U. S. DEPARTMENT OF LABOR
JAMES J. DAVIS, Secretary
BUREAU OF LABOR STATISTICS
ETHELBERT STEWART, Commissioner

BULLETIN OF THE UNITED STATES BUREAU OF LABOR STATISTICS . . . . . No. 356

WAGES AND HOURS OF LABOR SERIES

PRODUCTIVITY COSTS IN COMMON-BRICK INDUSTRY

BY

WILLIAM F. KIRK
SPECIAL AGENT, U. S. BUREAU OF LABOR STATISTICS

OCTOBER, 1924

WASHINGTON
GOVERNMENT PRINTING OFFICE
1924

ADDITIONAL COPIES

OF THIS PUBLICATION MAY BE PROCURED FROM
THE SUPERINTENDENT OF DOCUMENTS
GOVERNMENT PRINTING OFFICE
WASHINGTON, D. C.
AT
10 CENTS PER COPY

CONTENTS.

BULLETIN OF THE

U. S. BUREAU OF LABOR STATISTICS

NO. 356 WASHINGTON OCTOBER, 1924

PRODUCTIVITY COSTS IN COMMON-BRICK INDUSTRY.

INTRODUCTION AND SUMMARY.

This report is the result of a study which was recently made of the manufacture of common building brick in the United States, beginning with the digging or gathering of the clay and ending with the loading of the brick for shipment from the plant. It shows the average time cost of labor and the average money cost of labor in manufacturing 1,000 brick; describes the processes or methods of manufacture, and the machinery and other equipment used; defines the various occupations of the wage earners in the industry; and also presents occupational wage rates or earnings and hours of labor.

The average "time cost," expressed in hours and hundredths of hours, and "labor cost," expressed in money, per 1,000 brick, are shown in Table 1 for each of the three processes of manufacture by wage districts, and for each of the six departments into which the work of manufacturing brick is divided, and for all departments combined.

The three processes of manufacture are: (1) Stiff-mud, (2) Soft-mud, and (3) Dry-clay. These processes are described on page 9.

The wage districts shown in this report were formed by grouping or combining data of States in which the average earnings per hour of employees in the industry were approximately the same, regardless of the geographical location, or by showing data for one State only when the average earnings per hour were not approximately the same as for any other State. Average earnings per hour are shown under each process and for each district in Table 5, page 11.

The brick-yard departments are: (1) Clay-pit, (2) Machine-house, (3) Setting, (4) Burning, (5) Loading, and (6) Miscellaneous.

The number of establishments for which costs are shown for departments in some instances exceed the number for all departments. This is due to the inclusion of data for one or more departments of establishments in which there was no work in the clay-pit department, no burning, no loading, etc., and the exclusion of the data for such establishments from the data used in computing time and labor costs per 1,000 brick for all departments combined. Of 17 establishments covered in district 1, one dug no clay and reported only incomplete figures on setting and burning, one reported incomplete figures on burning, and three reported no loading during the period covered, leaving 12 establishments for which complete or total cost figures are shown for all departments combined.

TABLE 1.—AVERAGE TIME AND LABOR COST PER 1,000 BRICK IN EACH

STIFF-MUD PROCESS.

District.	Clay pit.				Machine-house.				Setting.			
	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	16	118	1.17	$0.49	16	178	2.08	$0.79	13	85	1.21	$0.58
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	77	1.21	.24	9	162	2.85	.50	8	119	1.72	.34
3. Maryland, North Carolina, Virginia	10	56	.88	.25	9	123	2.02	.54	10	112	1.65	.51
4. Illinois	6	54	.37	.29	5	226	1.42	1.02	6	108	.59	.49
5. Arkansas, Missouri	3	23	1.10	.40	3	53	3.21	.89	2	21	1.54	.58
Total	44	328	.72	.33	42	742	1.86	.85	39	445	.97	.49

SOFT-MUD PROCESS.

1. Connecticut, Massachusetts	7	43	1.07	$0.47	4	65	2.72	$1.20	4	77	3.39	$1.60
2. New Jersey, New York	4	55	1.07	.59	5	190	2.71	1.31	3	39	.99	.70
3. Kentucky, Ohio, Pennsylvania	5	28	.57	.25	5	60	1.26	.55	5	40	.94	.43
4. Louisiana, Mississippi, Texas	3	24	2.01	.35	4	56	3.47	.64	4	36	2.87	.58
5. Michigan	3	15	.45	.36	3	56	1.52	1.07	2	26	1.00	1.01
Total	22	165	.88	.43	21	427	2.19	1.04	18	218	1.50	.82

DRY-CLAY PROCESS.

1. Kansas, Missouri	3	23	2.02	$0.71	3	17	1.52	$0.47	4	37	2.42	$0.84
2. Texas	3	26	1.97	.40	3	19	1.26	.28	3	23	1.70	.42
Total	6	49	1.99	.51	6	36	1.36	.35	7	60	2.02	.61

Reading line 1, of Table 1, in explanation of the table, it is seen that district 1, under the stiff-mud process includes establishments in Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, and Wisconsin, so grouped because, as has already been stated, the average earnings per hour for the employees in each of these States are approximately the same; that for 16 establishments and 118 employees, the time cost for the work included in the clay-pit department is 1.17 man hours per 1,000 brick, and the labor cost is $0.49 per 1,000; that for 16 establishments and 178 employees of the machine-house department the time cost is 2.08 man hours per 1,000 and the labor cost is $0.79 per 1,000; that for the 13 establishments and 85 employees shown for the setting department the time cost is 1.21 man hours per 1,000 and the labor cost $0.58 per 1,000; that for the 15 establishments with 59 employees reporting costs of the burning department the time cost is 1 man hour per 1,000 and the labor cost is $0.42 per 1,000; that for the 8 establishments and 52 employees for which loading department figures were available the time cost is 1.11 man hours per 1,000 and the labor cost is $0.57 per 1,000; that for the 12 establishments and 123 employees included in

DEPARTMENT AND FOR ALL DEPARTMENTS, BY PROCESS AND DISTRICT.

STIFF-MUD PROCESS.

Burning.				Loading.				Miscellaneous.				All departments.			
Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.	Establishments.	Employees.	Time cost (man hours) per 1,000 brick.	Labor money cost per 1,000 brick.
15	59	1.00	$0.42	8	52	1.11	$0.57	12	123	1.70	$0.70	12	570	8.74	$3.85
8	95	2.23	.40	7	76	1.28	.28	8	131	2.30	.53	8	578	11.95	2.37
10	64	1.41	.37	9	104	1.49	.40	9	122	1.59	.42	8	508	9.12	2.57
6	29	.26	.18	4	113	.73	.61	5	186	1.19	.84	5	637	4.34	3.32
2	5	.57	.22	1	19	2.08	.75	2	21	2.42	.70	2	147	10.27	3.22
41	252	.78	.28	29	364	.99	.53	36	583	1.50	.73	35	2,440	6.82	3.23

SOFT-MUD PROCESS.

2	8	0.65	$0.25	2	6	1.93	$1.02	2	68	5.76	$2.44	5	402	13.29	$5.82
3	25	1.15	.48	3	95	1.50	.71	5	96	1.49	.77	3	429	8.66	4.41
3	12	1.02	.45	3	17	1.59	.71	2	27	.96	.45	5	233	6.97	3.10
3	8	.62	.12	3	17	1.34	.31	4	63	3.66	.86	1	52	16.16	2.66
2	4	.23	.14	1	10	.94	.58	1	18	1.40	.94	2	118	6.27	4.41
13	57	.73	.30	12	145	1.44	.68	14	272	2.10	.95	16	1,234	8.74	4.27

DRY-CLAY PROCESS.

2	10	1.81	$0.71	4	17	2.14	$0.77	3	23	2.55	$1.00	3	119	11.23	$4.04
4	12	.97	.27	1	3	.90	.21	2	23	1.56	.52	1	20	9.33	2.57
6	22	1.15	.37	5	20	1.87	.65	5	46	1.97	.72	4	139	10.81	3.78

the miscellaneous department the time cost is 1.70 man hours per 1,000 and the labor cost is $0.70 per 1,000; and that for the 12 establishments and 570 employees of all departments for all establishments for which complete cost figures were obtained the time cost is 8.74 man hours per 1,000 and the labor cost is $3.85 per 1,000 brick.

The cost figures in the above table represent the average time cost and the average labor cost per 1,000 brick when applied to the plants and the States as grouped by districts. They do not, however, show the very great differences in costs, production, and wage rates or earnings per hour between individual plants. To illustrate the wide differences, two plants, both included in Table 1 under the stiff-mud process, have been selected for comparison. Plant "A" is in district 2 and plant "B" is in district 4. Plant "B" is very large, is equipped with the best improved machinery and labor-saving devices, and is also efficiently organized and operated, while plant "A" is small and not so well equipped, organized, and operated.

In the clay pit of establishment "A" 6 employees worked 330 hours and earned $55.50, an average earning of $0.168 per hour, and dug and loaded by hand enough clay to produce 126,000 brick, an

average of 382 brick per hour, a time cost of 2.62 man hours per 1,000 brick, and a labor cost of $0.44 per 1,000 brick. In the clay pit of establishment "B" 11 employees worked 1,337 hours and earned $1,021.41, an earning of $0.76 per hour, and dug and loaded with machinery (steam shovel) enough clay to produce 5,838,000 brick, an average of 4,366 brick per hour, a time cost of 0.23 man hours per 1,000, and a labor cost of $0.175 per 1,000.

In the machine house of establishment "A" 12 employees worked 640 hours and earned $69.50, an average earning of $0.109 per hour. Using a small brick machine they molded 126,000 brick, an average of 197 brick per hour, a time cost of 5.08 man hours per 1,000, and a labor cost of $0.55 per 1,000. In establishment "B" 80 employees worked 8,607 hours and earned $6,445.44, an average earning of $0.749 per hour. Using a large brick-making machine they molded 5,838,000 brick, an average of 678 bricks per hour, a time cost of 1.47 man hours per 1,000, and a labor cost of $1.10 per 1,000.

The setting crew of 9 employees of establishment "A" worked 375 hours and earned $69.05, an average of $0.184 per hour, and transferred by hand from the dryer to and set in kiln 102,000 brick, an average of 272 brick per hour, a time cost of 3.68 man hours per 1,000 and a labor cost of $0.68 per 1,000. The crew of 21 employees of establishment "B" worked 2,463 hours and earned $2,028.63, an average earning of $0.82 per hour, and transferred with machinery from dryer to and set in kiln 5,838,000 brick, an average of 2,370 per hour, a time cost of 0.40 man-hours per 1,000, and a labor cost of $0.33 per 1,000.

The burning crew of 3 employees of establishment "A" worked 193 hours and earned $37, an average earning of $0.192 per hour, and using wood burned 75,000 brick, an average of 389 per hour, a time cost of 2.57 man-hours per 1,000 and a labor cost of $0.49 per 1,000. The burning crew of 8 employees of establishment "B" worked 1,483 hours and earned $1,004.55, an average earning of $0.677 per hour, and using oil and steam, burned 5,685,000, an average of 0.26 man hours per 1,000 and a labor cost of $0.18 per 1,000.

The loading crew of 2 employees of establishment "A" worked 60 hours and earned $12.55, an average earning of $0.201 per hour, loaded by hand 50,000 brick, an average of 833 per hour, a time cost of 1.20 man-hours per 1,000 and a labor cost of $0.25 per 1,000. The loading crew of 46 loaders of establishment "B" worked 4,932 hours and earned $4,040.63, an average earning of $0.918 per hour, loaded with machinery 5,838,000 brick, an average of 1,184 per hour, a time cost of 0.84 man hours per 1,000 and a labor cost of $0.69 per 1,000.

The 6 miscellaneous employees of establishment "A" worked 325 hours and earned $51.50, an average earning of $0.158 per hour, and did the miscellaneous work necessary in producing 126,000 brick, an average of 388 per hour, a time cost of 2.58 man hours per 1,000, and a labor cost of $0.41 per 1,000. The 37 miscellaneous employees of establishment "B" worked 4,111 hours and earned $2,855.91, an average earning of $0.695 per hour, and did the miscellaneous work necessary in producing 5,838,000 brick, an average of 1,420 per hour, a time cost of 0.70 man hours per 1,000 and a labor cost of $0.49 per 1,000.

The average earning per hour for all employees of all departments of establishment "A" is $0.153 compared with $0.79 for those of

establishment "B" while the labor cost for "A" is $2.82 per 1,000, compared with $2.94 for "B." The time cost for "A" (17.73 man hours per 1,000 brick) is higher and for "B" (4.02 man hours per 1,000 brick) lower than for any other plant under the stiff-mud process, covered in this study. Thus it is shown that with modern machinery and good management, time cost can be greatly reduced and higher wages paid without an increase in labor money cost.

The above two plants compared were those having the greatest difference in time cost. The highest total labor money cost among stiff-mud plants was $5.92 in a plant in district 1, and the lowest was $1.16 in a plant in district 2.

RATE OF PRODUCTION.

Table 2 presents for each district under the stiff-mud and the soft-mud processes, the average production rate per man hour in the plant as a whole and in the machine-house department only. The plants included in this table cover only such as furnished detailed information for all departments into which the manufacture of brick is divided, the information for the machine house being complete and not including in any case any work of any other department.

In arriving at the average production rate for the plant, the number of employees actually necessary to operate all departments combined was multiplied by the number of hours the brick machine was in operation during the pay period covered. The aggregate man hours so obtained was then used as the divisor of the number of thousand brick produced by the machine during that period. The production rate for the machine house was obtained by the same method by using the actual number of employees (complete machine-house crews) necessary to operate that department.

The number actually necessary to man all departments or to man the machine-house department only was used instead of the number found on the pay records because it is frequently found that, owing to the change (turnover) of the personnel, the number of individuals appearing on the pay rolls exceeds the number of full-time men actually necessary to man the plant as a whole or the machine-house department alone.

By far the highest production per man hour under the stiff-mud process is in district 4, the plants of which are all located in or near Chicago. This is due to the improved machinery generally used, especially to the mechanical handling of the product, the character of the clay, and to the process of burning. The same explanation, in a large measure, also applies to district 3 under the soft-mud process.

TABLE 2.—PRODUCTION PER MAN-HOUR, ALL EMPLOYEES, AND MACHINE-HOUSE EMPLOYEES, BY PROCESS AND DISTRICT.

District.	Number of establishments.	Number of employees.		Production rate per man hour (number of brick).	
		All departments.	Machine-house department only.	All employees, all departments.	Employees of machine-house department only.
Stiff-mud process.					
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	11	501	115	130.5	545.0
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	477	127	85.9	295.7
3. Maryland, North Carolina, Virginia	8	426	80	119.8	616.6
4. Illinois	4	446	153	359.9	1,066.0
5. Arkansas, Missouri	2	126	37	98.5	335.6
Total	33	1,976	512	221.8	763.4
Soft-mud process.					
1. Connecticut, Massachusetts	2	173	37	100.6	470.5
2. New Jersey, New York	3	366	113	125.2	403.7
3. Kentucky, Ohio, Pennsylvania	5	198	56	214.4	767.8
4. Louisiana, Mississippi, Texas	1	53	12	51.5	227.3
5. Michigan	2	115	40	168.0	482.1
Total	13	905	258	140.9	482.6

COST OF MANUFACTURE.

The manufacturing cost per 1,000 brick shown in Table 3 below covers the labor cost in all the departments into which the industry is divided in this study, and also the cost of materials and repairs. This cost, of course, is limited to only such plants as were able to furnish complete information covering the costs here specified.

The lowest cost ($5.78 per 1,000 brick) under the stiff-mud process is found in district 4, notwithstanding the fact that wage rates in district 4 are higher than in any other district under any process. The low cost is due to the improved machinery used in making and handling the product, to the method of burning, and to the great capacity of the plants, resulting in lower "time costs"—that is, less man hours per 1,000 brick in district 4 than in any other district.

The exceptionally high cost shown for district 1 under the soft-mud process is due to the method of making and handling the product, to the high cost of materials, together with the wage rates, especially when compared with the rates paid in district 4 under the soft-mud process. The clay for one plant is dug and loaded by hand onto carts, the clay for practically all plants is transferred by carts or trucks to the machine house, the dried brick of all plants are loaded by hand onto wheelbarrows or wheel cars and shoved to and set in the kilns by hand, the kilns, except those of one plant, are burned with wood or with wood and coal, and the brick of all plants are

loaded by hand from the kilns onto carts, trucks, and cars, thereby resulting in a very high "time cost" per 1,000 brick, which, of course, piles up the "labor cost."

TABLE 3.—MANUFACTURING COST PER THOUSAND BRICK UNDER EACH PROCESS OF MANUFACTURE, BY DISTRICT.

District.	Establishments.	Employees.	Manufacturing cost per 1,000 brick.
Stiff-mud process.			
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	8	334	$8.11
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	527	6.32
3. Maryland, North Carolina, Virginia	7	420	6.58
4. Illinois	5	637	5.78
5. Arkansas, Missouri	2	147	7.60
Total and average	29	2,065	6.31
Soft-mud process.			
1. Connecticut, Massachusetts	7	561	$11.14
2. New Jersey, New York	3	429	7.83
3. Kentucky, Ohio, Pennsylvania	4	165	5.80
4. Louisiana, Mississippi, Texas	2	96	5.65
5. Michigan	3	175	7.93
Total and average	19	1,426	8.24
Dry-clay process.			
1. Kansas, Missouri	4	134	$7.32
2. Texas	4	123	6.30
Total and average	8	257	6.72

A comparatively few of the stiff-mud and soft-mud plants covered in the study were found with cost figures segregated as to labor, materials, and repairs. The data so segregated were used in compiling Table 4, which shows under each process and for each district money cost per 1000 brick for labor, for materials, and for repairs, separately, and for the three items combined, and also shows the percentage that the cost of each item is of the total cost of the three combined. Some plants included in Table 3 are not included in Table 4 because data for them were not segregated as stated above.

The highest total cost under the stiff-mud process is $8.78 per 1,000 brick in district 5, segregated, $4.54, or 52 per cent, for labor; $3.11, or 35 per cent, for materials, and $1.13, or 13 per cent, for repairs. The lowest total cost under this process is $5.79 in district 4, of which $3.38, or 58 per cent, is for labor; $2.02, or 35 per cent, is for materials; and $0.39, or 7 per cent, is for repairs. The per cent that labor cost is of the total cost under this process ranges from 33 in district 2 to 58 in district 4; the per cent that material cost is of the total cost ranges from 35 in district 5 to 58 in district 2, and the per cent that cost of repairs is of the total ranges from 7 to 13.

TABLE 4.—MANUFACTURING COST PER THOUSAND BRICK, SEGREGATED AS TO LABOR, MATERIALS, AND REPAIRS, BY PROCESS AND DISTRICT, 1922.

District.	Establishments.	Employees.	Labor.		Materials.		Repairs.		Total.	
			Cost per 1,000 brick.	Per cent.	Cost per 1,000 brick.	Per cent.	Cost per 1,000 brick.	Per cent.	Cost per 1,000 brick.	Per cent.
Stiff-mud process.										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	4	188	$3.59	48	$2.83	37	$1.14	15	$7.56	100
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	2	304	2.20	33	3.91	58	.63	9	6.74	100
3. Maryland, North Carolina, Virginia	3	241	3.01	44	3.22	47	.60	9	6.83	100
4. Illinois	5	642	3.38	58	2.02	35	.39	7	5.79	100
5. Arkansas, Missouri	1	96	4.54	52	3.11	35	1.13	13	8.78	100
Total	15	1,471	3.28	53	2.37	39	.51	8	6.16	100
Soft-mud process.										
1. Connecticut, Massachusetts	3	234	$6.41	58	$3.61	33	$0.99	9	$11.01	100
2. New Jersey, New York	1	190	6.06	62	2.77	28	1.01	10	9.84	100
5. Michigan	2	130	3.82	49	3.37	44	.52	7	7.71	100
Total	6	554	5.12	56	3.21	35	.79	9	9.12	100

SCOPE AND METHOD.

This report was compiled in part from establishment cost statements covering a specified period of time whenever such cost figures were found to be available, and in part worked out from the number of thousand brick produced and the individual hours worked and individual earnings made by wage earners at their specified occupations during a sample pay period. The data were gathered by the Bureau of Labor Statistics through its agents from the records of 79 manufacturers of common building brick, employing 5,076 wage earners in 23 States for a pay period in the latter part of 1922 or early in 1923.

The "time cost" per 1,000 brick for each department was obtained by dividing the total number of one-man hours worked in the several departments during a stated period of time, by the number of thousand brick produced in that period of time.

In like manner, "labor cost" per 1,000 brick for each department was obtained by dividing the total amount of the money earned by employees in the departments during a stated period of time by the number of thousand brick produced in that period of time.

The number of thousand brick usually differed as between the clay pit, the machine house, setting, burning and loading. A few plants dug no clay during the time for which data were obtained, and a number did no burning or no loading. For these plants there was, of course, no time cost or labor cost for the departments in which there was no production, nor could total cost figures be computed for any such plants. This explains the difference between the number of plants and employees in Table 1 and in other tables of this report.

The records of some plants did not show the entire number of hours worked or all the money earned by employees at burning or at loading brick during the pay period for which information was obtained, because in such plants employees were temporarily shifted from other departments to assist in doing the work of burning or of loading. Consequently, in computing "time cost" and "labor cost" for departments, it was necessary to exclude not only the data for burning or for loading, but also for the departments from which the employees were shifted, as the inclusion of the data as shown on the records would have resulted in a lower "time cost" and "labor cost" for burning or for loading and higher costs for the other departments. In other words, while the pay roll was complete for the plant, it was not clearly segregated by departments. Data for such plants could not be used in computing costs for departments so affected, but data for the establishment as a whole could be and were used in computing costs for all departments combined. Therefore, the sum total of the costs of the departments as shown in Table 1 frequently differ from the costs for all departments.

Stiff mud is clay of such a degree of consistency that brick molded from it can be stacked (hacked) eight-high as they come from the machine without injuring the one at the bottom. Very little water is applied during the making.

Soft mud means that because of the application of water in quantity during the process of manufacture the bricks molded from such clay come from the machine so soft that they can not be lifted or moved by hand. The clay is pressed into molds by the machine, after which the molds are automatically ejected one by one from the machine and the bricks dumped from the molds onto metal pallets. The dumping of the brick from the molds onto metal pallets is done by hand or automatically by the brick machine.

Dry clay is clay which is not tempered by the application of water. The clay is gathered and usually "weathered" several months before it is made into brick. It is so dry and so compactly pressed in the molds that the brick are taken directly from the brick-making machine and set in the kilns where they are "water-smoked" and burned, it not being necessary to dry them in the dryer or in the open air as must be done with green brick molded from stiff-mud or from soft-mud clay.

It has been estimated by competent authorities that 50 per cent of the common brick manufactured in the United States is produced by the "stiff-mud" process, 40 per cent by the "soft-mud" process, and 10 per cent by "dry-clay" process. Nearly 6,000,000,000 common brick were produced in the United States during 1922, an increase of 30 per cent over 1921, and yet 10 per cent less than in 1914.

The clay-pit department includes the digging, loading, and transferring of clay from its source to the machine house.

The machine-house department includes the hoisting of the clay to the pug mill, the pugging, granulating, tempering of the clay, the molding of the clay into brick, the transferring of the green brick from the brick machine to the dryer or to the open-air drying yard, and the drying of the brick.

