

BRICK

Vol. XVIII

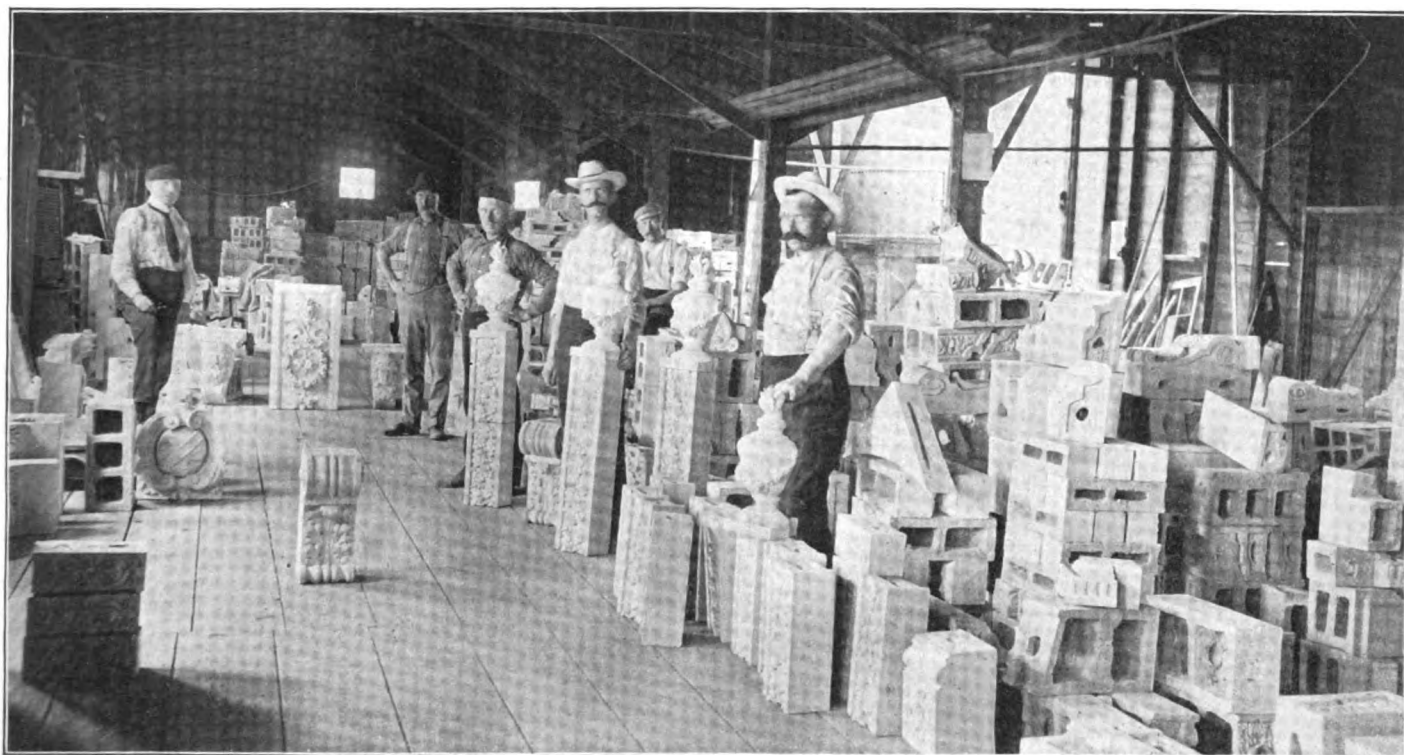
MAY 1, 1903

No. 5

The New Jersey Terra Cotta Co., Perth Amboy, N. J.

One of the most interesting plants it has been our pleasure to visit in New Jersey is that of the New Jersey Terra Cotta Co. The plant has been in operation since 1889 but the company was not incorporated until 1893. The sole product of these works is a very fine grade of architectural terra cotta. The clay is shipped in to the plant from different parts of the surrounding country and is prepared by putting it through rolls and then through a Martin clay crusher. Thence it passes into a pug mill, emerging in solid bars of clay ready for use in the pressing shop.

