

Exhibit 1

Recomposed Image for Unit 71 for the Production of "100 pairs men's medium grade, calf, welt, lace shoes, single soles, soft box toes" by Hand Method

Operation number.	Work done.	Machine, implement, or tool used.	Motive power.	Persons necessary on one machine.	Employees at work on the unit.							Operation number.
					Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.		Labor cost.	
									Rate.	Per—		
A	Measuring feet, cutting patterns, and fitting lasts to measure.	Tape measure, size stick, lasts, knife, etc.	Hand	1	1 M	Shoemaker	36	91-40.0	\$2.50	Day	\$22.9167	A
1, 11, 12, 51, 61, 85, 86, 98	Selecting and sorting stock	None used			1 M	Shoemaker	36	33-20.0	2.50	Day	8.3333	1, 11, 12, 51, 61, 85, 86, 98
2	Cutting out vamps	Knife, cutting board, and pattern.	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	2
4	Cutting out tips	Knife, cutting board, and pattern.	Hand	1	1 M	Shoemaker	36	5	2.50	Day	1.2500	4
3	Cutting out quarters	Knife, cutting board, and pattern.	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	3
5	Cutting out linings	Knife, cutting board, and pattern.	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	5
7	Cutting out facings and stays	Knife, cutting board, and pattern.	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	7
17, 18, 20, 21	Skiving upper stock	Knife and skiving table	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	17, 18, 20, 21
24	Pasting facings to linings	Brush	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	24
27	Folding top of quarters	Folding stick	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	27
B	Making wax ends	Awl and knife.	Hand	1	1 M	Shoemaker	36	33-20.0	2.50	Day	8.3333	B
25, 30	Making linings and sewing on facings and stays	Awl, needle, thimble, etc.	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	25, 30
29	Sewing back seam of quarters	Awl, needle, thimble, etc.	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	29
32a	Pasting linings to quarters	Brush	Hand	1	1 M	Shoemaker	36	5	2.50	Day	1.2500	32a
31, 32b	Sewing linings to quarters and turning tops	Awl, needle, thimble, etc.	Hand	1	1 M	Shoemaker	36	100	2.50	Day	25.0000	31, 32b
36	Sewing stays on back seam of quarters	Awl, needle, and thimble	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	36
31	Trimming edges of uppers	Welt awl	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	31
35, 159	Fastening eyelets	Punch and hammer	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	35, 159
40	Sewing back seam of vamps	Awl, clamp, and knife	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	40
41, 45	Rubbing down seams	Hammer and rubbing stick	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	41, 45
42	Pasting quarters to vamps	Brush	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	42