The setting department includes the transferring of the dried brick from the drying place to the kiln, and setting them in the kiln.

The burning department includes the firing or burning of the kilns with wood, coal, oil, or gas.

The loading department includes taking the brick from the kilns and loading them onto carts, wagons, trucks, railroad cars, boats, or barges.

The miscellaneous department includes all work necessary in the manufacture of common brick other than specified above.

In general, there is, either directly or indirectly, much piecework in the brick industry—directly, when the rate of pay is so much per thousand for loading brick from kilns onto cars, wagons, or trucks, or for transferring to and setting brick in kilns; indirectly, when the task or "stint" system is in effect; that is, when a specified number of thousand brick is allotted as a day's work.

Under the task system, the rate of pay is so much per day, regardless of the number of hours required to do (produce) the day's "stint." Owing to the variations in the working of the clay and other conditions, the time to do the "stint" may, and frequently does, vary from day to day. This system has been entirely discontinued in Chicago or district 4 under the stiff-mud process and in some other stiff-mud plants in other districts. The task system was reported as still in effect in 14 of the 45 stiff-mud plants, 20 of the 26 soft-mud plants, and in only 1 of the 8 dry-clay plants included in this study.

HOURS OF LABOR AND EARNINGS.

Table 5 shows the average full-time hours per week, average earnings per hour, and average full-time earnings per week of all wage earners, by districts, under each process or method of manufacture.

Average earnings per hour were computed by dividing the total earnings of all employees by the total number of hours actually worked. The average full-time hours per week were obtained by dividing the aggregate full-time hours of all employees by the total number of employees. Full-time earnings per week were computed by multiplying the average earnings per hour by the average full-time hours per week.

The highest average full-time hours per week and the lowest average earnings per hour for the stiff-mud group are found in district 2, while the lowest hours and the highest earnings are found in district 4.

Likewise in the soft-mud group the highest hours and lowest hourly earnings are in district 4, while lowest hours and highest earnings are found in district 5.

Both dry-clay districts show practically the same full-time hours, but the hourly earnings in district 1 exceed those of district 2 by 51 per cent.

TABLE 5.—AVERAGE FULL-TIME HOURS PER WEEK, EARNINGS PER HOUR, AND FULL-TIME EARNINGS PER WEEK IN THE COMMON-BRICK INDUSTRY UNDER EACH PROCESS OF MANUFACTURE, BY DISTRICT.

District.	Establishments.	Employees.	Average full-time hours per week.	Average earnings per hour.	Average full-time earnings per week.
Stiff-mud process.					
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	740	59.3	$0.428	$25.38
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	679	63.3	.195	12.34
3. Maryland, North Carolina, Virginia	10	601	59.1	.279	16.49
4. Illinois	6	761	52.2	.765	39.93
5. Arkansas, Missouri	3	173	57.9	.310	17.95
Total and average	45	2,954	58.3	.424	24.72
Soft-mud process.					
1. Connecticut, Massachusetts	9	668	54.7	$0.432	$23.63
2. New Jersey, New York	5	574	51.4	.512	26.32
3. Kentucky, Ohio, Pennsylvania	5	230	56.3	.430	24.21
4. Louisiana, Mississippi, Texas	4	219	58.5	.211	12.34
5. Michigan	3	174	50.0	.723	36.15
Total and average	26	1,865	53.9	.458	24.69
Dry-clay process.					
1. Kansas, Missouri	4	134	61.6	$0.355	$21.87
2. Texas	4	123	61.7	.235	14.50
Total and average	8	257	61.6	.300	18.48

Table 6 shows for the more important occupations in the industry—six for the stiff-mud and five for the soft-mud process—the number of establishments, number of employees, the average earnings per hour, and per cent of employees earning each classified amount per hour. In this table data are for all districts combined. Because of the few dry-clay-process plants scheduled no data are shown in the table for that process.

In the table it will be observed that data are shown for burners and kiln firemen, stiff-mud process, for 44 establishments and 207 employees; that the average earnings per hour were 32.8 cents; that 15 per cent of the 207 employees earned 10 and under 15 cents per hour; 16 per cent earned 15 and under 20 cents; 14 per cent earned 20 and under 25 cents; 9 per cent earned 25 and under 30 cents; 8 per cent earned 30 and under 35 cents; 6 per cent earned 35 and under 40 cents; 13 per cent earned 40 and under 50 cents; 8 per cent earned 50 and under 60 cents; 1 per cent earned 60 and under 70 cents; and 8 per cent earned 70 and under 80 cents.

TABLE 6.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR FOR EMPLOYEES IN SELECTED OCCUPATIONS, 1922, BY PROCESS.

Occupation.	Establishments.	Employees.	Average earnings per hour.	Per cent of employees whose earnings per hour were—													
				Under 10 cts.	10 and under 15 cts.	15 and under 20 cts.	20 and under 25 cts.	25 and under 30 cts.	30 and under 35 cts.	35 and under 40 cts.	40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under $1.	$1 and under $1.25
Stiff-mud process.																	
Burners and kiln firemen	44	207	$0.328	....	15	16	14	9	8	6	13	8	1	8	....	....	....
Laborers	45	712	.388	1	11	18	5	7	12	8	11	2	6	20	(1)	(1)	(1)
Loaders	38	415	.500	....	7	5	17	8	9	10	6	7	5	9	10	7	....
Off-bearers (hackers)	44	324	.441	2	4	20	7	6	8	4	12	1	(1)	32	4	....	....
Setters	41	229	.423	....	1	16	21	6	4	13	9	7	5	11	....	1	6
Wheelers, pitchers, tossers, and truckers	19	119	.346	....	....	18	25	(1)	8	22	14	3	6	....	3	....	....
Soft-mud process.																	
Burners and kiln firemen	21	73	$0.446	....	....	5	5	5	4	10	41	23	4	1	....	....	....
Laborers and clay wheelers	26	407	.423	....	2	5	3	5	10	23	29	15	7	1	1	....	....
Loaders	18	174	.450	....	....	7	7	2	2	2	34	36	9	1	....	....	....
Setters	26	88	.561	....	....	....	5	1	1	7	27	25	15	3	7	2	7
Wheelers, pitchers, tossers, and truckers	25	283	.515	....	....	7	2	2	(1)	6	36	26	2	(1)	13	4	....

[1] Less than 1 per cent.

REGULAR OR CUSTOMARY HOURS OF OPERATION.

The regular or customary hours of an establishment are the hours of operation when the plant is working its recognized standard full time; that is, the time from beginning work in the morning to the closing hour in the afternoon, less the regular time off duty for lunch or dinner.

Table 7 shows average hours and earnings and classified full-time hours per week, by processes and occupations, for the United States as a whole.

In a few occupations in the brick industry it is customary for employees to work 7 days per week and 12 hours per day—as, for instance, burners and kiln firemen, steam-dryer firemen, and stationary engineers. Practically all of the 7-day employees are shown as working 56, 70, and 84 hours per week, the only others being a very few of those whose regular or customary hours are over 60 and under 70 per week. Only 14 per cent of all employees in the stiff-mud group worked 7 days per week and only 10 per cent worked 12 hours per day. Regular or customary hours of 3 per cent of the burners and kiln firemen were 70 per week, or 10 per day for 7 days, and of 88 per cent were 84 per week, or 12 per day for 7 days. When the hours of the entire stiff-mud group are considered it is seen that out of 2,954 employees there were 3 per cent at 56 per week, or 8 per day for 7 days; 1 per cent at 70, or 10 per day for 7 days; 10 per cent at 84, or 12 per day for 7 days; 37 per cent at 60, or 10 per day for 6

days; 23 per cent at 48, or 8 per day for 6 days, and 10 per cent at 54, or 9 per day for 6 days. There were 12 per cent at over 60 hours per week and 88 per cent at 60 hours or less per week. Approximately 86 per cent of the employees had work 6 days per week and 14 per cent had work 7 days per week.

Somewhat similar conditions were found in the soft-mud and the dry-clay groups. The soft-mud group had 7 per cent of all employees working 7 days per week and 4 per cent 12 hours per day, while the dry-clay group had 12 per cent as 7-day employees and 10 per cent at 12 hours per day.

74987°—24†——2

TABLE 7.—AVERAGE HOURS AND EARNINGS AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1922, BY PROCESS AND OCCUPATION.

Occupation.	Establishments.	Employees.	Average full-time hours per week.	Average earnings per hour.	Average full-time earnings per week.	Per cent of employees whose full-time hours per week were—																	
						Under 40.	40	42	Over 44 and under 48.	48	Over 48 and under 50.	50	Over 50 and under 54.	54	Over 54 and under 55.	55	56	Over 56 and under 60.	60	Over 60 and under 70.	70	72	Over 72 and under 84.	84
Stiff-mud process.																							
Boiler firemen and steam-dryer firemen	29	67	68.5	$0.404	$27.67	....	....	....	....	3	....	....	5	5	....	....	8	5	27	2	12	....	....	36
Brick-machine operators	25	27	54.4	.493	26.82	....	....	....	....	33	4	4	....	4	....	8	4	4	41	....	....	....	....	....
Burners and kiln firemen	44	207	82.6	.328	27.09	....	....	....	....	....	....	....	....	....	....	....	....	....	6	3	3	....	....	88
Clay-cart drivers	12	36	56.4	.307	17.31	....	....	....	....	....	6	....	....	11	....	6	50	....	28	....	....	....	....	....
Dinkey engineers	22	27	55.5	.467	25.92	....	....	....	....	22	....	....	....	15	4	11	....	11	37	....	....	....	....	....
Hoist men	29	32	55.6	.374	20.79	....	....	....	....	22	6	....	....	9	3	6	....	3	50	....	....	....	....	....
Laborers	45	712	57.9	.388	22.47	....	....	....	1	24	1	(1)	....	4	(1)	1	7	13	40	2	3	....	....	6
Loaders	38	415	55.4	.500	27.70	....	....	....	....	19	4	....	....	25	1	5	....	7	39	....	....	....	....	....
Off-bearers (hackers)	44	324	54.0	.441	23.81	....	....	....	1	39	3	1	....	7	2	3	1	8	36	....	....	....	....	....
Pug-mill operators	38	43	55.4	.397	21.99	....	....	....	....	23	5	2	....	9	2	5	2	2	49	....	....	....	....	....
Setters	41	229	54.8	.423	23.18	....	....	4	1	20	2	4	....	14	5	4	....	8	39	....	....	....	....	....
Shovel engineers and stationary engineers	41	71	62.5	.585	36.56	....	....	....	....	13	3	....	....	7	1	7	1	7	35	3	1	....	....	21
Transfer men and car pullers	38	128	55.7	.408	22.73	....	....	....	1	20	3	....	3	16	2	4	1	2	49	....	....	....	....	....
Wheelers, pitchers, tossers, and truckers	19	119	54.5	.346	18.86	....	....	6	....	24	8	....	....	10	....	....	....	8	45	....	....	....	....	....
Other employees	41	517	56.6	.474	26.83	....	....	1	(1)	31	1	(1)	....	8	(1)	5	1	5	34	2	1	....	....	6
Total	45	2,954	58.3	.424	24.72	....	....	1	(1)	23	2	1	(1)	10	1	3	3	7	37	1	1	....	....	10
Soft-mud process.																								
Boiler firemen and steam-dryer firemen	19	43	66.4	$0.501	$33.27	....	....	....	....	14	....	....	....	....	....	....	35	....	2	....	14	....	5	30
Burners and kiln firemen	21	73	80.5	.446	35.90	....	....	....	....	....	....	....	....	7	....	....	....	....	3	3	....	....	6	82
Clay-cart drivers and scraper or wheeler operators	14	40	55.8	.370	20.65	....	....	....	3	28	....	....	....	8	....	3	3	....	55	3	....	....	....	....
Dumpers	21	63	53.7	.469	25.19	....	2	2	2	22	....	....	....	48	....	....	....	....	25	....	....	....	....	....
Laborers and clay wheelers	26	407	52.2	.423	22.08	1	....	1	1	25	....	1	3	40	....	3	(1)	1	24	....	(1)	....	....	....
Loaders	18	174	55.6	.450	25.02	....	....	....	....	17	2	....	....	29	....	3	....	6	43	....	....	....	....	....
Mold pushers	8	15	51.1	.464	23.71	....	....	....	7	40	....	....	....	53	....	....	....	....	....	....	....	....	....	....
Mold sanders	24	41	51.9	.387	18.79	2	5	2	2	32	....	....	....	34	....	....	....	....	22	....	....	....	....	....
Pallet boys	22	66	52.6	.376	19.78	3	2	3	....	26	....	....	....	47	....	....	....	....	20	....	....	....	....	....
Pug-mill operators	13	20	51.9	.520	26.99	10	....	....	....	25	....	....	....	50	....	....	....	....	15	....	....	....	....	....

Rackers	23	90	52.5	.478	25.20	7	2	1	2	22	.....	.....	.....	42	.....	.....	.....	.....	23	.....	.....	.....	.....	.....
Setters	26	88	49.9	.561	27.99	9	3	19	6	14	.....	.....	.....	25	.....	.....	.....	.....	24	.....	.....	.....	.....	.....
Shovel, drag-line, and stationary engineers	20	43	55.9	.648	36.22	5	.....	.....	.....	21	.....	.....	.....	33	.....	2	12	.....	9	5	12	.....	.....	2
Strikers off	19	31	51.7	.518	26.78	3	3	3	3	36	.....	.....	.....	29	.....	.....	.....	.....	23	.....	.....	.....	.....	.....
Transfer men and car pullers	5	17	55.4	.360	19.94	.....	.....	.....	.....	.....	.....	.....	.....	77	.....	.....	.....	.....	24	.....	.....	.....	.....	.....
Truckers to dryer	3	44	49.5	.446	22.08	.....	.....	.....	.....	77	.....	.....	.....	21	.....	.....	.....	.....	2	.....	.....	.....	.....	.....
Wheelers, pitchers, tossers, and truckers	25	283	50.1	.51ɔ	25.80	11	2	23	5	2	.....	.....	.....	35	.....	.....	.....	.....	23	.....	.....	.....	.....	.....
Other employees	26	327	54.3	.459	24.92	1	(1)	2	2	24	.....	.....	.....	43	.....	4	.....	2	17	1	2	(1)	.....	2
Total	26	1,865	53.9	.458	24.69	3	1	5	2	20	(1)	(1)	1	36	.....	2	1	1	23	1	1	(1)	(1)	4

Dry-clay process.

Burners and kiln firemen	7	23	83.0	$0.329	$27.31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Clay wheelers and feeder operators	5	13	58.8	.242	14.23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	23	.....	.....	77	.....	.....	.....	.....	.....
Laborers	5	47	59.6	.267	15.91	.....	.....	.....	.....	.....	.....	.....	.....	19	.....	.....	.....	.....	74	.....	4	.....	.....	3
Loaders and wheelers	5	19	58.5	.336	19.66	.....	.....	.....	.....	.....	.....	.....	.....	16	.....	11	.....	.....	74	.....	.....	.....	.....	.....
Off-bearers (hackers)	7	11	59.5	.275	16.36	.....	.....	.....	.....	.....	.....	.....	.....	9	.....	.....	.....	.....	91	.....	.....	.....	.....	.....
Setters	8	16	59.3	.352	20.87	.....	.....	.....	.....	.....	.....	.....	.....	6	.....	6	.....	.....	88	.....	.....	.....	.....	.....
Teamsters, drivers of wheelers, and scraper operators	7	35	59.8	.239	14.29	.....	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	.....	97	.....	.....	.....	.....	.....
Truckers and brick wheelers	8	49	59.2	.284	16.81	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	4	.....	.....	86	.....	.....	.....	.....	.....
Other employees	8	44	59.6	.375	22.35	.....	.....	.....	.....	.....	.....	.....	.....	11	.....	18	.....	.....	61	.....	7	.....	.....	2
Total	8	257	61.6	.300	18.48	.....	.....	.....	.....	.....	.....	.....	.....	10	.....	6	.....	.....	72	.....	2	.....	.....	10

[1] Less than 1 per cent.

SALE OF PRODUCT.

Of the 45 stiff-mud plants 16 reported that the entire output was as a rule sold and used in the locality of the plant. Five reported as much as 90 and under 100 per cent, four 75 and under 90 per cent, nine 50 and under 75 per cent, and most of the remaining eleven reported 10 per cent or less used in the locality where manufactured. Because of special contracts a few shipped to a distance practically the entire 1922 product.

Ten of the 26 soft-mud plants reported that 100 per cent of the product was used locally, three 90 and under 100 per cent, three 75 and under 90 per cent, two 50 and under 75 per cent, and three 25 per cent, while the remaining five shipped the entire product by barge or rail to a distant market, practically all to New York City.

Four of the eight dry-clay plants scheduled disposed of 100 per cent locally, one 50 per cent, two 25 per cent, and one 10 per cent.

EXPLANATION OF GENERAL TABLES.

In addition to the summary text tables already shown, general wage tables A, B, C, D, and E are presented in this report (pages 18 to 50). These tables do not include data for dry-clay plants because so few were scheduled. The one soft-mud plant having a monthly pay roll was also omitted from these tables.

Table A.—Average earnings and hours and classified full-time hours per week, 1922, by process, occupation, and district.

Table B.—Average full-time and actual hours and earnings, 1922, by process, occupation, pay period, and district.

Table C.—Average and classified earnings per hour of employees in selected occupations, 1922, by process and district.

Table D.—Average and classified actual hours of employees in selected occupations in one pay period, 1922, by process, occupation, length of pay period, and district. The high number of hours in one week shown for some employees is due to overtime at their principal occupation or to their having made a turn at kiln firing after completion of the regular day's work.

Table E.—Average and classified actual earnings of employees in selected occupations, in one pay period, 1922, by process, occupation, length of pay period, and district.

In Table B a comparison is drawn between the "Average full-time hours per pay period," or the regular hours during which under normal conditions it is possible for employees in an occupation to work, and the "Average hours actually worked in one pay period" by all employees in the occupation, including those who worked less than the hours of opportunity for work. In a parallel column is shown the per cent of full time worked. A comparison is also made between the full-time earnings and the actual earnings in the pay period. The full-time earnings were computed by multiplying the average earnings per hour actually made by the full-time hours in the pay period. Reference to the column "Per cent of full time worked" shows that the great majority of employees in the industry worked 90 per cent or more of full time, in some cases over 100 per cent, due

to the fact that the employees worked overtime at their own occupation or did some work at one or more other occupations, being credited and paid for such extra hours of work.

Tables C, D, and E are limited to the more important occupations in the industry, six for the stiff-mud and five for the soft-mud process.

In Tables D and E data for establishments having one-week pay rolls are shown separately from data for those having two-week or half-month pay periods because it was not possible accurately to separate the data of the latter so as to arrive at the equivalent of a one-week pay roll.

TABLE A.—AVERAGE EARNINGS AND HOURS AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1922, BY PROCESS, OCCUPATION, AND DISTRICT.

STIFF-MUD PROCESS.

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Average full-time earnings per week.	Average full-time hours per week.	Number of employees whose full-time hours per week were—																	
						Under 40.	40	42	44	Over 44 and under 48.	48	Over 48 and under 50.	50	Over 50 and under 54.	54	Over 54 and under 55.	55	56	Over 56 and under 60.	60	Over 60 and under 70.	70	72	Over 72 and under 84.	84
Boiler firemen and steam-dryer firemen.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	9	18	$0.368	$26.75	72.7	....	....	....	....	....	1	....	....	....	....	....	....	....	....	5	1	2	....	....	9
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	14	.175	12.60	72.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	....	....	2	....	6
3. Maryland, North Carolina, Virginia	7	16	.387	20.29	70.7	....	....	....	....	....	....	....	....	....	2	....	....	....	3	3	....	....	....	....	8
4. Illinois	5	17	.754	46.37	61.5	....	....	....	....	....	1	....	....	3	1	....	....	5	....	....	....	6	....	....	1
5. Arkansas, Missouri	1	2	.300	25.20	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2
Total	29	67	.404	27.67	68.5	....	....	....	....	....	2	....	....	3	3	....	....	5	3	14	1	8	2	....	26
Brick-machine operators.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	7	.487	27.37	56.2	....	....	....	....	....	1	1	....	....	....	....	....	1	....	4	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	8	.296	17.38	58.7	....	....	....	....	....	....	....	1	....	....	....	....	....	....	7	....	....	....	....	....
3. Maryland, North Carolina, Virginia	5	5	.302	16.34	54.1	....	....	....	....	....	1	....	....	....	1	....	2	....	1	....	....	....	....	....	....
4. Illinois	6	7	.839	40.27	48.0	....	....	....	....	....	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	25	27	.493	26.82	54.4	....	....	....	....	....	9	1	1	....	1	....	2	1	1	11	....	....	....	....	....
Burners and kiln firemen.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	62	.415	34.32	82.7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	....	....	59
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	73	.183	15.37	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	73
3. Maryland, North Carolina, Virginia	10	50	.253	20.16	79.7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	6	6	....	....	38
4. Illinois	6	18	.707	59.39	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	18
5. Arkansas, Missouri	2	4	.424	35.62	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4
Total	44	207	.328	27.09	82.6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	6	6	....	....	192

Clay-cart drivers.																											
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	25	.381	21.15	55.5							2			2		1	18		2							
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	6	.073	4.38	60.0															6							
3. Maryland, North Carolina, Virginia	3	3	.228	12.84	56.3										1		1			1							
5. Arkansas, Missouri	2	2	.316	18.01	57.0										1					1							
Total	12	36	.307	17.31	56.4							2			4		2	18		10							
Dinkey engineers.																											
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	4	5	.447	24.67	55.2						1				2					2							
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	4	5	.322	19.32	60.0															5							
3. Maryland, North Carolina, Virginia	8	10	.285	16.19	56.8										1	1	3		3	2							
4. Illinois	5	6	.853	41.80	49.0						5				1												
5. Arkansas, Missouri	1	1	.450	27.00	60.0															1							
Total	22	27	.467	25.92	55.5						6				4	1	3		3	10							
Hoist men.																											
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	10	.411	22.52	54.8						2	1			2		1			4							
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	5	6	.190	11.40	60.0															6							
3. Maryland, North Carolina, Virginia	7	9	.228	12.97	56.9							1			1	1	1		1	4							
4. Illinois	5	5	.791	37.97	48.0						5																
5. Arkansas, Missouri	2	2	.274	16.44	60.0															2							
Total	29	32	.374	20.79	55.6						7	2			3	1	2		1	16							
Laborers.																											
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	172	.388	22.12	57.0					5	12	4			13		1	47	16	71		3					
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	166	.152	9.58	63.0								2							142		1					21
3. Maryland, North Carolina, Virginia	10	146	.239	14.12	59.1						5	1			6	2	8		78	33		7					6
4. Illinois	6	186	.705	37.22	52.8						150				2					1	11	8					14
5. Arkansas, Missouri	3	42	.263	15.67	59.6										7					34							1
Total	45	712	.388	22.47	57.9					5	167	5	2		28	2	9	47	94	281	11	19					42
Loaders.																											
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	14	83	.505	28.84	57.1						8				14		12		3	46							
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	75	.220	13.20	60.0															75							
3. Maryland, North Carolina, Virginia	9	99	.262	14.80	56.5							15			12	4	9		27	32							
4. Illinois	5	130	.868	44.09	50.8						70				60												
5. Arkansas, Missouri	2	28	.352	19.75	56.1										18					10							
Total	38	415	.500	27.70	55.4						78	15			104	4	21		30	163							

TABLE A.—AVERAGE EARNINGS AND HOURS AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1922, BY PROCESS, OCCUPATION, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Concluded.