The clay is prepared according to the quality of product desired, a proportionate admixture of grog being added. In the modeling department there is constant activity under the able supervision of Christian Larsen, who has had charge of this work for several years. It is a matter of absorbing interest to watch the solid lumps of clay take life and shape beneath the skilful fingers, firm thumbs and dexterously manipulated tools of the artists. Every variety of architectural construction is here carefully studied. Considerations of light and shade, height and



FITTING DEPARTMENT—NEW JERSEY TERRA COTTA CO.

The main building is of brick, 50 x 63 ft. and two stories in height; on lower story is the plaster shop where all plaster molds are made, ready for use, on this floor is also located a most complete laboratory. Up stairs are the drafting rooms, the modeling room and the offices. Here also is a complete photographic equipment including a commodious dark room. All ornamental pieces are photographed as soon as modeled and sent away for approval by the architect.

The power house is a one-story structure and contains two boilers, one Atlas and one Pierce & Thomas, about 100 h. p. each carrying 80 lb. pressure. The engine is also an Atlas. Adjoining this machinery are grit mills, pug mills, and a clay crusher.

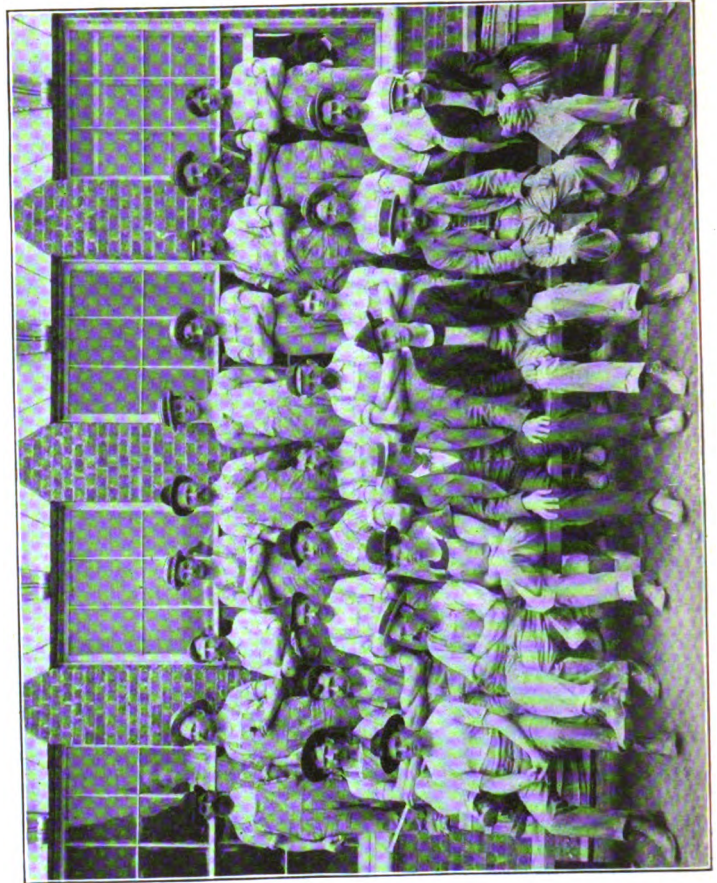
distance, foreshortening and perspective, encounter one at every turn in this branch of the clayworking art, and people, who take pleasure in observing the beauties of architectural terra cotta work in the finished building, little dream of how much though it has been expended in producing harmony of style, etc.

There are two other buildings one-story in height—the pressing shop, 200 x 50 ft. and the fitting shop, 36 x 160 ft. There are also two live steam driers, each 100 x 25 ft.

