No. 708,778. Patented Sept. 9, 1902.

J. J. NIETERS.

BRICK PRESS.

(Application filed May 20, 1901.)

(No Model.) 2 Sheets—Sheet 1.

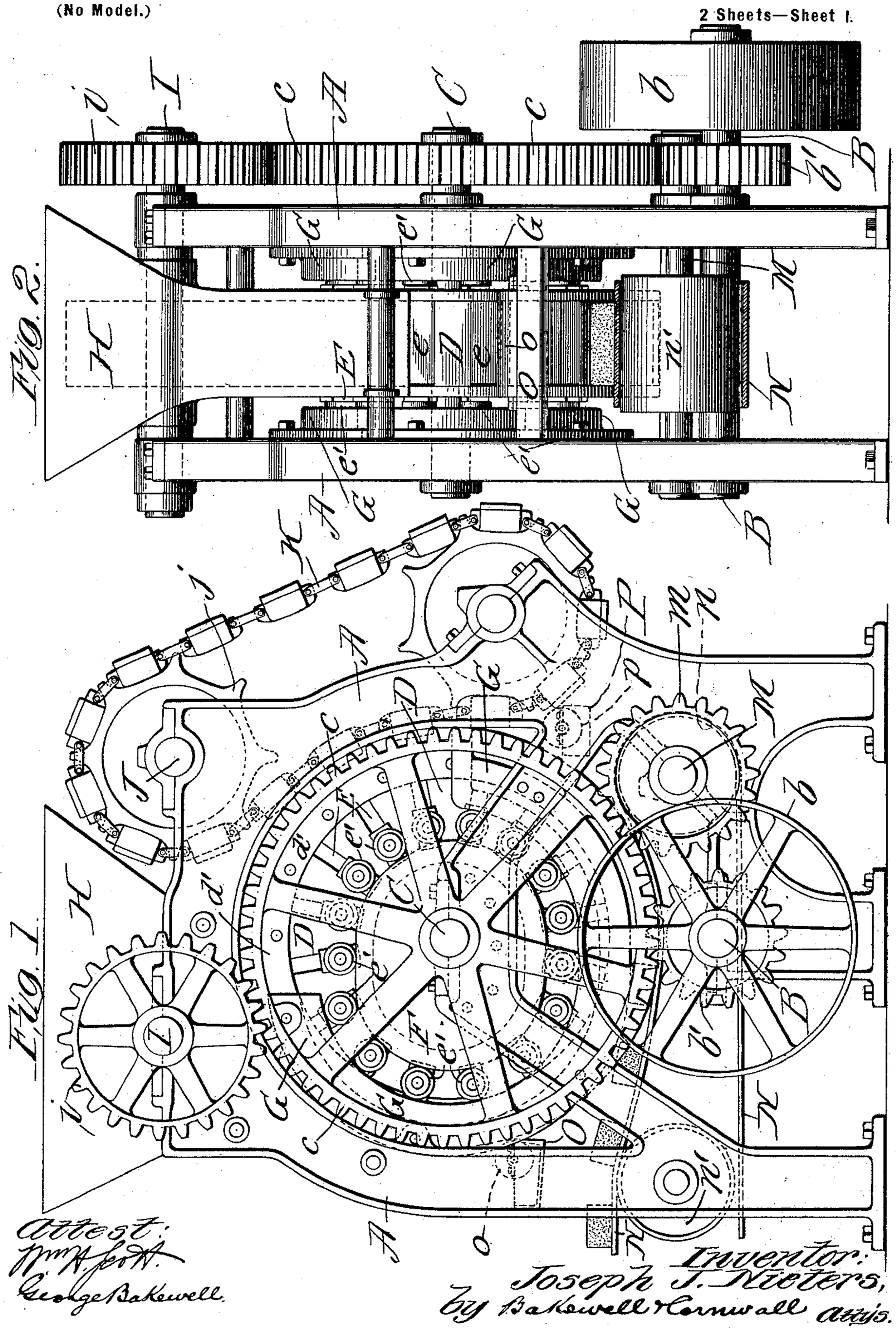

Fig. 1.

Attest:
Wm. A. Fenton.
George Bakewell.

Inventor:
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by Bakewell & Cornwall Attys.

