.
Bergs	No orders necessary	None given.	Fair.
A. G. Glover	To guard fly wheel	Complied with.	Good.
Seabury's, E. Orange	No orders necessary	None given.	Best.
George Cook, E. Orange	No orders necessary	None given.	Good.
H. Bulkley	To guard fly wheel	None given.	Good.
Bloomfield—			
P. Hayden	No orders necessary	None given.	Good.
James Moffatt	To guard two belts	None given.	Good.
R. S. Grummon	No orders necessary	None given.	Good.
H. K. & T. S. Benson	No orders necessary	None given.	Good.
J. Freeman & Co.	To guard shafting	Complied with.	Good.
De Lavel Separator Co.	No orders necessary	Complied with.	Good.
Combination Rubber Co.	No orders necessary	Complied with.	Good.
S. Gilson	No orders necessary	None given.	Good.
Ellor, Law & Co.	No orders necessary	None given.	Good.
Ellor Bros.	No orders necessary	None given.	Good.
Thompson, Ellor & Co.	No orders necessary	Complied with.	Good.
Lister's Medical and Surgical Plaster Co.	No orders necessary	Complied with.	Good.
Essex Laundry	To guard fly wheel	None given.	Good.
Consolidated Safety Pin Co.	No orders necessary	None given.	Very best.
Franklin—			
Kingsland's Paper Mill	No orders given	Complied with.	Good.
Montclair—			
United States Printing Co.	No orders necessary	None given.	Good.
Millburn—			
H. Graves	No orders necessary	None given.	Good.
F. Fourrat	No orders necessary	None given.	Good.
Diamond Paper Mill	To guard belts, shaft and gears	Not complied with	Fair.
A. L. Anderson	To guard shafting	None given.	Good.
Dillon's Hat Factory	No orders necessary	None given.	Good.
Brown's Hat Factory	No orders necessary	None given.	Good.

CHANGES ORDERED AND CONDITION OF FACTORIES—SIXTH DISTRICT—Continued.

LOCATION AND NAME OF COMPANY.	CHANGES ORDERED.	Disposition of previous orders.	Health and safety.
Millburn—			
Ward's Hat Factory	No orders necessary	None given.	Good.
W. F. & J. H. Wade, pasteboard	To guard one belt	Complied with.	Good.
J. L. Meeker, pasteboard	No orders necessary	None given.	Good.
Fred Crane's Chemical Laboratory	To guard shaft and pulley	None given.	Good.
Maplewood Paper Mills	No orders necessary	None given.	Good.
Belleville—			
DeWitt Wire Co.	No changes necessary	None given.	Good.
P. Hogan	To guard pulleys and belts; hand rail on stairs	Complied with.	Good.
Oscar Nenninger	To guard belts ond pulleys	None given.	Good.
Riverside Rubber Co.	No orders necessary	None given.	Good.
Eastwood Chemical Co.	No orders necessary	None given.	Good.
Eastwood Wire Co.	No orders necessary	None given.	Good.

REPORT OF ACCIDENTS—SIXTH DISTRICT.

LOCATION.	NAME.	NAME OF COMPANY.	NATURE AND RESULT OF ACCIDENT.
Newark	John Fleet	Newark Licorice Works	Scalded in arms and face.
"	Michael Kencler	Newark Licorice Works	Scalded in arms and back.
"	Michael Devine	Newark Licorice Works	Scalded in arms and back.
"	Michael Lyons	Newark Steel Works	Fell down elevator shaft; fracture of skull.
"	Joseph Dougherty	S. S. Sargent's Harness Factory	Arm torn off while putting belt on pulley.
"	August Zeturick	Aug. Geortz's Brass Works	Finger taken off on power press.
"	James Yuill	Clark's Thread Co., O. N. T.	Foot crushed between spinning mule and post.
"	Harry Hayward	Bress & Drake Smoothing Iron Factory	Foot injured by being caught between elevator and beam.
"	Chas Kohl	Gould's Brass Stair Rod Works	Injured internally by falling down elevator shaft.
Millburn	Joseph Reitch	Diamond Paper Mill	Arm broken while putting belt on pulley.
Belleville	Frank Ford	Hogan's Hat Factory	Fell in a vat of hot dye; scalded on breast and arms.
Soho	Robert H. Sandy	Hendrick's Bros. Copper Works	Fell in gears; collar bone and several ribs broken
Newark	Fanny Wankmueller	Union Steam Laundry	Arm crushed and burned in ironing machine.
"	Edward Meyer	Seitz's Hat Factory	Caught between belt and pulley; killed.
"	Herman Rohr	Zahn's Tannery	Caught on shaft; killed.
"	Elizabeth Johnson	Vere's Fur Cleaning Factory	Caught by hair on shaft of fur picking machine; killed.
"	Joseph Haeberly	Salomon's Tannery	Fell into vat of hot tan liquor; killed.
"	Joseph Riley	Crane's Chemical Works	Arm dislocated and internal injuries; caught on fly wheel.
"	James Moran	Kitchell's Bag Frame Co.	Injured in breast by bursting of emery wheel.
"	James Murry	New Jersey Zinc Works	Foot burned by melted metal.
Soho	James Connors	Worthen & Aldrich Print Works	Drawn over shaft; injured in shoulders and knees.
Newark	Teresa Locket	Meyer Mercy Mfg. Co.	Caught on shaft of forming machine; injured in head, arms and legs.

ACCIDENT-PREVENTING DEVICES APPLIED TO MACHINES.

BY JOHN H. COOPER, PHILADELPHIA, PA.
(MEMBER OF THE SOCIETY OF MECHANICAL ENGINEERS.)

When considering the possibility of damage to any machine while in service—an event likely to happen, as all experience teaches—the application of preventives would seem to be desirable. To provide machines with safeguards at every danger point, having for their object the protection of the attendant against injury, would seem equally desirable. When the dangers incident to rupture are very great, extraordinary precautions become necessary. The law-makers, not satisfied with the security afforded by one safety-valve on each independent steam-boiler, which may become inoperative by defect or neglect, have ordered *two* of good make, and that they shall be tested each working day, thus making surety doubly sure.

A well-planned legal act may have good effect; as, for instance, greater safety in the use of steam-boilers and economy of pump repairs are gained by the use of independently driven feed pumps; and the passage of this part of the Philadelphia Boiler Ordinance has wiped out the excuse of engine attendants, that low water was caused by their inability to keep the feed pump in good working order, because it was attached directly to the engine, and therefore was constantly running and as rapidly wearing out its packing and itself.

Every imperfect machine is liable to accident, which must happen sooner or later. It is like a strong chain with one weak link, whose strength cannot be counted as more than that of its weakest part. The nearer the approach is made to uniformity of strength and capacity for wear in all parts of a machine, the further away is accident removed from that machine. In the use of materials

for any machine or structure, care must always be taken to not exceed, by the stresses applied, the "elastic limit;" safety is only to be secured and preserved by keeping fully within this boundary.

In cases where breakage is imminent from the nature of the work to be done and the circumstances of use, a certain part of the machine is designed to receive a "breaking piece" of trifling cost, which will hold the parts in place for all regular work, but will yield to unexpected strain and give warning of its failure, as, for instance, the delivery spouts of grain drills, which may at any time strike a hidden root or stone, when a frail wooden pin yields to the pressure and saves the machine.

Instantaneously-acting stop-motions may be mentioned as live precautions, such as are applied to card-making machines, to weaving looms, and the like, for effecting a sudden stoppage when the card wire has gone astray, or when the tardy shuttle has failed to pass the web. Such also are relief-valves applied to the cylinders and pipes of water pumps and to steam-motor cylinders, for sudden relief from destructive strains due to confined water.

The safety pinion of Mr. Fogg, of Waltham, Mass., is of this character, and consists in attaching one of the pinions of the train to its arbor by means of a screw-thread, so that, when it is driven in the direction it is intended to run, it will be down in its place and in gear, but in the event of the breakage of the mainspring, the force of the recoil will cause it to revolve in the opposite direction, when it will rise on its arbor out of gear with the wheel into which it takes, thereby avoiding all liability of derangement of the train of gearing.