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Average full-time earnings per week.	Average full-time hours per week.	Number of employees whose full-time hours per week were—																				
						Under 40.	40	42	44	Over 44 and under 48.	48	Over 48 and under 50.	50	Over 50 and under 54.	54	Over 54 and under 55.	55	56	Over 56 and under 60.	60	Over 60 and under 70.	70	72	Over 72 and under 84.	84
Off-bearers (hackers).																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	73	$0.376	$21.36	56.8	....	....	....	....	2	3	5	....	....	13	....	3	4	4	39	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	62	.152	9.07	59.7	....	....	....	....	....	....	....	2	....	....	....	....	....	....	60	....	....	....	....	....
3. Maryland, North Carolina, Virginia	10	56	.260	14.31	55.1	....	....	....	....	....	7	5	....	....	5	6	6	....	22	5	....	....	....	....	....
4. Illinois	5	116	.765	36.72	48.0	....	....	....	....	....	116	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	17	.246	14.42	58.6	....	....	....	....	....	....	....	....	....	4	....	....	....	....	13	....	....	....	....	....
Total	44	324	.441	23.81	54.0	....	....	....	....	2	126	10	2	....	22	6	9	4	26	117	....	....	....	....	....
Pug-mill operators.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	16	16	.423	24.20	57.2	....	....	....	....	....	1	1	....	....	2	....	1	1	1	9	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	10	.177	10.45	59.0	....	....	....	....	....	....	....	1	....	....	....	....	....	....	9	....	....	....	....	....
3. Maryland, North Carolina, Virginia	6	7	.278	14.65	52.7	....	....	....	....	....	2	1	....	....	1	1	1	....	....	1	....	....	....	....	....
4. Illinois	6	7	.742	35.62	48.0	....	....	....	....	....	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	3	.328	19.02	58.0	....	....	....	....	....	....	....	....	....	1	....	....	....	....	2	....	....	....	....	....
Total	38	43	.397	21.99	55.4	....	....	....	....	....	10	2	1	....	4	1	2	1	1	21	....	....	....	....	....
Setters.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	16	67	.509	27.73	54.4	....	....	5	....	2	6	2	7	....	14	....	....	....	4	27	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	66	.205	11.93	58.1	....	....	....	....	....	9	....	2	....	....	....	....	....	....	55	....	....	....	....	....
3. Maryland, North Carolina, Virginia	10	55	.301	16.56	55.0	....	....	4	....	....	....	3	....	....	7	11	8	....	15	7	....	....	....	....	....
4. Illinois	3	31	.879	43.86	49.9	....	....	....	....	....	21	....	....	....	10	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	10	.391	19.00	48.6	....	....	....	....	....	9	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Total	41	229	.423	23.18	54.8	....	....	9	....	2	45	5	9	....	32	11	8	....	19	89	....	....	....	....	....

Shovel, stationary, and drag-line engineers.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	16	28	.569	35.18	62.1						3	1			2		1		2	12	1	1			5
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	6	9	.395	25.71	65.3															7					2
3. Maryland, North Carolina, Virginia	10	13	.390	22.03	56.4							1			1	1	4		3	3					
4. Illinois	6	14	.966	60.28	62.4						6				1					2		1			4
5. Arkansas, Missouri	3	7	.455	33.17	72.9										1						2				4
Total	41	71	.585	36.56	62.5						9	2			5	1	5		5	24	3	2			15
Transfer men and car pullers.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	15	29	.387	22.02	56.9					1	2	1			4		2	1		18					
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	6	34	.182	10.92	60.0															34					
3. Maryland, North Carolina, Virginia	9	18	.251	13.55	54.0						3	3			2	2	3		2	3					
4. Illinois	5	41	.716	36.80	51.4						16	5		4	13					3					
5. Arkansas, Missouri	3	6	.234	13.81	59.0										1					5					
Total	38	128	.408	22.73	55.7					1	21	9		4	20	2	5	1	2	63					
Wheelers, pitchers, tossers, and truckers.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	8	29	.468	26.58	56.8							4			8					17					
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	4	44	.198	11.07	55.9						15									29					
3. Maryland, North Carolina, Virginia	4	29	.387	20.51	53.0			7				5							10	7					
5. Arkansas, Missouri	3	17	.383	18.92	49.4						13				4										
Total	19	119	.346	18.86	54.5			7			28	9			12				10	53					
Other employees.																								
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	14	116	.420	24.71	58.8						8	1			13		8	6	6	66	2	2			4
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	101	.248	15.25	61.3						1									93		2			5
3. Maryland, North Carolina, Virginia	10	85	.304	17.75	58.3			6		1		6			10	2	17		18	6	9	2			8
4. Illinois	6	183	.738	38.15	51.7						141				15			1		15					11
5. Arkansas, Missouri	3	32	.329	18.59	56.5					1	7		1		4					17		2			
Total	41	517	.474	26.83	56.6			6		2	157	7	1		42	2	25	7	24	197	11	8			28

TABLE A.—AVERAGE EARNINGS AND HOURS AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1922, BY PROCESS, OCCUPATION, AND DISTRICT—Continued.

SOFT-MUD PROCESS.[1]

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Average full-time earnings per week.	Average full-time hours per week.	Number of employees whose full-time hours per week were—																	
						Under 40.	40	42	44	Over 44 and under 48.	48	Over 48 and under 50.	50	Over 50 and under 54.	54	Over 54 and under 55.	55	56	Over 56 and under 60.	60	Over 60 and under 70.	70	72	Over 72 and under 84.	84
Boiler firemen and steam-dryer firemen.																								
1. Connecticut, Massachusetts	5	13	$0.566	$34.30	60.6	....	....	....	....	....	3	....	....	....	....	....	....	7	....	....	....	....	....	....	3
2. New Jersey, New York	4	11	.511	33.06	64.7	....	....	....	....	....	2	....	....	....	....	....	....	5	....	....	....	....	....	....	4
3. Kentucky, Ohio, Pennsylvania	3	6	.401	29.15	72.7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	2	....	....
4. Louisiana, Mississippi, Texas	3	4	.226	15.59	69.0	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	2	....	....
5. Michigan	3	7	.641	51.28	80.0	....	....	....	....	....	....	....	....	....	....	....	....	3	....	....	2	....	....	....	2
Total	18	41	.502	33.94	67.6	....	....	....	....	....	6	....	....	....	....	....	....	15	....	1	6	....	4	....	9
Burners and kiln firemen.																								
1. Connecticut, Massachusetts	6	19	.449	34.62	77.1	....	....	....	....	....	....	....	....	....	3	....	....	....	....	....	2	....	....	....	14
2. New Jersey, New York	4	27	.439	35.91	81.8	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	25
3. Kentucky, Ohio, Pennsylvania	5	15	.436	34.84	79.9	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	4	9
4. Louisiana, Mississippi, Texas	3	7	.190	15.96	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	7
5. Michigan	3	5	.583	48.97	84.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5
Total	21	73	.446	35.90	80.5	....	....	....	....	....	....	....	....	....	5	....	....	....	....	2	2	....	....	4	60
Clay-cart drivers and scraper or wheeler operators.																								
1. Connecticut, Massachusetts	5	7	.400	21.56	53.9	....	....	....	....	....	2	....	....	....	3	....	....	1	....	....	1	....	....	....	....
2. New Jersey, New York	2	8	.596	28.61	48.0	....	....	....	....	....	8	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	11	.400	23.36	58.4	....	....	....	....	1	....	....	....	....	....	....	1	....	....	9	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	14	.171	10.12	59.2	....	....	....	....	....	1	....	....	....	....	....	....	....	....	13	....	....	....	....	....
Total	14	40	.370	20.65	55.8	....	....	....	....	1	11	....	....	....	3	....	1	1	....	22	1	....	....	....	....
Dumpers.																								
1. Connecticut, Massachusetts	7	22	.432	23.80	55.1	....	....	....	....	....	2	....	....	....	14	....	....	....	....	6	....	....	....	....	....
2. New Jersey, New York	3	15	.533	27.08	50.8	....	....	....	....	....	8	....	....	....	7	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	5	9	.469	25.51	54.4	....	1	1	....	1	....	....	....	....	....	....	....	....	....	6	....	....	....	....	....

4. Louisiana, Mississippi, Texas	3	5	.230	13.25	57.6						1								4					
5. Michigan	2	5	.694	34.98	50.4						3				2									
Total	20	56	.476	25.51	53.6		1	1		1	14				23				16					
Laborers and clay wheelers.																								
1. Connecticut, Massachusetts	8	167	.398	21.97	55.2						10				113			2	42					
2. New Jersey, New York	5	98	.498	24.80	49.8						62			12	24									
3. Kentucky, Ohio, Pennsylvania	5	43	.406	21.72	53.5			6		5			5				11		16					
4. Louisiana, Mississippi, Texas	4	50	.202	11.39	56.4						15								35					
5. Michigan	3	29	.636	31.67	49.8	5					14				4			3	2		1			
Total	25	387	.426	22.75	53.4	5		6		5	101		5	12	141		11	2	3	95		1		
Loaders.																								
1. Connecticut, Massachusetts	4	6	.406	21.92	54.0										6									
2. New Jersey, New York	3	95	.493	26.77	54.3						25				40				30					
3. Kentucky, Ohio, Pennsylvania	4	20	.437	24.87	56.9							3					6		11					
4. Louisiana, Mississippi, Texas	4	31	.216	12.55	58.1						5								26					
5. Michigan	2	17	.623	36.26	58.2													10	7					
Total	17	169	.448	24.95	55.7						30	3			46		6	10	74					
Mold pushers.																								
1. Connecticut, Massachusetts	4	4	.391	21.11	54.0										4									
2. New Jersey, New York	3	10	.510	25.70	50.4						6				4									
3. Kentucky, Ohio, Pennsylvania	1	1	.275	12.93	47.0					1														
Total	8	15	.464	23.71	51.1					1	6				8									
Mold sanders.																								
1. Connecticut, Massachusetts	6	10	.382	20.86	54.6						2				5				3					
2. New Jersey, New York	5	11	.374	18.77	50.2						7				4									
3. Kentucky, Ohio, Pennsylvania	5	7	.379	18.91	49.9		2	1		1									3					
4. Louisiana, Mississippi, Texas	4	4	.178	10.15	57.0						1								3					
5. Michigan	3	6	.634	30.75	48.5	1					3				2									
Total	23	38	.390	20.20	51.8	1	2	1		1	13				11				9					
Pallet boys.																								
1. Connecticut, Massachusetts	6	18	.344	18.68	54.3						3				11				4					
2. New Jersey, New York	4	24	.413	21.27	51.5						10				14									
3. Kentucky, Ohio, Pennsylvania	4	5	.326	15.91	48.8		1	2											2					
4. Louisiana, Mississippi, Texas	4	8	.110	6.44	58.5						1								7					
5. Michigan	3	7	.649	30.57	47.1	2					3				2									
Total	21	62	.380	19.95	52.5	2	1	2			17				27				13					

[1] Not including data for 98 employees of 1 establishment having a monthly pay period.

TABLE A.—AVERAGE EARNINGS AND HOURS AND CLASSIFIED FULL-TIME HOURS PER WEEK, 1922, BY PROCESS, OCCUPATION, AND DISTRICT—Concluded.

SOFT-MUD PROCESS—Concluded.

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Average full-time earnings per week.	Average full-time hours per week.	Number of employees whose full-time hours per week were—																		
						Under 40.	40	42	44	Over 44 and under 48.	48	Over 48 and under 50.	50	Over 50 and under 54.	54	Over 54 and under 55.	55	56	Over 56 and under 60.	60	Over 60 and under 70.	70	72	Over 72 and under 84.	84
Pug-mill operators.																								
1. Connecticut, Massachusetts	4	8	$0.447	$24.14	54.0	....	....	....	....	....	1	....	....	....	8	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	2	2	.425	21.68	51.0	....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	2	2	.455	27.30	60.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
4. Louisiana, Mississippi, Texas	2	2	.307	16.58	54.0	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1	....	....	....	....
5. Michigan	3	6	.761	35.01	46.0	2	....	....	....	....	3	....	....	....	1	....	....	....	....	....	....	....	....	....
Total	13	20	.520	26.99	51.9	2	....	....	....	....	5	....	....	....	10	....	....	....	....	3	....	....	....	....
Rackers.																								
1. Connecticut, Massachusetts	7	27	.432	23.50	54.4	....	....	....	....	....	4	....	....	....	17	....	....	....	....	6	....	....	....	....
2. New Jersey, New York	4	23	.480	24.91	51.9	....	....	....	....	....	8	....	....	....	15	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	5	14	.419	22.63	54.0	....	2	1	....	2	....	....	....	....	....	....	....	....	....	9	....	....	....	....
4. Louisiana, Mississippi, Texas	3	8	.185	10.55	57.0	....	....	....	....	....	2	....	....	....	....	....	....	....	....	6	....	....	....	....
5. Michigan	3	15	.749	34.15	45.6	6	....	....	....	....	6	....	....	....	3	....	....	....	....	....	....	....	....	....
Total	22	87	.481	25.25	52.5	6	2	1	....	2	20	....	....	....	35	....	....	....	....	21	....	....	....	....
Setters.																								
1. Connecticut, Massachusetts	8	30	.486	25.66	52.8	....	....	....	....	....	11	....	....	....	14	....	....	....	....	5	....	....	....	....
2. New Jersey, New York	5	19	.708	29.74	42.0	4	....	13	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	5	17	.528	27.38	52.8	....	3	2	....	2	....	....	....	....	....	....	....	....	....	10	....	....	....	....
4. Louisiana, Mississippi, Texas	4	7	.253	14.75	58.3	....	....	....	....	....	1	....	....	....	....	....	....	....	....	6	....	....	....	....
5. Michigan	3	9	.916	38.20	41.7	4	....	2	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	25	82	.568	28.12	49.5	8	3	17	....	5	12	....	....	....	16	....	....	....	....	21	....	....	....	....
Shovel, stationary, and drag-line engineers.																								
1. Connecticut, Massachusetts	6	15	.620	34.04	54.9	....	....	....	....	....	....	....	....	....	10	....	....	4	....	1	....	....	....	....
2. New Jersey New York	5	9	.688	35.50	51.6	....	....	....	....	....	5	....	....	....	2	....	....	1	....	1	....	....	....	....

3. Kentucky, Ohio, Pennsylvania	5	9	.512	31.28	61.1	1											1			2	2	3			
5. Michigan	3	9	.809	45.79	56.6	1					4				1							2			1
Total	19	42	.652	37.16	57.0	2					9				13		1	5		4	2	5			1
Strikers-off.																									
1. Connecticut, Massachusetts	6	7	.525	29.24	55.7										5					2					
2. New Jersey, New York	1	7	.531	25.49	48.0						7														
3. Kentucky, Ohio, Pennsylvania	4	4	.471	22.28	47.3		1	1		1										1					
4. Louisiana, Mississippi, Texas	4	5	.242	13.94	57.6						1									4					
5. Michigan	3	6	.728	35.31	48.5	1					3				2										
Total	18	29	.524	26.99	51.5	1	1	1		1	11				7					7					
Transfer men and car pullers.																									
1. Connecticut, Massachusetts	2	6	.433	23.38	54.0										6										
2. New Jersey, New York	1	7	.365	19.71	54.0										7										
4. Louisiana, Mississippi, Texas	2	4	.210	12.60	60.0															4					
Total	5	17	.360	19.94	55.4										13					4					
Truckers to dryer.																									
1. Connecticut, Massachusetts	1	9	.386	20.84	54.0										9										
2. New Jersey, New York	1	34	.467	22.42	48.0						34														
4. Louisiana, Mississippi, Texas	1	1	.250	15.00	60.0															1					
Total	3	44	.446	22.08	49.5						34				9					1					
Wheelers, pitchers, tossers, and truckers.																									
1. Connecticut, Massachusetts	7	104	.442	24.71	55.9										72					32					
2. New Jersey, New York	5	84	.622	26.50	42.6	18		53							13										
3. Kentucky, Ohio, Pennsylvania	5	20	.386	19.69	51.0		5	3		2										10					
4. Louisiana, Mississippi, Texas	4	28	.200	11.58	57.9						5									23					
5. Michigan	3	32	.859	36.08	42.0	12		8		12															
Total	24	268	.520	25.95	49.9	30	5	64		14	5				85					65					
Other employees.																									
1. Connecticut, Massachusetts	8	98	.439	23.57	53.7						19				68				1	7	1	1			1
2. New Jersey, New York	5	90	.500	25.95	51.9						41				40					4	2				3
3. Kentucky, Ohio, Pennsylvania	5	47	.429	24.07	56.1		1	7		5							12		1	15		3	1		2
4. Louisiana, Mississippi, Texas	4	41	.269	15.74	58.5						9									29		2			1
5. Michigan	3	21	.751	38.30	51.0	2					10				2				5	1		1			
Total	25	297	.459	24.97	54.4	2	1	7		5	79				110		12		7	56	3	7	1		7

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT.

STIFF-MUD PROCESS.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Boiler firemen and steam-dryer firemen—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	4	8	75.0	69.5	93	$25.65	$23.77
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	6	9	68.0	64.7	95	11.56	10.98
3. Maryland, North Carolina, Virginia	6	15	71.4	57.1	80	19.85	15.88
5. Arkansas, Missouri	1	2	84.0	81.4	97	25.20	14.40
Total	17	34	72.2	63.4	88	19.28	16.94
Boiler firemen and steam-dryer firemen—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	10	149.6	130.4	87	58.19	50.76
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	5	162.4	149.2	92	24.05	27.59
3. Maryland, North Carolina, Virginia	1	1	130.0	90.0	69	54.21	37.55
4. Illinois	5	17	131.3	135.9	104	99.00	102.51
Total	12	33	136.6	134.9	99	74.45	73.51
Brick-machine operators—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	4	4	56.3	59.4	106	26.29	27.71
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	6	6	58.3	57.0	98	16.91	16.53
3. Maryland, North Carolina, Virginia	5	5	54.1	54.7	101	16.34	16.51
Total	15	15	56.4	56.9	101	19.35	19.51
Brick-machine operators—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	3	121.3	130.2	107	62.35	66.94
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	2	120.0	119.5	100	37.80	37.68
4. Illinois	6	7	104.0	137.6	132	87.76	115.50
Total	10	12	112.7	132.7	118	76.75	90.39
Burners and kiln firemen—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	25	82.6	83.0	100	31.88	32.07
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	52	84.0	70.4	84	14.78	12.40
3. Maryland, North Carolina, Virginia	9	48	79.5	76.6	96	19.48	18.74
5. Arkansas, Missouri	2	4	84.0	84.0	100	35.62	35.63
Total	26	129	82.1	75.6	92	20.94	19.29
Burners and kiln firemen—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	37	164.8	161.8	98	71.52	70.29
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	21	180.0	135.6	75	35.82	26.93
3. Maryland, North Carolina, Virginia	1	2	168.0	120.0	71	75.60	54.00
4. Illinois	6	18	180.0	168.4	94	127.26	119.08
Total	18	78	170.9	155.2	91	76.56	69.46
Clay-cart drivers—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	21	55.5	43.6	79	21.53	16.90
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	6	60.0	49.2	82	4.38	3.60
3. Maryland, North Carolina, Virginia	3	3	56.3	53.0	94	12.84	12.11
5. Arkansas, Missouri	2	2	57.0	58.0	102	18.01	18.33
Total	9	32	56.5	46.4	82	17.12	14.04

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Clay-cart drivers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	4	111.5	109.5	98	$38.13	$37.50
Dinkey engineers—One week.							
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	3	4	60.0	60.8	101	18.84	19.08
3. Maryland, North Carolina, Virginia	8	10	56.8	56.0	99	16.19	15.95
5. Arkansas, Missouri	1	1	60.0	70.0	117	27.00	31.50
Total	12	15	57.9	58.2	101	17.72	17.82
Dinkey engineers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	4	5	116.0	106.3	92	51.85	47.56
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	1	130.0	130.0	100	46.15	46.15
4. Illinois	5	6	106.2	142.9	135	90.59	121.87
Total	10	12	112.3	126.6	113	75.02	84.60
Hoist men—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	3	56.3	56.3	100	24.38	24.38
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	4	4	60.0	58.0	97	11.28	10.93
3. Maryland, North Carolina, Virginia	6	6	55.3	51.9	94	11.17	10.48
5. Arkansas, Missouri	2	2	60.0	71.5	119	16.44	19.63
Total	15	15	57.4	57.0	99	14.69	14.60
Hoist men—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	7	110.9	115.6	104	44.47	46.32
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	2	130.0	99.5	77	25.09	19.25
3. Maryland, North Carolina, Virginia	1	3	130.0	100.0	77	36.27	27.93
4. Illinois	5	5	104.0	115.1	111	82.26	91.09
Total	14	17	114.5	110.8	97	54.85	53.06
Laborers—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	87	56.5	54.0	96	23.11	22.07
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	101	60.9	47.2	78	8.71	6.72
3. Maryland, North Carolina, Virginia	9	143	59.1	38.5	65	14.07	9.17
5. Arkansas, Missouri	3	42	59.6	49.0	82	15.67	12.90
Total	27	373	59.0	45.6	77	15.46	11.94
Laborers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	85	119.8	90.0	75	43.85	32.93
2. Florida, Georgia, Louisiana, Mississippi South Carolina	1	65	143.9	94.5	66	23.90	15.74
3. Maryland, North Carolina, Virginia	1	3	120.0	96.7	81	32.16	25.92
4. Illinois	6	186	114.7	106.0	92	80.86	74.71
Total	18	339	121.5	99.7	82	64.03	52.50
Loaders—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	23	58.3	55.7	96	30.43	29.09
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	51	60.0	40.8	68	12.48	8.49
3. Maryland, North Carolina, Virginia	8	92	56.2	41.4	74	14.89	10.99
5. Arkansas, Missouri	2	28	56.1	43.3	77	19.75	15.22
Total	22	194	57.4	43.2	75	17.39	13.09