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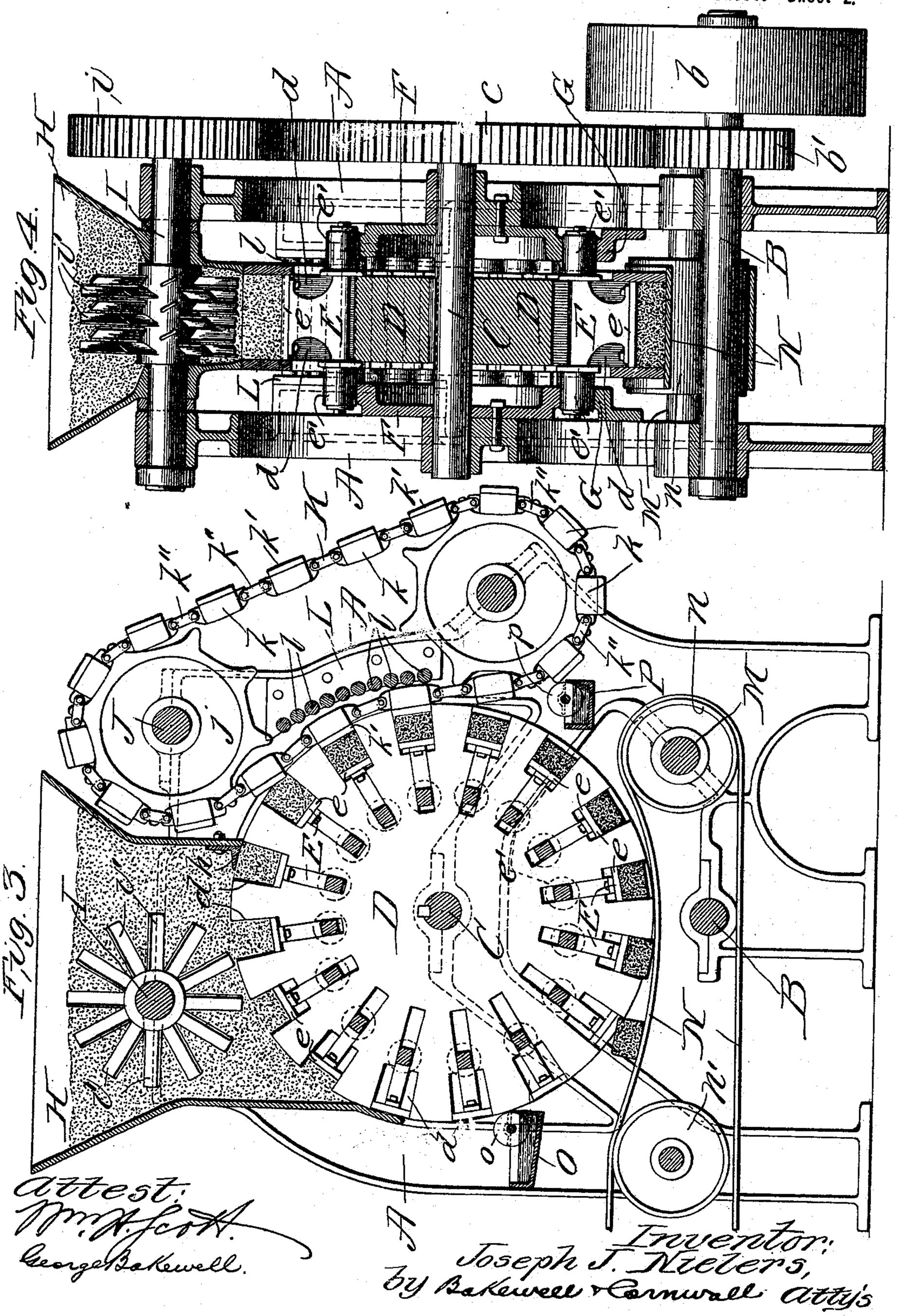

Fig. 3.

Attest:
W. N. Scott.
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Inventor:
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UNITED STATES PATENT OFFICE.

JOSEPH J. NIETERS, OF ST. LOUIS, MISSOURI.

BRICK-PRESS.