Some machines are destined to early destruction through lack of parts which should be designed for yielding to sudden strains and blows.

The writer, some years ago, perfected a machine for beating gold, in which all previous attempts had succeeded only in beating itself to pieces. The solution of the problem was completely accomplished by judiciously connecting together, with elastic intermedia, all the parts of the machine concerned with the reciprocating movements of the hammer, and these interposed cushions were made in simple form, of such common material as wood and leather.

All engineers who have grappled with the problem of large steam

and power hammers know the value of the knowledge which enables them to apportion and locate aright the elastic and the rigid parts.

With the lack of precision in certain moving parts of a machine end of means for adjustment of the same when worn or deranged, there results injuries to delicate and costly parts which are beyond repair.

For machines in which a punch shall unerringly enter a number of dies in swift succession and never strike their edges while entering (which would irreparably injure them), the movements being necessarily intermittent, with measured intervals of absolute rest between each movement, during which the die is immovably locked in correct position for receiving the punch, the mechanical movement shown in Figs. 60, 61, 62, and 63 was designed and built by the writer as long ago as 1871. This represents a type of

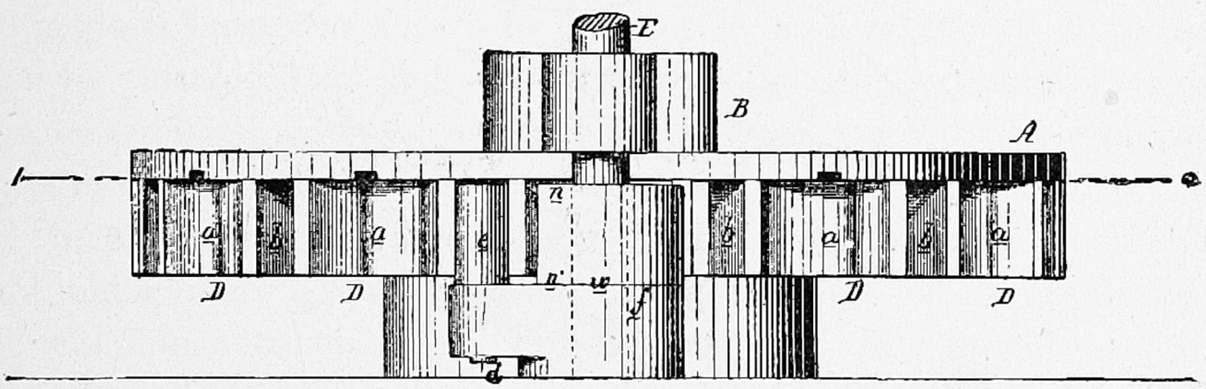

FIG. 60.

a perfection of contrivance which secures immunity from self-destruction while in action.

It consists of a wheel or disk, *A*, arranged to turn upon a shaft, *B*, as shown in Figs. 60 and 61. To the under side of this disk is attached, by screws, a series of blocks, *D*, all alike in shape, and arranged in a circle concentric with the disk, and at equal distances apart from each other. the blocks being so formed that there shall be between them spacies *b*, each space having opposite parallel sides *xx* (Fig. 61), which are also parallel with a radial line, *g*, drawn from the centre of the disk midway between the said sides *xx*. *E* is the driving shaft, to which is secured an arm, *G*, having near its outer end a pin, *d*, carrying a cylindrical roller, *e*, which is of such a diameter as to fit snugly in but pass freely through any of the spaces *b*. The hub *f* of the arm *G* is of the

peculiar segmental form illustrated in the drawing, being cut away on the radial lines mm', Fig. 61, and from the upper end n, Fig. 60, of the hub to the line n'; the periphery of this segmental hub is adapted to a segmental recess, a, formed in each of the blocks, and each recess is cut away at p. The arm G is supposed to be turning continuously in the direction of the arrows; and, as seen in Fig. 61, the roller of the arm is on the point of entering the space b'; on the further turning of the arm the disk A must necessarily be turned in the direction of its arrow, the corner i of the segmental hub f at the same time receding, so as to offer no impediment to

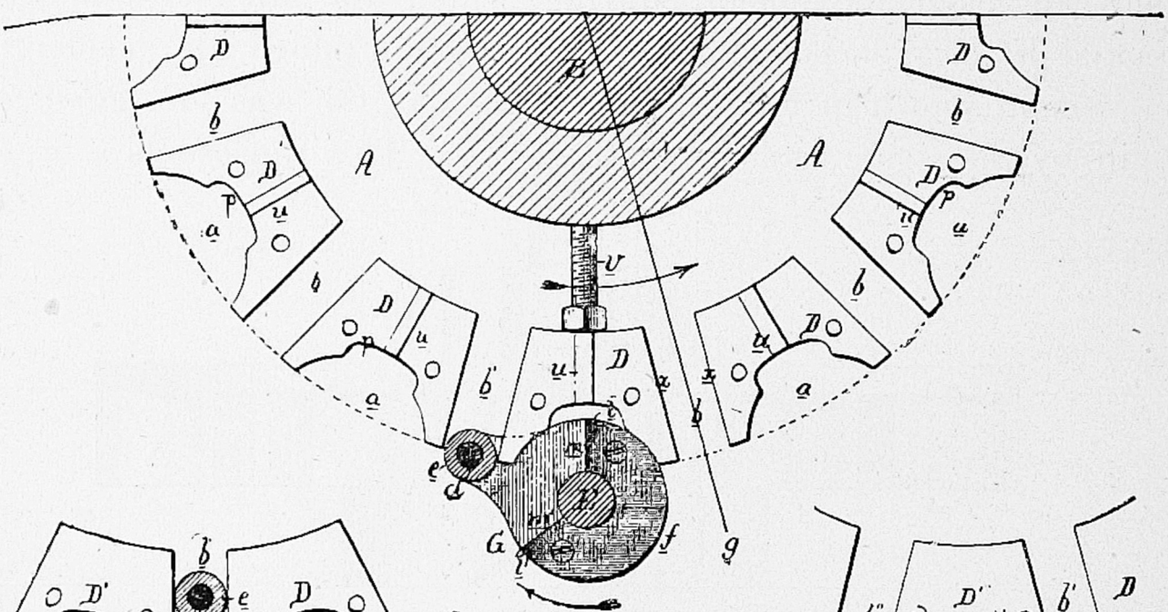

FIG. 61.

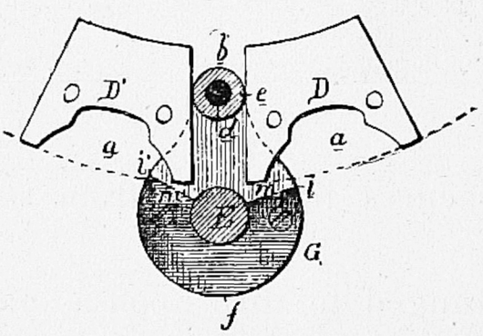

FIG. 62.