Operation number.	Work done.	Machine, implement, or tool used.	Motive power.	Persons necessary on one machine.	Employees at work on the unit.							Operation number.
					Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.		Labor cost.	
									Rate.	Per—		
43	Sewing vamps to quarters	Awl, clamp, and knife	Hand	1	1 M	Shoemaker	36	133-20.0	\$2.50	Day	\$33.3333	43
39	Sewing tips to vamps	Awl, clamp, and knife	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	39
C	Fitting lasts to measure	Last, knife, and hammer	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	C
60	Cutting out insoles	Knife and pattern	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	60
68	Tempering insoles	Water basin and sponge	Hand	1	1 M	Shoemaker	30	3-20.0	2.50	Day	.8333	68
63	Skiving insoles	Knife and skiving board	Hand	1	1 M	Shoemaker	36	1-40.0	2.50	Day	.4167	63
64	Rounding and fitting insoles	Knife and pattern	Hand	1	1 M	Shoemaker	36	5	2.50	Day	1.2500	64
102a	Tacking insoles to lasts	Hammer and last	Hand	1	1 M	Shoemaker	36	6-40.0	2.50	Day	1.6667	102a
65, 69	Cutting and turning insole channel	Knife and channel iron	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	65, 69
87	Cutting out counters	Knife and pattern	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	87
88-94	Skiving counters	Knife and skiving board	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	88-94
106, 108	Cutting out welts	Knife and board	Hand	1	1 M	Shoemaker	36	3-20.0	2.50	Day	.8333	106, 108
110, 115	Skiving and fitting welts	Knife and skiving board	Hand	1	1 M	Shoemaker	36	14-40.0	2.50	Day	4.1667	110, 115
95	Hammering counters	Hammer and lapstone	Hand	1	1 M	Shoemaker	36	3-20.0	2.50	Day	.8333	95
102b, 103	Inserting counters and shank and drawing uppers over lasts and tacking them to insoles.	Hammer, pincers, knife, etc	Hand	1	1 M	Shoemaker	36	116-40.0	2.50	Day	29.1667	102b, 103
116	Sewing welts to uppers and insoles	Awl, knife, clamp, pincers, and hammer.	Hand	1	1 M	Shoemaker	36	98	2.50	Day	24.5000	116
105	Pulling out tacks	Pincers	Hand	1	1 M	Shoemaker	36	2	2.50	Day	.5000	105
118	Beating up welts	Hammer, peaning iron, and knife	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	118
117	Trimming welts	Walt knife	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	117
119	Filling bottoms	Hammer and knife	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	119
48, 50, 56	Cutting out outsoles	Knife and pattern	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	48, 50, 56
55	Tempering outsoles	Water basin and sponge	Hand	1	1 M	Shoemaker	36	6-40.0	2.50	Day	1.6667	55
54	Skiving outsoles	Knife and skiving board	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	54
120, 121	Tacking on and fitting outsoles	Hammer, knife, and last	Hand	1	1 M	Shoemaker	36	11-40.0	2.50	Day	2.9167	120, 121
58	Molding outsoles	Hammer and last	Hand	1	1 M	Shoemaker	36	5	2.50	Day	1.2500	58
73, 80, 84	Cutting out heel and top lifts	Knife and pattern	Hand	1	1 M	Shoemaker	36	13-20.0	2.50	Day	3.3333	73, 80, 84
70, 81	Tempering heel and top lifts	Water basin and sponge	Hand	1	1 M	Shoemaker	36	3-20.0	2.50	Day	.8333	70, 81
122, 123	Cutting and turning outsole channels	Dividers and knife	Hand	1	1 M	Shoemaker	36	10-40.0	2.50	Day	4.1667	122, 123
124a	Sewing shanks to welts	Round awl, hammer, strap, etc	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	124a
124b	Sewing outsoles to welts	Square awl, hammer, strap, etc	Hand	1	1 M	Shoemaker	36	150	2.50	Day	37.5000	124b
127, 128	Cementing and closing channels and leveling bottoms	Brush, hammer, and long stick	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	127, 128
125	Fastening heel seats	Hammer and awl	Hand	1	1 M	Shoemaker	36	10-40.0	2.50	Day	4.1667	125
74	Nailing heel lifts together	Hammer and awl	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	74
130	Nailing on heels	Hammer and awl	Hand	1	1 M	Shoemaker	36	25	2.50	Day	6.2500	130
131	Driving slugs in heels	Hammer and awl	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	131
133	Trimming edge of heels	Hammer, shave, and knife	Hand	1	1 M	Shoemaker	36	53-20.0	2.50	Day	13.3333	133
134	Cutting down breast of heels	Hammer and knife	Hand	1	1 M	Shoemaker	36	5	2.50	Day	1.2500	134
135	Trimming edge of soles	Knife, edge plane, and edge glass	Hand	1	1 M	Shoemaker	36	50	2.50	Day	12.5000	135
137	Dividing and setting up stitches	Flat awl	Hand	1	1 M	Shoemaker	36	33-20.0	2.50	Day	8.3333	137
140	Filing and scouring edge of heels	Rasp, file, and sandpaper	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	140
141, 142, 143	Blacking, burnishing, and beading heels	Brush, lamp, and burnishing iron	Hand	1	1 M	Shoemaker	36	8-20.0	2.50	Day	2.0833	141, 142, 143
138	Blacking and burnishing edge of soles	Brush, lamp, and burnishing iron	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	138
144, 147, 148, 149	Scraping and scouring bottoms and heel tops	Edge glass and buffer	Hand	1	1 M	Shoemaker	36	21-40.0	2.50	Day	5.4167	144, 147, 148, 149
150, 151, 155	Staining and polishing bottoms	Sponge and rubbing bone	Hand	1	1 M	Shoemaker	36	20	2.50	Day	5.0000	150, 151, 155
145, 152, 153a	Striping soles and blacking heel tops and shanks	Sponge	Hand	1	1 M	Shoemaker	36	16-40.0	2.50	Day	4.1667	145, 152, 153a

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					Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.			Labor cost.
									Rate.	Per—		
146, 153b, 154, 156, 160, 161, 163, 164a	Burnishing soles, heel tops, and shanks .....	Lamp and burnishing iron .....	Hand	1 1 M	Shoemaker .....	36	33-20.0	\$2.50	Day	\$8.3333	146, 153b, 154, 156, 160, 161, 163, 164a	
129, 164b, 6, 162	Blacking, treeing, cleaning, and polishing uppers, and cleaning edge of soles.	Sponge, cloth, brush, and stick .....	Hand	1 1 M	Shoemaker .....	36	16-40.0	2.50	Day	4.1667	129, 164b, 6, 162	
	Pulling out lasts .....	Last hook .....	Hand	1 1 M	Shoemaker .....	36	3-20.0	2.50	Day	.8333	129	
	Inserting laces .....	None used .....		1 M	Shoemaker .....	36	5	2.50	Day	1.2500	164b	
	Cutting out sock linings .....	Knife, cutting board, and pattern.	Hand	1 1 M	Shoemaker .....	36	5	2.50	Day	1.2500	6	
	Inserting sock linings .....	Brush .....	Hand	1 1 M	Shoemaker .....	36	3-20.0	2.50	Day	.8333	162	

Source: Recomposed from Google digitized copy of the University of Michigan copy of **United States. Department of Labor. 1899. Thirteenth Annual Report of the Commissioner of Labor. 1898. Hand and Machine Labor.** Washington DC: GPO, Volume 2, pp. 540-544. <http://hdl.handle.net/2027/mdp.39015004311133>