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Loaders—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	9	60	118.7	105.7	89	$59.11	$52.64
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	24	130.0	103.3	79	31.98	25.39
3. Maryland, North Carolina, Virginia	1	7	120.0	31.0	26	26.88	6.93
4. Illinois	5	130	110.0	89.2	81	95.48	77.48
Total	16	221	114.9	93.4	81	77.33	62.84
Off-bearers (hackers)—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	26	56.1	53.7	96	22.72	21.73
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	43	59.5	52.8	89	8.93	7.93
3. Maryland, North Carolina, Virginia	9	54	54.9	50.9	93	14.27	13.27
5. Arkansas, Missouri	3	17	58.6	46.1	79	14.42	11.36
Total	27	140	57.0	51.4	90	14.36	12.97
Off-bearers (hackers)—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	47	120.2	109.1	91	43.27	39.27
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	19	130.0	87.0	67	20.54	13.75
3. Maryland, North Carolina, Virginia	1	2	120.0	100.0	83	30.96	25.80
4. Illinois	5	116	104.0	91.0	88	79.56	69.64
Total	17	184	111.0	95.3	86	64.82	55.64
Pug-mill operators—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	6	57.5	61.2	106	27.66	29.42
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	6	6	58.3	51.3	88	10.38	9.15
3. Maryland, North Carolina, Virginia	6	7	52.7	49.3	94	14.65	13.71
5. Arkansas, Missouri	3	3	58.0	51.7	89	19.02	16.93
Total	21	22	56.3	53.4	95	18.13	17.19
Pug-mill operators—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	10	118.7	120.3	101	46.06	46.72
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	4	130.0	121.9	94	22.88	21.48
4. Illinois	6	7	104.0	133.5	128	77.17	98.95
Total	17	21	116.0	125.0	108	55.10	59.33
Setters—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	15	55.3	64.1	116	29.92	34.70
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	53	57.6	41.7	72	11.69	8.48
3. Maryland, North Carolina, Virginia	9	50	54.5	47.2	87	16.19	14.03
5. Arkansas, Missouri	3	10	48.6	45.0	93	19.00	17.56
Total	26	128	55.4	46.7	84	17.12	14.44
Setters—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	52	117.8	116.1	99	58.90	58.01
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	13	130.0	112.0	86	27.95	24.07
3. Maryland, North Carolina, Virginia	1	5	120.0	100.0	83	40.56	33.84
4. Illinois	3	31	106.5	107.9	101	93.61	94.88
Total	15	101	116.0	112.2	97	65.89	63.76

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Shovel, stationary, and drag-line engineers—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	12	67.9	65.7	97	$36.60	$35.41
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	5	6	60.0	60.3	101	24.12	24.21
3. Maryland, North Carolina, Virginia	9	12	56.1	58.5	104	21.37	22.29
5. Arkansas, Missouri	3	7	72.9	73.7	101	33.17	33.51
Total	23	37	63.7	64.0	100	28.86	28.98
Shovel, stationary, and drag-line engineers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	16	121.8	127.0	104	71.13	74.15
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	3	163.3	178.3	109	62.05	67.82
3. Maryland, North Carolina, Virginia	1	1	130.0	100.0	77	65.00	50.00
4. Illinois	6	14	125.0	150.8	121	120.75	145.62
Total	18	34	125.6	140.5	112	91.44	102.31
Transfer-men and car pullers—One week.							
1. Kansas, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	10	57.0	54.7	96	23.66	22.66
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	5	11	60.0	59.0	98	9.48	9.30
3. Maryland, North Carolina, Virginia	8	16	53.2	47.2	89	13.57	12.04
5. Arkansas, Missouri	3	6	59.0	51.7	88	13.81	12.08
Total	23	43	56.6	52.6	93	14.89	13.81
Transfer-men and car pullers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	8	19	117.4	119.3	102	43.79	44.51
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	23	130.0	109.2	84	25.09	21.08
3. Maryland, North Carolina, Virginia	1	2	120.0	100.0	83	26.40	21.98
4. Illinois	5	41	111.0	106.5	96	79.48	76.22
Total	15	85	117.8	109.9	93	56.78	52.94
Wheelers, pitchers, tossers, and truckers—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	22	56.9	60.5	106	26.80	28.51
2. Florida, Georgia, Louisana, Mississippi, South Carolina	3	21	51.4	36.7	71	9.56	6.81
3. Maryland, North Carolina, Virginia	4	29	53.0	36.2	68	20.51	14.01
5. Arkansas, Missouri	3	17	49.4	40.3	82	18.92	15.45
Total	15	89	52.9	43.1	81	19.84	16.17
Wheelers, pitchers, tossers, and truckers—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	7	114.6	85.2	74	52.60	39.10
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	23	130.0	100.4	77	27.04	20.91
Total	4	30	126.4	96.8	77	32.86	25.16

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Other employees—One week.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	31	59.0	56.7	96	$25.19	$24.20
2. Florida, Georgia, Louisana, Mississippi, South Carolina	7	63	60.2	53.7	89	12.46	11.10
3. Maryland, North Carolina, Virginia	9	33	58.3	51.9	89	17.61	15.68
5. Arkansas, Missouri	3	32	56.5	53.9	95	18.59	17.71
Total	24	209	58.8	53.3	91	17.46	15.87
Other employees—Two weeks or one-half month.							
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	9	85	117.4	116.7	99	49.07	48.75
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	38	136.3	116.7	86	42.93	36.75
3. Maryland, North Carolina, Virginia	1	2	120.0	60.0	50	47.52	23.75
4. Illinois	6	183	112.0	116.7	104	82.66	86.10
Total	17	308	111.0	116.6	105	65.93	69.30

SOFT-MUD PROCESS. [1]

Boiler firemen and steam-dryer firemen—One week.							
1. Connecticut, Massachusetts	4	11	56.4	51.5	91	$33.95	$31.00
2. New Jersey, New York	1	4	84.0	84.0	100	33.60	33.60
3. Kentucky, Ohio, Pennsylvania	2	5	73.2	49.2	67	26.43	17.75
4. Louisiana, Mississippi, Texas	2	2	54.0	50.5	94	14.58	13.63
Total	9	22	65.0	56.8	87	30.75	26.88
Boiler firemen and steam-dryer firemen—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	2	168.0	207.0	123	61.66	76.00
2. New Jersey, New York	3	7	107.4	105.1	98	75.42	60.37
3. Kentucky, Ohio, Pennsylvania	1	1	140.0	140.0	100	84.00	84.00
4. Louisiana, Mississippi, Texas	1	2	168.0	95.5	57	30.41	17.25
5. Michigan	3	7	160.0	136.0	85	102.56	87.14
Total	9	19	141.2	128.1	91	75.68	68.58
Burners and kiln firemen—One week.							
1. Connecticut, Massachusetts	5	18	76.7	99.3	129	34.44	44.59
2. New Jersey, New York	1	9	77.3	47.4	61	32.62	20.01
3. Kentucky, Ohio, Pennsylvania	4	11	78.4	72.0	92	31.44	28.87
4. Louisiana, Mississippi, Texas	2	5	84.0	52.4	62	15.62	9.73
Total	12	43	78.1	76.0	97	32.26	31.37
Burners and kiln firemen—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	1	168.0	168.0	100	74.93	75.00
2. New Jersey, New York	3	18	168.0	162.8	97	75.10	72.79
3. Kentucky, Ohio, Pennsylvania	1	4	168.0	124.8	74	89.54	66.49
4. Louisiana, Mississippi, Texas	1	2	168.0	55.5	33	33.60	11.13
5. Michigan	3	5	168.0	152.4	91	97.94	88.90
Total	9	30	168.0	149.0	89	82.99	73.60

[1] Not including data for 98 employees of 1 establishment having a monthly pay period.

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

SOFT-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Clay-cart drivers and scraper or wheeler operators—One week.							
1. Connecticut, Massachusetts	5	7	53.9	52.6	98	$21.56	$21.07
3. Kentucky, Ohio, Pennsylvania	3	9	58.0	53.7	93	21.87	20.24
4. Louisiana, Mississippi, Texas	2	7	58.3	41.1	70	11.14	7.86
Total	10	23	56.8	49.6	87	19.14	16.72
Clay-cart drivers and scraper or wheeler operators—Two weeks or one-half month.							
2. New Jersey, New York	2	8	96.0	101.0	105	57.22	60.19
3. Kentucky, Ohio, Pennsylvania	1	2	120.0	105.0	88	60.12	52.65
4. Louisiana, Mississippi, Texas	1	7	120.0	88.4	74	18.00	13.22
Total	4	17	108.7	96.3	89	45.11	39.96
Dumpers—One week.							
1. Connecticut, Massachusetts	7	22	55.1	61.0	111	23.80	26.32
3. Kentucky, Ohio, Pennsylvania	4	4	47.3	40.2	85	21.81	18.55
4. Louisiana, Mississippi, Texas	2	3	56.0	52.7	94	14.34	13.50
Total	13	29	54.1	57.3	106	22.61	23.92
Dumpers—Two weeks or one-half month.							
2. New Jersey, New York	3	15	101.6	93.0	92	54.15	49.58
3. Kentucky, Ohio, Pennsylvania	1	5	120.0	94.0	78	57.00	44.65
4. Louisiana, Mississippi, Texas	1	2	120.0	57.0	48	22.92	10.88
5. Michigan	2	5	100.8	96.0	95	69.96	66.60
Total	7	27	106.2	91.1	86	57.14	48.95
Laborers and clay wheelers—One week.							
1. Connecticut, Massachusetts	7	148	55.3	56.1	101	21.95	22.28
2. New Jersey, New York	1	14	54.0	52.3	97	18.09	17.54
3. Kentucky, Ohio, Pennsylvania	4	34	51.8	51.6	100	20.82	20.35
4. Louisiana, Mississippi, Texas	3	41	55.6	32.1	58	11.79	6.83
Total	15	237	54.8	51.1	93	20.50	19.10
Laborers and clay wheelers—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	19	108.0	98.2	91	43.96	39.97
2. New Jersey, New York	4	84	98.3	88.1	90	51.61	46.27
3. Kentucky, Ohio, Pennsylvania	1	9	120.0	58.1	48	50.52	24.45
4. Louisiana, Mississippi, Texas	1	9	120.0	68.3	57	18.60	10.57
5. Michigan	3	29	99.6	90.0	90	63.35	87.27
Total	10	150	102.4	86.8	85	52.12	44.13
Loaders—One week.							
1. Connecticut, Massachusetts	3	5	54.0	43.5	81	21.49	17.30
2. New Jersey, New York	1	40	54.0	30.2	56	28.94	16.20
3. Kentucky, Ohio, Pennsylvania	3	12	54.9	57.3	104	23.77	24.81
4. Louisiana, Mississippi, Texas	3	24	57.5	31.1	54	12.31	6.65
Total	10	81	55.2	35.3	64	23.02	14.71
Loaders—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	1	108.0	105.0	97	47.95	46.67
2. New Jersey, New York	2	55	109.1	86.5	79	50.40	40.00
3. Kentucky, Ohio, Pennsylvania	1	8	120.0	96.4	80	53.16	42.71
4. Louisiana, Mississippi, Texas	1	7	120.0	78.9	66	26.88	17.66
5. Michigan	2	17	116.5	92.9	80	72.58	57.85
Total	7	88	112.4	88.3	79	53.50	42.00

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

SOFT-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Mold pushers—One week.							
1. Connecticut, Massachusetts	4	4	54.0	56.9	105	$21.11	$22.23
3. Kentucky, Ohio, Pennsylvania	1	1	47.0	44.9	96	12.93	12.35
Total	5	5	52.6	54.5	104	19.57	20.25
Mold pushers—Two weeks or one-half month.							
2. New Jersey, New York	3	10	100.8	79.1	78	51.41	40.36
Mold sanders—One week.							
1. Connecticut, Massachusetts	6	10	54.6	63.0	115	20.86	24.06
2. New Jersey, New York	1	1	54.0	54.0	100	16.20	16.20
3. Kentucky, Ohio, Pennsylvania	4	6	48.2	45.3	94	17.50	16.45
4. Louisiana, Mississippi, Texas	3	3	56.0	39.3	70	10.98	7.70
Total	14	20	52.9	53.7	102	18.67	18.93
Mold sanders—Two weeks or one-half month.							
2. New Jersey, New York	4	10	99.6	89.0	89	37.95	33.91
3. Kentucky, Ohio, Pennsylvania	1	1	120.0	95.0	79	57.00	45.12
4. Louisiana, Mississippi, Texas	1	1	120.0	88.0	73	15.00	11.00
5. Michigan	3	6	97.0	54.8	56	61.50	34.75
Total	9	18	101.0	77.9	77	43.53	33.54
Pallet boys—One week.							
1. Connecticut, Massachusetts	5	15	54.4	48.8	90	17.79	15.94
2. New Jersey, New York	1	14	54.0	45.5	84	18.74	15.79
3. Kentucky, Ohio, Pennsylvania	3	4	46.0	40.0	87	13.29	11.58
4. Louisiana, Mississippi, Texas	3	4	57.0	37.0	65	7.81	5.06
Total	12	37	53.6	45.3	85	16.83	14.23
Pallet boys—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	3	108.0	93.3	86	46.22	39.94
2. New Jersey, New York	3	10	96.0	86.0	90	48.58	43.51
3. Kentucky, Ohio, Pennsylvania	1	1	120.0	105.0	88	57.00	49.87
4. Louisiana, Mississippi, Texas	1	4	120.0	77.0	64	9.96	6.38
5. Michigan	3	7	94.3	92.9	99	61.20	60.29
Total	9	25	101.8	88.1	87	48.66	42.09
Pug-mill operators—One week.							
1. Connecticut, Massachusetts	3	6	54.0	58.1	108	24.14	25.99
2. New Jersey, New York	1	1	54.0	54.0	100	17.82	17.82
3. Kentucky, Ohio, Pennsylvania	1	1	60.0	23.0	38	24.60	9.43
4. Louisiana, Mississippi, Texas	2	2	54.0	44.0	81	16.58	13.50
Total	7	10	54.6	51.4	94	22.33	21.02
Pug-mill operators—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	2	108.0	136.0	126	48.38	60.97
2. New Jersey, New York	1	1	96.0	50.0	52	49.52	25.93
3. Kentucky, Ohio, Pennsylvania	1	1	120.0	140.0	117	60.00	70.00
5. Michigan	3	6	92.0	93.0	101	70.01	70.78
Total	6	10	98.4	102.0	104	61.99	64.26

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Continued.

SOFT-MUD PROCESS—Continued.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Rackers—One week.							
1. Connecticut, Massachusetts	6	24	54.5	61.8	113	$23.11	$26.17
2. New Jersey, New York	1	3	54.0	49.7	92	22.36	20.59
3. Kentucky, Ohio, Pennsylvania	4	9	50.7	46.6	92	20.38	18.77
4. Louisiana, Mississippi, Texas	2	6	56.0	32.7	58	10.98	6.39
Total	13	42	53.9	53.5	99	21.51	21.36
Rackers—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	3	108.0	84.2	78	54.00	42.08
2. New Jersey, New York	3	20	103.2	87.1	84	50.57	42.64
3. Kentucky, Ohio, Pennsylvania	1	5	120.0	78.3	65	54.00	35.23
4. Louisiana, Mississippi, Texas	1	2	120.0	89.5	75	18.00	13.40
5. Michigan	3	15	91.2	86.2	95	68.31	64.53
Total	9	45	102.1	85.7	78	60.94	47.77
Setters—One week.							
1. Connecticut, Massachusetts	7	27	52.7	63.6	121	25.35	30.63
2. New Jersey, New York	1	2	54.0	49.5	92	25.38	23.27
3. Kentucky, Ohio, Pennsylvania	4	9	46.4	45.8	99	23.52	23.21
4. Louisiana, Mississippi, Texas	3	5	57.6	55.6	97	15.78	15.25
Total	15	43	52.0	58.3	112	24.02	26.95
Setters—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	3	108.0	78.3	73	57.02	41.34
2. New Jersey, New York	4	17	81.2	83.9	103	59.76	61.78
3. Kentucky, Ohio, Pennsylvania	1	8	120.0	102.8	86	66.24	56.75
4. Louisiana, Mississippi, Texas	1	2	120.0	91.5	76	24.24	18.45
5. Michigan	3	9	83.3	77.6	93	76.40	71.01
Total	10	39	93.7	86.3	92	64.12	59.08
Shovel, drag-line, and stationary engineers—One week.							
1. Connecticut, Massachusetts	5	14	55.0	59.6	108	34.38	37.26
2. New Jersey, New York	1	2	54.0	58.0	107	33.70	36.17
3. Kentucky, Ohio, Pennsylvania	4	7	60.0	58.0	97	28.80	27.87
Total	10	23	56.4	59.0	105	32.82	34.31
Shovel, drag-line, and stationary engineers—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	1	108.0	120.0	111	60.05	66.67
2. New Jersey, New York	4	7	101.7	106.3	105	71.80	75.00
3. Kentucky, Ohio, Pennsylvania	1	2	130.0	136.0	105	81.38	85.15
5. Michigan	3	9	113.9	112.8	99	92.15	91.18
Total	9	19	110.8	113.2	102	80.89	83.29
Strikers-off—One week.							
1. Connecticut, Massachusetts	6	7	55.7	74.7	134	29.24	39.21
3. Kentucky, Ohio, Pennsylvania	3	3	43.0	50.3	117	19.82	23.18
4. Louisiana, Mississippi, Texas	3	4	57.0	39.5	69	14.42	10.00
Total	12	14	53.4	59.4	111	24.67	27.43

TABLE B.—AVERAGE FULL-TIME AND ACTUAL HOURS AND EARNINGS, 1922, BY PROCESS, OCCUPATION, PAY PERIOD, AND DISTRICT—Concluded.

SOFT-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours per pay period.	Average hours actually worked in pay period.	Per cent of full time worked.	Average full-time earnings in pay period.	Average earnings actually received in pay period.
Strikers-off—Two weeks or one-half month.							
2. New Jersey, New York	1	7	96.0	92.3	96	$50.98	$49.02
3. Kentucky, Ohio, Pennsylvania	1	1	120.0	128.0	107	60.00	64.00
4. Louisiana, Mississippi, Texas	1	1	120.0	88.0	73	24.00	17.60
5. Michigan	3	6	97.0	88.3	91	70.62	64.33
Total	6	15	99.6	92.8	93	57.97	54.05
Transfer men and car pullers—One week.							
1. Connecticut, Massachusetts	2	6	54.0	64.9	120	23.38	28.10
2. New Jersey, New York	1	7	54.0	51.3	95	19.71	18.70
4. Louisiana, Mississippi, Texas	1	3	60.0	46.7	78	13.26	10.33
Total	4	16	55.1	55.5	101	20.50	20.66
Transfer men and car pullers—Two weeks or one-half month.							
4. Louisiana, Mississippi, Texas	1	1	120.0	87.0	73	21.00	15.25
Truckers to dryer—One week.							
1. Connecticut, Massachusetts	1	9	54.0	48.1	89	20.84	18.57
4. Louisiana, Mississippi, Texas	1	1	60.0	60.0	100	15.00	15.00
Total	2	10	54.6	49.3	90	20.20	18.21
Truckers to dryer—Two weeks or one-half month.							
2. New Jersey, New York	1	34	96.0	69.8	73	44.83	32.56
Wheelers, pitchers, tossers, and truckers—One week.							
1. Connecticut, Massachusetts	6	89	56.2	65.7	117	24.33	28.48
2. New Jersey, New York	1	13	54.0	49.2	91	23.60	21.47
3. Kentucky, Ohio, Pennsylvania	4	15	48.0	48.8	102	16.61	16.91
4. Louisiana, Mississippi, Texas	3	18	56.7	46.9	83	12.81	10.63
Total	14	135	55.1	59.7	108	22.26	24.14
Wheelers, pitchers, tossers, and truckers—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	15	108.0	88.8	82	53.78	44.25
2. New Jersey, New York	4	71	81.0	73.3	90	53.14	48.08
3. Kentucky, Ohio, Pennsylvania	1	5	120.0	101.6	85	60.72	51.42
4. Louisiana, Mississippi, Texas	1	10	120.0	80.4	67	18.24	12.21
5. Michigan	3	32	84.0	76.2	91	72.16	65.41
Total	10	133	89.1	77.4	87	56.76	49.25
Other employees—One week.							
1. Connecticut, Massachusetts	7	90	53.3	53.2	100	23.13	23.10
2. New Jersey, New York	1	31	55.0	50.7	92	24.31	22.43
3. Kentucky, Ohio, Pennsylvania	4	34	53.7	52.7	98	21.96	21.56
4. Louisiana, Mississippi, Texas	3	39	58.4	37.2	64	15.59	9.93
Total	15	194	54.8	49.5	90	22.19	20.07
Other employees—Two weeks or one-half month.							
1. Connecticut, Massachusetts	1	8	115.6	113.3	98	53.03	55.64
2. New Jersey, New York	4	59	100.7	90.6	90	53.37	48.03
3. Kentucky, Ohio, Pennsylvania	1	13	124.9	99.0	79	60.33	47.82
4. Louisiana, Mississippi, Texas	1	2	120.5	74.0	62	36.60	22.60
5. Michigan	3	21	102.0	92.6	91	76.60	69.56
Total	10	103	105.0	93.5	89	58.91	52.49

TABLE C.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR OF EMPLOYEES IN SELECTED OCCUPATIONS, 1922, BY PROCESS AND DISTRICT.

STIFF-MUD PROCESS.

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Number of employees whose earnings per hour were—													
				Under 10 cts.	10 and under 15 cts.	15 and under 20 cts.	20 and under 25 cts.	25 and under 30 cts.	30 and under 35 cts.	35 and under 40 cts.	40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under $1.	$1 and under $1.25.
Burners and kiln firemen.																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	62	$0.415	.....	.....	.....	2	2	12	8	22	14	2	.....	.....	.....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	73	.183	.....	30	26	11	3	.....	.....	3	.....	.....	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	10	50	.253	.....	2	8	17	12	4	5	1	1	.....	.....	.....	.....	.....
4. Illinois	6	18	.707	.....	.....	.....	.....	.....	.....	.....	.....	1	1	16	.....	.....	.....
5. Arkansas, Missouri	2	4	.424	.....	.....	.....	.....	2	.....	.....	1	.....	.....	1	.....	.....	.....
Total	44	207	.328	.....	32	34	30	19	16	13	27	16	3	17	.....	.....	.....
Laborers.																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	172	.388	.....	.....	2	2	9	37	39	65	12	5	1	.....	.....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	166	.152	5	65	83	11	2	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	10	146	.239	.....	11	42	17	14	43	14	5	.....	.....	.....	.....	.....	.....
4. Illinois	6	186	.705	.....	.....	.....	.....	.....	.....	.....	1	2	39	140	1	1	2
5. Arkansas, Missouri	3	42	.263	.....	.....	.....	4	28	2	2	6	.....	.....	.....	.....	.....	.....
Total	45	712	.388	5	76	127	34	53	82	55	77	14	44	141	1	1	2
Loaders.																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	14	83	.505	.....	.....	.....	.....	1	4	13	23	28	12	2	.....	.....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	75	.220	.....	11	13	34	12	3	.....	.....	1	1	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	9	99	.262	.....	.....	7	33	19	26	13	1	.....	.....	.....	.....	.....	.....
4. Illinois	5	130	.368	.....	19	1	.....	.....	.....	.....	.....	.....	6	34	42	28	.....
5. Arkansas, Missouri	2	28	.352	.....	.....	.....	2	2	6	16	1	.....	.....	.....	1	.....	.....
Total	38	415	.500	.....	30	21	69	34	39	42	25	29	19	36	43	28	.....

TABLE C.—AVERAGE AND CLASSIFIED EARNINGS PER HOUR OF EMPLOYEES IN SELECTED OCCUPATIONS, 1922, BY PROCESS AND DISTRICT—Concluded.

STIFF-MUD PROCESS—Concluded.