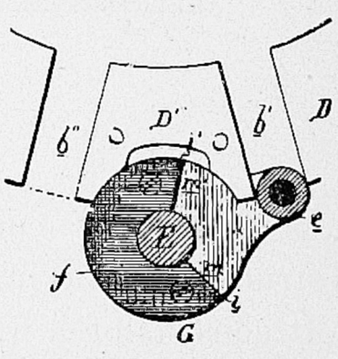

FIG. 63.

the free turning of the disk. By the time the arm G has reached the position shown in Fig. 62, the disk will have completed one-half of one movement, and the corner i of the segmental hub will be entirely free from the recess a of the block D, while the corner i' is approaching the recess of the block D'. As the movement of the arm continues, the disk A will continue to turn in the direction of the arrow, the segmental hub gradually taking its place within the recess a of the block D', until the arm arrives at the position shown in Fig. 63, when its roller e is about to leave the space b', after which it can have no further control of the disk, which is

locked by the segmental hub, owing to a portion of the latter fitting the recess *a* of the block *D'*; and the hub, as the arm continues to turn, will continue to retain and lock the disk until its roller *e* enters the next space b^2, Fig. 63, when the disk, freed from the control of the hub, will commence a second movement. It will be seen that the disk is controlled in its movements by the roller of the arm *G*, and that the locking of the disk is effected by the segmental hub, the several parts being so accurately arranged in respect to each other that the disk is never free from the control of the hub until the roller is in a position to turn the disk; in other words, as the arm *G* revolves the disk is either being moved by the roller of the arm or is locked by the hub of the same. The recesses *p* in the recesses *a* of the blocks are necessary for permitting the corners *i* and *i'* of the hub to take the course pointed out in the said recesses *a*. Although the segmental portion of the hub may be made separate, as shown by the line *w*, and to secure it to the arm by suitable bolts and screws, so that the said segmental portion can be adjusted at pleasure, or renewed when worn, to be replaced by a new segment.

The above-described movement is applicable to many machines, and under many circumstances, but one example of its applicability will suffice to illustrate the importance of the invention. In moulding soap, crude blocks of that material are placed in chambers of the proper size and configuration for imparting the desired form to the block, and the pressure on the latter is accomplished by means of a heavy falling plunger, which must enter and exactly coincide with the chambers. The chambers may be formed on the disk *A*, and be arranged radially on the same or a circle concentric with the axis of the disk, and one plunger may be raised and permitted to fall successively into every chamber containing the soap. It is of the greatest importance that the dish should be immovably locked and in the proper position during the falling of the plunger, so that the latter may coincide with the chamber which it has to enter; it is also important that, as the plunger is elevated free from the chamber, the disk should be promptly and accurately moved to the desired extent for bringing another chamber directly beneath the plunger. It will be evident that the above-described mechanical movements will meet all these requirements.

The blocks *D* are made adjustable to wear and precision, as shown in Fig. 61; for instance, where each block has a rib, *v*, adapted to a radial guiding groove in the disk, and each block can be moved by means of a screw, *v*, and secured after adjustment by screws. The roller at the end of the arm can be readily removed and replaced with such a roller as may coincide with the spaces between the blocks, these spaces varying in width in accordance with the adjustment of the blocks.

Many serious accidents occur from motor engines running away when the governor belt slips or slides off its driving pulley.

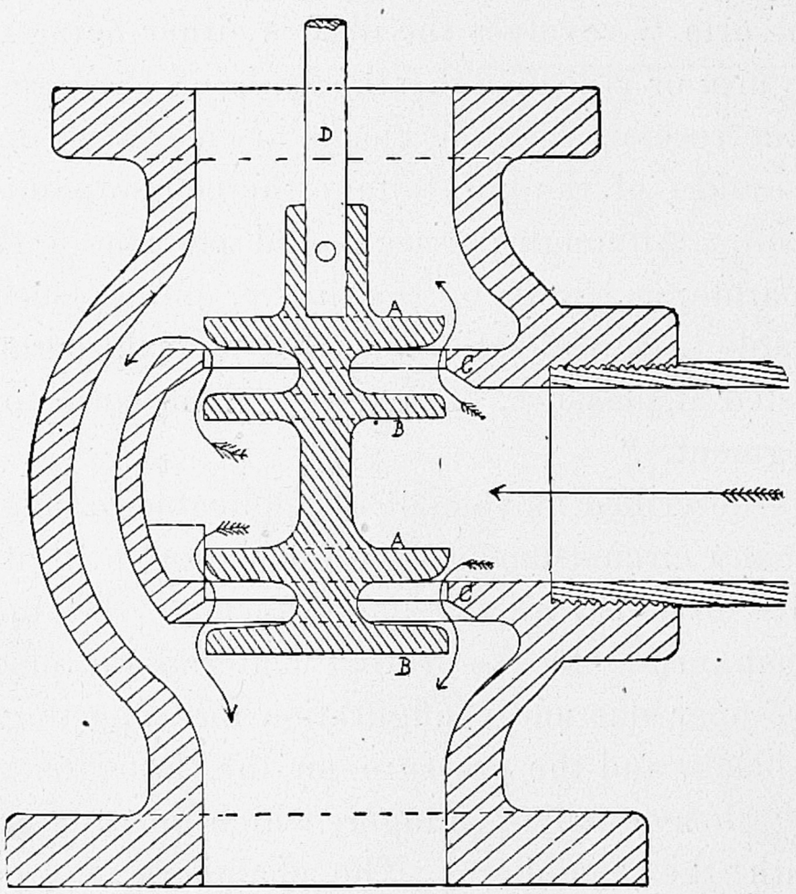

FIG. 64.

These may be prevented by the duplication of the valve disks, the invention of the writer, and shown in Fig. 64. The ordinary balanced governor valve *A* is provided with two extra disks *BB*, which do not interfere with the passage of steam to the cylinder when the governor balls are revolving in the proper working plane; but when they fall by loss of circular motion, the disks *BB* are drawn into the ways of the steam and effectually stop its flow, whence the engine comes to a standstill.

Loss of life or limb to an operative very often means the loss of

a skilled "hand" to an important industry, as well as the loss to a family of its chief means of support. It may add to the burdens of public institutions and may lessen the productive power of our mills. Therefore, the prevention of accidents, in a humanitarian sense as well as in a commercial one, should be a matter of deep interest to us, demanding the exercise of ingenuity in the devising of effective means for securing this end.

The subject is a broad one, and this paper proposes to merely touch it at a few salient points, and there leave it to the humanely wise, to whom a hint is sufficient.

On the well recognized principle that self-preservation is the first law of nature, the duty of establishing and maintaining protective appliances wherever necessary about dangerous machinery becomes apparent, and the effort to do so is worthy of praise, since we find that nature has well considered this necessity, having organized in our being ample means and methods of giving warning of approaching danger, and of guarding us against injury, which are at once effective and benificent.

Almost any machine has places about it which will pinch the flesh, mash a finger, or crush a bone, and it will perform these cruel acts upon anyone who thrusts his fingers into its open jaws.

With the exercise of ingenuity and care for protecting the machine against injury to itself, the attendant may be protected also, and if proper safeguards be thrown around a machine, with ordinary care and with instructions that may be given the attendant can perform all the work necessary about and with the machine with perfect safety to himself, thus preserving machine and man; while the employer, who may be held responsible for accidents occurring from exposed machinery which might have been protected at little cost, will have performed his whole duty.

A great number of accidents is caused through loss of presence of mind by the eagerness of work people to get through their work expeditiously, under threat of punishment if they do not. The largest contributions to the list of accidents are amputations and maimings of dexter hands, due to this eagerness. If urging must be done, these results of experience call loudly for safeguards and warning mechanism, and the enforcement of stringent rules for

safety, which shall be binding alike on employers, on foremen, and on the hands themselves.

Dr. G. C. Swallow (inspector of mines for Colorado), says: "The greatest number of accidents on the hoisting cage happen from neglect of ordinary caution. It is noteworthy that visitors to mines do not come to grief. It is always the men best acquainted with the workings who tumble down winzes or absent-mindedly ring the wrong signal. Careful as a miner may be, there comes a moment of forgetfulness, which is perhaps the critical moment for him." "After all, the great safeguard against mining accidents is the ever-present realization of danger, and the consequent habit of caution. On this ground some mining men condemn safety-catches to cages and devices to prevent overwinding, thinking it better to trust to the watchfulness of the engineer than to any mechanism which is liable to rust and to fail just at the time—one instant out of hundreds of days—when it should come into play."

Dr. Swallow suggests that mine cages be completely enclosed by strong wire netting of a mesh too small for the hand or foot to pass through, in order to prevent accidents to these members while passing the framing of the cage ways. The top should be well protected by similar means against accidents from objects falling down the shaft upon the cage. Other means of convenience and safety may be noted in this connection, as, for instance, sliding doors of light, open framework under control of an operator, may be fitted where needed for quick movement. A free space of two inches or more allowed all around an open hoisting cage has been insisted upon to prevent damage to the inadvertent foot projecting over the platform. Of all automatic mechanism it may be said: Those combinations which are much used need constant looking after so as to avoid accident by the failure or derangement of excessively worn parts; and those which are little used, to avoid accident by non operation when wanted.