Exhibit 2

Recomposed Image for Unit 71 for the Production of "100 pairs men's medium grade, calf, welt, lace shoes, single soles, soft box toes" by Machine Method

Operation number.	Work done.	Machine, implement, or tool used.	Motive power.	Persons necessary on one machine.	Employees at work on the unit.							Operation number.
					Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.		Labor cost.	
									Rate.	Per—		
1	Selecting and sorting upper stock.....	None used.....	.....	1 M	Upper-stock selector.....	37	10.0	(a)	Year	\$0.0692	1	
2	Cutting out vamps.....	Knives, cutting boards, and patterns.....	Hand	5 M	Vamp cutters.....	28-40	3-16.7	\$0.27½	Hour	.9015	2	
3	Cutting out quarters.....	Knives, cutting boards, and patterns.....	Hand	7 M	Quarter cutters.....	27-45	4-35.3	.22½	Hour	1.0324	3	
4	Cutting out tips.....	Knives, cutting boards, and patterns.....	Hand	2 M	Tip cutters.....	29, 33	1-18.7	.25	Hour	.3279	4	
5	Cutting out linings.....	Knives, cutting boards, and patterns.....	Hand	2 M	Lining cutters.....	24, 26	53.6	.25	Hour	.2233	5	
6	Cutting out sock linings.....	Mallets, dies, and blocks.....	Hand	3 M	Sock-lining cutters.....	17-22	32.0	.12½	Hour	.0667	6	
7	Cutting out trimmings.....	Mallets, dies, and blocks.....	Hand	3 M	Trimming cutters.....	17-22	1-26.0	.12½	Hour	.1792	7	
8	Perforating toe tips.....	Mallets, punches, and blocks.....	Hand	2 M	Tip punchers and scalloppers.....	26, 30	1-18.7	.25	Hour	.3279	8	
9	Cutting out doublers to quarters.....	Knives, cutting boards, and patterns.....	Hand	2 M	Quarter-lining cutters.....	22, 25	1-18.7	.12½	Hour	.1640	9	
10	Overseeing upper-cutting department.....	None used.....	.....	1 M	Foreman.....	37	30.0	(a)	Year	.2076	10	
11	Sorting vamps.....	None used.....	.....	2 M	Vamp sorters.....	31, 36	49.2	.30	Hour	.2460	11	
12	Sorting quarters.....	None used.....	.....	1 M	Quarter sorter.....	38	39.3	.25	Hour	.1638	12	
13	Throating vamps.....	Knives, cutting boards, and patterns.....	Hand	2 M	Vamp throaters.....	25, 40	1-18.7	.25	Hour	.3279	13	
14	Tying parts in bunches.....	None used.....	.....	2 M	Upper bunchers.....	30, 35	1-18.7	.30	Hour	.3935	14	
15	Marking vamps for tips.....	Tip marker.....	Hand	1 M	Tip marker.....	27	20.0	.22½	Hour	.0750	15	
16	Selecting doublers for quarters.....	None used.....	.....	1 M	Matcher.....	30	20.0	.22½	Hour	.0750	16	
17	Skiving vamps.....	Skiving machines.....	Steam	2 M	Vamp skivers.....	19, 27	49.2	.20	Hour	.1640	17	
18	Skiving tips.....	Skiving machines.....	Steam	2 M	Tip skivers.....	20, 25	49.2	.17½	Hour	.1435	18	
19	Skiving doublers.....	Skiving machine.....	Steam	1 M	Doubler skiver.....	29	39.3	.17½	Hour	.1146	19	
20	Skiving trimmings.....	Skiving machines.....	Steam	2 M	Trimmer skivers.....	22, 30	49.2	.22½	Hour	.1845	20	
21	Skiving quarters.....	Skiving machines.....	Steam	2 M	Quarter skivers.....	26, 32	49.2	.25	Hour	.2050	21	
22	Matching and marking parts for stitching room.....	Pencil.....	Hand	1 M	Distributor.....	31	39.3	.25	Hour	.1638	22	
23	Marking linings.....	Stamps.....	Hand	3 F	Lining stampers.....	17-20	1-36.7	.15	Hour	.2418	23	
24	Pasting facings to lining pieces.....	Brushes.....	Hand	3 F	Facing pasters.....	20-25	1-36.7	.15	Hour	.2418	24	
25	Sewing facings to linings.....	Sewing machines.....	Steam	3 F	Facing stitchers.....	21-26	1-56.0	.12½	Hour	.2417	25	
26	Marking places for second-row stitching.....	Markers.....	Hand	3 F	Second-row markers.....	18-20	58.0	.12½	Hour	.1298	26	
27	Folding top of quarters.....	Folding sticks.....	Hand	3 F	Folders.....	18-20	1-36.7	.12½	Hour	.2015	27	
28	Sewing second rows.....	Sewing machines.....	Steam	3 F	Second-row stitchers.....	20-25	1-36.7	.15	Hour	.2418	28	
29	Sewing back seam of quarters.....	Sewing machines.....	Steam	2 F	Top closers.....	20, 25	1-4	.15	Hour	.1510	29	
30	Making linings and sewing on back stays.....	Sewing machines.....	Steam	6 F	Lining makers.....	18-25	3-52.0	.15	Hour	.5800	30	
31	Sewing linings to quarters.....	Sewing machines.....	Steam	3 F	Closers-on.....	18-25	1-56.0	.16	Hour	.3093	31	
32	Cementing linings and turning tops.....	Brushes and turning irons.....	Hand	6 F	Cementers and turners.....	20-25	3-52.0	.15	Hour	.5800	32	
33	Trimming edges of uppers.....	Under trimming sewing machines.....	Steam	6 F	Upper edge trimmers.....	20-34	17.4	.16	Hour	.0464	33	
34	Sewing around tops.....	Under trimming sewing machines.....	Steam	6 F	Top stitchers.....	20-34	3-34.6	.16	Hour	.5723	34	
35	Fastening eyelets.....	Gang punches and eyelet machines.....	Steam	4 M	Eyeleters.....	18-25	2-37.3	.17½	Hour	.4588	35	

