

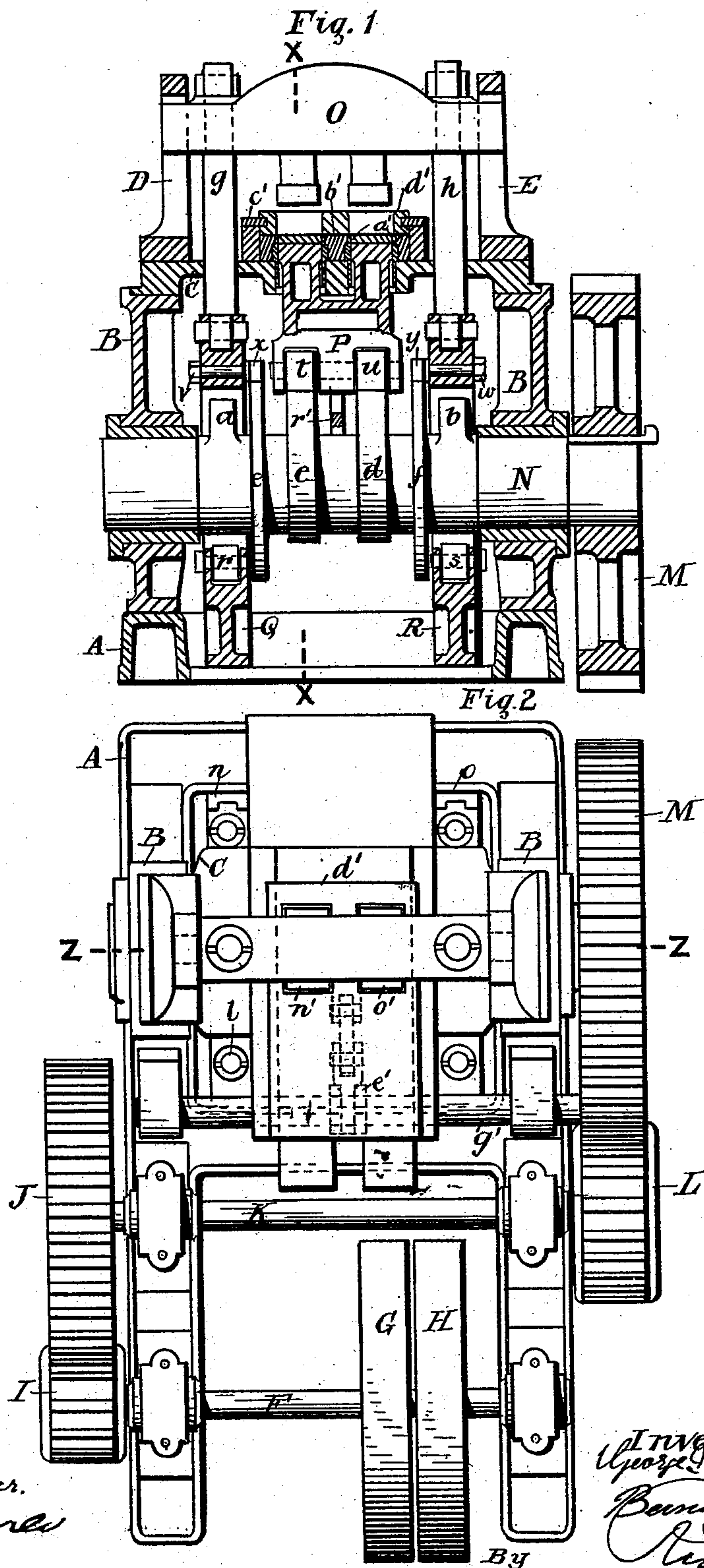
(No Model.)

2 Sheets—Sheet 1.

G. W. BLANKS & B. LEFEBURE.
DRY PRESS BRICK MACHINE.

No. 507,477.

Patented Oct. 24, 1893.