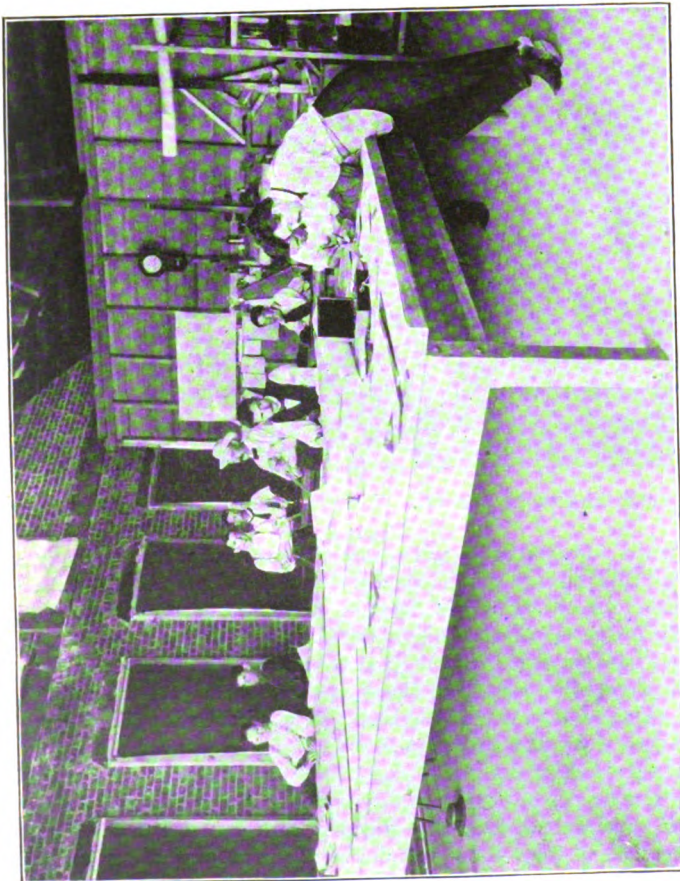
We gave but a casual mention to the drafting room just now, but it must not be forgotten that in that place is performed the most important work of all. Mistakes made here are fatal. The pieces are all drafted out to full size, forming perfect guides in



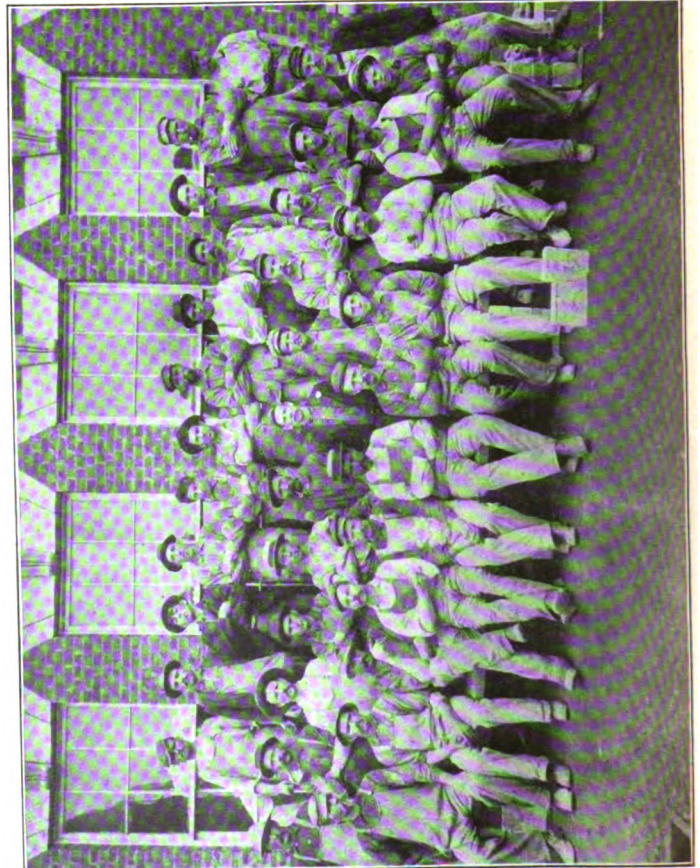
MODEL AND MOLD DEPARTMENT.



EMPLOYEES IN PRESSING DEPARTMENT.



DRAFTING DEPARTMENT.