To prevent accidents* happening from belts winding around

*The writer has been favored with the perusal of a copy of a work published by the "Society for the Prevention of Accidents in Factories," illustrated by 42 plates, with a tri-lingual text. This assemblage of appliances and apparatus proves on examination to be a veritable encyclopædia of ingenious and practical means for the prevention of accidents in factories, and of injury to the operatives working therein;

shafts or couplings of the same, simple and cheap hooks or belt-rests may be devised for and attached in the needed places. They may be located as at *C*, Fig. 65, to prevent a belt from sliding off the pulley, and others, as *CC*, to hold the belt in safe position when off.

In the belt carriers of Mr. Biedermann, which are formed of a bent flat iron bow, *C*, Figs. 66 and 67, generally concentric with

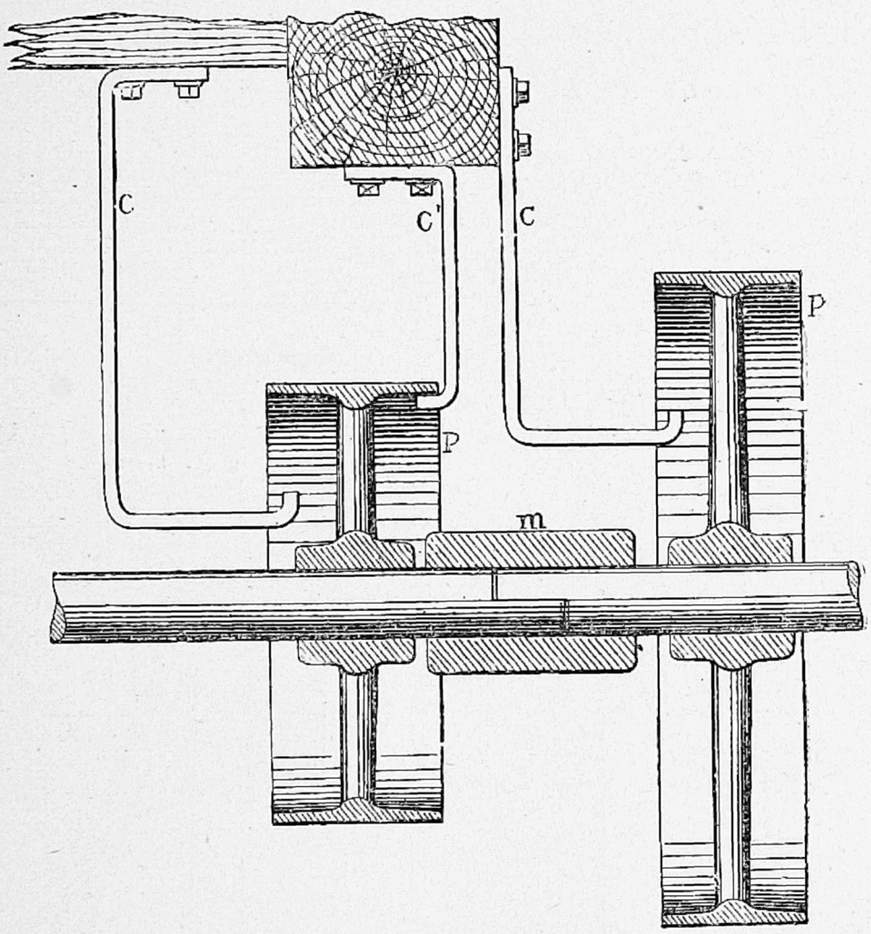

FIG. 65.

the rim of the pulley and around, say four-fifths of its diameter, and carry four to six hook-bolts which project in a circle a few inches less than the pulley rim, the first bolt being situated at a

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it embodies the full record so far as completed by this committee, up to the year 1889, covering twenty years of active existence.

The self-appointed task assumed by this committee having already accomplished remarkable results, seeks, by a well-directed public spirit, through this publication, to diffuse them among manufacturers everywhere.

This publication, from which aid has been received in the preparation of this article, is, therefore, recommended to the attention of all those who desire to perfect the safety side of machines, as well as those who take more interest in the manufacturing problems of the day than in the mere mercenery outcome of them. J. H. C.

point where the belt is taken up, and the last where it is paid out. When the belt is dismounted it is supported by these bolts, retaining a curved position, and is ready to be remounted; it is enough to lift it gently with the long-arm *Q*, surmounted by a curved finger, and bring it in contact with the pulley, when it is immediately carried away upon the pulley *P* without the least exertion.

In the case of a horizontal belt, which is taken up at the top of the pulley, the appliance is fitted rather higher, so that the first bolt may be brought as close as possible to the rim of the pulley;

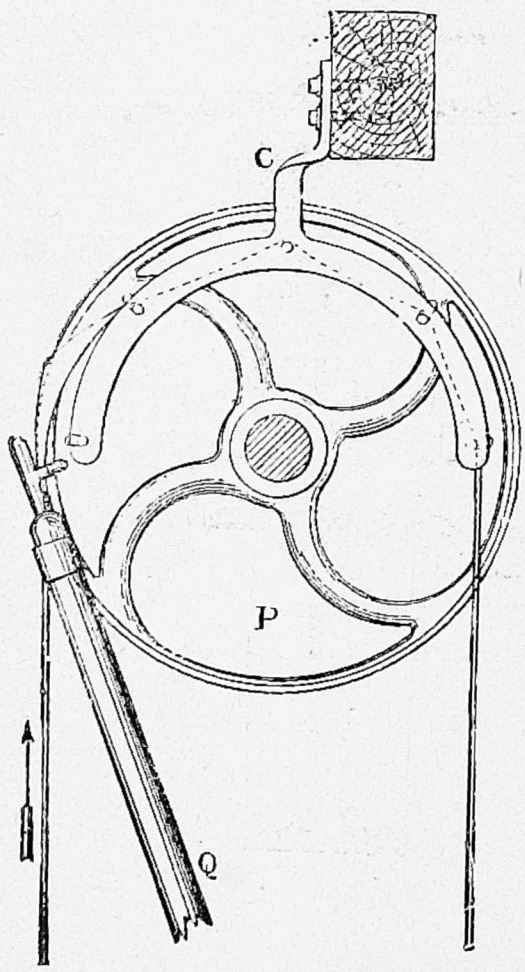

FIG. 66.

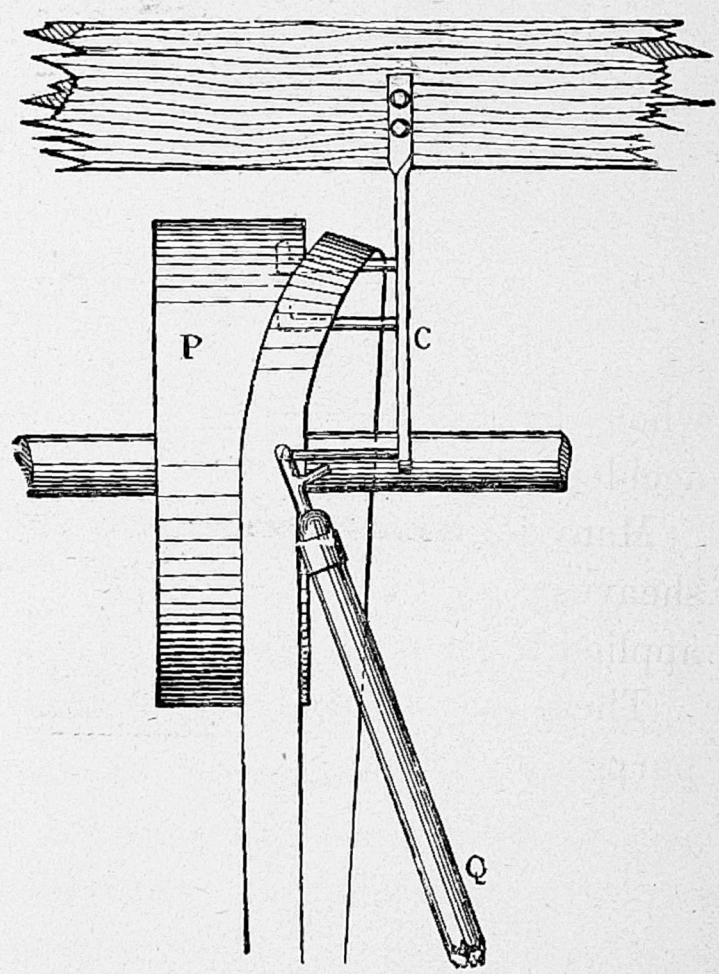

FIG. 67.

this bolt being removed from *a* to *a'*, to allow the long-arm room to guide the belt and to set it in its real position on the pulley. See Fig. 68.