Witnesses.
J. Walker.
J. Gamble

Inventors
George W. Blanks,
Barnes Lefebure
Richard
their Attorneys

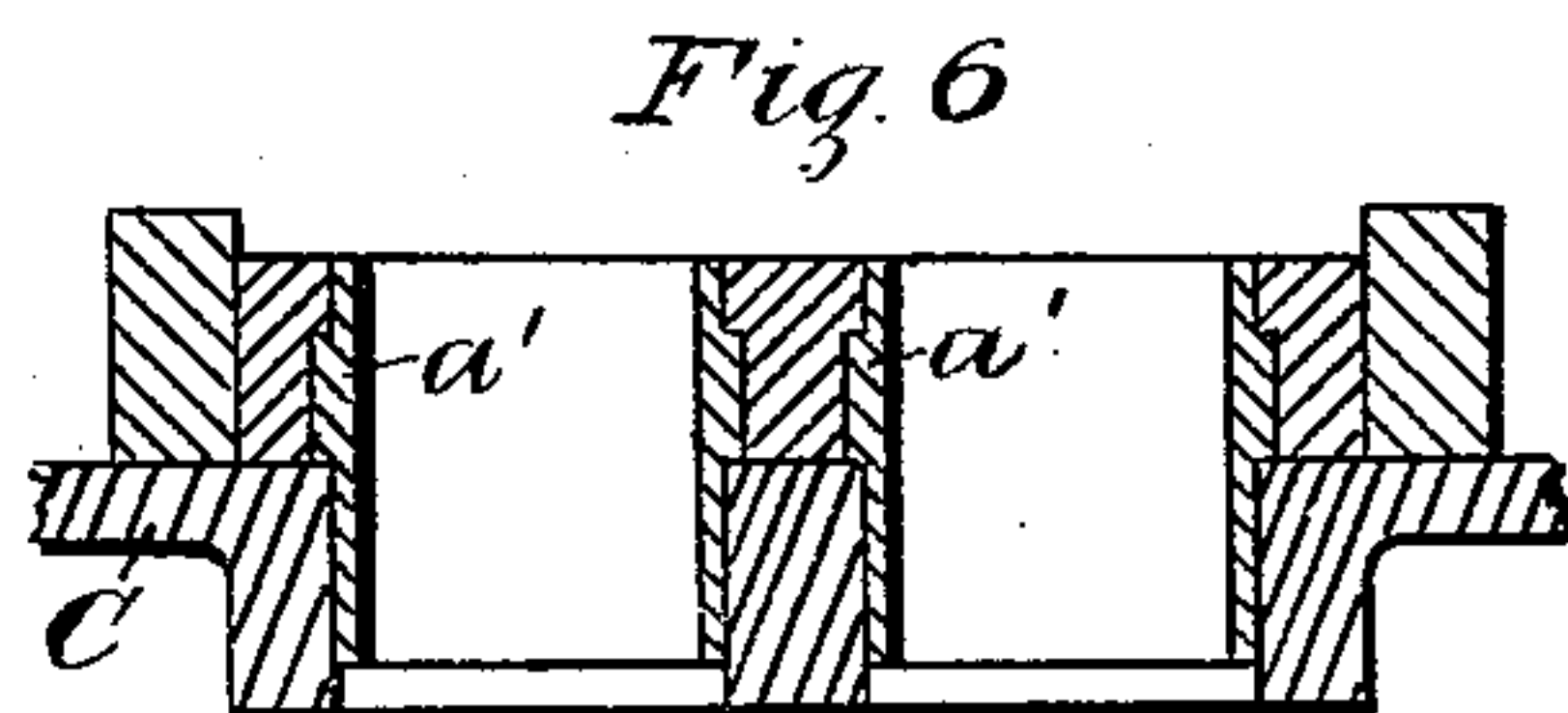
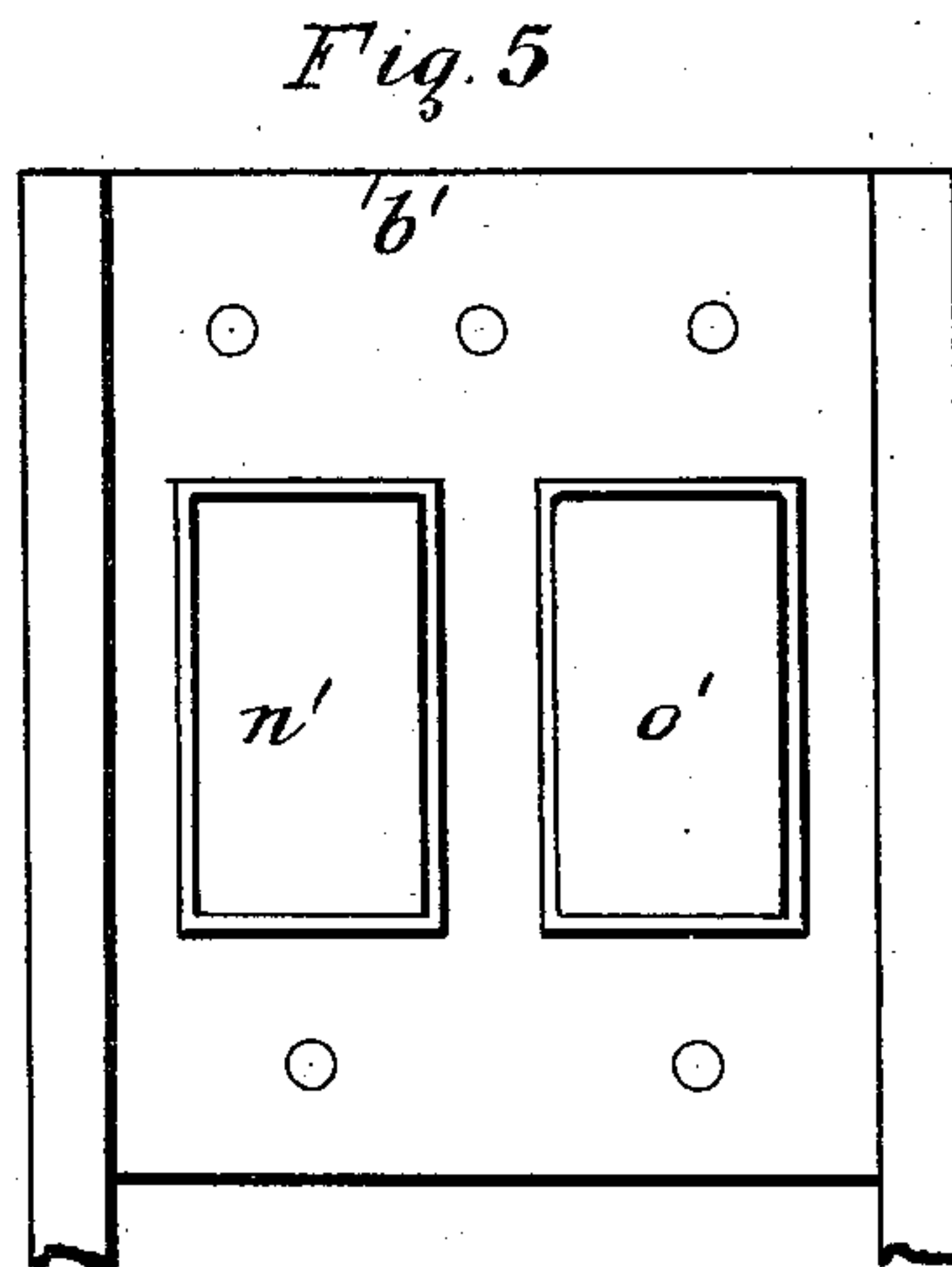
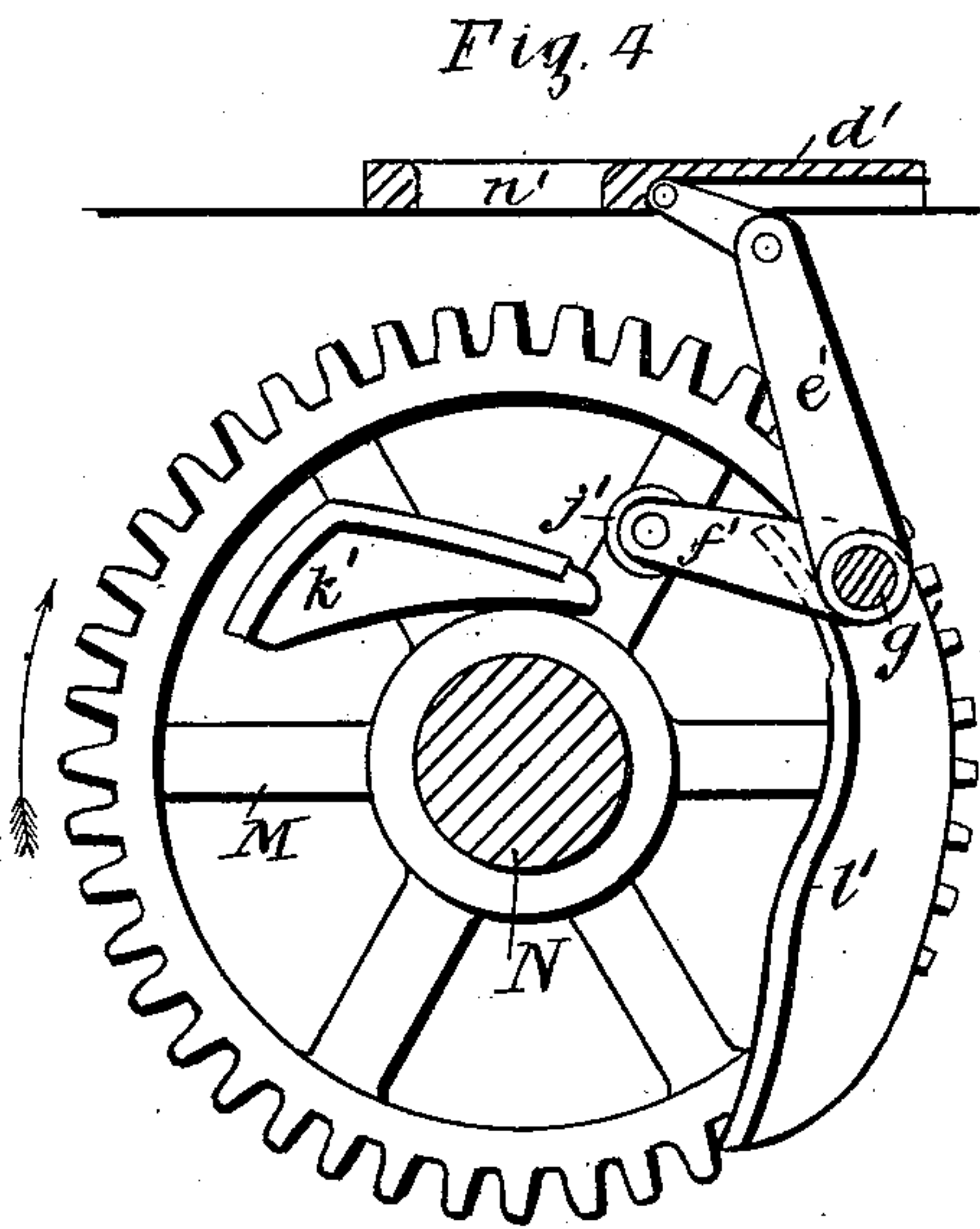