EMPLOYEES IN LABOR DEPARTMENT.

every way for the mold makers or the modelers and the pressers. When the drawings are submitted to the mold maker his first work is the construction of templets to the size and shape required, all allowance for shrinkage in burning having been made upstairs in the drafting room. The ductile plaster of paris is

ing the length of the driers. The time occupied in drying varies according to the size and shape of the pieces. Care has to be taken with certain pieces that they should be tilted in different positions to insure equal drying and to prevent warping. From the drier the products are taken to the kilns, there are six of



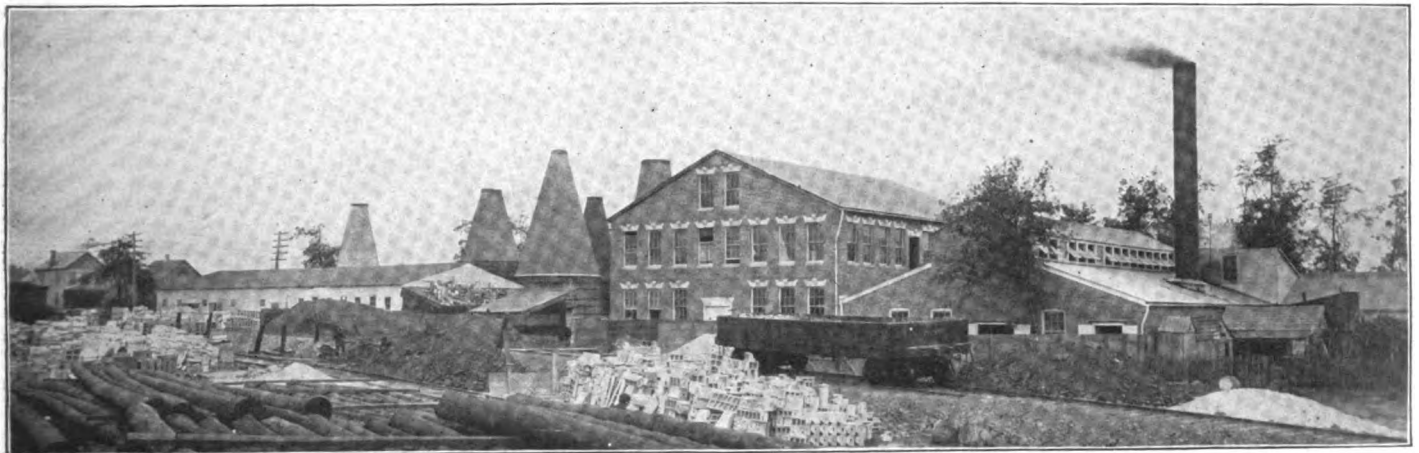
MODELING DEPARTMENT—NEW JERSEY TERRA COTTA CO.

then built up, the templet gives the required outline and the mold is soon ready to do its duty in the pressing room.

The pressing room floor of the New Jersey Terra Cotta Co. at the time of our visit was covered with pieces of all sizes and shape, with molds and with men busily engaged pressing into them the clay which would endure as a monument to their industry and skill long after the hands which molded it have returned to

these, all muffle kilns and up and down draft. Coal is used for fuel. The time of burning is also dependent upon the composition, shape and size of the goods set. Great care has to be taken also in the setting.

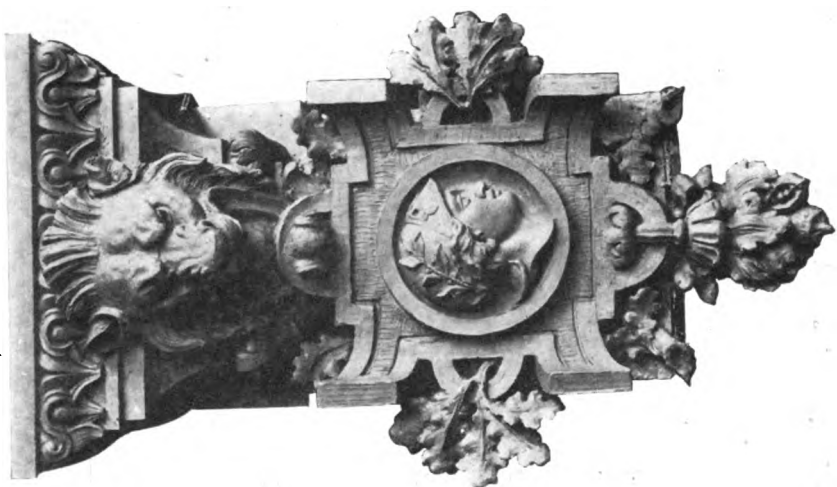
The shipping facilities are very good at this plant as it is situated on a junction of the Central Railroad of New Jersey and has a switch on the Lehigh Valley. Some shipments are occasionally