F is a light fork of hard wood, which prevents the appliance from being bent against the shaft when the belt happens to repose upon it. This fork does not touch the shaft when the belt is on the pulley. When the belt is horizontal and taken up from underneath, the same kind of appliance is used, but in a reverse manner, Oblique belts whose angle does not exceed 45° may retain the

appliance in its concentric form; but when it exceeds 45° the form adopted for horizontal belts should be used. Workmen frequently indulge in the bad habit of taking both ends of a belt (which is off the pulley and resting on a running shaft) in one hand and of pressing them together, in which case a fold is apt to be formed on the slack part which is liable to be drawn in under the tight part, and the

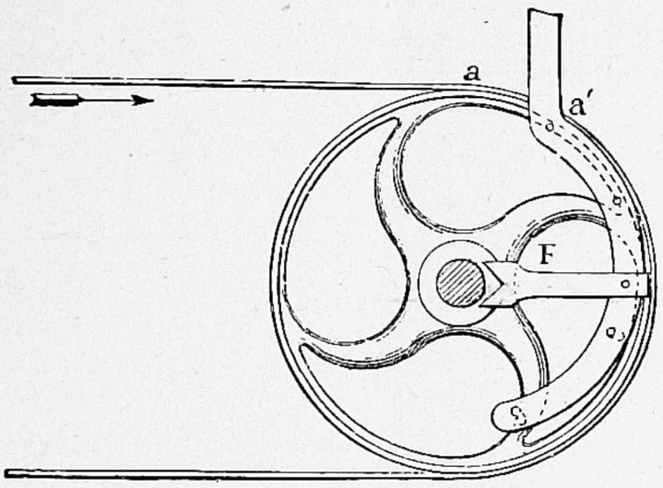

FIG. 68.

whole be rolled up rapidly on itself on the shaft, with risk of accident to any one who may get caught in its drawing up folds.

Many accidents occur from ropes and chains running off their sheaves; an idea is given in Figs. 69, 70, 71 and 72, of guards applied to such sheaves.

These may be modified in a multitude of ways, according to the purpose to be served, whether as a protection to the hand, where

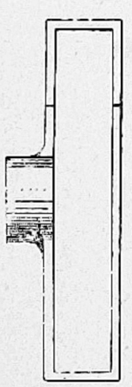

FIG. 69.

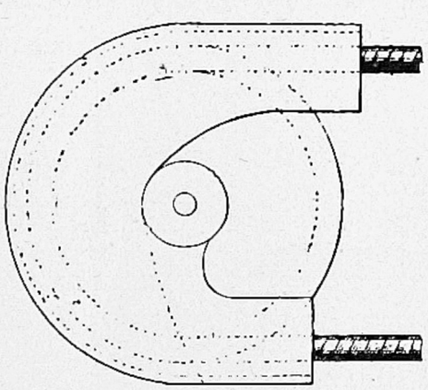

FIG. 70.

the rope must be taken hold of, or as a safety device to the machine itself, for hoists, cranes, and the like, where dislodged ropes would wreck the machine.

To prevent rolling wheels from running over any object in its

way, a rail guard, shown by Figs. 73, 74, and 75, is provided and attached.

Devices such as these for preventing accidents to machines and their attendants might be reproduced almost indefinitely.

As new "hands" are coming into mills all the time, who are presumably ignorant of the dangers surrounding them and of the

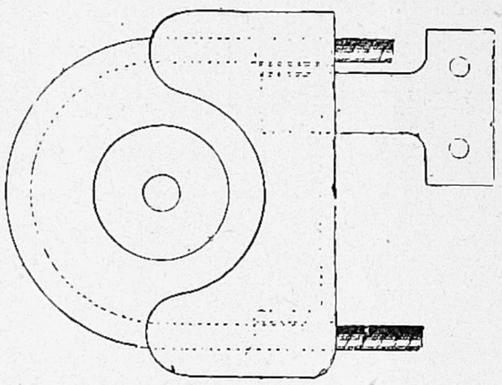

FIG. 71.

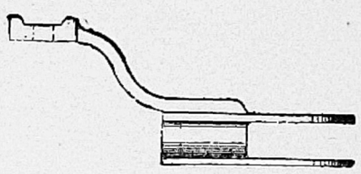

FIG. 72.

constant care which is necessary to be exercised over their persons at all times, and so may meet with accident from such causes, it is desirable to have plainly posted rules which, if enforced, might enable them to avoid injury.

A rule forbidding the cleaning of shafts and wheels, while in motion, with "waste" or rags taken in hand, would save many of these all-important members from mutilation or loss.

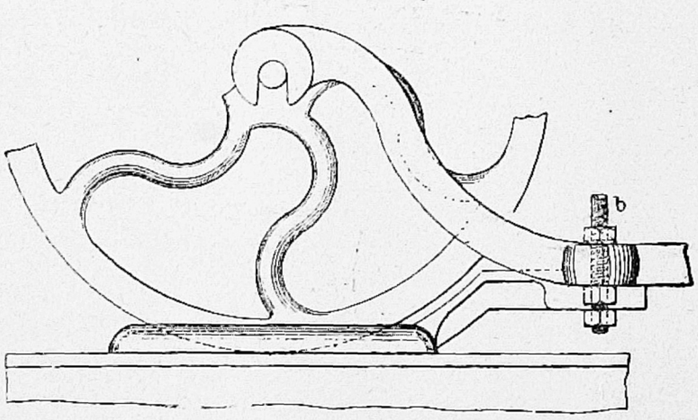

FIG. 73.

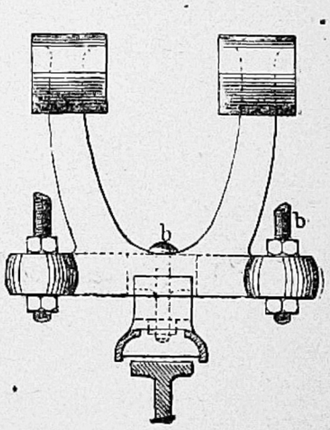

FIG. 74.

Stringent, clearly understood rules in regard to starting the motive engine, which should be done only on well-determined signals in cases where repairs are going on in any part of a mill, that no accident may occur to the men at work upon standing machinery; and, conversely, plainly visible and easily accessible

alarm apparatus should be located at proper places in all the work-rooms, which are to be used in cases of accident for signaling the engineer to stop the motive engine at once.

Much has already been done, but much yet remains substantially to protect the attendant against projecting wedges, keys, set-screws,

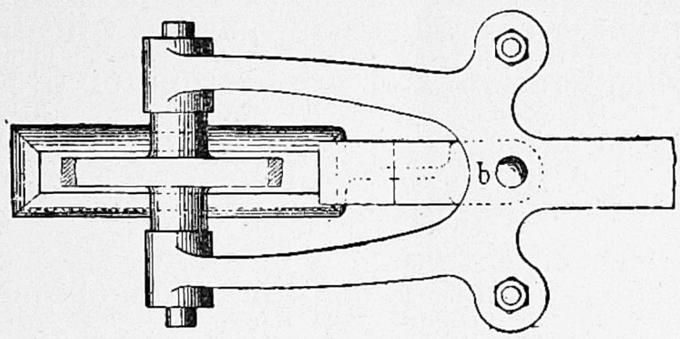

FIG. 75.

nuts, grooves, and the like of machinery in motion, which are so liable to catch his clothing and scarify his flesh.