Occupation and district.	Establishments.	Employees.	Average earnings per hour.	Number of employees whose earnings per hour were—													
				Under 10 cts.	10 and under 15 cts.	15 and under 20 cts.	20 and under 25 cts.	25 and under 30 cts.	30 and under 35 cts.	35 and under 40 cts.	40 and under 50 cts.	50 and under 60 cts.	60 and under 70 cts.	70 and under 80 cts.	80 and under 90 cts.	90 cts. and under $1.	$1 and under $1.25.
Off-bearers (hackers).																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	17	73	$0.376	.....	.....	5	5	4	13	13	27	3	1	1	1	.....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	62	.152	6	11	42	3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	10	56	.260	.....	.....	19	8	7	13	1	7	1	.....	.....	.....	.....	.....
4. Illinois	5	116	.765	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	104	12	.....	.....
5. Arkansas, Missouri	3	17	.246	.....	.....	.....	6	7	.....	.....	4	.....	.....	.....	.....	.....	.....
Total	44	324	.441	6	11	66	22	18	26	14	38	4	1	105	13	.....	.....
Setters.																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	16	67	.509	.....	.....	.....	.....	.....	1	18	14	16	7	9	.....	2	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	9	66	.205	.....	2	30	31	3	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	10	55	.301	.....	.....	6	16	10	8	7	3	.....	5	.....	.....	.....	.....
4. Illinois	3	31	.879	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	16	.....	.....	15
5. Arkansas, Missouri	3	10	.391	.....	.....	.....	.....	.....	1	4	4	1	.....	.....	.....	.....	.....
Total	41	229	.423	.....	2	36	47	13	10	29	21	17	12	25	.....	2	15
Wheelers, pitchers, tossers, and truckers.																	
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	8	29	.468	.....	.....	.....	.....	.....	2	12	8	3	.....	.....	4	.....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	4	44	.198	.....	.....	21	23	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
3. Maryland, North Carolina, Virginia	4	29	.387	.....	.....	.....	7	1	8	1	5	.....	7	.....	.....	.....	.....
5. Arkansas, Missouri	3	17	.383	.....	.....	.....	.....	.....	.....	13	4	.....	.....	.....	.....	.....	.....
Total	19	119	.346	.....	.....	21	30	1	10	26	17	3	7	.....	4	.....	.....

SOFT-MUD PROCESS.

Burners and kiln firemen.																	
1. Connecticut, Massachusetts	6	19	$0.449					2	3	1	8	4	1				
2. New Jersey, New York	4	27	.439		1					5	15	3	2	1			
3. Kentucky, Ohio, Pennsylvania	5	15	.436					2		1	7	5					
4. Louisiana, Mississippi, Texas	3	7	.190			3	4										
5. Michigan	3	5	.583									5					
Total	21	73	.446		1	3	4	4	3	7	30	17	3	1			
Laborers and clay wheelers.																	
1. Connecticut, Massachusetts	9	187	.394					5	23	81	73	5					
2. New Jersey, New York	5	98	.498					4	9	6	18	38	23				
3. Kentucky, Ohio, Pennsylvania	5	43	.406						7	5	26	5					
4. Louisiana, Mississippi, Texas	4	50	.202		8	19	11	11			1						
5. Michigan	3	29	.636							1		12	6	6	4		
Total	26	407	.423		8	19	11	20	39	93	118	60	29	6	4		
Loaders.																	
1. Connecticut, Massachusetts	5	11	.458						1	4	2	4					
2. New Jersey, New York	3	95	.493								39	56					
3. Kentucky, Ohio, Pennsylvania	4	20	.437								19	1					
4. Louisiana, Mississippi, Texas	4	31	.216			12	13	4	2								
5. Michigan	2	17	.623									1	15	1			
Total	18	174	.450			12	13	4	3	4	60	62	15	1			
Setters.																	
1. Connecticut, Massachusetts	9	36	.483							4	18	11	3				
2. New Jersey, New York	5	19	.708								2	1	9	2	2	1	2
3. Kentucky, Ohio, Pennsylvania	5	17	.528							2	3	10	1	1			
4. Louisiana, Mississippi, Texas	4	7	.253				4	1	1		1						
5. Michigan	3	9	.916												4	1	4
Total	26	88	.561				4	1	1	6	24	22	13	3	6	2	6
Wheelers, pitchers, tossers, and truckers.																	
1. Connecticut, Massachusetts	8	119	.441							14	80	25					
2. New Jersey, New York	5	84	.622								15	44	7	1	17		
3. Kentucky, Ohio, Pennsylvania	5	20	.386		1	4				3	8	4					
4. Louisiana, Mississippi, Texas	4	28	.200		4	11	6	6	1								
5. Michigan	3	32	.859												20	12	
Total	25	283	.515		5	15	6	6	1	17	103	73	7	1	37	12	

TABLE D.—AVERAGE AND CLASSIFIED ACTUAL HOURS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT.

STIFF-MUD PROCESS.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time hours in pay period.	Average hours actually worked in pay period.	Number of employees who during pay period worked—																					
					Under 8 hrs.	8 and under 16 hrs.	16 and under 24 hrs.	24 and under 32 hrs.	32 and under 40 hrs.	40 and under 48 hrs.	48 and under 56 hrs.	56 and under 64 hrs.	64 and under 72 hrs.	72 and under 80 hrs.	80 and under 88 hrs.	88 and under 96 hrs.	96 and under 104 hrs.	104 and under 112 hrs.	112 and under 120 hrs.	120 and under 128 hrs.	128 and under 136 hrs.	136 and under 144 hrs.	144 and under 152 hrs.	152 and under 160 hrs.	160 and under 168 hrs.	168 and under 176 hrs.	176 and under 184 hrs.	184 hrs. and over.
Burners and kiln firemen—One week.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	25	82.6	83.0	....	2	....	....	....	....	....	1	1	5	11	....	2	1	....	2	....	....	....	....	....	....	....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	52	84.0	70.4	2	1	1	3	1	1	4	3	1	9	17	3	2	1	1	2	....	....	....	....	....	....	....	.....
3. Maryland, North Carolina, Virginia	9	48	79.5	76.6	....	1	....	1	2	3	1	6	3	4	16	....	6	1	1	2	1	....	....	....	....	....	....	.....
5. Arkansas, Missouri	2	4	84.0	84.0	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	.....
Total	26	129	82.1	75.6	2	4	1	4	3	4	5	10	5	18	48	3	10	3	2	6	1	....	....	....	....	....	....	.....
Burners and kiln firemen—Two weeks or one-half month.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	37	164.8	161.8	....	1	....	....	....	....	....	....	....	....	1	....	1	....	....	....	1	2	3	4	5	6	10	3
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	21	180.0	135.6	....	1	....	....	....	....	1	....	....	3	....	....	1	1	....	....	1	....	3	2	....	4	1	3
3. Maryland, North Carolina, Virginia	1	2	168.0	120.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	.....
4. Illinois	6	18	180.0	168.4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	5	3	....	2	1	2	4
Total	18	78	170.9	155.2	....	2	....	....	....	....	1	....	....	3	1	....	2	1	....	2	3	7	9	6	7	11	13	10
Laborers—One week.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	87	56.5	54.0	....	3	....	2	4	12	20	37	3	....	4	1	1	....	....	....	....	....	....	....	....	....	....	.....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	101	60.9	47.2	4	8	1	8	1	18	19	35	4	2	....	....	....	....	....	1	....	....	....	....	....	....	....	.....
3. Maryland, North Carolina, Virginia	9	143	59.1	38.5	11	20	21	11	8	12	22	25	7	2	2	....	....	....	....	....	1	1	....	....	....	....	....	.....

5. Arkansas, Missouri	3	42	59.6	49.0	2	3	1	....	....	7	12	8	6	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	27	373	59.0	45.6	17	34	23	21	13	49	73	105	20	6	7	1	1	....	....	1	1	1	....	....	....	....	....	....
Laborers—Two weeks or one-half month.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	85	119.8	90.0	....	8	3	1	3	2	2	4	2	....	3	5	14	12	7	8	4	2	....	....	1	2	2	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	65	143.9	94.5	....	4	6	3	....	4	2	2	3	2	2	1	2	4	....	4	7	8	5	2	....	2	1	1
3. Maryland, North Carolina, Virginia	1	3	120.0	96.7	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	6	188	114.7	106.0	1	1	1	5	3	3	2	1	2	4	9	19	30	47	8	9	8	2	6	8	5	5	3	4
Total	18	339	121.5	99.7	1	13	10	9	6	9	6	7	7	6	14	26	48	63	15	21	19	12	11	10	6	9	6	5
Loaders—One week.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	23	58.3	55.7	....	....	....	....	1	2	6	13	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	51	60.0	40.8	5	....	11	5	2	3	7	12	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	8	92	56.2	41.4	9	10	3	5	1	13	27	2	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	2	28	56.1	43.3	....	2	5	....	3	4	6	7	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	22	194	57.4	43.2	14	12	19	10	7	22	46	53	10	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Loaders—Two weeks or one-half month.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	9	60	118.7	105.7	1	1	1	....	....	....	2	....	1	....	5	4	7	9	7	8	8	2	4	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	24	130.0	103.3	....	1	2	....	....	....	1	1	1	....	....	....	2	3	....	2	7	4	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	7	120.0	31.0	1	1	3	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	5	130	110.0	89.2	3	10	4	1	2	....	....	5	....	7	4	7	28	19	24	4	12	....	....	....	....	....	....	....
Total	16	221	114.9	93.4	5	13	10	1	2	1	3	6	2	7	9	11	38	31	31	14	27	6	4	....	....	....	....	....
Off-bearers (hackers)—One week.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	26	56.1	53.7	....	1	....	....	....	2	10	12	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	43	59.5	52.8	....	1	3	....	2	2	10	25	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	54	54.9	50.9	....	....	2	....	7	10	16	14	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	17	58.6	46.1	1	1	1	2	....	1	1	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	27	140	57.0	51.4	1	3	6	2	9	15	37	61	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

TABLE D.—AVERAGE AND CLASSIFIED ACTUAL HOURS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments.	Employees.	Average full-time hours in pay period.	Average hours actually worked in pay period.	Number of employees who during pay period worked—																					
					Under 8 hrs.	8 and under 16 hrs.	16 and under 24 hrs.	24 and under 32 hrs.	32 and under 40 hrs.	40 and under 48 hrs.	48 and under 56 hrs.	56 and under 64 hrs.	64 and under 72 hrs.	72 and under 80 hrs.	80 and under 88 hrs.	88 and under 96 hrs.	96 and under 104 hrs.	104 and under 112 hrs.	112 and under 120 hrs.	120 and under 128 hrs.	128 and under 136 hrs.	136 and under 144 hrs.	144 and under 152 hrs.	152 and under 160 hrs.	160 and under 168 hrs.	168 and under 176 hrs.	176 and under 184 hrs.	184 hrs. and over.
Off-bearers (hackers)—Two weeks or one-half month.																										
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	47	120.2	109.1	....	2	1	1	....	1	....	....	....	....	....	1	10	8	10	4	2	....	....	....	6	1	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	19	130.0	87.0	....	....	1	2	....	1	....	2	1	....	1	2	2	1	....	3	2	1	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	2	120.0	100.0	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	5	116	104.0	91.0	....	1	....	1	1	1	....	2	2	7	14	33	35	18	1	....	....	....	....	....	....	....	....	....
Total	17	184	111.0	95.3	....	3	2	4	1	3	....	4	3	7	15	36	49	27	11	7	4	1	....	....	6	1	....	....
Setters—One week.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	15	55.3	64.1	....	....	....	....	1	1	3	6	1	1	....	....	1	....	....	1	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	53	57.6	41.7	7	5	3	1	2	2	12	20	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	50	54.5	47.2	....	2	2	3	7	8	15	13	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	10	48.6	45.0	....	....	....	....	1	5	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	26	128	55.4	46.7	7	7	5	4	11	16	34	39	2	1	....	....	1	....	....	1	....	....	....	....	....	....	....	....
Setters—Two weeks or one-half month.																												
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	52	117.8	116.1	....	....	....	....	....	....	2	3	....	3	1	2	4	14	5	3	4	1	....	1	....	5	2	2
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	13	130.0	112.0	....	....	1	....	....	....	....	1	....	....	....	1	....	1	....	4	....	5	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	5	120.0	100.0	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	....	....	....	....

4. Illinois	3	31	106.5	107.9	....	....	....	....	....	....	....	....	....	1	....	1	1	19	7	2	....	....	....	....	....	....	....	....	....
Total	15	101	116.0	112.2	....	....	2	....	....	....	2	4	....	4	1	4	5	34	12	13	4	6	....	1	....	5	2	2
Wheelers, pitchers, tossers and truckers—One week.																													
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	22	56.9	60.5	....	....	....	1	....	1	9	5	2	2	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	3	21	51.4	36.7	....	....	6	4	1	2	5	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	4	29	53.0	36.2	2	3	2	4	3	6	4	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	17	49.4	40.3	....	1	....	....	7	4	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	89	52.9	43.1	2	4	8	9	11	13	23	13	2	2	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....
Wheelers, pitchers, and tossers and truckers—Two weeks or one-half month.																													
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	7	114.6	85.2	....	....	1	....	....	....	....	2	....	1	....	....	....	2	....	....	....	....	....	....	1	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	23	130.0	100.4	....	1	1	....	....	....	2	1	....	1	2	1	1	1	....	4	3	5	....	....	....	....	....	....	....
Total	4	30	126.4	96.8	....	1	2	....	....	....	2	3	....	2	2	1	1	3	....	4	3	5	....	....	1	....	....	....	....

SOFT-MUD PROCESS.[1]

Burners and kiln firemen—One week.																													
1. Connecticut, Massachusetts	5	18	76.7	99.3	....	....	....	....	....	....	1	1	1	1	....	1	4	3	3	2	1	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	9	77.3	47.4	....	1	....	2	1	1	....	1	1	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	11	78.4	72.0	....	....	....	....	....	....	....	....	8	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	2	5	84.0	52.4	....	....	....	....	1	....	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	12	43	78.1	76.0	....	1	....	2	2	1	3	3	11	4	1	2	4	3	3	2	1	....	....	....	....	....	....	....	....
Burners and kiln firemen—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	1	168.0	168.0	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....
2. New Jersey, New York	3	18	168.0	162.8	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	2	1	1	1	1	2	2	2	5	....
3. Kentucky, Ohio, Pennsylvania	1	4	168.0	124.8	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	1	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	2	168.0	55.5	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	5	168.0	152.4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	....	1	....
Total	9	30	168.0	149.0	....	....	....	....	....	....	1	1	....	....	1	....	....	1	....	2	3	1	6	1	2	3	2	6	....

[1] Not including data for employees of 1 establishment having a monthly pay period.

TABLE D.—AVERAGE AND CLASSIFIED ACTUAL HOURS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT—Concluded.

SOFT-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time hours in pay period.	Average hours actually worked in pay period.	Number of employees who during pay period worked— Under 8 hrs.	8 and under 16 hrs.	16 and under 24 hrs.	24 and under 32 hrs.	32 and under 40 hrs.	40 and under 48 hrs.	48 and under 56 hrs.	56 and under 64 hrs.	64 and under 72 hrs.	72 and under 80 hrs.	80 and under 88 hrs.	88 and under 96 hrs.	96 and under 104 hrs.	104 and under 112 hrs.	112 and under 120 hrs.	120 and under 128 hrs.	128 and under 136 hrs.	136 and under 144 hrs.	144 and under 152 hrs.	152 and under 160 hrs.	160 and under 168 hrs.	168 and under 176 hrs.	176 and under 184 hrs.	184 hrs. and over.
Laborers and clay workers—One week.																												
1. Connecticut, Massachusetts	7	148	55.3	56.1	1	....	2	6	8	17	43	36	17	9	4	1	3	....	....	1	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	14	54.0	52.3	....	....	....	3	....	2	2	3	1	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	34	51.8	51.6	1	....	1	....	....	10	8	10	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	41	55.6	32.1	....	6	8	6	5	6	8	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	237	54.8	51.1	2	6	11	15	13	35	61	51	20	13	5	1	3	....	....	1	....	....	....	....	....	....	....	....	....
Laborers and clay workers—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	19	108.0	98.2	....	....	1	....	1	....	....	2	....	1	3	4	....	....	4	....	....	....	....	....	....	....	....	3	....
2. New Jersey, New York	4	84	98.3	88.1	....	1	1	2	1	....	1	2	2	4	14	9	38	7	....	2	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	9	120.0	58.1	1	1	1	2	....	....	....	....	....	....	....	....	1	1	2	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	9	120.0	68.3	....	....	....	1	1	1	....	1	....	2	1	1	....	....	....	1	....	....	....	....	....	....	....	....	....
5. Michigan	3	29	99.6	137.3	....	....	....	1	1	....	....	....	1	2	6	6	5	4	1	....	1	1	....	....	....	....	....	....	....
Total	10	150	102.4	86.8	1	2	3	6	4	1	1	5	3	9	24	20	44	12	7	3	1	1	....	....	....	....	3	....	....
Loaders—One week.																													
1. Connecticut, Massachusetts	3	5	54.0	43.5	....	1	....	1	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	40	54.0	30.2	....	15	3	1	6	6	8	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	3	12	54.9	57.3	....	....	....	....	....	....	6	4	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	24	57.5	31.1	2	5	2	3	2	4	3	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	10	81	55.2	35.3	2	21	5	5	8	10	19	7	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Loaders—Two weeks or one-half month.																														
1. Connecticut, Massachusetts	1	1	108.0	105.0	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	2	55	109.1	86.5	....	....	....	2	1	1	3	5	5	2	4	5	12	11	....	2	....	....	....	1	1	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	8	120.0	96.4	....	....	....	....	....	....	1	....	....	....	....	2	1	3	1	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	7	120.0	78.9	....	....	....	....	....	....	....	....	2	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	2	17	116.5	92.9	....	1	....	....	1	....	1	1	1	....	....	2	1	2	2	4	1	....	....	....	....	....	....	....	....	....
Total	7	88	112.4	88.3	....	1	....	2	2	1	5	6	8	2	9	9	14	17	3	6	1	....	....	1	1	....	....	....	....	....
Setters—One week.																														
1. Connecticut, Massachusetts	7	27	52.7	63.6	....	....	....	1	....	1	7	9	....	5	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	2	54.0	49.5	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	9	46.4	45.8	....	....	....	....	....	7	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	5	57.6	55.6	....	....	....	....	....	1	2	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	43	52.0	58.3	....	....	....	1	....	10	10	11	1	6	2	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Setters—Two weeks or one-half month.																														
1. Connecticut, Massachusetts	1	3	108.0	78.3	....	....	....	....	....	1	....	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	4	17	81.2	83.9	....	....	....	....	....	1	2	....	1	....	7	2	....	3	....	1	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	8	120.0	102.8	....	....	....	....	....	....	1	....	....	....	....	1	....	2	4	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	2	120.0	91.5	....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	9	83.3	77.6	....	....	....	....	....	....	....	....	1	3	2	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....
Total	10	39	93.7	86.3	....	....	....	....	....	2	3	....	2	4	9	6	....	7	5	1	....	....	....	....	....	....	....	....	....	....
Wheelers, pitchers, tossers, and truckers—One week.																														
1. Connecticut, Massachusetts	6	89	56.2	65.7	....	....	3	6	3	3	12	16	14	7	8	9	5	2	1	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	13	54.0	49.2	....	....	....	....	1	5	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	15	48.0	48.8	....	....	....	....	....	10	....	4	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	18	56.7	46.9	....	....	2	3	1	1	5	2	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	14	135	55.1	59.7	....	....	5	9	5	19	24	22	17	9	8	9	5	2	1	....	....	....	....	....	....	....	....	....	....	....
Wheelers, pitchers, tossers, and truckers—Two weeks or one-half month.																														
1. Connecticut, Massachusetts	1	15	108.0	88.8	....	....	....	1	....	2	....	....	....	1	3	1	2	3	....	1	....	....	....	1	....	....	....	....	....	....
2. New Jersey, New York	4	71	81.0	73.3	1	1	....	2	1	1	3	10	7	22	6	8	5	4	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	5	120.0	101.6	....	....	....	....	....	....	....	1	....	....	....	1	....	....	2	1	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	10	120.0	80.4	....	....	....	....	....	....	....	2	....	2	2	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	32	84.0	76.2	....	....	1	....	....	1	....	3	7	5	8	4	3	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	10	133	89.1	77.4	1	1	1	3	1	4	3	16	14	30	19	18	10	7	2	2	....	....	....	1	....	....	....	....	....	....

TABLE E.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT.

STIFF-MUD PROCESS.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time earnings in pay period.	Average earnings actually received in one pay period.	Number of employees whose earnings in one pay period were—																										
					Under $8.	$8 and under $10.	$10 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and under $20.	$20 and under $25.	$25 and under $30.	$30 and under $35.	$35 and under $40.	$40 and under $45.	$45 and under $50.	$50 and under $55.	$55 and under $60.	$60 and under $65.	$65 and under $70.	$70 and under $75.	$75 and under $80.	$80 and under $85.	$85 and under $90.	$90 and under $95.	$95 and under $100.	$100 and under $110.	$110 and under $120.	$120 and over.
Burners and kiln firemen—One week.																															
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	25	$31.88	$32.07	1	....	....	....	....	1	....	4	6	2	4	4	....	1	2	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	52	14.78	12.40	13	6	7	8	12	1	....	....	....	2	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	48	19.48	18.74	5	1	3	3	8	8	6	5	4	1	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	2	4	35.62	35.63	....	....	....	....	....	....	....	1	1	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
Total	26	129	20.94	19.29	19	7	10	11	20	10	6	10	11	5	8	8	....	1	2	1	....	....	....	....	....	....	....	....	....	....	....	....
Burners and kiln firemen—Two weeks or one-half month.																															
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	37	71.52	70.29	1	....	....	....	....	....	....	....	1	....	....	....	3	1	3	2	7	7	1	3	4	1	1	1	....	1
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	21	35.82	26.93	1	....	....	2	2	....	1	4	4	2	2	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	2	75.60	54.00	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	6	18	127.26	119.08	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	3	5	6	....
Total	18	78	76.56	69.46	2	....	....	2	2	....	1	4	5	2	2	2	4	1	4	3	7	7	1	3	4	1	5	4	5	7	....
Laborers—One week.																															
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	87	23.11	22.07	3	1	3	5	7	5	6	33	12	7	3	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....

2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	101	8.71	6.72	67	29	3	1	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	143	14.07	9.17	69	19	19	11	6	6	6	5	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	42	15.67	12.90	6	1	6	13	9	2	3	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	27	373	15.46	11.94	145	50	31	30	22	13	15	40	12	8	4	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Laborers—Two weeks or one-half month.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	85	43.85	32.93	10	2	1	2	2	1	2	7	5	9	18	10	5	2	2	2	2	3	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	65	23.90	15.74	17	3	3	5	2	4	4	20	5	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	3	32.16	25.92	....	....	....	....	....	....	....	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	6	186	80.86	74.71	2	....	1	....	....	5	....	3	2	2	....	1	1	6	8	16	30	29	22	13	8	4	7	4	11	11
Total	18	339	64.03	52.50	29	5	5	7	4	10	6	31	14	12	19	11	6	8	10	18	32	32	22	13	8	4	7	4	11	11
Loaders—One week.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	23	30.43	29.09	....	....	....	1	....	1	1	2	7	7	1	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	7	51	12.48	8.49	31	2	2	4	11	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	8	92	14.89	10.99	26	8	10	15	16	9	2	5	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	2	28	19.75	15.22	5	1	2	3	2	4	4	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	22	194	17.39	13.09	62	11	14	23	29	14	7	14	7	8	2	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Loaders—Two weeks or one-half month.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	9	60	59.11	52.64	2	1	....	....	....	....	2	....	2	1	3	9	12	8	2	4	2	1	....	4	2	5	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	24	31.98	25.39	3	1	....	1	1	....	....	3	3	9	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	7	26.88	6.93	5	....	....	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	5	130	95.48	77.48	9	2	3	1	....	2	....	2	....	....	1	1	2	3	2	1	4	3	3	10	20	19	21	18	2	1
Total	16	221	77.33	62.84	19	4	3	3	1	3	2	5	5	10	7	10	14	11	4	5	6	4	3	14	22	24	21	18	2	1

74987°—24†——4

TABLE E.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT—Continued.