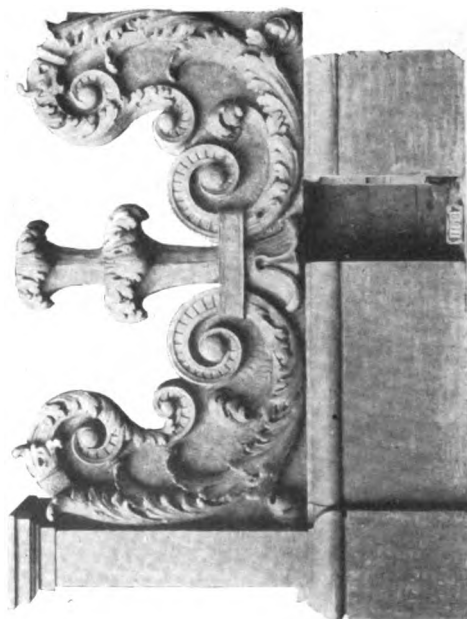
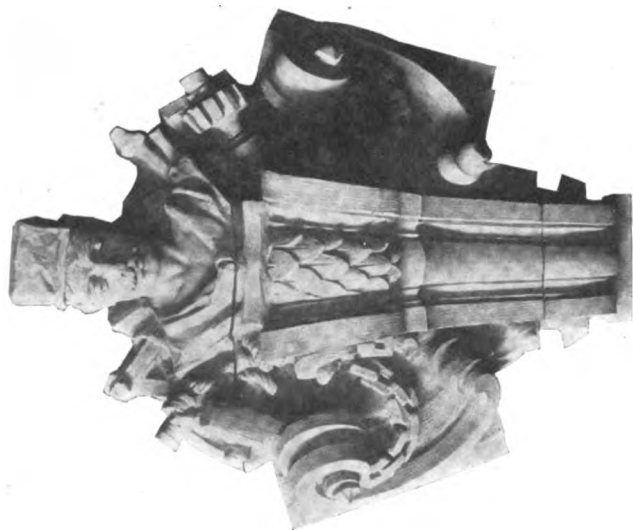
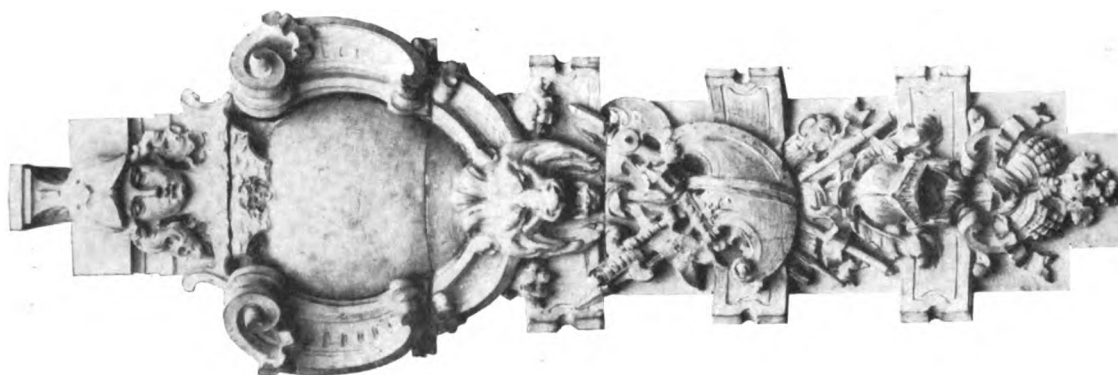
PLANT OF THE NEW JERSEY TERRA COTTA CO.

primitive earth. On the pieces are to be seen different shaped tabloids of clay which form markers indicative of the stage of manufacture reached by the pieces on which they are placed. Some indicate that the piece in question is ready for the tools of the trimmer and finisher; others show that the piece has left the finisher's hand and is ready to be taken to the drier. As already mentioned live steam dry floors are used, miles of piping travers-

made by boat. The company owns a considerable area of land at this place, besides the buildings already mentioned and a stable building, mold sheds and storage sheds. There are also coal and clay bins close to the railroad track. Coal is the sole fuel used at the plant for power production and for burning the kiln. About 170 men are employed and the work is carried on the whole year through.