Many serious accidents have happened from this source, and the exercise of common ingenuity with uncommon vigilance seems necessary to reduce their number.

The usual methods of protective boxing to belts, ropes, shafts, and pulleys, where they pass through floors, should receive attention, as their importance demands, and there are peculiar cases of these parts of transmitting machinery which need critical looking after.

The engineer on duty must not be permitted to wear garments with loose fluttering ends; the same advice may be extended to all attendants, male and female, and to workmen on machine tools or any rapidly going machines.

The subject is an important one, not only in its humanitarian aspects, but in its promotion of increased production, by insuring full confidence to every operative that there is no such thing as harm in any machine, and that accident to man and machine are alike nearest the impossible.

Much may be said of the grandeur of our industrial systems and machinery, of the excellence of our contrivances, which will do almost everything except think and talk, yet with their development and use comes a long list of distressing accidents, apparently beyond our power to prevent.

Let us hope that from another presentation of this subject, a thought will be added to the many with which the engineer has to deal, and that he will employ it for the safety of machines and of men; that the growing intelligence of workmen will lead them into habits of greater watchfulness while in places of danger and to a more prompt obedience to orders respecting the care of machines as well as of themselves; and that masters will take a "holding turn" in the consideration and application of protective devices wherever necessary.

DISCUSSION.

Mr. J. L. Gobeille.—There is one line of machinery which is certainly more imperfect than anything else made in this country in this matter of danger in use, and that is the tool known as the jointer or buzz planer. The accident which usually happens is that the man, in running a small piece of wood over the knives, drops his left hand into the cutter slot. That takes off his last three fingers, or else he puts his thumb or the forefinger of his right hand into the slot and loses that. So far as I know, there has never been any accident-preventing device for this tool which has been at all practicable. The only preventive which I have found for this class of accidents is to forbid a man from using a machine when he appears to be careless. It not only occurs in the largest sizes but also in the smaller sizes. I know of one 24-inch machine which is responsible for perhaps sixteen or eighteen fingers, and parts of hands, and it has been necessary to stop the use of it because men would get careless after using it for a year or eighteen months, and in an unguarded moment, generally from seven o'clock to eight o'clock in the morning, they would thrust their fingers into the slot. Another wood-working machine which is extremely dangerous is the ordinary circular saw with tilting table. All the accidents which I have observed, or of which I knew the circumstances, arose when the man, in sawing, put his hand back of the saw. That takes the hand between the fingers and cuts it up through the palm. This kind of accident has occurred several times under my own observation. It is a very serious accident, and difficult to cure without amputating one or more fingers. Another serious accident occurring in wood-working shops is to have

a piece of wood caught on the top of the saw while running at perhaps 3,000 revolutions, and which hurls the piece with an impetus of perhaps 2½ miles per minute. It catches a man either in the chest or the abdomen. That means, it knocks him senseless; he is partially paralyzed—his extremities being in a tremor for two or three days. I have had two accidents of that kind. One was the case of a young man 19 years old, who was in this State a week. This young man was struck by a piece of pine 3½ inches long, about 4 inches wide and 1¼ thick. When we showed this piece of wood to our attorneys, anticipating trouble, they laughed at the idea that such a fragment could hurt a man seriously; but it nearly killed this young man, and it did it without any abrasion, simply leaving the mark of the corner of the piece of wood just below the chest.

The President.—I knew of a case very similar to this, where a contractor, a well known man, a very skillful builder, living near me, attempted to put a piece of ordinary one-inch pine board 10 or 12 feet long against a circular saw to rip it lengthwise. It came back and struck him in the abdomen, knocking him senseless, and so injuring him that he died a few days afterward. In another case a small piece of wood flew back from a saw and cut a man's thumb very badly. I believe indeed that this is a very frequent form of accident.

*Mr. Jno. H. Cooper.**—There can be but one opinion expressed while discussing the subject of this paper regarding accidents to running machines and to the men who operate them.

Every engineer can relate in detail numerous cases which have occurred during his experience, but few care to bring such company home to their feelings, and therefore desire neither retrospection nor repetition of these painful happenings.

It is an easy task to formulate a plan of accident-preventing devices after the harm is done, but the wiser engineer forsees the possible weakness, as well as the dangers ahead, which are involved in his new enterprise, and at once embodies all the necessary means of safety in his original design.

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*Author's Closure, under the Rules.

The writing of this article has for its object the furtherance of this latter idea.

Fortunately the American mechanical engineers are not bound by such laws as we are told the ancient Hindoos have written in their books, which had the effect of closing the gates of progress. "Under pretext of care for the creature, their authors imposed the fatal principle, that a man must not address himself to discovery or invention, as Heaven had provided him all things needful."

Our more practical rule—"Take care of yourself"—brings best results when faithfully carried out, and its force is not weakened by the addition of helping to care for others, who, lacking experience, may profit by advice or material methods placed where necessary, especially when we have come to know the meaning of the hard truth expressed in the doggerel of *Hudibras*:

"Ah, me! what perils do environ
The man that meddles with cold iron."

To the consideration of the two features referred to, a third may be named, and that is upon whom the responsibility falls when accident occurs, which may happen from want of proper safeguards where machines are dangerous or carelessly constructed.

More than twenty years ago it was said by M. Dollfus, president of the Mulhouse Society for the prevention of accidents in factories: "The manufacturer owes his workmen other things besides merely their wages." Among these will surely be included their personal safety, secured to them from the moment they enter his service.

To argue the right and need of such care-taking, in the light of existing law, would be as throwing words away, and whatever may be said for or against the objects and aims of any engineer who is devising means and methods for saving the limb or life of a fellow creature while engaged in the service assigned to him, he is, without question, contributing to an extraordinary and benevolent work.

WHAT BENEFITS HAVE THE WORKING CLASSES DERIVED FROM THE PASSAGE OF THE LABOR LAWS.

BY INSPECTOR CALLAN.

Inspector Callan, of New Jersey, read the following paper :—

What benefits have the working people in New Jersey derived from the passage of the labor laws? This is a very broad question, and one that can be answered from many poins of view. In order to learn the benefits derived from the passage of these laws, it is necessary to know what they are. Whatever laws have been passed in the interest of the working classes in the State of New Jersey were not passed by the free will of her Legislature, or by the suggestions of her humanitarians, or by the advice of the inspection department, but solely by the demand of the working people themselves, expressed through their labor organizations; for, while legislatures may listen to suggestions from those individuals who have the good of humanity at heart, yet it is only those who control the greatest voting power on election day that our law makers will do anything for.

The first enactment especially in the interest of labor was the repeal of what was know as the conspiracy law, which made it a crime for workingmen to combine, to peaceably pursuade, advise or encourage their brother workingmen to enter or leave the employment of any person or corporation for the general benefit of their special trade or calling. This may now be lawfully done.

The second enactment made the store order system of payments illegal, which heretofore left the working people, more particularly those in the mining districts, at the mercy of corporations, who paid no cash wages, but forced their employees to deal at the company's stores, at such prices as they saw fit to charge.

The third enactment was a law against convict labor, where it competed with or injured honest labor, and the establishment in prisons of what is known as the piece-price system.

The fourth was an act making it illegal for horse-car companies to require more than twelve hours a day, instead of sixteen and eighteen, as formerly, from their drivers and conductors.

The fifth was a law resulting from agitation by the working people through the State, together with a general demand from the public, compelling horse-car companies to grant a system of transfer tickets on their lines, and also an act requiring railroad companies to recognize tickets as good until used.

