

(No Model.)

5 Sheets—Sheet 1.

S. McCARTER.  
PRESS FOR PLASTIC MATERIAL.

No. 304,337.

Patented Sept. 2, 1884.

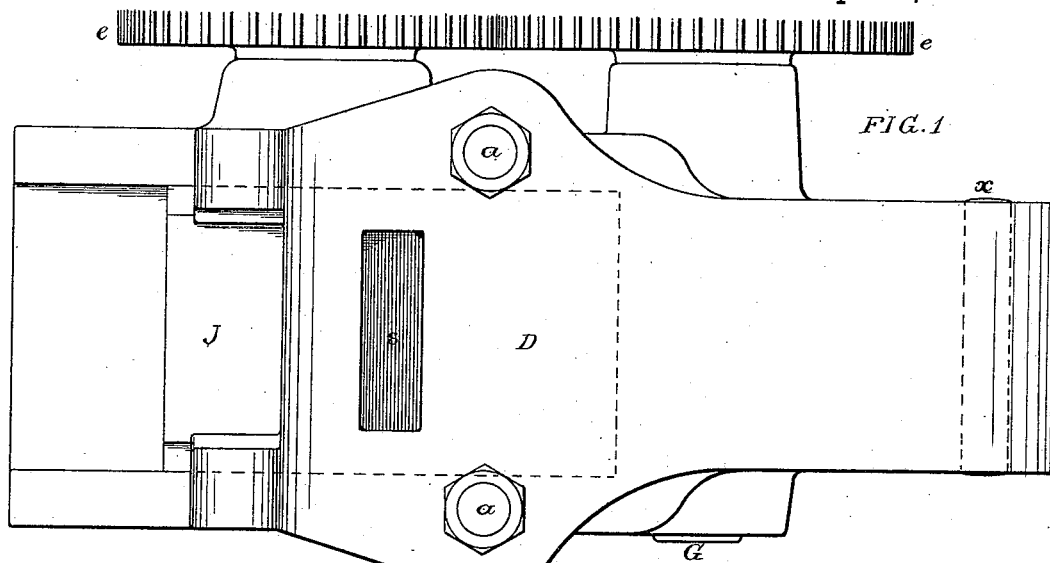


FIG. 1

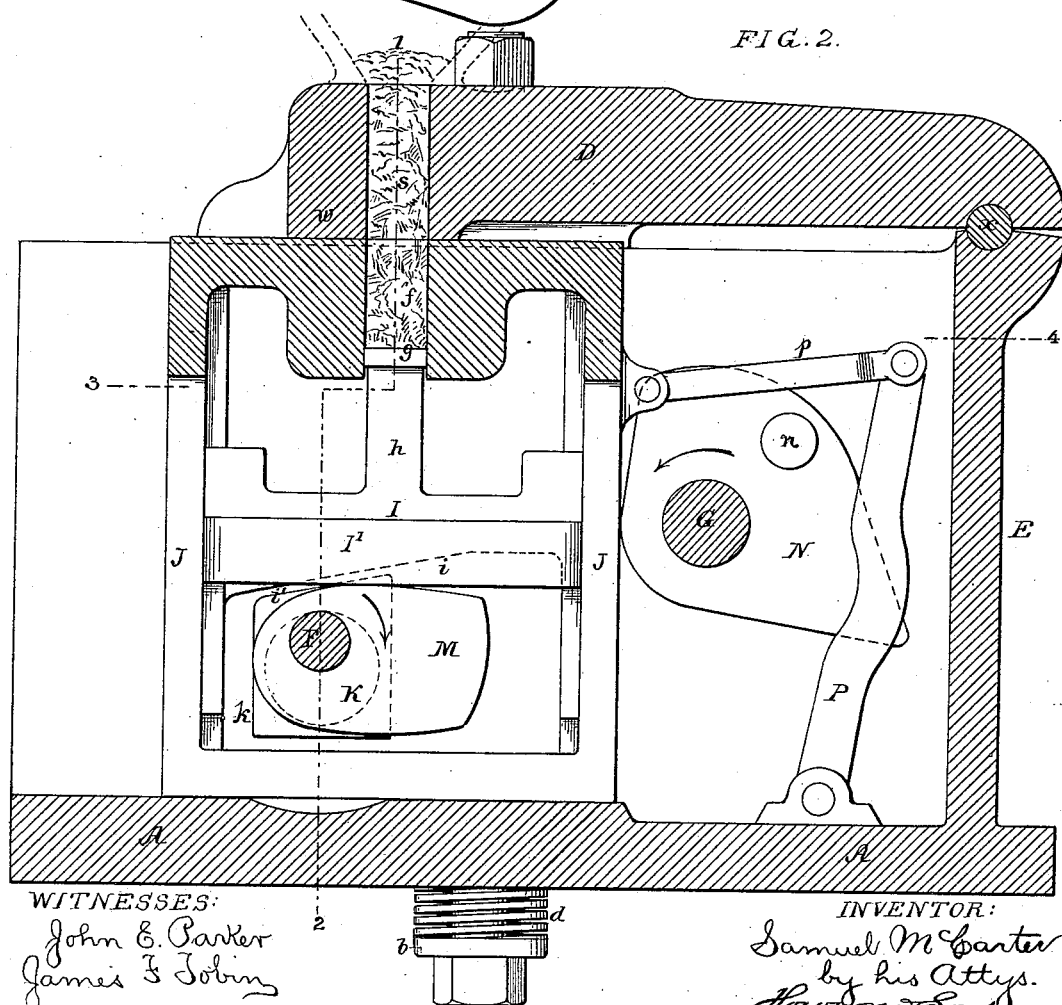