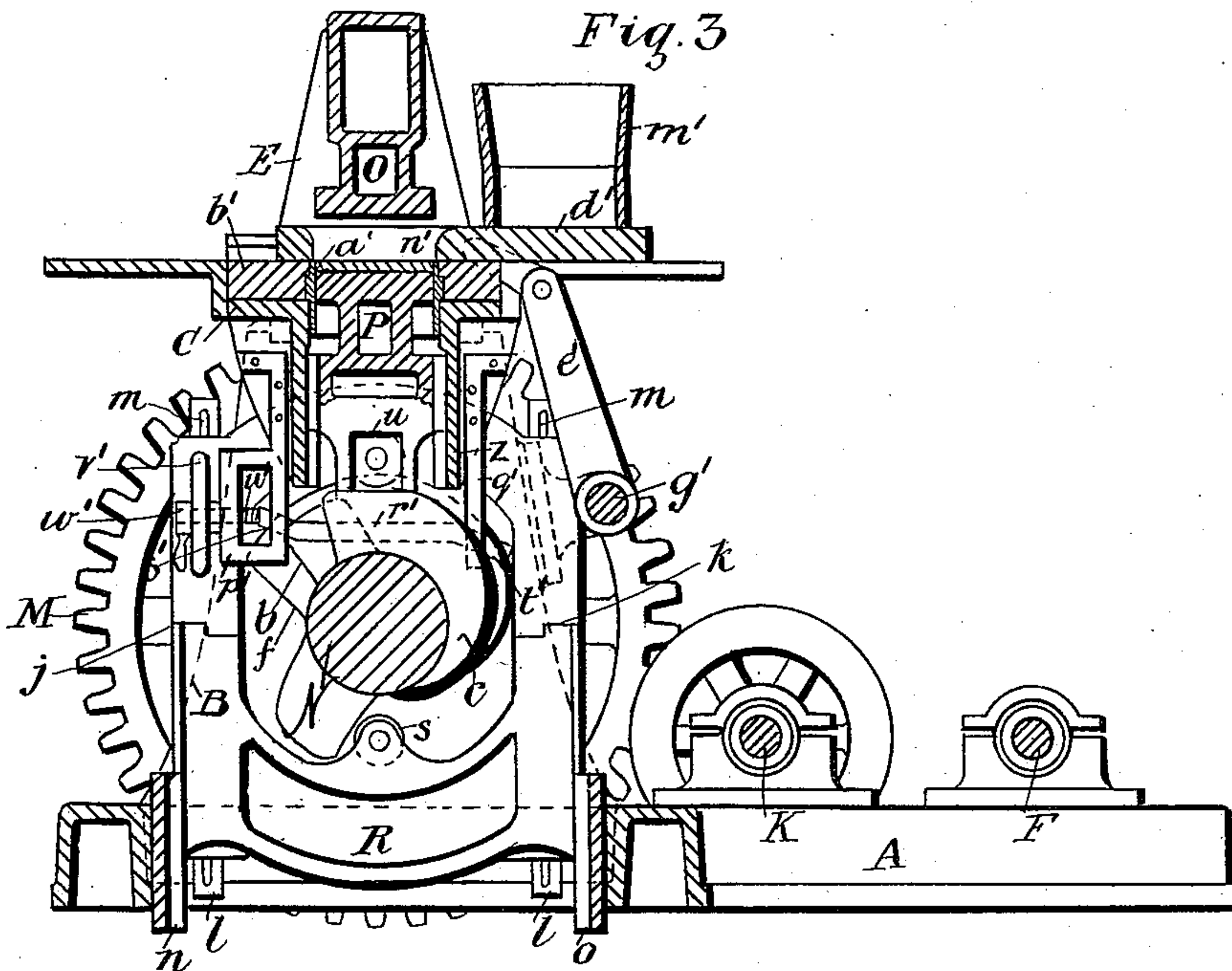
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UNITED STATES PATENT OFFICE.

