(No Model.)

2 Sheets—Sheet 1.

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No. 266,532.

Patented Oct. 24, 1882.

Fig. 1.

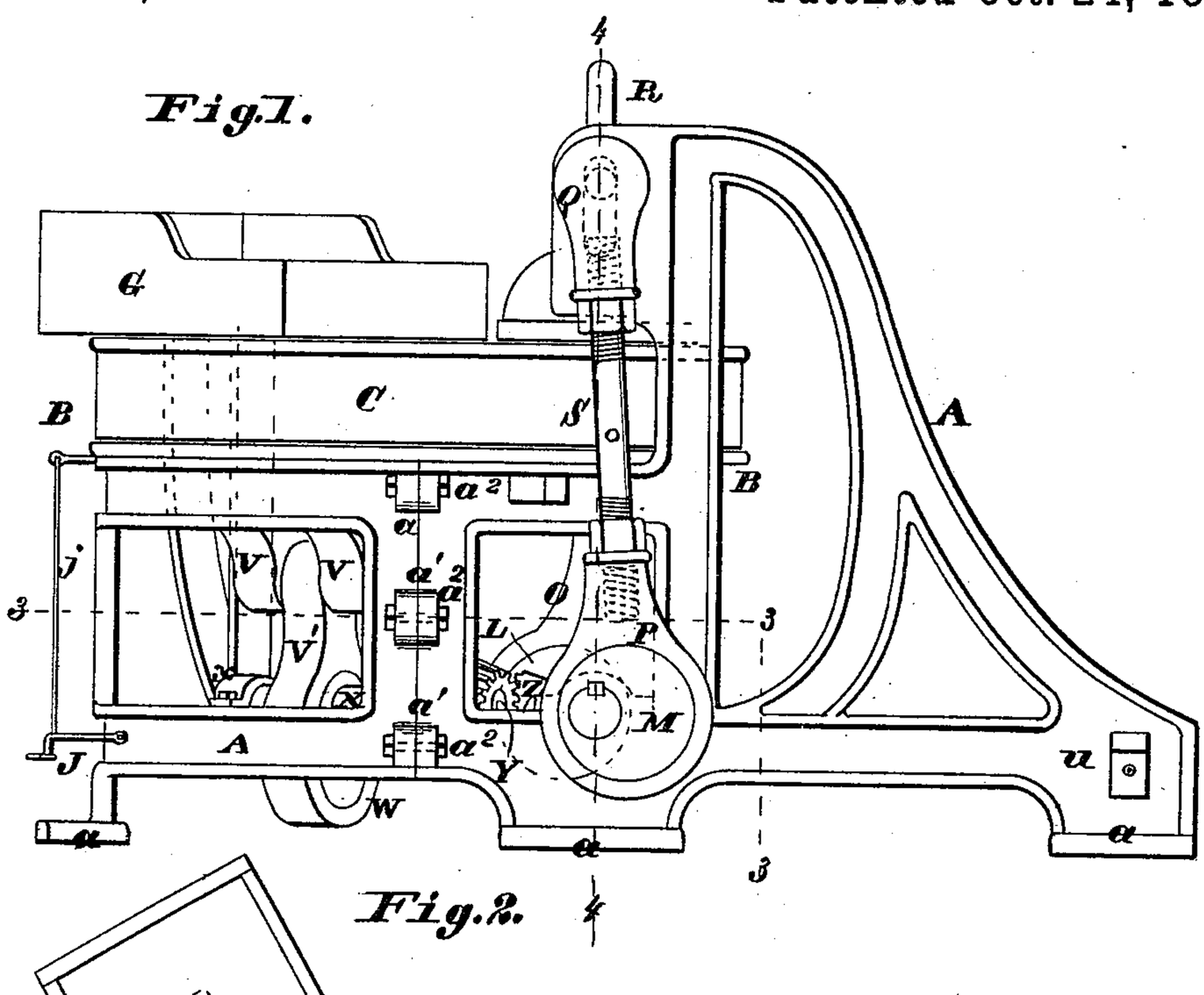
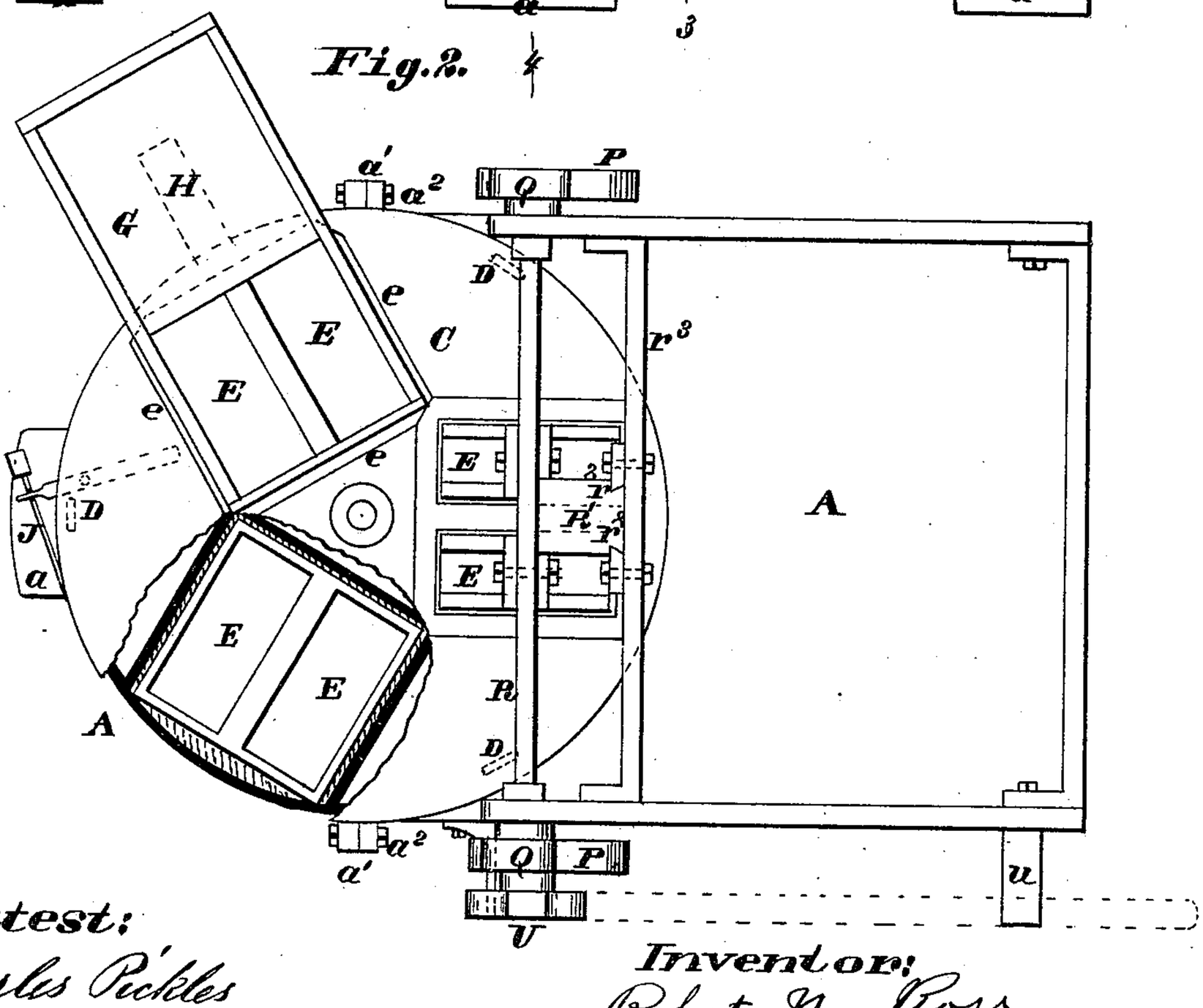


Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

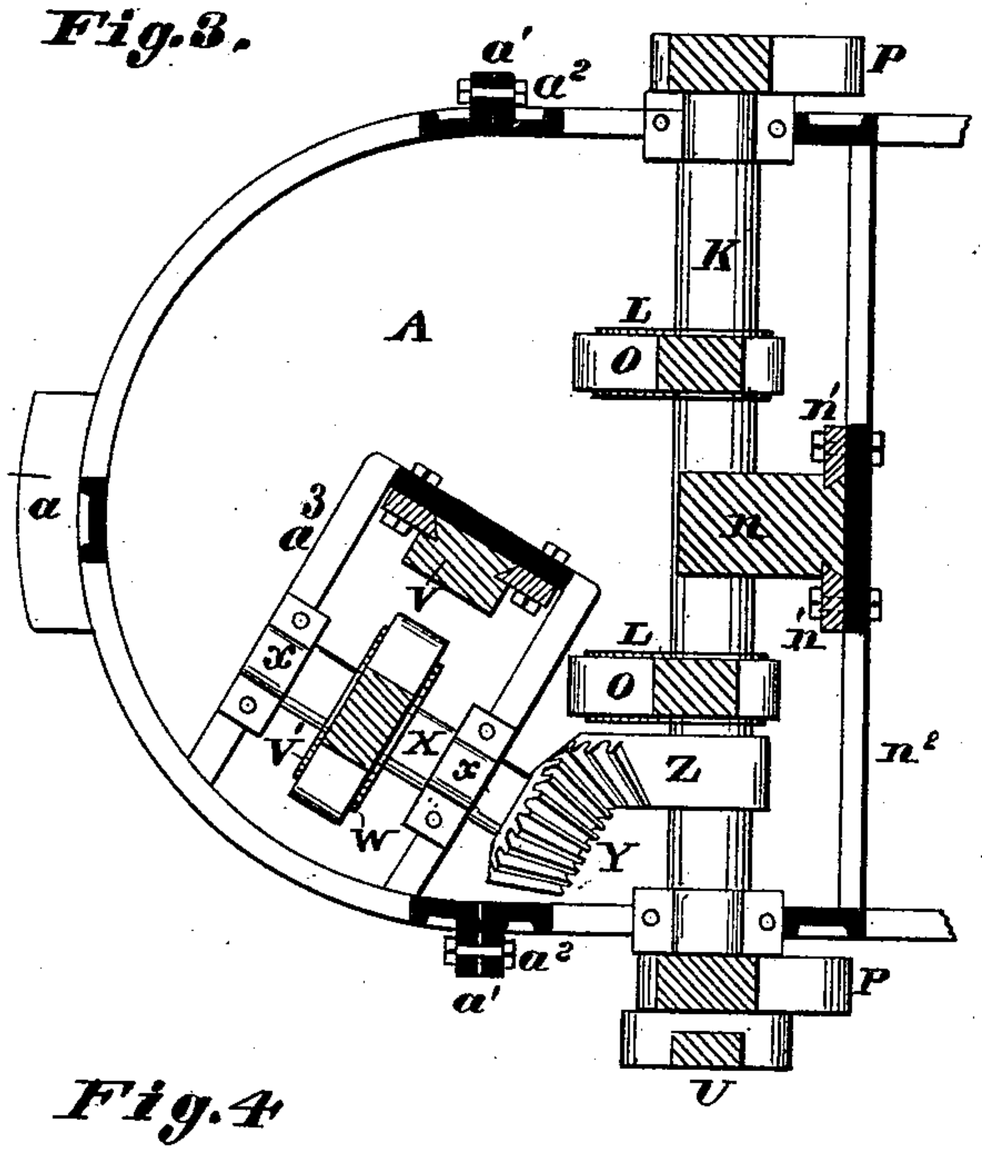


Fig. 4

Fig. 5

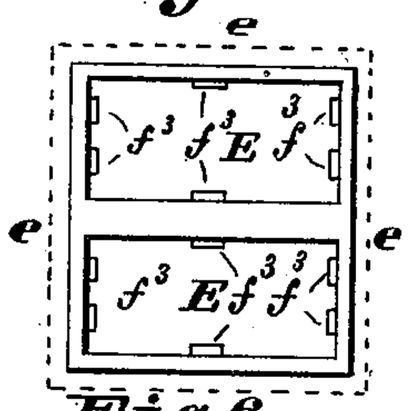


Fig. 6.

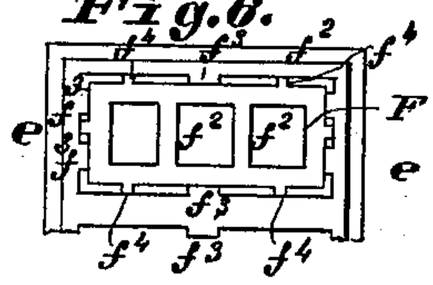


Fig. 7.

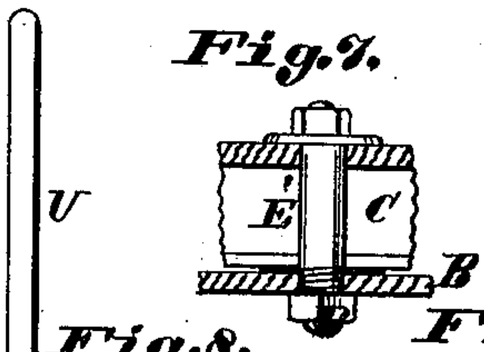


Fig. 8.