FIG. 2.

WITNESSES:

John C. Parker  
James F. Jobin

INVENTOR:

Samuel McCarter  
by his Attys.  
Hawson & Sons

(No Model.)

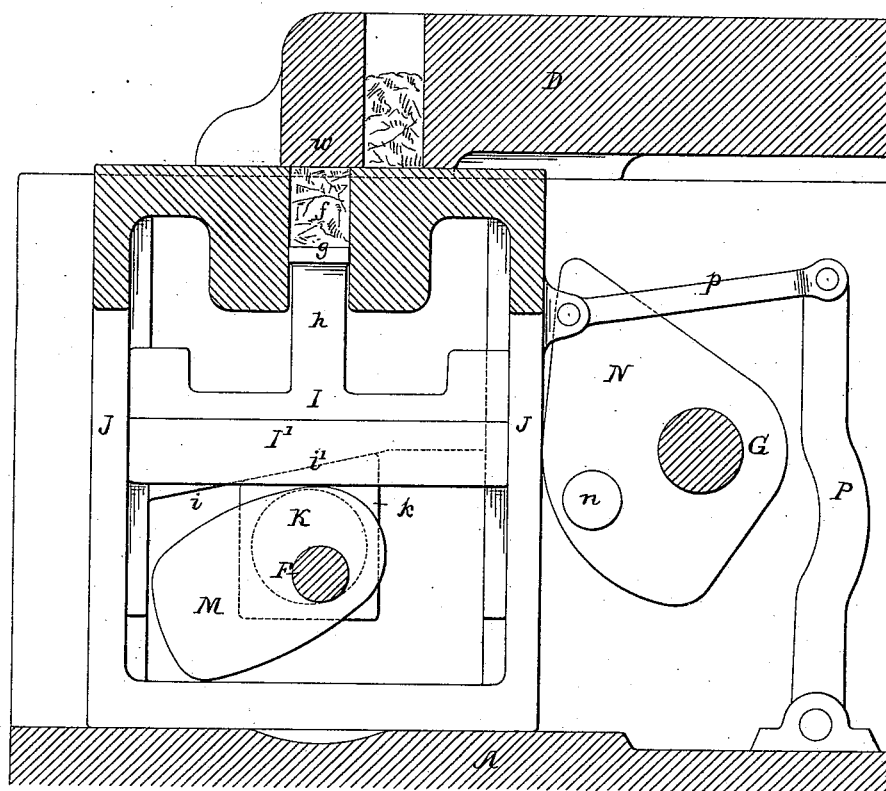
5 Sheets—Sheet 2.