Height, 57 in.



ART SNAPSHOTS IN THE NEW JERSEY TERRA COTTA CO.'S. EXHIBIT ROOM.

The president of the company is K. Mathiasen, the secretary and treasurer E. V. Eskesen.

The superintendent of the plant is W. H. Griswold, who has been for four years with the company, a man of evident business capacity, one who has infused much of his personality into the operations of the works. A brother of Mr. Eskesen, L. B. Eske-

parts join fitly together according to the most minute requirements of the plans sent in by the architect. Of considerable interest is the excellent system adopted by the company for the computation of the cost of operation. Each process of manufacture is tabulated as shown in the illustrations so that at a glance the exact cost of any job may be estimated at will.

A large time clock has been installed for the registering of the time of the men. Each man leaves his card in a rack alongside of the clock; on entering in the morning he takes the card, places it in a slot in front of the clock when the exact time of his entry is stamped in the space reserved for that purpose. On his adjournment to lunch he again stamps his card and his

TIME SHEET.

DEPARTMENT _____

Date _____ 190__

No.	1150	1148																		TOTAL HOURS
121	5	4																		9

(SIZE OF ORIGINAL, 9 X 12 IN.)

sen, has charge of the estimating department at the company's office, 108 Fulton St., New York; another brother, Thøge Eskesen, has charge of the laboratory, dividing his time between this factory and the company's tile factory, in Matawan, N. J., that of the New Jersey Mosaic Tile Co. Chr. Mathiasen is superintendent

DISTRIBUTION OF TIME.

Form No. 450	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Labor-Moulds																
Power-Heating																
Mill																
Dryer																
Spraying																
Sitting																
Drawing																
Burning																
Shipping																
Repair-Equipment																
Repair-Mill																
Repair-Kiln																
Repair-Property																
Supplies																
Construction																
Total																

(REVERSE SIDE OF TIME CARD.)

ing the work in the pressing department, and P. Londergaard has charge of the model and mold-makers department.

When the pieces are burned they are removed to the fitting department and here they undergo a severe scrutiny and checking, trimming being resorted to wherever necessary until the different

Kiln

SETTING

Date	Hours	at	Cost.	Finished.	Total.

BURNING

DRAWING

Fuel	Barrows	@	Pounds	Tons at

Weight.	Terra Cotta

KILN CARD (ORIGINAL 4 X 9 1/2 IN.)

afternoon entry and final exit in the evening are registered in a similar manner. On the inside of the card is a form showing the number of hours worked by him on each particular day. There is also a form on the front cover for the registering of overtime. This system is of singular merit inasmuch as a man's time is printed by himself, avoiding all possibility of dispute.

Another form is used called the time sheet on which is entered the number of the job, the number of the man employed on it, and the number of hours he worked on that specific product. Another card similar to the first described shows the distribution of time in the different classes of labor—labor molds, power heating, mill, drier, spraying, setting, drawing, burning, shipping, repairs to equipment, mill, kiln or property supplies and construction. We invite the attention of the reader also to the kiln

card, which gives as seen the date, hours, cost and time of the setting, burning and drawing operations. The class and amount of fuel and the weight of the terra cotta burnt are also noted. From these different cards entry is made on a large sheet 26 x 24 in. with columns on both sides devoted to the record of the drawing, modeling, models and molds, pressing, fitting and ship-

Siloxicon.

Siloxicon is the name given a new substance discovered by D. J. Acheson, the discoverer of carborundum. Briefly told this new substance is a compound of silicon, carbon and oxygen. It is not to be found in a natural state but occurs as a greenish white powder in the electric furnace at the intense heat of between 4,500 and 5,000° F.

Siloxicon comes at a very opportune time. The rapidly-increasing and ever-extending use of fire brick and refractory furnace linings has created an urgent demand for a substance that will withstand great heat, that will be insoluble in metals and neutral to slags. Our very best fire clays from which are manufactured the fire brick for ore-melting furnaces, though providing sufficient resistance to enable manufacturing to be carried on at its present vast extent, are not proving adequate to the demands made on them. Moreover, fire brick are expensive. According to reports siloxicon is able to fill the place of the highest grade fire brick with ease. It can be produced cheaply. It forms the third of a group of compounds invented by Mr. Acheson.