The sixth was an act making the first Monday in September a legal holiday, to be known as Labor Day; and New Jersey was the first State in the Union to give this recognition of labor.

The seventh was the passage of an act against the employment of Pinkerton and other foreign armed detectives during labor troubles, no officer being now allowed to act except such as are citizens of the State.

The eighth was a law against the employment of children under twelve and fourteen years of age in factories, and also making it illegal to employ children, minors or women, over ten hours per day.

The ninth was the enactment of the compulsory education law, requiring all children from seven to fifteen years of age to attend school during a certain portion of the year.

The tenth is a law for the general safety, health and comfort of the working people, while employed in factories and other places, more or less confined and dangerous, or detrimental to health, under the old conditions.

The passage of these various laws, and their enforcement, have conferred great benefits on the working classes of New Jersey; but among the best and wisest of them are those regulating the employment age of children, and their compulsory education.

A full or adequate account of benefits that flow from the passage of the two laws last mentioned cannot now be given. It is only in the years to come that their good results can be fully shown in a large class of healthy and intelligent citizens. The dense ignorance, dwarfed intellects, depraved tastes and enfeebled bodies of

the children employed in factories previous to the enactment of these laws will be in strong contrast to those whom these laws have been instrumental in producing. It is no longer possible to find children of nine and ten years of age working in factories, standing on benches to make them high enough to reach machines that were made for, and intended to be operated by, the fathers or mothers of the helpless victims of an inhuman and destroying system. Children in New Jersey are not now, as formerly, allowed to work twelve or thirteen hours a day, often under cruel and heartless taskmasters, who had no regard for their mental, moral or physical conditions, but who sought only to get the most work from them for the very smallest compensation they could offer.

There is no more mingling of the sexes indiscriminately in crowded workrooms, nor is their mental culture neglected. Through the untiring efforts of Chief Inspector Fell, who went in person before the governing bodies in the different cities, schools were established for the working children, and truant officers appointed, whose duty it is to see that children who are employed during the day attend evening school, and that those whom the inspector discharges from factories, because under the legal age, attend day school.

During the last year, which was the first year of the enactment of the compulsory education act, a large number of children were returned to school, and so great was the increase in attendance on this account, that boards of education found difficulty in accommodating all of them. Many of the manufacturers in towns and cities throughout the State have recently established evening schools at their own expense for the children in their employ, in obedience to a public sentiment which demands better treatment of the young people in factories and workshops.

In a census bulletin on education, prepared by Mr. Blodgett, special expert agent for the United States government, the public school enrolment for the different States gives the States of New Jersey and Idaho a large increase in school enrolment, only slightly less than their respective increase in population.

These facts speak for themselves. When we find employers coming forward and generously establishing schools for their young employes, and a continual increase in the establishment of good

public libraries in the various cities of the State, it is a sure sign that the people of New Jersey are earnestly supporting both the letter and the spirit of these laws for the advancement of the industrial population of the State.

It is not required by employers that men and women should any longer lose their identity as human beings, and become mere machines, with numbers substituted for their names, as was formerly the case in several factories. There was a time not long since, when, should inquiry be made for John Doe at the office of a factory, it would be responded to by a telephone message, sent to the foreman in charge of the room in which he worked, to send down "Number 21." Civilization has now advanced so far in this State that John Doe himself will be called, instead of "Number 21."

Nearly all the employers in the State now approve of the labor law as a benefit to humanity; and in the district in which I am located I find little difficulty in securing their assistance and co-operation in changes required for the comfort, health and convenience of those employed in their factories.

There is far less risk to life and limb than formerly. The dangerous machinery must now be guarded. The foul-smelling, ill-ventilated workroom, with its dirt-stained walls, must have fresh draughts of pure air, and be limewashed regularly. The separate toilet, wash and dressing rooms for men and women are part of every new factory, and are introduced in old ones whenever practicable. The heated and dusty workrooms are now generally provided with cooling fans and blowers, to carry off the dust. Stairways and hallways must be kept clean and well lighted. There are better means of egress, and outward swinging doors have been put up. The fire-escape law is being vigorously enforced, and new fire-escapes are going up on all the large factories throughout the State. I am pleased to mention that many of the proprietors of factories have adopted the system of fire drill suggested by an inspector in the last annual report of our department, so that employes will be properly trained to avoid the confusion of panic likely to occur through a lack of discipline in case of fire.

But, notwithstanding all this, some of the working people themselves say that they have derived little or no benefit from these

laws. Such invariably belong to a class of persons who think it should be the duty of the inspector to turn out the employer, and put them in charge. There are others again—happily very few—who say that the laws are an injury to them, particularly where the State prevents them from putting their children to work before they are of legal employment age, and compels their attendance at school. I will here repeat the argument of one of those persons who may be taken as a fair representative of his small class. His little daughter, eleven years old, was discharged by the inspector from a factory where she was employed for the wages of $1.25 per week. "The State," he said, "has no right to interfere with my family affairs, and tell me my child is not fit to work, or that she must attend school; I am her father, and I claim the right to decide those questions for myself; besides, I am a poor man, and her wages, though small, do something to help keep the house." Upon inquiry, it was learned that this man in his own home was not only a tyrant but a drunkard. His other children did not attend school, but were obliged to go to work before they were of sufficient age; and when they were able they left him: one enlisted in the navy, the other is at present in the State Penitentiary, serving out a term for burglary.

The great majority of working people, however, declare that they have derived great benefits through the passage of the labor laws. They feel that the State has an interest in their welfare; that their lives and limbs are in less danger from unguarded machinery, or fire; that, should accidents happen to them, the State, through its agent, the factory inspector, will bring all the facts of the case to the attention of the proper authorities, who will see that justice is done for the injured, so far as the law can secure it.

Employers, too, are now beginning to realize that these laws were not passed as a menace or injury to them, but only in the interest of their employes, who have some rights, which, as good citizens, they are bound to respect.

There is one subject which I wish to mention, and I do so because many of the working people, at the first inception and agitation of these measures, and their subsequent enactment as laws seemed to have thought that, as a result of their passage, they would receive an immediate increase in wages. I regret to state that, so

far as my observation goes, wages have not increased in the State of New Jersey. Trades unions appear to be no longer able to secure advances in wages, or to prevent frequent reductions by employers, who are united, and determined to increase their profits or decrease their losses by such a course. As a rule, strikes are failures; and, when successful, it is only after a bitter contest, which necessarily results in loss and injury to those thrown out of employment, and imposes a burden upon the employed for the support of their unemployed brethren. The strong competition in the manufacture and the sale of the products of labor in factories and workshops, leaves only a small margin to the employer, in most kinds of business, the management of which is often attended with loss, especially to the smaller establishments. The most direct mode of reducing losses or increasing profits is to reduce the wages of employes, and resist any increase of their pay when it is demanded. These grinding and destructive contests between manufacturers, known as competition, continually tend to decrease wages and reduce profits. Then the great number of applicants for work in almost every department of industry, daily augmented by foreign immigration, presents to the American workingman of to-day, and the average young mechanic starting out in life, a picture by no means inviting. Among those who are naturally more gifted or more favorably situated than the masses of their fellows there are many exceptions; but I speak of the great body of the working people, and to them the present situation is not a happy one.

Excepting the building trades, in our State, there is hardly a shadow of what might be called an apprentice system; and the young man of to-day has a very limited chance to acquire thorough skill and mastery in any branch of mechanical business by which he can make a good living for himself and his family, and save something for his declining years. Nearly every trade is broken up into sections by the introduction of machinery, the result of which is to change the old order of things, from reasonable certainty of steady work and wages, to doubt, uncertainty, and fear of what the near future may bring. It is not strange that discussion, agitation and discontent unhappily prevail to a great extent among the industrial masses in the centres of population.