S. McCARTER.  
PRESS FOR PLASTIC MATERIAL.

No. 304,337.

Patented Sept. 2, 1884.

FIG. 3.



WITNESSES:

John E. Carter  
James F. Jobin

INVENTOR:

Samuel McCarter  
by his Attorneys  
Howson & Sons

S. McCARTER.  
PRESS FOR PLASTIC MATERIAL.

No. 304,337.

Patented Sept. 2, 1884.

FIG. 4.

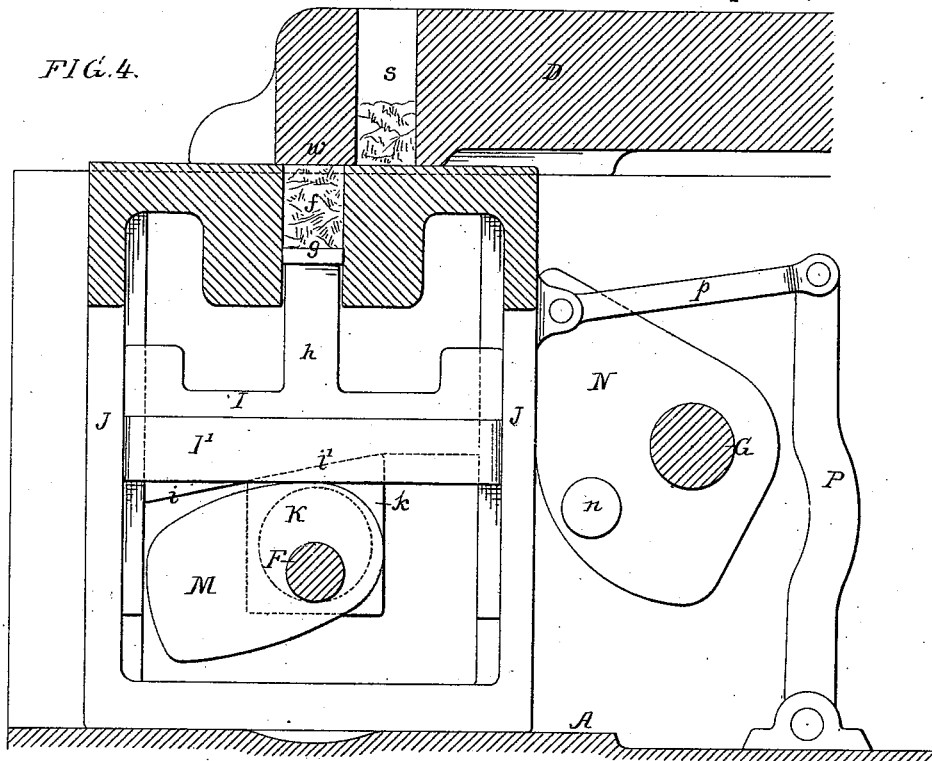
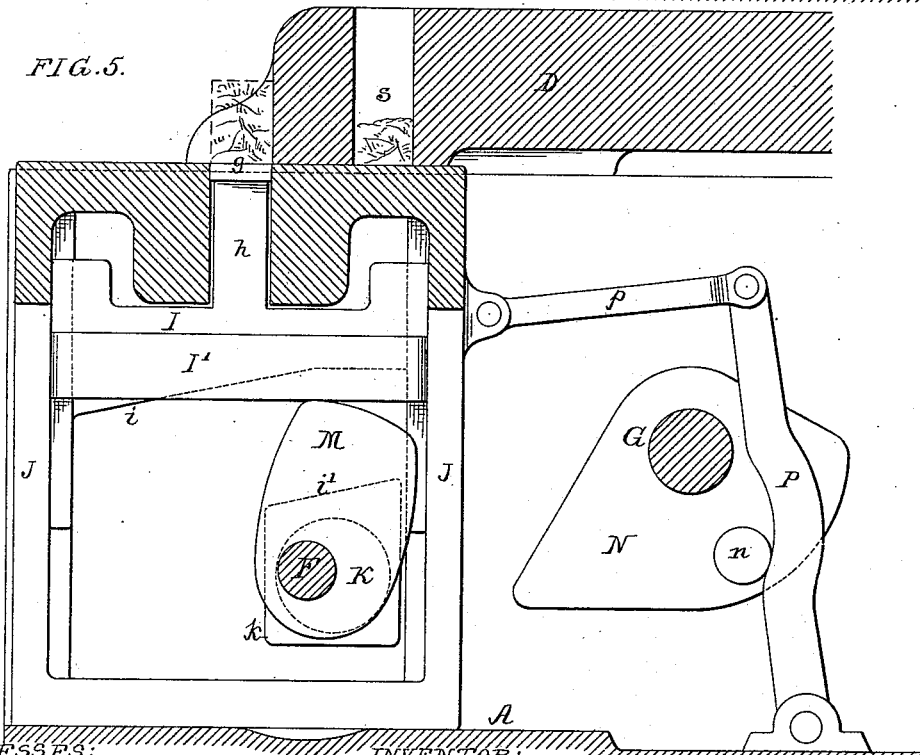