SPECIFICATION forming part of Letters Patent No. 708,778, dated September 9, 1902.

Application filed May 20, 1901. Serial No. 61,102. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH J. NIETERS, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Brick-Presses, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevational view of my improved brick-press. Fig. 2 is a front elevational view. Fig. 3 is a longitudinal vertical sectional view, and Fig. 4 is a vertical cross-sectional view.

This invention relates to a new and useful improvement in a brick-press, the object being to construct a machine of the character described which will continuously press the clay into molded forms.

Another object is to produce a simple, cheap, and compact machine of the character described.

With these objects in view the invention consists in the arrangement, construction, and combination of the several parts, all as will hereinafter be described and afterward pointed out in the claims.

In the drawings, A indicates the side frames of the machine, which afford appropriate bearings for the several shafts.

B indicates the main driving-shaft, upon which is mounted a driving-pulley *b* and a pinion *b'*. This pinion meshes with a gear *c*, mounted on a shaft C. This shaft carries the mold-wheel D, which mold-wheel is located between the side frames of the machine. The mold-wheel D consists of a body portion formed with pockets *d* transversely its periphery, in which pockets are mounted plungers E. These plungers are provided with heads *e* upon their outer ends, which heads form the bottom wall of the pockets *d*. The shank of the plunger extends laterally through slots in the mold-wheel, the extremities thereof carrying rollers *e'*. Suitable guide-shoes are provided to coöperate with the side walls of the mold-wheel and guide the plunger in its radial movement. A ring-flange *d'* is bolted or otherwise secured to the sides of the mold-wheel near its periphery for forming the side walls of the pockets *d*.

F indicates cams secured to the side frames and embracing the shaft C, with which cams coöperate the rollers *e'*.

G indicates cams, likewise secured to the side frame of the machine for coöperating with the rollers *e'*.

H indicates a hopper bolted or otherwise secured between the upper portions of the side frames, said hopper having its side walls bearing on the flange-rings *d'*, while its front wall is preferably curved to conform to the contour of the periphery of the mold-wheel. The back wall carries a scraping-blade *h*, which coöperates with the periphery of the mold-wheel and shapes the surface of the clay in the pockets.

I indicates a shaft mounted in the side frames and traversing the hopper. This shaft carries a pinion *i*, which is in mesh with the gear *c*. Shaft I also carries agitating-blades *i'* in the form of angled flights, alternate rows being bent or twisted in opposite directions so as to keep the clay in the hopper thoroughly agitated.

J indicates shafts mounted in the side frames, which shafts carry sprocket-wheels *j*, over which sprocket-wheels passes an endless chain K. This chain K consists of a number of presser-shoes *k*, faced with plates *k'*, of such size as to snugly fit in the open ends of the pockets *d*. These presser-shoes are connected by links *k''*.

L indicates a frame mounted between the side frames and intermediate the sprocket-wheels. This frame is faced with antifriction-rollers *l*, transversely arranged, which rollers coöperate with the presser-shoes of the endless chain. The alinement of the rollers *l* is preferably slightly eccentric with respect to the path of travel of the inner side of the endless chain, so that a gradual pressure is exerted on the presser-shoes, forcing their face-plates into the mold-pockets.

M indicates a shaft on which is mounted a pinion *m*, driven by the gear *c*. Shaft M carries a pulley *n*, over which passes a conveyer-belt N, said conveyer-belt extending forwardly and being supported by a pulley *n'*. The upper side of this belt bears against the

lower face of the mold-wheel, and the speed of the belt is preferably the same as the peripheral speed of said mold-wheel.

O indicates a receptacle containing a lubricant in which is mounted a roller *o*, designed to contact with and lubricate the periphery of the mold-wheel and also the faces of the plungers, which plungers are forced outwardly opposite the roller *o* for the purpose of being lubricated.

P indicates a receptacle containing a lubricant and a roller *p* for coöperating with and lubricating the face-plates on the presser-shoes.