First, he made carborundum, a product which is now used in every country as an abrasive. Then getting an even higher heat than that required for carborundum manufacture, Mr. Acheson succeeded in forming graphite. The factories of carborundum and graphite are among the largest in Niagara Falls. Mr. Acheson discovered further that just before his mass of sand coke became carborundum it went into a peculiar form. Experimenting with this and stopping the process just before reaching the carborundum heat, he succeeded in obtaining this new substance, siloxicon, at will. Although self-binding and thus forming a substance that can be molded into shape for crucible use, it is found that when mixed with a refractory clay, siloxicon gives much better results. It is safe to predict a universal application and use for this new substance.

Another discovery of possible importance was made by Mr. Acheson while experimenting with crucibles. He noticed that the most plastic and valuable clays were sedimentary clays or clays which had been transported a distance by streams and that although these were often discolored they were the most plastic and strongest. Seeking the cause of this discoloration Mr. Acheson conceived that the clays had been practically tanned by being brought into contact with decaying vegetable substances in the water. The inventor throws a new light upon the reason for the use of straw by the Egyptians in brick manufacture. It has always been taught that this straw was used to bind the bricks together. Mr. Acheson treated clay with an extract of straw and demonstrated that bricks made from clay so treated were stronger than those made from the same clays without that treatment. A patent has been secured for the treating of clays with tanning substances. Tests show 50 per cent higher tensile strength gained by this process, with a decrease of shrinkage and an increase of plasticity. Negotiations are under way for the erection of a factory for the production of siloxicon at Niagara Falls. At present it is made by the Acheson Graphite Co.

A sand-lime brick plant will be in operation at Sault Ste. Marie, Mich., by May 1st.

The Chandler Brick Co., Guthrie, O. T., reports extensive business during the past year.

The Hancock Brick & Tile Co. will commence operations at Findlay, O. The Brooker tile plant at North Baltimore will be consolidated with the new concern. About 100 men will be employed.

NEW JERSEY TERRA COTTA CO.

Form No. 150
This Side Out.

No. **44**
OVER TIME.

PAY.....190

No. NAME.

DATE	A. M.			P. M.		TOTAL	DMS	A. M.			P. M.		
	IN	OUT	DINER	IN	OUT			LOST TIME	IN	OUT	IN	OUT	
1						1							
2						2							
3						3							
4						4							
5						5							
6						6							
7						7							
8						8							
9						9							
10						10							
11						11							
12						12							
13						13							
14						14							
15						15							

REGULAR TIME.....HRB. RECEIVED IN FULL TO DATE
 OVER TIME.....HRB. SIGNED.....DOLLARS
 TOTAL.....HRB.
 RATE.....TOTAL WAGES.....

TIME CARD (ORIGINAL 5 1/2 X 7 IN.)

ping. All other items mentioned, such as drying, repairs, etc., having also separate columns. Such a sheet contains a full record of the cost of each job under way. Nothing is left to chance and the slightest leakage or deficiency in any department can be instantly detected. Improvements are constantly suggested and made by this company and a most recent one is the reconstruction of all the kilns after the most approved pattern of muffle kiln.

Improvements at Fiske Plant.

Our readers will be pleased to learn of the improvements that are to be made this spring at the well known Fiske plant. Many of them will remember with pleasure the visit of the National Brick Manufacturers' Association to it and the cordial hospitality of G. M. Fiske and Mr. J. Parker B. Fiske. Seventeen new chambers are to be added to those already in existence and the capacity of the plant thereby increased to 50,000 per day. A contract also has been placed with the Boston office of the C. W. Raymond Co., 178 Devonshire St., Boston, Mass., for a Raymond down cut rotary automatic cutter to be used in connection with the company's Freese combined machine.

The X. Y. Z. Tile Works started up for its spring and summer campaign at Eldora, Ia., on April 1st. Business prospects are good.

BRICK

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We want our readers to always feel that BRICK is their paper, and that what interests them interests its publishers and subscribers. We will therefore appreciate most highly any communications, questions, experiences or suggestions, or marked copies of local papers containing items of news pertaining to the interests of clayworking.