FIG. 5.



WITNESSES:  
John B. Parker  
James S. John

INVENTOR:  
Samuel McCarter  
by his Attys. Rowson & Sons

(No Model.)

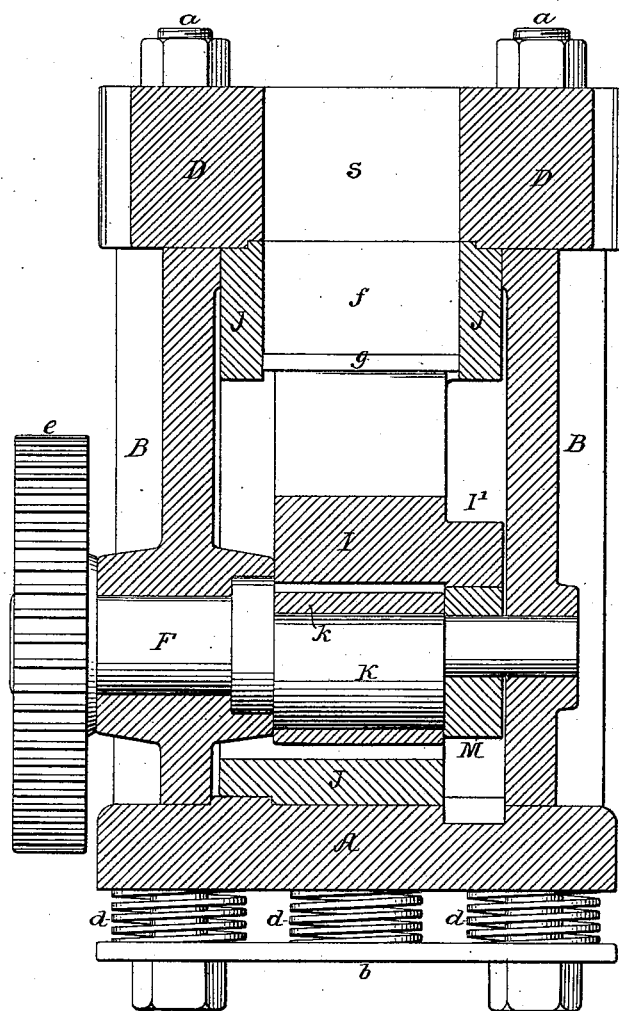
5 Sheets—Sheet 4.

S. McCARTER.  
PRESS FOR PLASTIC MATERIAL.

No. 304,337.

Patented Sept. 2, 1884.

FIG. 6.



WITNESSES:

John E. Carter  
James J. Johns

INVENTOR:

Samuel McCarter  
by his Attys  
Hosmer & Sons

(No Model.)

5 Sheets—Sheet 5.

S. McCARTER.

PRESS FOR PLASTIC MATERIAL.

No. 304,337.

Patented Sept. 2, 1884.