We are in the midst of intellectual, social and industrial activity,

such as has never been known in the history of this country. It is to be hoped that the increasing intelligence of the masses, and the growing tendency of employers, by compulsion as well as their own volition, to treat their employes fairly, or at least humanely, will show a steady improvement in their circumstances. Besides this, there is a quickened and growing public opinion that demands a just recognition of the rights of labor by employers, and that the industrial masses of America, under free institutions, shall participate more fully and generally in all the blessings of a government which they have done so much to establish and preserve, and the ultimate success and permanence of which must yet be determined by the measure of happiness and prosperity which it confers upon them.

Both the limits of this paper, and the subject with which it deals, forbid that I should here make any attempt to propose or suggest measures or remedies otherwise than by legislation of the character referred to, for the betterment of the working people. These are important social, economic and political questions to be determined by themselves, in a country where every honest man, on election day at least, however humble, is the equal of the highest. There is an increasing interest among them in public measures, of State and national importance, that are continually discussed and calculated to introduce better social conditions and larger industrial rewards for the wealth-producers of this land.

My duty in this matter is done when I have directed attention to some of the benefits which have come from the measures adopted by the Legislature of the State of New Jersey. They have, in fact, done a great deal to prepare the people of that State for a higher and better civilization, which will confer blessings upon them and upon the children of coming generations. With slow and painful steps, and often with bleeding feet, the ranks of labor and those who march with them move forward to higher and better conditions. This is the law of life, the salvation of labor, the decree of the Almighty. It cannot be repealed, it cannot be defeated, it cannot be reversed. The acts of the Legislature to which I have referred are onward steps which bring us nearer to the goal, and will in a large measure, contribute to the groundwork upon which a better social and industrial structure shall at last be raised.

MANUAL TRAINING, WHAT IT IS, WHAT IT IS NOT, AND WHAT IT AIMS AT.

BY INSPECTOR E. R. WHITE.

Inspector E. R. White, of New Jersey, read the following paper on "Manual Training, What it is, What it is not, and What it aims at":—

MR. CHAIRMAN, LADIES AND GENTLEMEN OF THE CONVENTION:—Two years ago when the convention was held in Trenton, New Jersey, I read a paper on this same subject. My aim then was simply to show what can be done. This paper is to show what should be done.

Manual training differs from industrial training in this: manual training aims at something else, while industrial training ends in itself; that is, manual training aims at fitting the pupil for successful study. For instance, penmanship is manual training; but you never write for the purpose of writing in itself; you write to convey an idea, or to describe something that you have seen or heard. Then, again, they differ as a brick differs from a completed building, since a litttle child looks upon its toy house as a thing in itself, but upon its building blocks as the instrument with which it may construct a house of any shape. Still further, while a gold brick is valuable it is not valuable for itself alone as a gold brick; but is valuable because of that which may be made out of it.

Since manual training aims to assist or fit the pupil to do more thorough, better and rapid work, it should be taught much earlier than industrial training. Is it any wonder that there is such a great difference of opinion in regard to it, since it is so imperfectly understood? There is room for grave doubts in regard to the justice, to say nothing about the practicability, of introducing the full line of industrial training in our public schools. Should not industrial

training be relegated to special schools? But industrial training is not the subject of this paper.

Manual training is neither a subject nor an art in itself. It is a method of training in all branches taught in the public schools, and, as such, we will proceed to handle it.

In order to be successful in this training it is absolutely necessary to clearly define our aims and objects, and work accordingly. In other words, we must be intelligent workers and not blind followers.

The first thing aimed at is the thorough training of the child's perceptive faculties. One of the first methods to accomplish this is clay moulding, and clay moulding as generally handled is not only useless, but, in some instances, injurious, instead of being, as it should be and may be, one of the most valuable means of sense-training at our command. We can make this more clear by outlining a lesson. But before doing so I wish to call your attention to this particular line of work, described by one of our leading papers under the date of Jan. 19, 1889, as follows:—

"In the rooms of the board of education are on exhibition several boxes of clay work, made in the lower primary grades by children between the ages of five and eight years. There are different sizes of spheres, cubes, cylinders and prisms, and all are very perfectly moulded. There are also representations of various kinds of fruits, and the moulding is very true to natural forms.

"The idea of drilling these small children in clay moulding is to inculcate a basis of the knowledge of *form*. Thus far this teaching has been very successful and has broadened the observing powers of the pupils. It is intended to select some of the best work in clay moulding and paper to combine with the educational exhibit which will be sent to the Paris exposition. The particular interest is in the fact that such perfect work has been produced by children of such tender years."

Now as to the lesson. Take, we will say, a boy six or seven years of age; give him a piece of proper, tempered material, and show him how to mould it into a sphere; this will teach him patience and some skill of hand. While both these things are valuable and desirable they are not the prime things we are aiming at in our lesson. After having completed a sphere,—perhaps of a given size,—we ask him to look around and see whether he can

find anything which is the same shape, or spherical. The probabilities are he will at first say "no;" but upon pressing further, being careful not to be too suggestive, he may remember that his ball or marbles are the same shape, and, encouraged by his success, he may suggest an apple, the door knob, etc.

It is just here that we accomplish our best work in clay moulding, namely, giving the pupil the power to correctly recognize, through his senses, the objects that are around him; and I may add that that is one of the most essential things required of any boy that spends the greater part of his time in the factory or workshop,—to correctly recognize the objects that are around him.

He will next timidly suggest that the lamp shade is shaped like one half of his sphere, and the ink bottle, the bell, etc., are of the same shape. If he should be slow in recognizing these hemispherical forms, ask him to cut his clay sphere in two. Now we have in this lesson an epitome of all the aims and plans of manual training.

Manual training sometimes dwells too much on the training of the senses alone. There must be an un-sensing process to make our training all that is to be desired. In a word, we must look after other faculties as well as the perceptive. Paper cutting, drawing, free hand and mechanical, designing and tool work are taken up in rotation, each having its proper place and purpose. The question may be asked: What is the particular outcome of all this? And in reply I would say: It developes closeness of observation, accuracy of perception, vividness of imagination, quickness of the eye, facility of the hand, care and judgment in expression. It cultivates a knowledge of relation, of fitness and adaptation, all of which are useful in the general duties of life, and which render their possessor either better producers or better able to appreciate the production of labor into which the elements of design enter. It teaches the pupil patience, thoughtfulness, order and refinement, and brings him in contact with all that is elevating in past art.

Will some opponent of manual training mention some subject taught in public schools that will give the American workman the desire and ability to make his surroundings more elevating and beautiful? Can you mention anything taught in the public schools that will be of such practical benefit to the boy and girl that may

have to spend the best years of their life in a factory or workshop? Will not such a course of study make them better mechanics? Will it not give them more confidence in themselves, to plan, arrange and produce better work? In this hurrying and bustling life of ours, do you ever realize the vast amount of labor-saving machinery that is brought into existence every day, displacing help that must find employment in some other branch of industry? Would it not be best that our system of education be so arranged that as our children leave school, and grow up into manhood, they can more readily adapt themselves to the new conditions in which they may be placed, or must we let them learn by hard knocks, as we have learned, not helping them along until their faculties are sufficiently developed, that they may gain a little foothold? Will you answer me these questions, gentlemen?

We, the advocates of manual training, are amply able to prove, by work already done, that the training which is the subject of this paper will do, and wherever properly tried has done, all and more than we ever claimed for it; and in this method of education I am happy to say little New Jersey takes the lead of all other States in the Union. About what is being done in some of our schools in regard to this highly important subject a great deal might be said. Every social problem is hindered in its solution by at least two classes; those who are opposed, and those who allow their enthusiasm to run away with their judgment. Manual training is no exception to this rule. We of New Jersey believe that the school laws of our State are more liberal and progressive in this direction than any of the other States; we think that we can show results in the direction of manual training (we do not mean industrial training) which cannot be equalled elsewhere in this country; and we believe that the arrangements, equipments and, indeed, all phases of all that belongs to factories will be the first to feel the good results of this long-needed training. This will be manifest in safer, surer and better-cared-for machinery, more economical production of driving power, more useful and progressive operatives, better homes and home surroundings, better service, hence better pay; in a word, better everything. All this we believe will be the outcome of manual training in our public schools.