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			Motive power.	Persons necessary on one machine.	Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.		Labor cost.		
									Rate.	Per—			
36	Sewing stays on back seam of quarters.	Sewing machines	Steam	1	6 F	Stayers	25-30	3-52.0	\$0.17	Hour	\$0.6573	36	
37	Blackening edge of vamps	Brushes	Hand	1	2 M	Vamp blackers	22, 25	49.2	.15	Hour	.1230	37	
38	Cementing doublers to vamps	Brushes	Hand	1	3 F	Vamp cementers	18-22	1-36.7	.12 <sup>1</sup> / <sub>2</sub>	Hour	.2015	38	
39	Sewing tips to vamps	Sewing machines	Steam	1	3 F	Tip stitchers	20-30	1-36.7	.16	Hour	.2579	39	
40	Sewing back seam of vamps	Sewing machines	Steam	1	2 F	Vamp closers	20, 25	1- 1.5	.25	Hour	.2563	40	
41	Rubbing down back seams	Seam-rubbing machines	Steam	1	2 M	Seam rubbers	20, 25	1- 1.5	.15	Hour	.1538	41	
42	Cementing vamps to quarters and putting on stays	Hammers and brushes	Hand	1	2 F	Vamp cementers	20, 25	1- .4	.12 <sup>1</sup> / <sub>2</sub>	Hour	.1258	42	
43	Sewing vamps to quarters	Double-needle sewing machines	Steam	1	12 F	Vampers	25-40	7-44.0	.25	Hour	1.9333	43	
44	Lacing uppers for lasting	None used			3 F	Last lacers	18-20	1-56.0	.10	Hour	.1933	44	
45	Rubbing down top seams	Rubbing irons	Hand	1	2 M	Seam rubbers	18, 20	59.0	.15	Hour	.1475	45	
46	Barring toe linings	Sewing machines	Steam	1	2 F	Lining barrers	18, 20	1- 1.5	.12 <sup>1</sup> / <sub>2</sub>	Hour	.1281	46	
47	Overseeing fitting and stitching department.	None used			1 M	Foreman	37	40.0	(a)	Year	.2662	47	
48	Cutting leather into strips for outsoles	Stripping machine	Steam	1	1 M	Outsole-stock stripper	60	23.6	.20	Hour	.0787	48	
49	Rolling outsole strips	Rolling machine	Steam	1	1 M	Outsole-strip roller	55	15.9	.20	Hour	.0530	49	
50	Cutting out outsoles	Sole-cutting machine	Steam	1	1 M	Outsole cutter	25	39.3	.25	Hour	.1638	50	
51	Sorting outsoles	Sorting table	Hand	1	1 M	Outsole sorter	30	26.2	.25	Hour	.1092	51	
52	Tying up outsoles	None used			1 M	Outsole buncher	30	11.8	.25	Hour	.0492	52	
53	Overseeing sole-leather cutting department.	None used			1 M	Foreman	60	40.0	(b)	Year	.3195	53	
54	Skiving outsoles	Skiving machine	Steam	1	1 M	Outsole skiver	40	13.9	.25	Hour	.0579	54	
55	Tempering outsoles	Water tank and rack	Hand	1	1 M	Outsole temperer	40	5.9	.25	Hour	.0246	55	
56	Rounding outsoles	Sole-rounding machine	Steam	1	1 M	Outsole rounder	35	29.5	.25	Hour	.1229	56	
57	Beveling edge of outsoles	Feather-edging machine	Steam	1	1 M	Feather edger	45	23.6	.22 <sup>1</sup> / <sub>2</sub>	Hour	.0885	57	
58	Molding outsoles	Molding machine	Steam	1	1 M	Outsole molder	45	13.9	.22 <sup>1</sup> / <sub>2</sub>	Hour	.0521	58	
59	Cementing outsoles	Brush	Hand	1	1 M	Outsole cementer	75	39.3	.12 <sup>1</sup> / <sub>2</sub>	Hour	.0819	59	
60	Cutting out insoles	Sole-cutting machines	Steam	1	2 M	Insole cutters	33, 35	49.2	.20	Hour	.1640	60	
61	Sorting insoles	None used			1 M	Insole sorter	35	19.7	.25	Hour	.0821	61	
62	Tying up insoles	None used			1 M	Insole buncher	35	19.7	.25	Hour	.0821	62	
63	Skiving insoles	Skiving machine	Steam	1	1 M	Insole skiver	35	11.8	.25	Hour	.0492	63	
64	Rounding insoles	Sole-rounding machine	Steam	1	1 M	Insole rounder	28	28.1	.25	Hour	.1171	64	
65	Channeling insoles	Channeling machines	Steam	1	2 M	Insole channelers	28	1-18.7	.22 <sup>1</sup> / <sub>2</sub>	Hour	.2951	65	
66	Cutting across insoles	Knife	Hand	1	1 M	Insole slasher	18	34.7	.15	Hour	.0868	66	