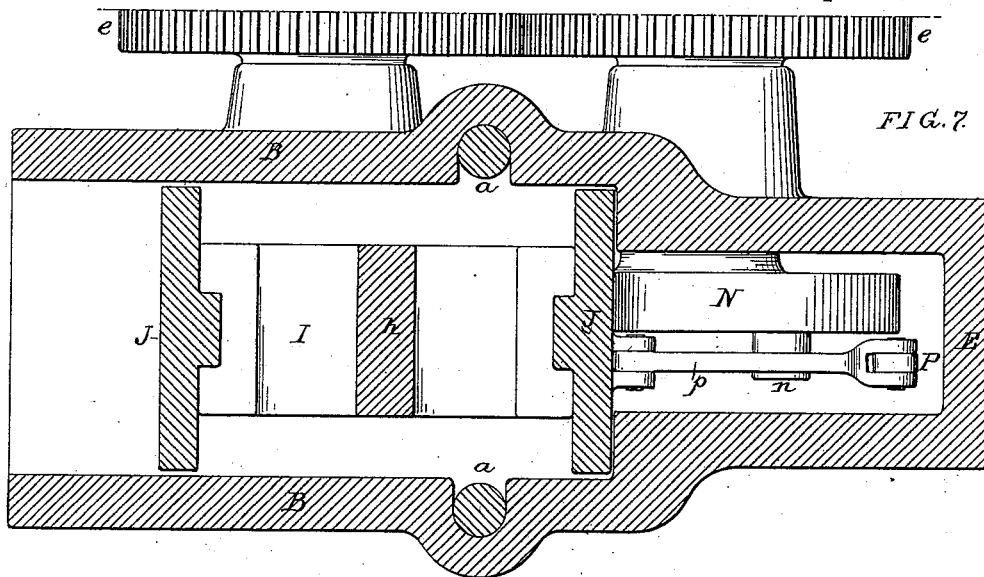


FIG. 7.

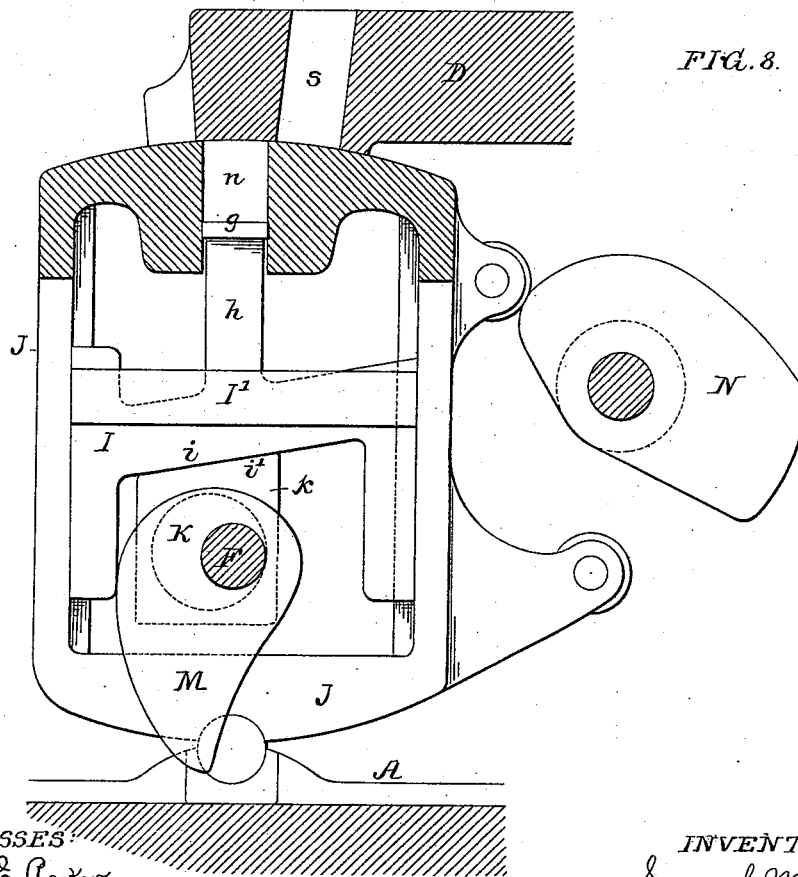


FIG. 8.