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The St. Louis Clay Exhibit.

We publish elsewhere a circular outlining the plans for the special clay industry exhibit at the St. Louis World's Fair. It will be highly gratifying to all our readers to know that at last the clay industry will be represented in an adequate manner in what portends to be the greatest exposition which has ever thrown its gates open to the world. The space of 20,000 sq. ft. set aside for the exhibit by the authorities of the exposition will be readily filled and taxed to its utmost capacity, and there is no reason to doubt that the plans presented to our readers in this issue will be carried out to their fullest extent and that the exhibit itself will open the eyes of the general public to the extent of our industry and the variety of application of its products.

"Brick" has played a very important part in the securing of this desirable result, a fact which the authorities of the Louisiana Purchase Exposition Co. have not failed to recognize. Early in 1901 "Brick" laid before the directors of the World's Fair a carefully considered plan for an exhibit of the clay products of the nation. President David R. Francis was much interested in the conception and much praise was given to the plan by Dr. David P. Day, Chief of the Department of Mines and Metallurgy, and by F. V. Skiff, Director of Exhibits. At that time a special concession was secured for exhibition space in the Mines building contingent upon the securing of the material and capital for the erection of the exhibit. Promises of funds and material were secured by "Brick" sufficient to satisfy the directors of the exposition within a short space of time. Personal letters were written

to all the leading clay manufacturers of the country, most of whom were heartily in favor of the project.

Other valuable pioneer work in bringing the need of a proper representation of the clayworking industry to the attention of the World's Fair authorities was done by G. C. Stoll, secretary of the Illinois Clayworkers' Association. He also submitted plans which received the approval of the directors. The postponement of the exposition's opening to May 1904 gave a much greater opportunity for a gathering of the clans among the clayworkers. At the Cleveland convention of the National Brick Manufacturers' Association in February, 1902, the proposed exhibit was discussed and a committee for its arrangement was appointed. A representative of "Brick" was appointed as a member of that committee and immediately any advantage which we had gained by personal effort became merged with the interests of the National Brick Manufacturers' Association committee. Since that time good work has been done and valuable concessions have been secured. The clay exhibit will be located in the nearest building to the main entrance gate of the exposition, immediately opposite the Government Building. It will be viewed by people therefore, who are still fresh in their quest of information and education, and consequently they will be in a better position to take retentive notice of the many phases of our display. We trust that our readers will do all in their power to draw public attention to this exhibit, and that should they be called upon by the committee for any practical assistance in the way of sending material, photographs or information they will not be "backward in coming forward".

H. W. Schleuter, Des Moines, Ia., is forming a company to engage in the manufacture of pressed building brick exclusively, in Des Moines. The company will have a capitalization of \$100,000, of which Mr. Schleuter will subscribe \$55,000.

John F. Michalski, who is connected with the Southern Fire Brick and Clay Co., with offices at 172 Washington St., Chicago, has changed his name to John F. Warwick. Mr. Michalski's parents were named Warwick but the boy's father died when he was young. His mother afterwards married the elder Michalski. As the youth grew he was known by that name. Warwick is an English name of considerable historical renown.

Professor Ries, of the chair of geology at Cornell University, has announced that the kaolin deposits of Georgia are superior in quality to the French deposits from which the famous Sevres and Haviland chinaware are made. The clay belt of Georgia extends across the state from Augusta to Columbus and is about 100 miles in width. There are fine deposits in the country around Bibb and all through that section of the State. In a comparison of clay from different parts of the country, recent investigation of the Georgia clays has given them pre-eminence in almost every quality according to this report.

Alfred Eastman, of the Ogden Pressed Brick & Sewer Pipe Co., is interesting capitalists of Evanston, Wyo., in the construction of a brick plant at that city. Good clay beds have been located extending from the line of the Union Pacific railway north and south for a distance of 20 miles, the width varying from one to three miles. This clay bed is from 20 to 50 ft. in thickness and is practically the only clay suitable for the manufacture of brick in intermountain states. Another feature in the brick plant proposition is that there is a strata of good coal overlying the clay which would furnish an abundance of fuel supply for operative purposes. A side track has already been laid to the clay beds and there is an abundant water supply close at hand.