The operation of the press is as follows: Clay to be shaped or formed is preferably raw—that is, in the condition in which it is taken from the bank. Being properly reduced or comminuted, it is introduced into the hopper, preferably completely filling said hopper, a constant supply of clay being furnished the hopper during the operation of the machine. The cams F and G are so constructed that when the plungers enter the forward portion of the hopper they are retracted or caused to recede and occupy a position in the bottom of the pocket *d*. The agitating-blades prevent the clay from choking and cause the pockets to become filled with clay, as shown in Fig. 3. The scraping-blade *h* prevents an excess quantity of clay being carried out by the pockets, and when a pocket is exposed one of the presser-shoes of the endless chain is in position to introduce its face-plate into the open end of the pocket. In this connection it might we well to say that these face-plates are so spaced apart as to register with the pockets, and as at least two face-plates are in operative position in the pockets at all times it is unnecessary to positively drive the endless chain, as the coöperation of the mold-wheel therewith is sufficient to effect the proper movement of the chain. When the face-plate is properly introduced into the open end of the pocket, the presser-shoe enters the widest space between the rollers *l* and the mold-wheel. As the pressure-shoe travels downward these rollers gradually force the same inwardly, and simultaneously the cam F gradually forces the plungers E outwardly, so that the clay between the face-plates and plungers is compressed. The outward movement of the plungers and the consequent pressure upon the clay in the pockets may be adjusted by circumferentially adjusting the cams F. When the clay is subjected to its final pressure, it is carried around by the mold-wheel to a point over the belt N, when the cams F force the plungers E outwardly and discharge the bricks onto the belt. The outward movement of the plungers is continued until the heads of the plungers are substantially flush with the periphery of the mold-wheel, when they are lubricated by the roller *o*. The plungers are held in this outward position until after they enter the hopper, when the cycle of operations above described is repeated.

I am aware that minor changes in the arrangement, construction, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a brick-press, the combination with a hopper, of a mold-wheel provided with pockets in its periphery, plungers arranged in the bottoms of said pockets, and a cam for holding said plungers in their outermost position when they enter the hopper and for permitting said plungers to occupy their innermost position as they leave the hopper; substantially as described.

2. In a brick-press, the combination with a hopper, of a mold-wheel provided with pockets across its periphery, flange-rings forming the side walls of said pockets, plungers arranged in the bottoms of the pockets, said plungers having laterally-extending arms carrying rollers, and cams on each side of the mold-wheel for coöperating with said rollers; substantially as described.

3. In a brick-press, the combination with a mold-wheel formed with pockets in its periphery, of a traveling carrier provided with presser-shoes, at least two of which coöperate with the pockets of the mold-wheel at all times by being received therein; substantially as described.

4. In a brick-press, the combination with a mold-wheel formed with pockets in its periphery, of an endless chain carrying presser-shoes, and removable face-plates on said presser-shoes, at least two of which coöperate with the pockets of the mold-wheel at all times by being received therein; substantially as described.

5. In a brick-press, the combination with the mold-wheel formed with pockets in its periphery, of an endless chain, presser-shoes carried by said endless chain, face-plates on said presser-shoes for entering the pockets of the mold-wheel, and an eccentric line of anti-friction-rollers coöperating with said presser-shoes; substantially as described.

6. In a brick-press, the combination with a mold-wheel formed with pockets in its periphery, of plungers arranged in the bottoms of said pockets, an endless chain carrying presser-shoes which coöperate with the outer portions of the pockets, devices for coöperating with said presser-shoes and moving the same inwardly when in engagement with the mold-wheel, and cams for forcing the plungers outwardly when opposite the presser-shoes; substantially as described.

7. In a brick-press, the combination with the hopper, of a mold-wheel formed with pockets in its periphery, plungers in the bot-

toms of said pockets, a scraping-blade arranged on the back wall of the hopper, an endless chain carrying presser-shoes, face-plates on said presser-shoes for entering the pockets, a series of eccentrically-arranged antifriction-rollers *l*, and cams F for forcing the plungers outwardly to compress the material therebetween and the face-plates; substantially as described.

8. In a brick-press, the combination with a mold-wheel formed with pockets in its periphery, of an endless chain carrying presser-shoes, face-plates on said presser-shoes which are designed to be received by the pockets in the mold-wheel, and a lubricating device for said face-plates; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 16th day of May, 1901.

JOSEPH J. NIETERS.

Witnesses:
WM. H. SCOTT,
ANNA S. GRAY.