GEORGE WALTER BLANKS AND BERNARD LEFEBURE, OF SYDNEY, NEW SOUTH WALES.

DRY-PRESS-BRICK MACHINE.

SPECIFICATION forming part of Letters Patent No. 507,477, dated October 24, 1893.

Application filed February 25, 1891. Serial No. 382,692. (No model.) Patented in New South Wales June 13, 1890, No. 2,254, and in Victoria June 20, 1890, No. 7,829.

To all whom it may concern:

Be it known that we, GEORGE WALTER BLANKS and BERNARD LEFEBURE, subjects of the Queen of Great Britain, and both residing at Sydney, in the Colony of New South Wales, have invented new and useful Improvements in Dry-Press-Brick-Making Machines, (for which we have received Letters Patent in New South Wales, No. 2,254, dated June 13, 1890, and in Victoria, No. 7,829, dated June 20, 1890;) and we do hereby declare that the following is a full, clear, and exact description of the invention.

The object of our invention is to construct a dry press brick-making machine which shall be capable of producing bricks which do not vary in size and which when being molded, shall be pressed with an equal top and bottom pressure of many tons, making them solid, compact, and even in shape.

The dry press brick-making machines at present in use necessitate the use of heavy framing in their construction as it is customary to use two main shafts, and when the brick is being pressed owing to the two shafts and the height of the framing, the various parts of the machine spring, and as a result the bricks vary in size, and cause the stampers to foul with the edges of the liners, wearing them rapidly away. The steel liners and die plate too are usually so arranged as to cause great loss of time when replacing with new ones.

In our invention we use but one main shaft or cam shaft in the construction of our dry press brick-making machine, and the pressure on the stampers, of which we use two, a top stamper and a bottom stamper, is equally distributed on the cam shaft the cams on the shaft forcing one stamper up and pulling the other stamper downward; there is therefore little tendency to spring or bend the cam shaft, and the pressure being on the cam shaft only the framing is not in any way distorted.

Our liners are simply dropped into recesses made to receive them in the table to which the die plate is screwed, and are easily renewed in a short space of time.

For operating the charger box, we use cams secured to one of the geared wheels.

Figure 1 is a section at Z Z. Fig. 2 is a plan. Fig. 3 is a longitudinal section at X X. Fig. 4 is an elevation showing the method of operating the charger box, details of which are not shown in Fig. 2. Fig. 5 is a plan of the die plate. Fig. 6 is a section of the die plate showing the liners.