STIFF-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time earnings in pay period.	Average earnings actually received in one pay period.	Number of employees whose earnings in one pay period were—																									
					Under $8.	$8 and under $10.	$10 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and under $20.	$20 and under $25.	$25 and under $30.	$30 and under $35.	$35 and under $40.	$40 and under $45.	$45 and under $50.	$50 and under $55.	$55 and under $60.	$60 and under $65.	$65 and under $70.	$70 and under $75.	$75 and under $80.	$80 and under $85.	$85 and under $90.	$90 and under $95.	$95 and under $100.	$100 and under $110.	$110 and under $120.	$120 and over.
Off-bearers (hackers)—One week.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	7	26	$22.72	$21.73	....	1	1	....	1	6	4	6	4	2	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	43	8.93	7.93	20	15	4	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	54	14.27	13.27	5	11	14	3	6	8	1	4	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	17	14.42	11.36	2	1	4	4	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	27	140	14.36	12.97	27	28	23	10	14	14	5	10	5	2	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Off-bearers (hackers)—Two weeks or one-half month.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	47	43.27	39.27	2	2	....	....	....	....	1	8	1	3	10	5	....	1	7	....	6	1	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	19	20.54	13.75	3	3	2	3	1	2	....	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	2	30.96	25.80	....	....	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	5	116	79.56	69.64	....	....	1	....	....	....	1	1	....	1	....	1	1	3	4	6	37	9	41	6	3	....	1	....	....	....
Total	17	184	64.82	55.64	5	5	3	3	1	2	2	14	3	4	10	6	1	4	11	6	43	10	41	6	3	....	1	....	....	....
Setters—One week.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	6	15	29.92	34.70	....	....	....	....	2	....	....	5	1	2	....	1	....	2	....	....	1	....	1	....	....	....	....	....	....	....

2. Florida, Georgia, Louisiana, Mississippi, South Carolina	8	53	11.69	8.48	17	3	20	12	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	9	50	16.19	14.03	10	3	10	2	3	10	3	5	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	10	19.00	17.56	....	....	....	1	....	4	4	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	26	128	17.12	14.44	27	6	30	15	6	14	7	11	5	2	....	1	....	2	....	....	1	....	1	....	....	....	....	....	....	....	....
Setters—Two weeks or one-half month.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	10	52	58.90	58.01	....	....	....	....	....	....	....	....	3	1	2	5	5	8	4	3	9	6	4	1	....	1	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	13	27.95	24.07	1	....	....	1	....	....	1	2	4	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	1	5	40.56	33.84	....	....	....	1	....	....	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Illinois	3	31	93.61	94.88	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1	4	....	7	1	1	....	15	....
Total	15	101	65.89	63.76	1	....	....	2	....	....	1	2	7	5	6	5	5	9	4	3	10	7	8	1	7	2	1	....	15	....
Wheelers, pitchers, tossers, and truckers—One week.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	5	22	26.80	23.51	....	....	1	....	....	2	1	5	5	1	2	4	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	3	21	9.56	6.81	10	7	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Maryland, North Carolina, Virginia	4	29	20.51	14.01	6	2	4	4	3	3	1	1	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Arkansas, Missouri	3	17	18.92	15.45	1	....	....	5	4	....	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	89	19.84	16.17	17	9	9	9	7	5	9	6	10	1	2	4	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wheelers, pitchers, tossers, and truckers—Two weeks or one-half month.																														
1. Kansas, Kentucky, Nebraska, New Jersey, Ohio, Pennsylvania, Wisconsin	3	7	52.60	39.10	1	....	....	....	....	....	....	....	2	....	1	1	....	1	....	....	....	....	1	....	....	....	....	....	....	....
2. Florida, Georgia, Louisiana, Mississippi, South Carolina	1	23	27.04	20.91	2	....	1	2	2	1	1	3	10	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	4	30	32.86	25.16	3	....	1	2	2	1	1	3	12	1	1	1	....	1	....	....	....	....	1	....	....	....	....	....	....	....

TABLE E.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT—Continued.

SOFT-MUD PROCESS.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time earnings in pay period.	Average earnings actually received in one pay period.	Number of employees whose earnings in one pay period were—																								
					Under $8.	$8 and under $10.	$10 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and under $20.	$20 and under $25.	$25 and under $30.	$30 and under $35.	$35 and under $40.	$40 and under $45.	$45 and under $50.	$50 and under $55.	$55 and under $60.	$60 and under $65.	$65 and under $70.	$70 and under $75.	$75 and under $80.	$80 and under $85.	$85 and under $90.	$90 and under $95.	$95 and under $100.	$100 and under $110.	$110 and under $120.	$120 and over.
Burners and kiln firemen—One week.																													
1. Connecticut, Massachusetts	5	18	$34.44	$44.59	....	....	....	1	....	....	1	....	3	2	1	....	....	5	1	2	2	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	9	32.62	20.01	1	....	2	....	1	1	1	....	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	11	31.44	28.87	....	....	....	....	....	1	1	....	6	1	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	2	5	15.62	9.73	1	2	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	12	43	32.26	31.37	2	2	3	1	2	2	3	....	10	3	4	....	1	5	1	2	2	....	....	....	....	....	....	....	....	....
Burners and kiln firemen—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	1	74.93	75.00	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....
2. New Jersey, New York	3	18	75.10	72.79	....	....	....	....	....	....	....	....	....	....	1	....	....	3	....	5	2	1	2	1	....	....	1	....	....	2
3. Kentucky, Ohio, Pennsylvania	1	4	89.54	66.49	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	1	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	2	33.60	11.13	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	5	97.94	88.90	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	4	....	....	....	1	....	....	....
Total	9	30	82.99	73.60	....	....	1	1	....	....	....	....	....	....	1	1	....	3	....	5	2	3	3	6	....	....	1	1	....	2
Laborers and clay wheelers—One week.																													
1. Connecticut, Massachusetts	7	148	21.95	22.28	3	....	5	6	11	7	22	54	24	8	4	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	14	18.09	17.54	1	2	1	....	2	1	1	4	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	34	20.82	20.35	1	1	....	....	6	3	2	15	4	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	41	11.79	6.83	24	8	2	4	1	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	237	20.50	19.10	29	11	8	10	20	13	25	73	30	10	4	2	2	....	....	....	....	....	....	....	....	....	....	....	....	....

Laborers and clay wheelers—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	19	43.96	39.97	1	....	....	1	....	....	....	2	1	3	3	2	2	1	....	....	....	1	2	....	....	....	....	....	....	....
2. New Jersey, New York	4	84	51.61	46.27	1	....	1	2	1	....	....	....	6	1	11	13	14	9	3	20	2	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	9	50.52	24.45	2	1	1	1	....	....	....	....	....	....	1	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	9	18.60	10.57	4	1	1	2	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	29	63.35	87.27	....	....	....	....	....	....	1	1	....	1	....	1	5	3	3	6	1	5	1	....	1	....	....	....	....	....
Total	10	150	52.12	44.13	8	2	3	6	1	....	1	4	7	5	15	18	21	14	6	26	3	6	3	....	1	....	....	....	....	....
Loaders—One week.																													
1. Connecticut, Massachusetts	3	5	21.49	17.30	1	....	1	....	....	....	....	2	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	40	28.94	16.20	15	....	3	1	1	1	2	4	5	7	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	3	12	23.77	24.81	....	....	....	....	....	....	....	8	3	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	24	12.31	6.65	15	....	6	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	10	81	23.02	14.71	31	....	10	4	1	1	2	14	8	8	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Loaders—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	1	47.95	46.67	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	2	55	50.40	40.00	....	....	....	2	....	1	....	2	8	5	6	11	13	3	2	....	2	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	8	53.16	42.71	....	....	....	....	....	....	....	1	....	....	1	2	3	1	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	7	26.88	17.66	....	1	....	....	....	....	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	2	17	72.58	57.85	....	1	....	....	....	....	....	1	....	1	1	1	....	....	1	2	3	3	2	....	....	1	....	....	....	....
Total	7	88	53.50	42.00	....	2	....	2	....	1	6	4	8	6	8	14	17	4	3	2	5	3	2	....	....	1	....	....	....	....
Setters—One week.																													
1. Connecticut, Massachusetts	7	27	25.35	30.63	....	....	1	....	....	1	....	1	13	4	4	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	2	25.38	23.27	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	9	23.52	23.21	....	....	....	....	....	3	....	2	3	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	5	15.78	15.25	....	....	1	1	1	1	....	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	15	43	24.02	26.95	....	....	2	1	1	5	....	5	17	5	4	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....
Setters—Two weeks or one-half month.																													
1. Connecticut, Massachusetts	1	3	57.02	41.34	....	....	....	....	....	....	....	1	....	....	1	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	4	17	59.76	61.78	....	....	....	....	....	....	....	....	1	2	....	1	....	3	1	1	2	1	2	2	....	....	....	....	....	1
3. Kentucky, Ohio, Pennsylvania	1	8	66.24	56.75	....	....	....	....	....	....	....	....	1	....	....	....	....	1	2	3	1	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	2	24.24	18.45	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	9	76.40	71.01	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	4	....	....	2	....	....	....	....
Total	10	39	64.12	59.08	....	....	....	....	....	....	2	1	2	2	1	1	....	4	3	5	3	4	6	2	....	2	....	....	....	1

[1]Not including data for employees of 1 establishment having a monthly pay period.

TABLE E.—AVERAGE AND CLASSIFIED ACTUAL EARNINGS OF EMPLOYEES IN SELECTED OCCUPATIONS, IN ONE PAY PERIOD, 1922, BY PROCESS, OCCUPATION, LENGTH OF PAY PERIOD, AND DISTRICT—Concluded.

SOFT-MUD PROCESS—Concluded.

Occupation, pay period, and district.	Establishments	Employees.	Average full-time earnings in pay period.	Average earnings actually received in one pay period.	Number of employees whose earnings in one pay period were—																										
					Under $8.	$8 and under $10.	$10 and under $12.	$12 and under $14.	$14 and under $16.	$16 and under $18.	$18 and under $20.	$20 and under $25.	$25 and under $30.	$30 and under $35.	$35 and under $40.	$40 and under $45.	$45 and under $50.	$50 and under $55.	$55 and under $60.	$60 and under $65.	$65 and under $70.	$70 and under $75.	$75 and under $80.	$80 and under $85.	$85 and under $90.	$90 and under $95.	$95 and under $100.	$100 and under $110.	$110 and under $120.	$120 and over.
Wheelers, pitchers, tossers, and truckers—One week.																															
1. Connecticut, Massachusetts	6	89	$24.33	$23.48	....	3	4	1	2	4	1	15	22	13	10	9	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....
2. New Jersey, New York	1	13	23.60	21.47	....	....	....	....	1	....	5	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	4	15	16.61	16.91	5	....	....	....	1	2	2	2	2	1	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	3	18	12.81	10.63	5	2	1	7	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Total	14	135	22.26	24.14	10	5	5	8	5	6	10	24	24	14	10	9	5	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Wheelers, pitchers, tossers, and truckers—Two weeks or one-half month.																															
1. Connecticut, Massachusetts	1	15	53.78	44.25	....	....	....	1	....	....	....	2	....	....	1	3	3	3	....	1	....	....	1	....	....	2	....	....	....	....	....	....
2. New Jersey, New York	4	71	53.14	48.08	1	1	....	....	2	....	....	3	1	5	5	7	9	11	15	4	5	....	....	....	....	....	....	....	....	....	....	....
3. Kentucky, Ohio, Pennsylvania	1	5	60.72	51.42	....	....	....	....	....	....	....	....	....	1	....	....	1	1	....	2	....	....	....	....	....	....	....	....	....	....	....	....
4. Louisiana, Mississippi, Texas	1	10	18.24	12.21	....	1	3	6	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
5. Michigan	3	32	72.16	65.41	....	....	....	1	....	....	....	....	....	1	....	....	1	1	1	3	8	11	5	....	....	....	....	....	....	....	....	....
Total	10	133	56.76	49.25	1	2	3	8	2	....	....	5	1	7	6	10	14	16	16	10	13	11	6	....	2	....	....	....	....	....	....	....

APPENDIXES.

APPENDIX A.—DESCRIPTION OF OPERATIONS AND OF EQUIPMENT.

The different departments or steps in the manufacture of brick, from the digging or mining of the clay to the loading of the burned brick on trucks, railroad cars, or river barges, and the various operations in each department will be briefly discussed in their proper order, and the more important kinds of machinery and equipment in use will be described.

The Clay Pit.

The methods of digging the clay from which bricks are made vary greatly at the different plants, even among those employing the same process of manufacture. For instance, of the 45 stiff-mud plants scheduled 3 used electric shovels for scooping up the clay and loading it into clay cars, 28 used steam shovels, 3 used a "drag-line" shovel, and 11 used hand shovels. The steam or electric shovel is the most modern, resulting in increased output in the handling of the clay, especially where the usable clay extends to a great depth. At some of the Chicago yards there seems to be no limit to the depth at which good clay is found. To illustrate, at one of these yards the clay pit ranged from 40 to 50 feet in depth, and tests to a depth of 100 feet showed the clay to be as good as at 50 feet. At this yard a special steam shovel, with extra long boom, scoops up 2 cubic yards of clay at a time, the dipper passing all the way from the bottom to very near the top of the pit, thus permitting a mixture of the different kinds of clay found at varying depths. It was said that a better brick was produced as a result of such mixture. The clay is loaded onto a clay car which holds 4 cubic yards, the weight of this quantity of clay being approximately 9,390 pounds, enough to make about 1,565 regulation size brick. Here, as at many other plants, the clay car is hauled to the foot of the incline and is pulled up by cable to the "machine house," where the bricks are formed. The cable hoist is operated by the hoistman, who is stationed in the machine house at the top of the incline.

At 16 of the 45 stiff-mud plants the clay cars were hauled to the foot of the incline by "dinkey" or gasoline engines; at 3 plants horsepower was used, and at 16 the cable extended all the way to the shovel. One plant used a gasoline tug for towing canal barges laden with clay. At some plants the cars were run by gravity, at two the clay was hauled to the machine house in auto trucks, and at others it was hauled all the way in horse-drawn carts. Thirty-two of the 45 plants used the cable hoist.

Fourteen of the 26 soft-mud plants used steam shovels, 8 loaded the clay on cars by hand, 2 used scrapers, and 1 plant used a drag line. At 1 plant the clay was dredged from the river bottom.

Seven of the 26 plants used gasoline engines to haul the cars to the foot of the incline, 1 plant used a tractor and 1 an aerial tramway, and at 7 plants the cable extended to where the clay was loaded on the

cars. At 4 plants horsepower was used from the shovel to the foot of the incline and at 4 from the shovel to the machine house. Thirteen of the 26 used the cable hoist.

In the dry-clay process only 8 plants were scheduled, 7 of which gathered the clay with a scraper drawn by horsepower. Three of the 7 plants dumped the clay into a chute leading to a clay car at the foot of an incline up which the car was pulled by cable; one plant conveyed the clay in buckets by an overhead electric tramway, and at 3 plants it was carried to the machine house by the scraper or clay gatherer. At the remaining plant the clay was loaded onto the cars by hand and run by gravity to the machine house, the cars being checked by cable.

The Machine House.

The house or room in which the clay-grinding and the brick-forming machines are located is commonly spoken of as the "machine house" or "machine room." Entirely different types of machines are used in the three different processes of brickmaking.

In the stiff-mud process the character of the clay determines the different kinds of machinery necessary to transform it into brick. Some clays call for the use of a granulator, conical rolls, dry pan, and pug mill, in addition to the machine which forms the brick. Other clays go first to the pug mill and then to the brick machine. In a few instances the character of the clay is such that it goes direct to the brick machine.

A description is here given of the machinery found at a typical Chicago yard.

As is the case at most Chicago yards, the clay cars are hoisted to the machine house by cable. The hoistman also operates the machinery which tilts the clay car and dumps the clay into the hopper of the granulator.

The purpose of the granulator is to so cut up the rough clay as to permit it to go through a pair of corrugated conical rolls. The granulator consists of a strong cast-iron conical case in which revolves a horizontal steel shaft to which large steel knives are spirally attached. The revolution of the shaft forces the clay to the smaller end of the machine, from which it drops to the rolls below. The conical rolls moving against each other remove the stones from the clay.

From the rolls the clay empties onto an elevator belt which elevates it to the pug mill where it is pugged, or mixed. The clay is tempered by applying water to bring it to the proper consistency to suit the brick machine. It must be neither too dry nor too wet. When too wet, dirt made by pulverizing burned brickbats is applied and mixed up with the clay. The machine in which the burned brickbats are ground up is called a dry pan. The pug mill is somewhat similar in construction to the granulator.

The clay drops from the pug mill direct into the brick-forming machine. The one here described, like those at practically all stiff-mud plants, is of the auger type. As the clay falls into the machine it passes through another set of knives, which force the clay to the screw, which in turn forces it through a hard steel double die onto a measuring belt leading to a cutting machine.

As the ribbon of clay is forced from the brick machine it is split through the center by an upright knife, making two bars of clay

each of which is 2¼ inches thick and 4 inches wide. At most yards the clay comes out through a single instead of a double die.

As the bars reach the wire cut-off they are cut into sections of uniform length, 8¼ inches, thus forming the brick. The circular end-cutting machine in use at this plant contains 6 piano wires which cut 12 bricks with each revolution, and it makes 58 revolutions per minute, resulting in 696 bricks per minute or more than 40,000 per hour, the two machines at this yard having turned out more than half a million per day. Four of the other Chicago plants scheduled each produced between 30,000 and 35,000 per hour while the remaining one produced between 20,000 and 25,000 per hour. Of the stiff-mud plants outside the Chicago district, three had capacities of 10,000 and under 15,000 per hour; eight, 7,500 and under 10,000; twelve, 5,000 and under 7,500; eleven, 2,500 and under 5,000; each of the remaining five made less than 2,500 per hour.

Leaving the cutting machine, the bricks travel on an off-bearing belt from which they are removed by the hackers, at some plants termed "belt-boys" or "off-bearers," and "hacked" or set on cars, 840 bricks to the car. The hacking crew at this typical Chicago yard consists of 18 men to handle the product of one machine, and there are two machines there.

The cars on which the bricks are hacked are run parallel to the belt, where they are loaded. They are then taken on a hand transfer at right angles to the off-bearing belt and run into the drying tunnels.

A few plants were found where the wheel press is still in use. At one of these the clay is conveyed on a 24-inch belt from a crusher to a hopper over the mold and pressure wheels, which stand upright. As the clay is punched down through the hopper it is pressed by the pressure wheel into the molds of the mold wheel as they revolve. The bricks are dropped from the molds onto a belt, from which they are removed and set on cars by the off-bearers.

Another type of brick machine consists of a horizontal mold wheel and auger pressure. As the wheel revolves the clay is pressed into the molds, from which they are automatically ejected onto a conveyor.

In the manufacture of brick by the soft-mud process very much the same kind of machinery is used as in the stiff-mud process, up to the brick machine. The capacity of this machine is low when compared with the stiff-mud machine, only a few attaining as many as 8,000 or 9,000 bricks per hour while most of them range between 3,000 and 5,000. Because of the quantity of water added in mixing the clay the bricks are so soft as they come from the machine that they can not be handled by hand. Molds containing spaces for six or seven bricks, after being sanded by the mold sander to keep the bricks from sticking to the mold, are pushed into the machine by the mold pusher and the clay is pressed into them. The striker-off smoothes the top surface of the bricks with a small paddle, and the mold is automatically ejected from the machine onto a table. The bumper bumps the mold to loosen the bricks; the pallet boy places a metal pallet on the table; the dumper picks up the mold and dumps the six or seven bricks onto the pallet and starts it on a parallel cable conveyor which carries it to the dryer. Here the rackers remove the pallets from the conveyor and place them in the drying racks. At other yards empty dryer cars equipped with racks are run into the

machine house, and the rackers remove the pallets from the table and place them in the racks. The cars are then run by transfer to the dryer.

At a few soft-mud plants automatic brick machines were found which eliminate several of the employees mentioned above, and such machines were being installed at some other yards at the time of the special agent's visit. As the mold is automatically ejected from the machine it is inverted and bumped so as to loosen the bricks, which are dumped onto a metal pallet, the empty mold being returned to the machine.

In the dry-clay process the operations in the machine room, as in most departments of the plant, are entirely different from those in the stiff-mud and soft-mud processes and the machine capacity even less than at soft-mud plants—one yard making 5,000 bricks per hour, four making 4,000; two making 2,000; and one making 1,300. As previously stated, the clay is stored under a long shed where it is allowed to dry out or "weather" for several months. The shed at one plant was said to be large enough to store sufficient clay to run the machine for two years.

The clay is shoveled from the dump into the feeder or grinder. After going through the rolls the crushed clay is carried by belt-bucket conveyors to a rotary mixer. From the mixer it drops into the mold box which contains from 5 to 10 molds, and as the powerful press comes down the dry clay (no water whatever having been added) is so compactly pressed into the molds that durable bricks are formed.

When the press is lifted the bricks are automatically ejected from the molds and pushed out on a table, from which they are taken by the off-bearer and placed on two-wheel trucks, usually 80 to the truck. The truckers wheel these trucks direct to the kiln and toss the bricks to the setter, brick made by this process being sufficiently free of moisture to permit the elimination of the dryer.

Drying the Brick.

The green brick as it comes from the stiff-mud or the soft-mud brick machine contains much moisture, and it is necessary to remove the greater portion of this moisture before the brick is burned. There are various methods of drying brick, each of which will be discussed briefly.

Since either the waste hot air or the steam dryer is found at most of the very large plants, a detailed description is here given of the waste hot-air method as found at one of the Chicago yards. As previously indicated, the cars on which the bricks are hacked are run into the drying tunnels and allowed to remain from 24 to 30 hours. It may be of interest to note here that the "green" brick as it enters the dryer weighs approximately 5 pounds; that it loses three-quarters of a pound in the drying and an additional quarter of a pound in the burning process.

The dryer at the yard under consideration contains 18 tunnels, each 175 feet long and holds 25 cars, making it possible to place 450 cars in the dryer at one time, which means a capacity of 378,000 bricks. The waste hot air is taken from the boilers and forced by two 12-foot fans through an underground tunnel into the dryer. The temperature carried averages about 250° F. The steam or vapor coming from the bricks as they are being dried is carried off by natural draft through brick stacks.

At another yard of the same company the bricks are dried by steam and the system is on a somewhat larger scale than the one described above. The first 30 feet of the dryer has no steam pipes. The next 170 feet has steam coils under the tracks and cold-air inlets under the coils, the cold air passing up through the coils, then through the bricks, creating a vapor which is carried out through the ventilating stacks.