67	Tying and bunching insoles	None used			1 M	Insole buncher	38	3.9	.15	Hour	.0098	67	
68	Tempering insoles	Sponge and water basin	Hand	1	1 M	Insole temperer	38	19.7	.12 <sup>1</sup> / <sub>2</sub>	Hour	.0410	68	
69	Turning up insole channels	Channel-turning machine	Steam	1	1 M	Channel turner	18	19.7	.12 <sup>1</sup> / <sub>2</sub>	Hour	.0410	69	
70	Tempering heel stock	Water tank	Hand	1	1 M	Heel-stock temperer	60	7.9	.17 <sup>1</sup> / <sub>2</sub>	Hour	.0230	70	
71	Skiving heel stock	Skiving machine	Steam	1	1 M	Heel-stock skiver	60	13.9	.17 <sup>1</sup> / <sub>2</sub>	Hour	.0405	71	
72	Rolling heel stock	Rolling machine	Steam	1	1 M	Heel-stock roller	60	13.9	.17 <sup>1</sup> / <sub>2</sub>	Hour	.0405	72	
73	Cutting out heel lifts	Mallet, die, and block	Hand	1	1 M	Heel-lift cutter	28	1-38.3	.22 <sup>1</sup> / <sub>2</sub>	Hour	.3686	73	
74	Pasting and nailing heel lifts together	Hammers, brushes, and dies	Hand	1	4 F	Heel builders	30-40	2- 8.9	.50	100 pairs	.5000	74	
75	Cutting out rands	Splitting machine	Steam	1	1 M	Rand cutter	26	3.0	2.50	Day	.0125	75	
76	Curling and shaping rands	Rand-curling machine	Steam	1	1 M	Rand curler	26	5.9	2.50	Day	.0246	76	
77	Tacking rands to heels	Rand-fastening machine	Steam	1	1 M	Rand fastener	22	32.8	1.75	Day	.0957	77	
78	Cutting off rand ends	Lever and knife	Foot	1	1 M	Rand trimmer	17	19.7	1.25	Day	.0410	78	
79	Compressing and molding heels	Heel-compressing machine	Steam	1	1 M	Heel compressor	60	27.6	1.25	Day	.0575	79	
80	Cutting leather into strips for heel tops	Stripping machine	Steam	1	1 M	Top-lift stock stripper	25	3.9	2.00	Day	.0130	80	
81	Tempering top-lift stock	Water tank	Hand	1	1 M	Top-lift stock temperer	25	2.0	1.75	Day	.0058	81	
82	Skiving top-lift stock	Skiving machine	Steam	1	1 M	Top-lift stock skiver	25	2.0	1.75	Day	.0058	82	
83	Rolling top-lift stock	Rolling machine	Steam	1	1 M	Top-lift stock roller	25	2.0	1.75	Day	.0058	83	
84	Cutting out top lifts	Cutting machine	Steam	1	1 M	Top-lift cutter	25	7.9	2.25	Day	.0296	84	
85	Sorting top lifts	None used			1 M	Top-lift sorter	28	7.9	2.50	Day	.0329	85	
86	Sorting and arranging counter stock	None used			1 M	Counter-stock sorter	35	9.1	2.00	Day	.0303	86	
87	Cutting out counters	Counter-cutting machines	Steam	1	2 M	Counter cutters	23, 40	18.3	2.75	Day	.0839	87	
					2 M	Counter cutters	23, 40	18.3	2.25	Day	.0686		
					2 M	Counter cutters	23, 40	18.3	2.00	Day	.0610		
					1 M	Counter cutter	40	9.1	1.83 <sup>1</sup> / <sub>2</sub>	Day	.0278		
					2 M	Counter cutters	23, 40	18.3	1.75	Day	.0534		
					1 M	Counter cutter	23	9.1	1.50	Day	.0228		
88	Skiving counters to thickness	Skiving machines	Steam	1	2 F	Counter skivers	24, 35	17.5	5.00	Week	.0243	88	
89	Skiving bottom edge of counters	Skiving machine	Steam	1	1 M	Counter skiver	33	9.1	2.25	Day	.0341	89	
90	Skiving bottom and top of counters	Skiving machines	Steam	1	5 M	Counter skivers	28-30	45.7	2.00	Day	.1523	90	
91	Skiving top edge of counters	Skiving machine	Steam	1	1 M	Counter skiver	36	9.1	1.75	Day	.0265	91	
92	Skiving ends of counters	Skiving machines	Steam	1	2 M	Counter skivers	22, 24	18.3	1.50	Day	.0458	92	
93	Skiving ridges (left by machines) off counters	Spokeshaves and clamps	Hand	1	8 M	Counter skivers	25-40	1-13.2	2.25	Day	.2745	93	
94	Scouring counters	Buffing machines	Steam	1	2 M	Counter buffers	19, 21	13.7	1.00	Day	.0228	94	
95	Rolling counters	Rolling machines	Steam	1	2 M	Counter rollers	22	18.3	1.00	Day	.0305	95	