Our invention consists of a sole plate A, to which are bolted the upright frames B, B. On the frames B, B, and bolted to them rests the table C of cast or wrought iron. To the table C are bolted the guides D and E. On the driving shaft F are the fast and loose pulleys G and H. On the shaft F is keyed the spur wheel I which gears with the toothed wheel J which is keyed on the shaft K. At the opposite end of the shaft K is keyed the spur wheel L which gears with the toothed wheel M which is keyed on the cam shaft N. The cams *a* and *b* are rigidly attached to the cam shaft N to actuate the top stamper O, and *c* and *d* are cams rigidly attached to the cam shaft N to actuate the bottom stamper P. The cams *e* and *f* on the cam shaft N, are for raising the top stamper O rapidly, and for keeping it raised while the charger box travels forward and deposits its charge of material in the die boxes. While the charger box *d'* is stationary, the top stamper O drops through the charger on to the material filling the mold and thus insures a full charge. The top stamper O is now raised by the cams *e* and *f* and the charger is drawn backward.

The top stamper O is connected by means of the rods *g* and *h* to the frames Q and R respectively, which are preferably of cast iron, and divided into two parts at *j* and *k* respectively, and are held together by the rods *l* and keyed by the cotters *m*.

The frames Q and R travel vertically in the guides *n* and *o*.

In the bottom of the frames Q and R are the rollers *r* and *s* respectively, which act in contact with the cams *a* and *b*. In the bottom stamper P are the rollers *t* and *u* which act in contact with the cams *c* and *d*. On the bolts *v* and *w* are the rollers *x* and *y* which act in contact with the cams *e* and *f*.

The bottom stamper P slides in the guides *z*, *z*, which may be cast on the table C. The

liners a' which may be of steel, cast-iron or any other suitable metal fit in recesses in the table C and the die plate b' fits over them, and is securely fastened to the table C; guide bars c' are bolted to the table C to act as guides for the charger box d' , which is operated by the levers e' and f' . The lever e' is attached to the spindle g' on which is also attached the lever f' at the end of which is the roller j' which acts in contact with the cam pieces k' and l' , the latter being securely bolted to the toothed wheel M.

We will further proceed to describe our invention. Motion is communicated to the cam shaft N from the pulley H and gearing I, J, L, M. The charger box receives its charge of material from the hopper m' , and is pulled over the die boxes n' and o' by means of the levers e' and f' which are actuated from the cam pieces k' and l' on the toothed wheel M, and empties itself into the die boxes n' and o' and rapidly returns to its original position. In the meantime the bottom stamper P as the cams c and d revolve has fallen to its lowest position. The top stamper O, held in its highest position by the cams e and f , falls on the material and is quickly raised again to its highest position by the same cams and held there until the charger box d' has returned. The cams e and f revolving with the cam shaft N now allow the top stamper O to fall; as the shaft N revolves, the cams a and b acting on the rollers r and s begin to pull downward the top stamper O and press the brick. At the same time the bottom stamper P is forced upward by the cams c and d and presses the brick from the bottom. The top and bottom stampers O and P are thus drawn toward each other until the limit of pressure is reached. The cams a and b now release the top stamper O which is raised by the cams e and f and held raised until the charger box d' returns; and the cams c and d force the now molded brick to the surface of the die plate b' , the brick being pushed forward by the charger box d' in its next stroke. It is seen that the

stampers O and P traveling toward each other with a constantly increasing pressure and with an equal pressure on the top and bottom of the brick produce a brick which is even in form, compact, solid and smooth.

If the liners require renewing, by unscrewing the die plate b' and lifting it from the table C, the liners may be renewed in a short period.

Provision is made for heating the top and bottom stampers as ordinarily.

For regulating the density of the brick, a device is attached below the table C, consisting of a saddle p' and a guide q' through which passes the bar r' inclined at s' and t' and having a thread u' at one end, on which is screwed the wheel v' , locked by the lock-nut w' . It is seen that by screwing or unscrewing the wheel w' , the bar r' is raised or lowered, the bottom stamper P falling on the bar r' at each stroke, thus regulating the density of the brick to suit various materials.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is—

In a brick machine, the combination with the frame of a saddle arranged on one side thereof, a guide located on the opposite side of the machine, a bar passing through the guide and having a threaded end passing through the saddle, the said bar being inclined at the points of passage through the guide and the saddle, a threaded hand wheel on the said threaded end, and a nut for locking the said wheel on the bar; substantially as described.

In witness whereof we have hereunto set our hands in presence of two witnesses.

GEORGE WALTER BLANKS.
BERNARD LEFEBURE.

Witnesses:

WILLIAM WALKER,
ALFRED SHAW,

Notary Public, Sydney, N. S. Wales.