An exception to the general method employed in hot-air drying was at a plant where the bricks were run by belt conveyor direct from the machine house to any desired kiln and set in the kiln, where they were dried, thus eliminating the dryer entirely. This was accomplished by setting the first day's machine production in kiln No. 1, then turning on the hot air, while the second day's run was set in kiln No. 2, and the third in kiln No. 3. The hot air was then cut off at kiln No. 1, the crew returning to this kiln to set the fourth day's run of the machine, and so on until the bricks in the three kilns were set and dried.

In a few plants visited bricks were dried by "direct heat," the fire pans being built just beneath the dryer. Most of these plants used wood and coal, but two used gas, one plant making its own gas.

The "open-air" method of drying bricks is still found at a large number of plants. This is of course less expensive, but it requires from 7 to 10 days. At many "open-air" plants drying racks are found. At some the cars on which the bricks were hacked are run on tracks under the drying shed, while at others the bricks are placed on the ground to dry. In many instances the roofs of the sheds are constructed in sections so that they may be lifted to let in the air and light or closed to shut out the rain and snow.

To summarize as to drying methods, of the 45 stiff-mud plants scheduled 14 dried the brick by steam, 7 by waste heat (sometimes from the boilers, sometimes from kilns as they cooled off), 7 by steam and waste heat, 8 by direct heat (2 of which used gas), 2 by hot air, and 1 by waste heat and direct heat, 1 dried the bricks in the kiln by hot air, and 5 dried in the open air.

In the soft-mud process the 26 plants scheduled dried brick as follows: By steam, 15; open air, 9; steam and open air, 2.

In the dry-clay process the bricks are so free of moisture that the dryer is eliminated entirely. All of the eight plants scheduled set the bricks in the kiln direct, where they are slowly dried or "water smoked" by burning wood before the fire is increased to the degree necessary in burning the brick.

Setting the Bricks in the Kiln.

After the bricks are dried the loaded cars are pulled from the dryer and run onto an electric transfer, which holds three cars, and are transferred to any desired point along the kiln shed where a kiln is being set. (The shed at the yard mentioned in the first paragraph on this page is 2,000 feet long with a holding capacity of twenty million bricks. A single kiln may hold more than one and a quarter million.) The cars are then taken off the transfer and run onto a track crosswise of the shed—that is, in front of the kiln.

Formerly it was the universal practice to set the bricks in the kiln by hand, and this method is still followed at the great majority of plants, but in recent years mechanical setting machines have been

successfully used at many of the larger stiff-mud plants, especially in the Chicago district.

There are few, if any, permanent kilns in the Chicago district, a kiln being built anywhere under a long shed. These are known as "scove" kilns, and vary as to capacity from 720,000 to 1,250,000.

When the dryer car loaded with brick is run under the shed the entire unit of 840 bricks is lifted from the car by an overhead crane by means of a "fork." The "fingers" of the fork are shoved between the "finger" bricks, so called because they were so placed on the car by the hackers that the eleven prongs or fingers of the fork would pass between them. Upon being lifted by the crane the weight of the unit forces little grip plates located in the "fingers" of the fork to grip the bottom bricks of the unit, thus preventing the bricks from slipping. The unit is in this way moved to the kiln and set in the position indicated by the brick setters. The electric crane is operated by a man in the cage and the "fingers" of the fork are guided by a man on the ground. When the fork load is lowered into the kiln and the fork relieved of its weight the grip plates automatically drop back into place, thus releasing the fingers of the fork so that they can be withdrawn from the unit.

When the transfer goes to the dryer for more loaded cars it returns the empty ones to a point where they are picked up by an electrically operated conveyor or hoist and are again run parallel to the belt.

Having shown the course of the clay from the bottom of a 50-foot hole in the earth to the point where the bricks are to be set in the kiln, a description is now given of the building of the kiln after the manner of this modern Chicago yard, said to be the largest brickyard in the world, which turns out over half a million bricks per day.

The kiln is built by first laying a series of burned bricks on the kiln ground, which are known as "stringers." Each set of "stringers" is 6 bricks wide and 53 bricks long and so placed as to cover the width of the unit to be set, which is 34 inches. The sets of "stringers" extend across the shed, a distance of 40 feet. These burned bricks are placed at the bottom of the kiln to keep the bricks yet unburned from being affected by the moisture from the earth.

The first arch of the kiln is made by setting a tier of double-coaled bricks across the shed at the end of the kiln. The mixture of a double quantity of hard coal screenings with the clay before the brick is formed tends to draw the fire to these bricks, and their burning tends to hold the heat within the kiln more readily.

Inside this tier of double-coaled bricks is set another tier of ordinary bricks in which there is no coal composition. Then a space of 12 inches is left to permit the formation of the arch into which to fire and burn the kiln after it is completed. On the next set of "stringers" a solid 4-brick unit is set, and so on.

On the sides of the kiln, from the point where the kiln is 8 bricks high to the top of the kiln, there is laid a single tier of double-coaled bricks, but at each end of the kiln this double-coaled tier extends from the ground to the top. The purpose of this construction, as indicated above, is to assist in burning the outside bricks of the kiln which are most exposed to the cold.

After the kiln is set it is incased in a burned-brick wall which is one brick wide and the wall is then daubed with loam to hold the heat

within the kiln. Small quantities of cement and water are usually added to the loam. This work is known as the "walling and daubing" of the kiln. Similar work on the roof of the kiln is referred to as "platting."

At the great majority of yards throughout the country where the bricks are artificially dried, whether by steam, waste heat, or gas, the cars are pulled from the dryer and shoved by hand to the kiln. The tossers remove the bricks from the car and toss them, usually two at a time, to the setters who set them in the kiln.

It is not unusual, however, especially at soft-mud plants, for the wheelers to remove the pallets from the drying racks of a steam dryer, stack the bricks on wheelbarrows and wheel them to the kiln. As a rule, such wheelers do not toss the brick, this work being done by the tosser while the wheeler takes an empty barrow to the dryer for more brick.

As previously stated, it is the practice at dry-clay plants for the truckers to wheel trucks of brick from the machine to the setter, who sets them in the kiln, where they are slowly dried, or "water smoked," by wood fire for 3 to 3½ days in summer and 5 to 6 days in winter, after which coal is used for burning. This can be done in the dry-clay process because of the lower percentage of moisture in the brick as they come from the machine. The advantage is that it reduces the work of handling the brick by eliminating the dryer, as such.

Burning the Kiln.

The purpose of burning is to remove the remaining moisture and to harden the brick. The burning causes a partial fusion of the various constituents of the brick, cementing them so as to prevent disintegration.

In the burning of brick various kinds of fuel are used—namely, oil, oil and steam combined, natural gas, artificial gas, wood, and coal. The great majority of plants use wood or coal or both, but in some sections oil or oil and steam is used almost exclusively, particularly in the Chicago district.

Since a description has been given of the work in other steps of brickmaking as it is done at a typical Chicago yard, a brief description will now be given of the burning of a kiln of bricks at the same yard before taking up the burni[illegible]ith wood or coal.

The oil pipe lines are drawn up to the arch-holes, and both oil and steam are forced into the nozzle. It is first turned in very slowly on one side of the kiln and is lighted by a torch. The combination of oil and steam is projected directly against a burned brick, known as the "target," placed 18 inches inside the arch-hole, or "dog" hole as it is sometimes called, which aids in the ignition of the oil because this brick gets hot quickly and thus increases the temperature of the surrounding air in the arch-hole. One side of the kiln is usually fully lighted before going to the other side.

As the temperature is raised to a point sufficient to keep the oil burning the valves on the burners are opened, slowly at first, then wide. The burning is kept up for about 18 hours, by which time the temperature in the lower part of the kiln reaches 1,900° to 2,000° F., sufficient to burn the bricks as high as the seventh from the bottom. This is also the maximum temperature required during the burning of an entire kiln.

After the initial 18 hours of burning the kiln begins to settle. The oil is then turned off and air pipes are inserted in the arch-holes. The steam is again turned on, which tends to suck air into the kiln, the combination of steam and air forming a complete combustion as it is forced through the kiln, causing the heat in the lower part of the kiln to rise without further use of oil or fuel.

This method, which has come to be known as the "blowing process," is continued until the forty-fourth hour of burning is reached, by which time the temperature at the top of the kiln has reached 1,900° F., after which four hours more are required to complete the burning of the kiln. The temperature at the bottom of the kiln, which was 1,900° F. at the eighteenth hour, has then dropped to 400° F., due to the cold air that was drawn in at the bottom.

It is claimed that the "blowing process" has resulted in a reduction of 40 per cent in the fuel consumed, as compared with the old method of burning with oil, the number of gallons per thousand bricks now being 12 to 14, as against 20 to 25 formerly.

Five to eight days are required in the Chicago district for the kiln to cool off sufficiently to permit of the handling of the brick.

It has been stated above that it is the rule in the Chicago district to have no permanent kilns but to erect "scove" kilns. They are so called because they are "scoved" or smeared with clay. They are invariably rectangular in shape and the entire structure is removed after the kiln is burned.

In contrast to this, permanent kilns are found in most other sections of the country. The great majority of these are rectangular, though many round or "beehive" kilns are still in use. The rectangular kilns at stiff-mud plants range in capacity from 25,000 to 1,000,000 bricks, most of them from 400,000 to 600,000, while some Chicago kilns hold 1,250,000. The round kilns are small in comparison, ranging from 25,000 to 50,000 capacity.

The "continuous" kiln is another type, several of which were found at some of the stiff-mud plants. These kilns are so called because they can be operated continuously, resulting in a reduction in time and fuel cost. A kiln of this kind is constructed of several sections or chambers, which are set with bricks and burned in rotation. When one section of the kiln has been set with bricks the fires are started and the bricks in this chamber are being burned while the bricks are being set in other chambers. When the second chamber is fired the dampers between the first and second are opened, so that the surplus heat from the first may be let into the second, and so on. Sometimes there is nothing but a paper wall between each two sections and this is torn out to let the heat pass from one chamber to another. The capacity of these kilns is very great, most of them ranging from 800,000 to 1,500,000 bricks, though some of 350,000 were found.

At practically all soft-mud yards the kilns are rectangular and are of more uniform size, most of them being of 500,000 or 600,000 or 700,000 capacity. One however was as low as 180,000 and a few were as high as 1,000,000 capacity.

At the few dry-clay plants visited the capacity ranged from 230,000 to 500,000, but the prevailing figures were 350,000 and 400,000.

Most plants outside of the Chicago district using oil for burning reported from 5½ to 6 days as the time required for burning a kiln, which is more than twice the time required by the "blowing process" used in Chicago.

At plants where wood or coal or both wood and coal are used for burning brick the time required for burning a kiln varies considerably with the weather as well as with the character of the clay and size of the kiln. It is the practice at many yards to burn with wood for the first 12 to 24 hours in order gradually to remove from the brick such moisture as was not removed in the drying. This is known as "water smoking" and tends to prevent the bricks from cracking. Wood is shoved into the arches of the kiln to a distance of 16 feet from each side. When the burning is well under way coal is thrown in at each end of the various arches, after which the ends of the arches or "dog holes" are closed up. The burning period ranges from 5½ to 9 days and nights, though the majority of plants report 7 days. It then requires from 6 to 10 days for the kiln to cool off to the point where the brick can be handled.

It requires from one to two days longer to burn with wood than with wood and coal and from one to two days longer to burn a kiln in winter than in summer.

Replies to inquiries at the principal dry-clay plants indicate that it requires 3½ to 5 days for the brick to dry off in the kiln and an additional 7 or 8 days to burn the brick. As previously stated, bricks made by this process are so free of moisture that they are not dried, either by steam or in open air, before being set in the kiln.

Loading.

The great majority of brick manufacturers still employ the hand method of loading the bricks—whether on trucks, railroad cars, or boats. The bricks are tossed down—two or three at a time—to the wheeler who places them on a wheelbarrow and then rolls it along a runway onto the railroad car or boat. Sometimes the wheeler stacks the bricks in the car or on the boat, but more often this is done by another man while the wheeler returns to the kiln with an empty wheelbarrow for more bricks.

In practically all instances of hand loading on trucks the bricks are simply tossed into the truck, no effort being made to stack them in order.

Not infrequently there is found a semimechanical device for loading bricks on railroad cars. This usually takes the form of a gravity conveyor system, consisting of a carrier chain of iron rollers sloping from the kiln toward the car. The loaders in the kiln start the bricks on the rollers and the weight of the bricks is sufficient to keep them moving until they enter the car, when they are removed and stacked in order by other loaders at that end. In case of a curve to be rounded by the bricks—and sometimes even where the course is straight—a metal strip is fastened to either side of the carrier to prevent the bricks from falling off.

Another semimechanical device consists of a multiple belt arrangement. These belts are made in lengths ranging from 8 to 26 feet. If it is desired to load onto a truck, one end of the belt is placed in the kiln and the other is projected over the truck, the belt being supported by an upright piece which may be folded up when the belt is lowered

flat on the ground. A hopper is placed over the end of the belt in the kiln and the edges of the belt at that end curve upward to keep the bricks from falling off as they are dropped into the hopper and started on their way by the moving belt.

When it is desired to carry the brick a greater distance—that is, to a railroad car or a barge—the belts are made to overlap, thus feeding one another until the bricks reach their destination.

Still another semimechanical scheme is used in some parts of the South where open freight cars are used for transportation. The bricks are taken from the kiln by hand and tossed into a crate which holds about 500. The crate is picked up by an overhead crane and conveyed to the open freight car. The supporting chain at one corner of the crate is released and the bricks slide from the crate into the car. Because of weather conditions, the open freight car is little used in the North.

A system used at some Hudson River yards is also a combination hand and mechanical arrangment. The bricks are placed in crates by hand. The crates are lifted by crane and placed on automobile trucks and carried to the river landing, where another crane lifts the crate from the truck and places it on board the barge. The bricks are then removed from the crate by hand and stacked on the barge. In some cases the crates go with the bricks to their destination and are then returned.

At some yards, where delivery is made by truck only, crates filled with bricks are moved by crane to the autotruck, usually four crates of 750 bricks each to the truck, the crates going with the bricks to the delivery point, being returned later.

Strictly mechanical loading, as distinguished from semimechanical and hand loading, has reference to the use of a machine which picks up an entire unit of bricks, 750 to 1,000, and places them on a truck, stacked in the same order as they left the kiln, without the necessity of being touched by hand.

This is the same kind of machine as that used for setting an entire unit of bricks in the kiln. It is found in use more often at the larger stiff-mud plants. Thus it is seen that the bricks not only are set in the kiln mechanically but also are removed mechanically. In fact, with the exception of removing the bricks from the belt to the dryer cars, every operation is performed mechanically at the typical Chicago plant referred to in various sections of this report.

At the soft-mud plants it is more difficult to build up the unit of bricks in such a way as to permit of mechanical handling to such an extent as found at some of the larger stiff-mud plants. However, the semimechanical loading on boats with the use of cranes, as referred to above, is in common use at soft-mud plants.

Loading at dry-clay plants is usually done by hand with a wheelbarrow.

APPENDIX B.—GLOSSARY OF OCCUPATIONS.

A brief description of each of the occupations for which figures are presented in this report follows:

Boiler fireman and steam dryer fireman.—Fires the boiler in the power house and at some plants acts as power engineer at night, or fires the steam dryer system.

Brick-machine operator.—Operates the machine which forms the brick.

Bumper.—Bumps the molds to loosen the bricks so that they will not stick to the molds.

Burner.—Has charge of the burning of the kiln, watches the temperature, instructs the kiln firemen when to fire and when to cease firing the kiln, and sees that the kiln laborers keep a sufficient supply of wood and coal near the arches of the kiln.

Cable hooker.—Hooks cable to clay car at foot of incline from which it is drawn up to the machine house.

Cart driver.—Drives cart, hauling away brickbats, etc.

Clay-car loader.—Digs and loads clay into clay cars by hand with use of pick and shovel.

Clay-cart driver.—Where the clay pit is not too deep, drives horse-drawn car of clay from clay pit to machine house and dumps the clay into a pit inside the house, from which it can be shoveled onto a belt which feeds the pug mill.

Clay-pit man.—Works in front of steam shovel. Is really clay-pit laborer. Sometimes called shovel man.

Clay-press operator, dry clay.—Operates the powerful press which presses the clay into the molds so compactly that it forms a durable brick.

Clay wheelers.—In the dry-clay process the clay is left under a shed for several months in order to let it dry out, or "weather." When the nearer supply has been shoveled into the feeder the wheelers use wheelbarrows to bring up the supply as needed.

Conveyor man.—Watches the pallets as they move on parallel cable conveyor to see that they round the curves and that none fall off.

Craneman.—Operates overhead crane used in mechanical setting and loading of brick.

Dinkey engineer.—Operates dinkey engine which pulls one or more clay cars from the location of the shovel to foot of incline leading to machine house. At some plants, where the grade permits, the dinkey engine hauls the clay car into the machine house.

Drag-line engineer.—Operates engine which furnishes power to "drag line," which draws a large shovel, scooping up clay and carrying it to an elevation from which it can be dumped into a clay car.

Dry-pan man.—Operates dry pan in which burned brickbats are ground into powder which is used for stiffening clays that are too soft.

Dumper.—Dumps the bricks from the molds upon the metal pallets and starts pallet of 5 to 7 bricks on cable conveyor leading to drying racks.

Empty-pallet boy.—When the brick have been dried and removed from the pallets in the drying racks the boy places the empty pallet on the lower part of the conveyor which returns it to the brick machine.

Gasoline engineer.—Operates gasoline engine used in lieu of dinkey engine.

Granulator man.—Operates the granulator in which the clay is ground up.

Groundman.—Guides the "fingers" of the fork by which an entire unit of 840 bricks are lifted by the crane and lowered into the kiln.

Hoistman.—Operates the cable which hoists the clay car from the clay pit to the machine house.

Kiln fireman.—Under supervision of the burner, the fireman fires the kiln with wood, coal, oil, or gas.

Laborer.—Does cleaning up under kiln shed and about the yard, helps to load débris on carts, unloads coal or other material, and brings up wood and coal to kiln.

Loader.—Tosses the burned brick from kiln to crates to be moved by crane to truck or open freight car. Tosses brick from kiln into wagon or truck. Tosses brick down from kiln to wheelbarrow man to be wheeled to railroad car or barge. Wheelbarrow man is also called a loader. Other loaders inside the car or on the barge remove bricks from wheelbarrow and stack them in order in the car or on the barge. Other loaders take bricks from the kiln, start them on gravity conveyor or multiple belt conveyor leading to freight car or truck. Some work at other end of conveyor, removing the bricks therefrom and stacking them in order in the freight car.

Mold pusher.—Shoves the empty molds into the brick machine.

Mold sander.—Sands the empty molds before they are shoved into the brick machine. The sand keeps the wet clay from sticking to the molds.

Off-bearer (hacker).—Removes green brick from the belt and hacks or stacks them on cars which are run into the dryer. At some open-air plants, removes brick from belt and places them on kind of a wheelbarrow used for wheeling them to the drying shed, where they are hacked to be dried.

Pallet boy.—Places empty metal pallets in convenient position for brick to be dumped upon them.

Pug-mill operator.—Operates the pug mill in which the clay is mixed.

Racker.—Removes pallets of bricks from cable conveyor and places them in drying racks. Where dryer cars are used instead of the cable conveyor the racker places the metal pallets in the racks of the car which is then shoved into the dryer.

Roll operator.—Operates conical rolls which throw out stones from the clay.

Setter.—Sets the brick in the kiln to be burned.

Stationary engineer.—Operates the engine which supplies power for running the brick machine.

Shovel engineer.—Operates the engine which furnishes power for the steam shovel to scoop up clay from the earth and load it into a clay car. He usually looks after the engine and the crane, though at some large plants both an engineer and a craneman are found on the steam shovel.

Steam-shovel fireman.—Fires the engine which supplies power for the steam shovel.

Striker-off.—Strikes off surplus clay from the top of the molds, making an even-surface brick.

Teamster, driver of wheeler, and scraper operator.—Drives the clay gatherer—sometimes called a scraper, sometimes a wheeler—a kind of shovel which scrapes up the clay and dumps it under the clay shed or into a chute leading to a clay car at foot of the incline, from which the car is pulled up to the machine house by cable. The clay-gathering machine is drawn by horse power.

Tosser or pitcher.—Tosses to the setter brick to be set in the kiln for burning.

Trackman.—Extends and keeps in repair the dinkey railroad track in the clay pit.

Transfer man and car puller.—Pushes dryer car on which green brick are hacked or racked onto transfer and into dryer and pulls car from dryer when brick are dried, shoving it by transfer to kiln.

Trucker and wheeler.—Wheels brick from machine to drying shed or from dryer to kiln. Loaders who wheel the brick from the kiln to railroad cars or barges are also called brick wheelers.

NOTE.—In the case of automatic brick machines most of the above soft-mud occupations are eliminated, the work being done by the machine.

APPENDIX C.—WORKING AGREEMENT, 1922-23.

The following is a copy of the working agreement between the Brickmakers' District Council No. 1 of the United Brick and Clay Workers of America and the Common-Brick Manufacturers' Association in the Chicago district, in effect during the period for which wages data are shown in this report.[1]

BRICKMAKERS' DISTRICT COUNCIL NO. 1.

WORKING AGREEMENT, 1922-23.

SECTION I.

All employees who are classified in the scale of wages of this agreement shall be members of Brickmakers' District Council No. 1 of the United Brick and Clay Workers of America. No distinction shall be made as to what local men employed belong.

This organization hereby agrees that it will at all times furnish a sufficient number of capable men to properly operate the yard or yards of the manufacturer. Should the organization fail, or be unable, to furnish men in sufficient numbers within two days after being notified by the manufacturer to furnish men, the manufacturer may employ men who are not members of the organization, and may pledge such men 30 days' work. At the end of the 30-day period, these men may be replaced by union men, but if the organization fails to supply union men to replace such nonunion men at the end of said 30-day period, the manufacturer may retain such nonunion men for a further period of 30 days and continue to do so until this organization shall be able, at the end of some 30-day period to supply union men: *Provided, however,* That such nonunion men be employed with the understanding that they pay the same dues per month as are paid by members of this organization and are subject to the same check-off regulations as apply to union men.

After working 30 days temporary employees must be accepted into the union if such employees elect to join.

The manufacturer on his part agrees to promptly notify the organization when he is in need of men.

The manufacturer further agrees to check off all initiation fees, dues, fines and assessments each month, provided that the local union or the business agent of this organization submit a list in duplicate to the manufacturer, arranged according to yards when necessary, at least 10 days prior to pay day.

The manufacturer reserves the right in this agreement to adopt any and all improved machinery and methods in the conduct of his business which he may deem advisable to adopt, and in case any new machinery is used which displaces hand labor, such machinery shall be operated at a price not to exceed the price paid to men operating similar machinery in brickyards in the Cook County district.

The manufacturer shall have the right to discharge men not satisfactory to him.

SECTION II.