a Rate, \$1,250.

b Rate, \$1,500.

Operation number.	Work done.	Machine, implement, or tool used.	Employees at work on the unit.								Operation number.	
			Motive power.	Persons necessary on one machine.	Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.			Labor cost.
									Rate.	Per—		
96	Molding counters.....	Molding machines.....	Steam	1	2 M	Counter molders.....	26, 40	18. 3	\$10. 00	Week	\$0. 0508	96
					3 M	Counter molders.....	26-40	27. 4	1. 25	Day	. 0571	
97	Overseeing counter-molding department.....	None used.....			1 M	Counter molder.....	26	9. 1	1. 00	Day	. 0152	97
98	Sorting counters.....	None used.....			1 M	Foreman.....	30	9. 3	2. 75	Day	. 0426	
					1 M	Counter sorter.....	45	9. 1	2. 50	Day	. 0379	98
					1 M	Counter sorter.....	23	9. 1	2. 00	Day	. 0303	
					1 F	Counter sorter's helper.....	25	8. 8	1. 00	Day	. 0147	
					1 F	Counter sorter's helper.....	17	5. 9	. 75	Day	. 0074	
99	Overseeing counter-sorting department.....	None used.....			1 M	Foreman.....	45	9. 1	3. 00	Day	. 0455	99
100	Furnishing power for making counters.....	Engine.....	Steam	1	1 M	Engineer.....	33	1. 9	2. 75	Day	. 0087	100
101	Firing boiler.....	Shovel, poker, etc.....	Hand	1	1 M	Fireman.....	45	1. 9	1. 50	Day	. 0048	101
102	Inserting counters, shank pieces, and insoles, and pulling uppers over lasts.....	Lasting jacks, pincers, etc.....	Hand	1	8 M	Pullers-over.....	33-40	4-51. 7				102
103	Drawing uppers over lasts and tacking to insoles.....	Lasting machines, pincers, etc.....	(a)	1	8 M	Lasters.....	33-40	4-51. 7	. 07	Pair	7. 0000	103
104	Stringing toes.....	None used.....			3 M	Toe stringers.....	17-20	1-59. 3	1. 50	Day	. 2983	104
105	Pulling out tacks.....	Tack pullers.....	Hand	1	4 M	Tack pullers.....	16-18	2-37. 3	1. 25	Day	. 3277	105
106	Cutting leather into strips for welts.....	Knife and gauge.....	Hand	1	1 M	Welt stripper.....	26	11. 5	. 25	Hour	. 0479	106
107	Scarfing ends of welt strips.....	Scarfing machine.....	Steam	1	1 M	Welt scarfer.....	30	9. 5	. 15	Hour	. 0238	107
108	Cutting strips to uniform width for welting.....	Welt-cutting machine.....	Steam	1	1 M	Welt cutter.....	35	4. 3	. 25	Hour	. 0179	108
109	Cementing ends of welt strips.....	Brushes and mallets.....	Hand	1	2 M	Welt cementers.....	26	13. 8	. 15	Hour	. 0345	109
110	Skiving welt strips to uniform thickness.....	Skiving machine.....	Steam	1	1 M	Welt skiver.....	32	1. 9	. 25	Hour	. 0079	110
111	Cutting welting into uniform lengths.....	Tapo measure and knife.....	Hand	1	1 M	Welt measurer.....	30	1. 9	. 25	Hour	. 0079	111
112	Winding welting on reels.....	Reel.....	Hand	1	3 M	Welt reeler.....	26	6. 3	. 15	Hour	. 0158	112
113	Furnishing power for making welting.....	Engine.....	Steam	1	1 M	Engineer.....	33	0. 1	2. 50	Day	. 0004	113
114	Firing boiler.....	Shovel, poker, etc.....	Hand	1	1 M	Fireman.....	45	0. 1	1. 50	Day	. 0003	114
115	Grooving and beveling welts.....	Welt-grooving machines.....	Steam	1	2 M	Welt groovers.....	28, 35	11. 8	. 20	Hour	. 0393	115
116	Sewing welts to uppers and insoles.....	Welt sewing machines.....	Steam	1	10 M	Welt stitchers.....	30-40	6-15. 8	3. 50	Day	2. 1922	116
117	Trimming welts.....	Welt trimmers.....	Hand	1	6 M	Welt trimmers.....	25-40	1-58. 0			. 6250	117
118	Beating up welts.....	Welt-beating machines.....	Steam	1	6 M	Welt beaters.....	25-40	1-58. 0	. 30	24 pairs	. 6250	118
119	Filling bottoms.....	Knives.....	Steam	1	6 M	Bottom fillers.....	25-40	3-56. 0	. 24	24 pairs	1. 0000	119
120	Laying outsoles.....	Sole-laying machines.....	Steam	1	3 M	Outsole layers.....	42-46	1-58. 0	. 20	24 pairs	. 8333	120
121	Fitting and gauging outsoles.....	Knives and gauges.....	Hand	1	6 M	Outsole gaugers.....	38-42	3-43. 5	. 30	24 pairs	1. 2500	121
122	Cutting channels in outsoles.....	Channeling machine.....	Hand	1	6 M	Outsole channelers.....	38-42	3-56. 0	3. 00	Day	1. 1800	122