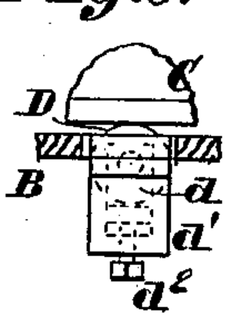


Fig. 9.

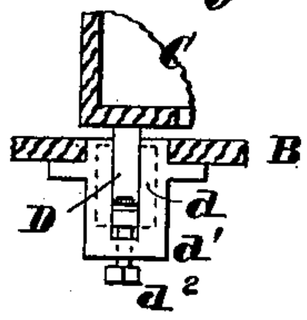


Fig. 10.

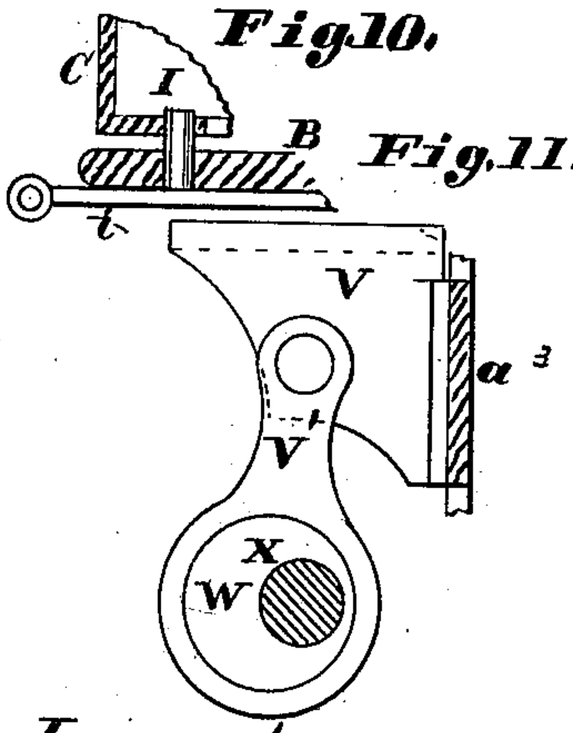
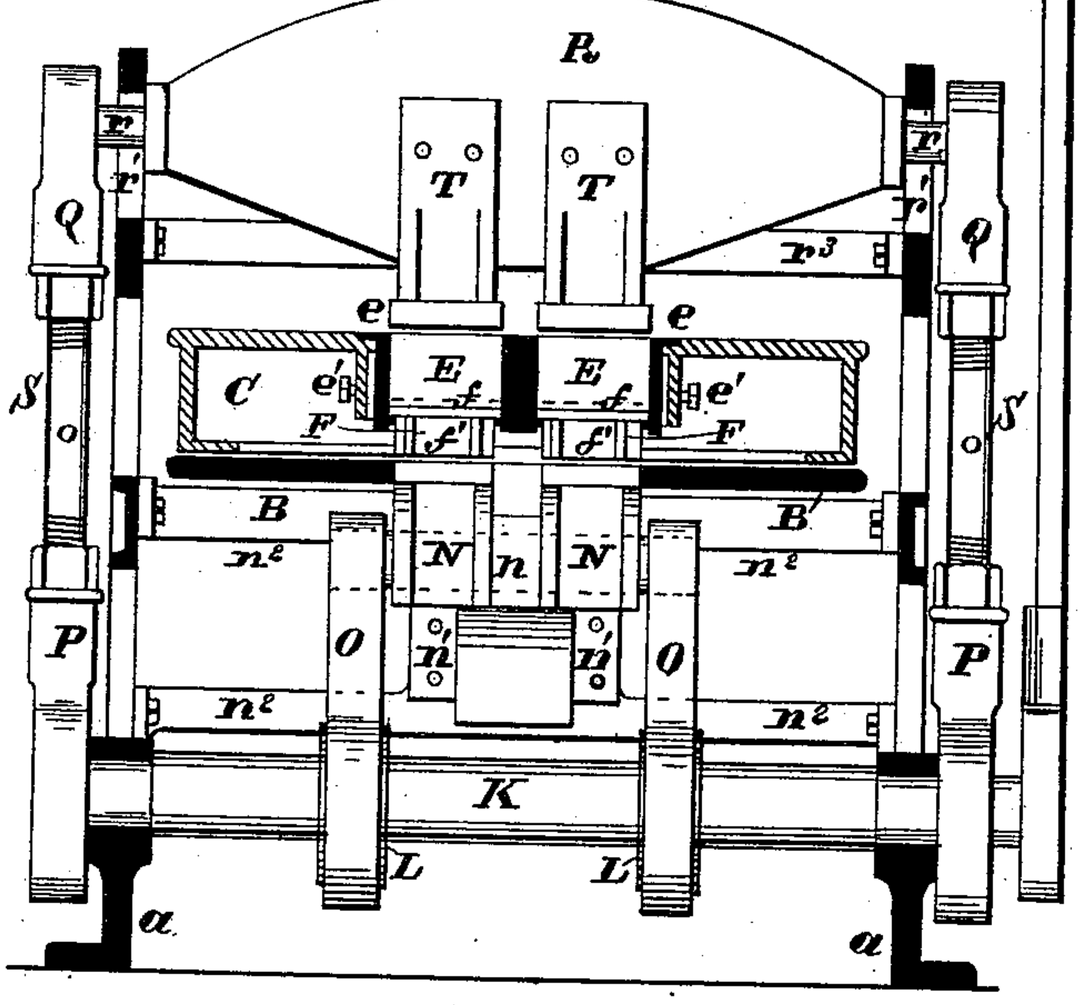