Eight hours shall constitute a day's work with the following exceptions:

1. Burners and their helpers may work not to exceed 12 hours per day on all oil-burning yards.

On yards where brick burning is done with wood and coal, the head burner and second burner may each work not to exceed 12 hours per day; helpers, however, must not work more than 8 hours a day, unless it is impossible to secure enough men to do this work, in which event they, too, may work longer

[1] This agreement expired April 30, 1923. The new agreement provides for an increase in wages of approximately 12½ per cent and runs for one year from May 1, 1923.

hours. On wood and coal burning yards one man shall be employed for each five arches of brick or major fraction thereof.

On yards that have continuous burning with wood and coal there shall be one man to each seven arches of brick.

2. Starting time for tossers shall be determined by the manufacturer. Regardless of starting time all trucks or teams under the kiln shed by 4 o'clock shall be loaded at straight time. It is agreed that if more than 50 per cent of the number of trucks or teams in use on that day shall arrive between 3.30 o'clock and 4 o'clock the excess trucks shall be loaded at time and one-half. Any additional tossing shall be offered to such tossers at time and one-half. If such tossers do not elect to do such tossing, then other men may do such work, and regular tossers receive no pay for such work. If tossers are not at work when loading must be done, such work may be done by any men belonging to the union.

Team track brick tossers shall report for work at 6 o'clock a. m. Any truck or wagon reporting at team track after 4 p. m., which shall then be loaded shall be paid for at rate and one-half. In case trucks or wagons which arrive after 4 p. m. are loaded by the driver or the chauffeur, or his assistant, the tosser shall receive pay for such loading, but only at straight time. In case only one load of brick remains in the car on team track at 4 p. m., loaders may be required to toss these brick at straight time. Wherever practical, one tosser shall be assigned to each four teams, or to two trucks, or to one truck and two teams.

3. Wallers and daubers may be required to work more than 8 hours—but shall not be required to work in excess of 48 hours per week at walling and daubing.

4. Starting time for loaders shall be determined by the manufacturer. No car loaders shall be required to wait longer than one hour for empty cars. Any further waiting time asked for by the manufacturer after the first hour shall be paid for at $1 per hour. Such loaders must remain at yard until released by the manufacturer for the day. When extra loaders are needed the manufacturer shall have the privilege of selecting whatever men he chooses for this work. All loading to be paid for at straight time.

5. Setting gangs on machine setting yards shall be required to work 10 hours at straight time when, in the judgment of the manufacturer, it is necessary, and all men who may be required to assist setting gangs shall be required to work at straight time. Setting gangs and all men assisting setting gangs shall be allowed rate and one-half for all time in excess of 10 hours.

The hours for starting and completing a day's work shall be designated by the manufacturer, and time shall be continuous within such designated hours, unless work for the day is suspended; in which event men shall be given time up to the hour of suspension.

Setters, transfer men and car pullers at dryer may be required to start work a half-hour in advance of the regular starting time.

Men reporting for work in the morning, when ordered to report by the manufacturer, shall be allowed two hours' time for so reporting on all days during which the yard does not operate, unless such yard does not operate on account of working conditions. In the event that they are employed at other than their usual tasks on such days, they will be paid only for the time they work. Belt men shall be given the same pay for extra work as is offered other men in case there is extra work to be done on such days.

All employees must remain at their respective posts during working hours unless work for the day is suspended.

Nothing in this agreement shall prohibit an employer, one foreman, or one member of any firm from working on the yard not more than two hours on any one day.

SECTION III.

There shall be no work performed on Sundays, New Year's Day, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas, except as herein provided for.

Any work outside of brickmaking on the yard may be performed on any of the above-mentioned days, and shall be paid for at the rate of time and one-half. All repair work after 8 hours shall be paid for at the rate of time and one-half. Where it is necessary for men to work more than 8 hours for the proper operation of the plant, they shall be paid straight time up to 10 hours, and time and one-half thereafter. Fires shall not be set to kilns 24 hours preceding New Year's

Day, Decoration Day, Fourth of July, Labor Day, Thanksgiving Day, and Christmas. Burners and helpers to receive straight time.

All members of this organization who are citizens and who are entitled to vote, shall be given opportunity to do so both on election and primary days: *Provided, however,* That all employees who are entitled to vote shall, on the day previous to election or primary day, notify the foreman of their intention to exercise their right to vote, and shall give their address and polling place.

In localities where the polls close at 5 p. m., the yard shall, if necessary, close down for the day at 3 p. m., and in localities where the polls close at 4 p. m., the yard shall, if necessary, close down at 2 p. m., in order to give such men the opportunity to vote, and all men entitled to vote and who do vote shall be entitled to and shall receive pay up to the regular quitting time. All other employees, however, shall receive pay only for the time they actually worked on such days.

SECTION IV.

All yards shall have a stated pay day, to wit: All employees shall collect their wages semimonthly; the pay roll ending with the fifteenth day of the month shall be paid on the twenty-fifth day of such month, and the pay roll ending with the last day of the month shall be paid on the tenth day of the succeeding month. On yards where hand setting is done, kilns shall be paid for not later than four days after the completion of the kiln. Upon discharge, men shall receive their pay or a time check showing the amount due. In case a yard is shut down by the manufacturer, all demands for labor shall become due and payable within four days. Men leaving their employment shall not be entitled to pay prior to the next regular pay day. If pay day falls on a Sunday or holiday, employees shall receive their pay on the previous day.

SECTION V.

Each yard shall have a steward, whose duty it shall be to enforce this agreement. In the performance of this duty he shall hear complaints of any and all character made by either the employees or the manufacturer, or his agent, the foreman, and shall then and there endeavor to settle such complaints. He may call upon the president of his local union for assistance, if he deems it necessary to do so. Cases which can not be adjusted in this manner shall be reported to the district council by him. If the district council can not settle the matter in dispute with the manufacturer, the case shall be left to the decision of a man to be agreed upon as umpire by the business agent of District Council No. 1 and the manufacturer. Said umpire shall render a decision within three days after all evidence in the case shall have been presented to him, and his decision shall be final and binding upon both parties.

Under no circumstances shall a yard be shut down by either the steward, the men, or the local unions having jurisdiction over the yard where a complaint is under investigation. Anyone, be he steward or any other individual, or the local union guilty of bringing about the shutdown of a yard shall pay the penalty prescribed in Section XX of this agreement.

If a steward is neglectful of his duty, and complaint to this effect is made against him by the manufacturer or his foreman, he shall be removed from office, if the charge against him be proven to the satisfaction of the business agent of this organization and the business agent of the manufacturer.

SECTION VI.

It is agreed that the business agent of Brickmakers' District Council No. 1 shall have free access to the yard of the manufacturer during working hours, except during the time of strikes or lockouts.

SECTION VII.

The label of Brickmakers' District Council No. 1 and the name, initial, or number of the yard of the manufacturer shall be placed upon the brick manufactured, except in the case of side cut brick, or in any other cases where the marking may be impracticable. Such label shall at all times be the property of Brickmakers' District Council No. 1 and may be withdrawn at any time for any violation of this agreement.

SECTION VIII.

There shall be a regular walling gang composed of two wallers and daubers to each machine making from 100,000 to 150,000 brick per day; three wallers and daubers for each machine making more than 150,000 per day; and four wallers and daubers to each machine making more than 300,000 brick per day. They shall perform no other work when walling and daubing requires their attention. On yards where no regular gang of wallers is employed, this work may be performed by other members of this union. It is agreed and understood that such men be paid by the arch, as provided in Section XVII. Wallers and daubers must complete their work on kilns within 24 consecutive hours (one full day) after the setting gang has completed its work on the kiln, provided double coal setting has been kept up with run of kiln, and provided further, that kilns completed Saturdays be completed not later than 12 o'clock noon on that day. Nothing herein contained shall prevent the manufacturer from employing other than the regular walling gang to complete the walling and daubing in case it appears that the regular gang can not or will not complete their work on a kiln within the time limit herein specified. Wallers and daubers shall not work more than 48 hours a week at walling and daubing. Material for daubing kilns shall be delivered by the manufacturer, and hot water for mixing daub shall be furnished wallers during cold weather at all times where the thermometer registers lower than 40 degrees above zero. The manufacturer shall furnish one pair of rubber mittens of standard make to each waller per season. Wallers and daubers shall be required to get their own burned brick for walling purposes, but shall not be required to wheel such brick more than eight sections of kiln shed.

SECTION IX.

Brick loading shall be done in such type of cars as are supplied by the railroad companies without discrimination.

Brick must be piled evenly throughout the entire length and width of cars, and the space between doors shall be piled with brick in such a manner as to comply with section 1906 of the General Rules for Loading Materials of the American Railway Association—Revised Edition, 1918, and as illustrated by Figure 107 in said rules, in case the manufacturer desires to have his brick loaded in this manner.

When select or sewer brick are loaded at yards having a single loading track, loaders shall be paid for 3,000 extra brick per car.

When tight-end gondola cars, or drop-end gondola cars, or hopper-bottom cars are furnished for loading by railroad companies, these cars must be loaded. In the case of tight-end gondolas and hopper-bottom cars, the manufacturer shall furnish an extra man at loaders' rates and another man at the hourly rate, which latter shall pile brick until the three outer tiers in such cars have been erected throughout the entire length of the car, when he shall be taken off.

The loading rule of the American Railway Association shall not apply to tight-end gondolas, drop-end gondolas, or hopper-bottom cars, nor shall the rate for loading according to said rule apply.

It is further agreed and understood that each gang of loaders shall make a separate loading ticket, of such form as may be determined by the manufacturer, for each car of brick, which ticket shall show the car number and initial, date of loading, the number of tiers of brick in such car, the height of tier, and the number of brick in each tier. They shall also keep tally in the same manner as has been done heretofore. Such ticket, after having been signed by the person designated by such gang of brick loaders to do such signing, shall be handed to the foreman before the brick loaders leave the yard on each day. A duplicate ticket shall be retained by each loading crew.

Only merchantable brick shall be loaded. Any gang of loaders whose cars contain clinker brick, half-green brick, or swelled brick, or more than 15 to 20 per cent of soft brick in a carload of kiln-run brick, or any but sewer or select brick, when sewer or select brick are specified, shall be fined in accordance with the provisions of Section XX of this agreement.

In case a loading gang is ordered by the foreman to load brick of such quality as in their opinion might subject them to the fine provided for in Section XX of this agreement, they shall write across the face of the loading ticket a short statement to that effect, and in that event they shall not be found guilty of a violation of this section, even though the car designated by such loading tickets contains unmerchantable brick.

When loaders are required to load stuck brick, they shall receive an extra man for each single gang, and for all brick thrown out of kiln they shall receive the regular loaders' scale, except bats thrown out, which shall be paid for at the regular rate in excess of four dump-cart loads per section. All red brick shall be carefully piled and paid for at the regular rate. No soft brick, stringers, platting or walling, or arch brick, or defective brick of any kind shall be visible in the doorway of cars.

Brick will not be regarded as stuck brick when it is possible to separate them without tools.

If brick are loaded by belt or other loading device, the manufacturer reserves the right to do such loading by day labor.

SECTION X.

Where brick are set by hand there shall be at least five setting gangs, composed of one setter and two tossers each for each and every 100,000 brick made on dryer yards, and an additional gang for each additional 20,000 brick made. Where brick are set from hacks there shall be at least four setting gangs, composed of one setter and three wheelers each for each and every 100,000 brick made, and an additional gang for each additional 25,000 brick. The same pro rata rule will apply to yards making less than 100,000 brick.

On Builders' Brick Co. yard there shall be 18 men employed when brick are set from belt to kilns. They shall also be required to lay bottoms and wheel brick to belt for platting, and shall set double coal brick with each run of setting as required. The company shall provide two extra men to help setters when double coal brick are set.

SECTION XI.

The maximum size of kiln-burned brick shall be 2¼ by 3¾ by 8 inches.

A persistent violation of this section shall subject the manufacturer to the penalty prescribed in Section XX. When the manufacturer permits his machine man to determine the size of die necessary to produce brick of the size specified, he shall not be subject to fine if brick are oversize.

SECTION XII.

The limit of wheeling green brick shall be six sections of kiln shed. Any distance over this shall entitle each gang to one extra wheeler, and wheeling from one kiln shed to another shall also entitle each gang to an extra wheeler. When brick are set by hand they shall be set not over 45 brick high. Double coal shall be kept up with run of kiln. The kiln ground is to be kept in such condition and at such grade that loaded cars need not be pushed upgrade. The transfer track shall be kept in such condition that loaded cars need not be pushed upgrade. On transfer yards, green brick men shall be given an extra man when brick are set more than 30 sections of kiln sheds from the nearest side of the dryer, and shall be paid the same rate as setters. When brick are delivered to the kiln by electric transfer car or otherwise, the wages of such men necessary to deliver the brick shall be paid by the setting gang.

If kiln ground is not kept in such condition as to enable setting gangs to continue at their work, the manufacturer shall be penalized as provided in Section XX of this agreement.

SECTION XIII.

No member of this organization, whether he be pieceworker or a man working on time, shall quit the yard in the course of the day before the regular quitting time, without permission from the foreman. Any violation hereof shall be penalized in accordance with Section XX of this agreement.

SECTION XIV.

Under no circumstances shall this organization or any of its members, determine when a yard is to be shut down; nor shall any excuse be resorted to for shutting down a yard. The yard shall be operated on every day the manufacturer determines to operate, with such exceptions as are noted in Section III, and it shall be the duty of the union to supply substitutes where men are obliged to be temporarily absent from their post.

SECTION XV.

It is agreed and understood that no local union belonging to District Council No. 1 shall adopt any rules which in any way conflict with this agreement, or any section thereof. Any rule conflicting with any of the provisions of this agreement shall be null and void, and subject the local unions to the penalty prescribed in Section XX of this agreement.

SECTION XVI.

No intoxicating liquors of any kind shall be permitted on the yard of the manufacturer, nor shall any employee be under the slightest influence of liquor during working hours. A violation of this section shall be sufficient cause for discharge.

SECTION XVII.

The following wage scale shall be paid:

A. CLAY PIT.	Per hour.
Steam-shovel engineer	$0. 92
Drag-line engineer	.92
Tug pilots	.83
Steam-shovel craneman	.75½
Steam-shovel fireman	.70
Clamshell operator	.80½
Deckhand on dredge	.70
Man in front of shovel	.72½
Other men working around shovel	.70
Dinkey engineer	.83
Gasoline engineers	.83
Electrical-dinkey engineers	.74½
Drivers and other workers in clay hole	.66½
Cable hooker	.65½
Shovelers in clay hole	.72½
Cart drivers in clay hole	.72½
Plowman in clay hole	.72½

Steam-shovel engineers supplying clay for one machine shall do their own firing; when supplying clay for two machines they shall be entitled to a fireman.

Dinkey engineers shall do their own firing.

Both steam-shovel and dinkey engineers shall raise their own steam in the morning, and shall be allowed one hour at straight time therefor.

Steam-shovel and dinkey engineers shall be allowed an hour at straight time for doing their own firing.

Plowman shall receive extra time for sprinkling.

B. MACHINE HOUSE.	Per hour.
Hoist men	$0. 72
Steam-hoist men	.76½
Granulator men	.72
Extra men to shovel dry stuff	.66½
Roller men	.70
Pug-mill men	.72
Machine men	.81
Machine men where no hopper man is used	.83
Dry-pan men	.70
Sandman	.70

The machine man may be designated as the general repair man in the machine house, and if so appointed shall have general charge of repairs and be responsible for and, if possible, do all oiling of all machinery in machine room before and after hours, the hoist man, granulator man, and pug-mill man doing all oiling necessary during running time. All men on machines, when available, shall help repair their machinery when helpers are needed.

C. BELT ROOM.	Per hour.
Belt men	$0. 75½
Cut-off men	.84
Pulley men	.84

	Per hour.
Transfer men:	
Hand transfer	$0. 70
Power transfer	.72½
Car shovers in dryers	.70
Empty car shovers	.70
Car oilers	.70
Clean-up men	.66½
Belt adjuster on Builders' yard	.79
Brick switchers on Builders' Brick Co. yard, per man, per kiln	33. 20
Belt men on Lake View Brick Co.'s yard	.66½
Belt wheelers and hackers on hacks	.75½
Hackers from cars on open yards	.72½
Transfer men on open yards	.70
Empty car shovers on open yards	.70

Any belt man who fails to catch his share of brick or who shall not properly hack his brick on cars shall be fined in accordance with the provisions of Section XX.

On La Bahn Bros.' yard all belt men shall receive equal pay.

D. BRICK SETTING.	Per hour.
Dryer men (car pullers)	$0. 70
Transfer men on open yards	.70
Controller men:	
Three-men transfer	.72½
Six-men transfer	.74
Operators of electric cranes	.75½
Helpers	.70
Special labor under kiln shed not otherwise classified	.70
Bottoms men	.70
Setting and tossing green brick from cars, per M	.87½
Setting and tossing from wheelbarrows, per M	.93½
Setting green brick on Builders' Brick Co. yard (18 men), per kiln per man	

On yards 3, 5, 22 and 35 of the Illinois Brick Co., and on the yards of the Bach Brick Co., the setting gangs shall be paid 3 cents per hour in excess of the rate above fixed on account of black brick.

On hand-set yards black brick shall carry an extra of 4 cents per M.

On all hand-set yards platting and stringers are to be paid for as brick set.

E. BRICK BURNING.	Per hour.
Head burners	$0. 76½
Second burners	.74½
Helpers	.70
Cart drivers	.67½
Special labor not otherwise specified	.70

F. BURNED BRICK HANDLERS.	Per M.
Loading burned brick in cars from machine-set kilns, 45 brick high	$0. 64
Loading burned brick in cars from machine-set kilns in excess of 45 brick high, extra for each brick in excess	.00⅓
Loading burned brick in cars from hand-set kilns, 45 brick high	.62
Loading brick in drop-end gondola cars	.79
Loading brick in tight-end gondola cars	.79
Loading hopper-bottom coal cars	.79
Loading drop-end, tight-end and hopper-bottom cars on Builders' yard	.83
Loading according to American Railway Association rule	.72
Tossing burned brick to wagons from kiln (or 75½ cents per hour)	.25½
Loading boxes at kilns	.39½
Tossing brick to trucks when no help furnished	.48
Loading trailers at kilns	.48
Tossing brick to wagons from cars	.24

	Per M.
Tossing brick to trucks or trailers at kilns when no help is furnished	$0. 48
Tossing burned brick to trucks or trailers when the chauffeur and chauffeur's helper assist in loading	.24
Loading on Builders' Brick Co. yard	.75½
Loading burned brick on Builders' Brick Co. yard from kilns—	
No. 7—extra	.02
No. 8—extra	.03
Loading by means of belt at Builders' Brick Co. yard	.70

MACHINE LOADING ON WAGONS, TRUCKS, OR CARS.

	Per hour.
Operators of electric cranes	$0. 75½
Three helpers	.70
All other helpers	.68

When extra men are employed at brick loading they shall receive loaders' wages.

All burned brick which are piled under shed by the loading gang shall be paid for at loading rates.

Runway planks must be delivered at kilns by the manufacturer—the runways must be erected by the loaders at their own expense.

Brick tossers shall make out all delivery tickets and stubs (and may be required to collect receipted tickets from drivers and chauffeurs).

WALLING GANGS.

	Per arch.
Walling and daubing per arch, round top, 45 brick high	$4. 20
Walling and daubing per arch, square top, 45 brick high	4. 11½
All kilns set more than 45 brick high, extra per brick per arch	.05
Walling and daubing on Builders' Brick Co. yard	4. 30

H. ENGINE AND BOILER ROOM.

	Per hour.
Stationary engineers	$0. 92
Foremen	.75½
Coal passers	.66½
Fan engineers (doing own firing)	.83
Independent furnace men	.72½

I. MISCELLANEOUS.

	Per hour.
General repair men	$0. 83
Truck repair men	.83
General repair men helpers	.72
Roustabouts	.66½
Cart drivers	.67½
	Per ton.
Unloading coal	$0. 22
Unloading coal from hopper-bottom cars or cars with high sides	.24

When men are employed at other than their regular occupation, they shall be paid the rate fixed for the occupation at which they may be engaged for the time being.

Any men who are required by the foreman of any yard to do any oiling before or after working hours shall be paid for the time actually consumed at their regular rate.

Any member or members of this organization, or any local unions belonging to District Council No. 1, or any individual manufacturer who attempts to negotiate a separate wage scale except through his or their business agent, shall be guilty of a violation of this agreement, and shall suffer the fine or penalty prescribed in Section XX of this agreement.

SECTION XVIII.

No strikes or cessation of work shall be called or brought about by any individual, group of individuals, or any local unions belonging to this organization for any reason whatsoever.

A strike may be called only by District Council No. 1, and by it only after the manufacturers, through their business agent, shall have had ample opportunity to present their side of any controversy concerning the rules or scale of wages to the men.

SECTION XIX.

No private agreement or understanding of any character, no old established usage of any kind shall have binding force unless contained in this agreement.

SECTION XX.

The business agent of this organization and the business agent of the manufacturer shall constitute the tribunal which is to determine whether or not this agreement or any section thereof shall have been violated, and their decision shall be final and binding upon both parties to this agreement.

Any individual who is guilty of bringing about the shutdown of a yard in violation of Section V of this agreement, shall be fined $25 for each and every offense and may be discharged from the organization.

Loaders guilty of loading unmerchantable brick as described in Section IX of this agreement shall be fined the cost of loading the car in question.

A persistent violation of Section XI of this agreement by the manufacturer shall subject him to a penalty to be determined by the gravity of the case. The maximum penalty shall be rate and one-half for loading brick, and on hand setting yards rate and one-half for setting brick.

When kiln grounds on hand setting yards are not kept in order and the setting gang is delayed thereby, the manufacturer shall be penalized by being obliged to pay the setting gang for the actual time lost, at the rate fixed for special labor under kiln shed.

Any member of this organization who shall be guilty of quitting his work in the course of the day without permission of the foreman in violation of Section XIII, shall be fined $25, shall be discharged, and may be expelled from the organization.

Any violation of Section XIV by an individual member of this organization shall carry a penalty of $25. A violation of this section by a local union shall carry a fine of $200 with it.

Any violation of Section XV of this agreement by any local union shall be penalized by a fine of $200.

Any violation of the wage-scale section of this agreement shall carry a fine of $25 for individuals, a fine of $200 for local unions, and a fine of $100 for each and every violation committed by a manufacturer.

Any belt man who does not catch his portion of the brick which pass the cut-off man, and who willfully or negligently permits his share of brick to pass by him, or who fails to hack his brick in a workmanlike manner, shall be fined from $5 to $25, may be discharged and expelled from the organization.

Any violation of Section XVIII by individuals shall carry a penalty of $25, whereas local unions violating this section shall be fined $200.

All fines shall be checked off in like manner as dues and assessments are checked off, and in such installments as may be agreed upon by the two business agents.

SECTION XXI.

All collected fines shall be held in trust by the business agent of the manufacturers, and credited to an account called "Relief Fund of District Council No. 1," and he shall pay out money from this fund as may be agreed upon by the two business agents provided for in this agreement.

SECTION XXII.

This agreement shall be in force and effect from November 1, 1921, until April 30, 1923, and all other agreements, particularly the agreement last entered into and effective from May 1, 1920, until May 1, 1921, and all subsequent amendments thereto, are hereby rescinded and repealed. Should either party to this agreement desire to enter into a new agreement with the other party, notice to this effect must be served on such other party on or before March 1, 1923.

○