123	Turning outsole channels.....	Channel turners.....	Hand	1	6 M	Channel turners.....	16-18	3-56. 0	1. 75	Day	. 6883	123
124	Sewing outsoles to welts.....	Sole sewing machines.....	Steam	1	8 M	Outsole stitchers.....	35-40	5-14. 7	3. 50	Day	1. 8358	124
125	Fastening heel seats.....	Wire grip fast-ning machines.....	Steam	1	2 M	Heel-seat fasteners.....	20, 22	1-18. 7	1. 50	Day	. 1968	125
126	Randing out heel seats and rubbing down stitches.....	Randing-out knives and rubsticks.....	Hand	1	4 M	Heel-seat randers.....	35-41	2-37. 3	2. 50	Day	. 6554	126
127	Cementing and closing channels.....	Cementing and pounding machines.....	Steam	2	2 M	Cementers and channel layers.....	19, 40	1-18. 7	1. 50	Day	. 1968	127
128	Leveling bottoms.....	Leveling machines, hammers, etc.....	(a)	1	3 M	Botom levelers.....	30-40	1-58. 0	3. 00	Day	. 5900	128
129	Pulling out lasts.....	Last hooks and spindles.....	Hand	1	3 M	Last pullers.....	20-21	1-58. 0	1. 50	Day	. 2950	129
130	Nailing on heels.....	Heel-nailing machines.....	Steam	2	3 M	Heel nailers.....	25-27	1-58. 0	3. 25	Day	. 6392	130
					3 M	Heel nailers' helpers.....	16-19	1-58. 0	1. 00	Day	. 1967	
131	Driving slugs in heels.....	Wire grip-slugging machines.....	Steam	1	3 M	Heel sluggers.....	21-25	1-58. 0	2. 50	Day	. 4917	131
132	Relasting shoes.....	Lasts and spindles.....	Hand	1	2 M	Relasters.....	30, 40	1-18. 7	2. 00	Day	. 2623	132
133	Trimming edge of heels.....	Heel-trimming machines.....	Steam	1	3 M	Heel trimmers.....	25-30	1-58. 0	. 20	24 pairs	. 8333	133
134	Cutting down breast of heels and pounding up heel seats.....	Heel-breasting machines and hammers.....	Steam	1	3 M	Heel breasters.....	20-25	1-58. 0	2. 25	Day	. 4425	134
135	Trimming edge of soles.....	Edge-trimming machines and rand knives.....	Steam	1	4 M	Edge trimmers.....	35-40	2-37. 3	. 50	24 pairs	2. 0833	135
136	Making sole and heel joints.....	Knives and hammers.....	Hand	1	3 M	Joint makers.....	45-50	1-58. 0	2. 50	Day	. 4917	136
137	Dividing and setting up stitches.....	Flat awls.....	Hand	1	6 M	Stitch dividers.....	20-25	3-56. 0	1. 75	Day	. 6883	137
138	Blacking and burnishing edge of soles.....	Edge-setting machines and brushes.....	(a)	1	5 M	Edge setters.....	35-40	3-16. 7	. 72	24 pairs	3. 0000	138
139	Scouring breast of heels.....	Heel-scouring machines.....	Steam	1	2 M	Heel scourers.....	20, 25	1- 1. 5	1. 50	Day	. 1538	139
140	Scouring edge of heels.....	Heel-scouring machines.....	Steam	1	2 M	Heel scourers.....	38, 55	1-18. 7	2. 50	Day	. 3279	140
141	Blacking edge of heels.....	Brushes.....	Hand	1	2 M	Heel blackers.....	17, 20	1-10. 2	1. 25	Day	. 1463	141
142	Burnishing edge of heels.....	Heel-burnishing machines.....	Steam	1	2 M	Heel finishers.....	32, 38	1- 1. 5	2. 75	Day	. 2819	142
143	Beading heel seats.....	Heel-beading machines.....	Steam	1	2 M	Heel beadars.....	20, 30	1- 1. 5	2. 00	Day	. 2050	143
144	Scouring heel tops.....	Bottom-buffing machines.....	Steam	1	2 M	Heel-top buffers.....	42	1- 1. 5	2. 50	Day	. 2563	144
145	Blacking heel tops.....	Brush.....	Hand	1	1 M	Heel-top blacker.....	17	39. 3	1. 00	Day	. 0655	145
146	Polishing heel tops.....	Brush wheel.....	Steam	1	1 M	Heel-top polisher.....	25	39. 3	2. 25	Day	. 1474	146
147	Scraping blacking off nail heads.....	Knife.....	Hand	1	1 M	Heel-top scraper.....	17	39. 3	. 75	Day	. 0491	147
148	Scouring forepart of bottoms.....	Bottom-buffing machines.....	Steam	1	4 M	Forepart buffers.....	32-45	2-24. 6	2. 50	Day	. 6025	148
149	Scouring shanks.....	Shank-buffing machines.....	Steam	1	2 M	Shank buffers.....	21, 24	49. 2	2. 25	Day	. 1845	149
150	Staining and brushing forepart of bottoms.....	Brushes and brush wheels.....	(a)	1	3 M	Bottom stainers.....	38-41	1-38. 3	2. 50	Day	. 4096	150
151	Gumming and polishing forepart of bottoms.....	Brushes and brush wheels.....	(a)	1	2 M	Bottom polishers.....	25, 27	1- 5. 6	2. 00	Day	. 2187	151