Fig. 11.



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UNITED STATES PATENT OFFICE.

ROBERT N. ROSS, OF ST. LOUIS, MISSOURI.

BRICK-PRESS.

SPECIFICATION forming part of Letters Patent No. 266,532, dated October 24, 1882.

Application filed January 10, 1882. (No model.)

To all whom it may concern:

Be it known that I, ROBERT N. ROSS, of 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, reference being had to the accompanying drawings, forming part of this specification.

In the drawings, Figure 1 is a side elevation of my improved machine. Fig. 2 is a plan, with part of the top of the mold-cylinder broken away to show one pair of molds. Fig. 3 is a horizontal section on line 3 3, Fig. 1. Fig. 4 is a vertical section on line 4 4, Fig. 1. Fig. 5 is a top view of a pair of molds. Fig. 6 is a bottom view of one of the molds, showing the movable bottom in place. Fig. 7 is a detail view, showing the manner of securing the revolving mold-cylinder to the bed-plate of the machine. Figs. 8 and 9 are detail views, showing the adjustable friction-rollers which form the vertical support of the mold-cylinder. Fig. 10 is a detail view, showing the stop for engaging with the bottom of the mold-cylinder, as hereinafter described. Fig. 11 is a side elevation of one of the plungers for removing the bricks from the molds.

A represents the frame, supported on suitable legs, *a*. I prefer casting the frame in two pieces, with lugs *a'* for securing them together by bolts a^2.

B is the bed-plate of the machine, upon which rests the mold-cylinder C. The cylinder does not rest directly on the bed-plate, but is supported by friction-rollers D, which have journal-bearing in movable boxes *d*, working in stirrups *d'*, secured to the under side of the bed-plate. (See Figs. 8 and 9.) The boxes are adjusted by means of set-screws d^2 screwing through the bottoms of the stirrups. They are three in number. The advantage of these friction-rollers is that they reduce the friction and at the same time protect the bed-plate and cylinder from wear by the contact of their surfaces. They are made adjustable, so that their relative heights may be changed as desired. The cylinder C is cast with three openings for the reception of the molds E. The molds are made in pairs, (see Fig. 5,) with a marginal flange, *e*, at top. The upper face of the cylinder is rabbeted around the openings (see Fig. 4) to receive the flanges of the molds, and thus the molds are vertically supported. The openings in the cylinder are somewhat larger than the molds, so that a space is left between them to be filled with a suitable packing, so that the molds are held firmly in place. As a packing I prefer to use sulphur, as it will not shrink in cooling, and should it be desired to remove the molds it can be easily taken out by melting. To hold the molds in place before the packing is put in, set-screws *e'* are employed, (see Fig. 4,) which screw through the shell of the cylinder that surrounds the mold-openings. The cylinder is secured to the bed-plate by a bolt, E', extending upward through the center of the bed-plate and through the center of the cylinder. Around this bolt the cylinder revolves.

F F are the movable bottoms of the molds. They consist of a top, *f*, and a body, *f'*. The body is cast hollow, with cross-ribs f^2. (See bottom view, Fig. 6.) The top *f* fits snugly the inside of the mold. Lugs f^3 on the inside lower portion of the molds limit the downward movement of the bottoms. It will be seen that the bottoms do not come in contact with the bed-plate.

When it is desired to make thin bricks I remove the bottoms F and insert others having thicker tops *f*, as shown by dotted lines, Fig. 4. The bodies of the bottoms have guide-ribs f^4. (See Fig. 6.)

The clay is conveyed to the molds by a hopper, G, supported by a bracket, H, secured to the frame A. The molds are brought in turn beneath the hopper by turning the cylinder C. The molds are so located in the cylinder that while the clay is being filled into one pair the bricks are being pressed in the next pair to the right, and removed from the other pair, as hereinafter described.

To insure the stoppage of the cylinder when the molds are exactly beneath the hopper, and in the proper position for the pressing and removing plungers, I provide a spring-stop. The stop consists of a pin, I, on a spring-plate, *i*, secured by one end to the bottom of the bed-plate. The pin extends up through a hole in the bed-plate, and engages with holes in the bottom of the cylinder C.

J is a treadle connected to the free end of

the spring-plate *i* by a connecting rod or chain, *j*. (See Fig. 1.) When the cylinder is to be turned the treadle is pressed down, which draws the pin I out of engagement with the cylinder, which allows the cylinder to be turned. As soon as the cylinder is slightly turned, so that the pin I will not enter the same hole, the pressure is removed from the treadle, and the spring will keep the pin I in contact with the bottom of the cylinder until the next hole comes around, which is when the next pair of molds come beneath the hopper, and then the pin will enter the hole under the influence of the spring and lock the cylinder from revolving farther until the treadle is again pressed down.

The pressing of the bricks is as follows:

K is a shaft having journal-bearing in suitable boxes secured to the frame A. On the shaft are eccentrics L L and M M, rigidly secured to the shaft. The eccentrics L L are connected to the lower plungers, N N, by means of coupling-links O O, whose lower ends have eyes fitting the eccentrics, and the upper ends eyes fitting the outward-extending pins on the lower portion of the plungers. Similar links, P P, to those O O fit the eccentrics M M, and are connected to the links Q Q on the outer ends, *r*, of the sliding beam R by connecting-rods S S. The ends *r* of the sliding beam work in slots *r'* in the frame A.

T T are the upper plungers, rigidly secured to the beam R. The salient parts of the eccentrics M are at right angles to the salient part of the eccentrics L. Thus it will be seen that when the shaft K is turned by means of the lever U the plungers will move toward each other, and thus press the bricks from above and beneath, the lower plungers coming in contact with the bottoms F.

The rods S are connected to the links by right and left screw-threads, so that by turning them the relative position of the plungers can be changed to press the bricks more or less. The lower plungers are cast with a connecting-web, *n*, which has a dovetail connecting with cleats *n'*, secured to cross-bars n^2 of the frame A. (See Figs. 3 and 4.) The plungers are thus guided and held from lateral movement. The upper plungers are similarly guided by a block, R', connected to the sliding beam R, and having dovetail connection with cleats r^2, secured to cross-bars r^3 of the frame A.

u is a stop (see Figs. 1 and 2) for the outer end of the lever U, to limit its downward movement.

The bricks are removed from the molds by the plungers V V, operated by means of an eccentric, W, on the counter-shaft X, which has bearing in suitable boxes, *x*, secured to the frame a^3, which projects inward from the frame A. On the shaft X is a bevel-wheel, Y, engaged by a segment, Z, on the shaft K. The connection between the eccentric W and plungers V is by a link, V', similar to those O and P. (See Fig. 11.) The plungers V are guided by a dovetail connection with the frame a^3. (See Figs. 3 and 11.) It will be seen that when the lever is operated to press the bricks it will also operate the plungers V and remove the bricks from the pair of molds over the plungers. It is necessary that the plungers V should have twice the movement of those N and T, so that the bricks will be removed completely out of the molds. To accomplish this I make the diameter of the segment Z twice that of the bevel-wheel Y.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a brick-press, the mold-cylinder C, supported on friction-rollers D, adjustably secured to the bed-plate B, substantially as and for the purpose set forth.

2. In combination with cylinder C and molds E, the set-screws *e'*, as and for the purpose set forth.

3. The combination of shaft K, eccentrics L L M M, mounted thereon, lower plungers, N N, links O O, P P, and Q Q, beam R, upper plungers, T T, adjustable connecting-rods S S, and suitable molds, E E, as set forth.

4. The removing-plungers V, connected to the shaft X by eccentric W and link V', the frame a^3, bevel-wheel V, and segment Z, all substantially as and for the purpose set forth.

ROBT. N. ROSS.

Witnesses:

SAML. KNIGHT,

GEO. H. KNIGHT.