a Steam and hand.

Operation number.	Work done.	Machine, implement, or tool used.	Motive power.	Persons necessary on one machine.	Employees at work on the unit.						Operation number.	
					Number and sex.	Occupation.	Age.	Time worked. h. m.	Pay of labor.			Labor cost.
									Rate.	Per—		
152	Marking and blacking shanks.....	Knives and brushes .....	Hand	1	3 M	Shank markers and blackers.....	38-42	1-22.0	\$1.25	Day	\$0.1708	152
153	Striping and burnishing forepart of bottoms .....	Stripers, burnishing irons, and lamps.....	Hand	1	3 M	Forepart stripers.....	25-29	1-22.0	1.50	Day	.2050	153
154	Burnishing shanks.....	Burnishing irons, lamps, and knives.....	Hand	1	3 M	Shank burnishers.....	33-55	1-38.3	2.50	Day	.4096	154
155	Polishing forepart of bottoms.....	Felt wheels.....	Steam	1	2 M	Forepart polishers.....	42, 50	54.6	2.25	Day	.2048	155
156	Polishing shanks.....	Felt wheels.....	Steam	1	2 M	Shank polishers.....	32, 40	49.2	2.00	Day	.1640	156
157	Waxing and brushing shanks.....	Brush wheels.....	Steam	1	2 M	Shank fakers.....	42, 50	1- 1.5	2.00	Day	.2050	157
158	Stamping firm name on bottoms.....	Stamp.....	Hand	1	1 M	Monogrammer.....	38	39.3	1.50	Day	.0983	158
159	Fastening lacing studs.....	Lace-stud machines.....	Steam	1	2 F	Stud fasteners.....	20, 25	1-18.7	1.40	Day	.1836	159
160	Cleaning edge of soles.....	Cloths, lamps, and irons.....	Hand	1	4 M	Edge cleaners.....	32-38	2-27.5	2.00	Day	.4917	160
161	Greasing, rubbing, and treeing uppers.....	Shoe trees, brushes, etc.....	Hand	1	20 M	Trees.....	30-40	13- 6.7	2.50	Day	3.2779	161
162	Inserting sock linings.....	Brushes.....	Hand	1	3 F	Sock liners.....	25-35	1-36.7	1.40	Day	.2256	162
163	Dressing and polishing uppers.....	Sponges and cloths.....	Hand	1	5 F	Dressers.....	20-26	3-13.3	1.50	Day	.4833	163
164	Cleaning shoes and inserting laces.....	Cloths.....	Hand	1	4 F	Cleaners and lacers.....	22-30	2-25.0	1.25	Day	.3021	164
165	Brushing heels and edge of soles.....	Brush wheels and cloths.....	(a)	1	2 M	Edge polishers.....	17, 20	58.7	1.00	Day	.0978	165
166	Tying shoes in pairs.....	None used.....			3 F	Strap stringers.....	20-25	1-36.7	1.00	Day	.1612	166
167	Overseeing finishing department.....	None used.....			1 M	Foreman.....	35	40.0	(b)	Year	.2556	167
168	Overseeing bottoming department.....	None used.....			30	(c)	Year				.3185	168
169	Packing shoes and marking boxes.....	Hammers, stencils, brushes, etc.....	Hand	1	5 M	Packers.....	26-29	.15	.15	Hour	.6000	169
170	Keeping machinery in order.....	Machinists' tools.....	Hand	1	1 M	Machinist.....	45	40.0	2.50	Day	.1667	170
171	Furnishing power.....	Engine.....	Steam	1	1 M	Engineer.....	30	40.0	3.00	Day	.2000	171
172	Firing boiler.....	Shovel, poker, etc.....	Hand	1	1 M	Fireman.....	40	40.0	1.75	Day	.1167	172
173	Watching establishment.....	None used.....			1 M	Watchman.....	50	40.0	1.75	Day	.1167	173
					1 M	Watchman.....	50	40.0	1.50	Day	.1000	

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