WITNESSES:

John E. Barker  
James J. Johns

INVENTOR:

Samuel McCarter  
by his Attys.  
Horton & Sons

# UNITED STATES PATENT OFFICE.

SAMUEL McCARTER, OF NORRISTOWN, PENNSYLVANIA, ASSIGNOR OF ONE  
THIRD TO JOHN D. NEWBOLD, OF SAME PLACE.

## PRESS FOR PLASTIC MATERIAL.

SPECIFICATION forming part of Letters Patent No. 304,337, dated September 2, 1884.

Application filed January 14, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL McCARTER, a citizen of the United States, and a resident of Norristown, Montgomery county, Pennsylvania, have invented certain Improvements in Presses for Plastic Material, of which the following is a specification.

The main object of my invention is to construct a powerful, compact, and effective machine for pressing blocks of plastic material, the number of parts in the machine being few and the application of power direct. A further object is to prevent the straining of the machine by excessive pressure upon the mass confined in the mold.

In the accompanying drawings, Figure 1, Sheet 1, is a plan view of the press; Fig. 2, a longitudinal section of the same; Fig. 3, Sheet 2, and Figs. 4 and 5, Sheet 3, diagrams illustrating the operation of the press; Fig. 6, Sheet 4, a transverse section on the line 1 2, Fig. 2; Fig. 7, Sheet 5, a sectional plan on the line 3 4, Fig. 2; and Fig. 8, a view illustrating a modification of part of the invention.

The fixed frame of the machine comprises the base A, opposite sides, B B, top D, and back E, the parts A, B, and E being cast in one piece or rigidly bolted together, but the top D being pivoted to the back E at the point *x*, and being confined vertically to the side frames by means of bolts *a*, which pass through openings in the base, top, and sides, the upper ends of the bolts having nuts bearing on the top D, and the heads at the lower ends of said bolts bearing on a cross-bar, *b*, between which and the base A are interposed springs *d*.

To bearings in the side frames, B B, are adapted two shafts, F and G, which are suitably geared together by spur-wheels *e e*, one of these shafts, preferably the shaft F, being intended to be driven by power applied in any suitable manner.

To guides on the base A and top D of the fixed frame is adapted a frame, J, which is free to slide longitudinally in said guides, this frame J having an opening, *f*, forming a mold, in which is a snugly-fitting plunger, *g*, the rod *h* of the latter having a cross-head, I, verti-

cally guided in the frame J, and having an inclined under face, *i*.

On the shaft F is an eccentric, K, and a cam, M, the eccentric having a block, *k*, with inclined upper face, *i'*, adapted to act upon the inclined face *i* of the cross-head I, and the cam M being adapted to act upon a projection, I', of said cross-head, so as to impart to the plunger the differential vertical reciprocating movement described hereinafter, the reciprocation of the frame J being effected by a cam, N, on the shaft G, said cam acting on the rear of the frame J, and having a pin, *n*, adapted to act upon a pivoted arm, P, connected by a rod, *p*, to the said frame.

The operation of the machine will be understood on reference to Figs. 2, 3, 4, and 5, which represent the different steps in the formation of the block of plastic material. In Fig. 2 the plunger *g* is at the bottom of the mold *f*, and the latter is in line with the opening *s* in the top D of the frame, said opening forming a continuation of the supply-hopper. (Shown by dotted lines.) The mold being filled with the plastic material or compound, the frame J is moved by the action of the cam N, so as to bring the mold under the press-block *w*, forming part of the top frame, D, as shown in Fig. 3, the frame J being allowed to remain in this position while the plunger *g* is raised to compress the mass in the mold, this elevation of the plunger being effected by the action of the block *k* upon the cross-head I, as shown in Fig. 3. The block *k*, being under the control of the eccentric K, has both a vertical and lateral movement, and, owing to the inclined faces *i i'* of the cross-head and block, the effect of this movement is to retain the plunger for a short time at the limit of its upward movement, and then to permit a slight retraction of the plunger, as shown in Fig. 4, so as to relieve the mass in the mold from pressure prior to the movement of the frame J by the cam N, so as to carry the mold from under the press-block *w*, the ejection of the contents of the mold being then effected as the plunger is elevated by the action of the cam M on the portion I' of the cross-head I. (See Fig. 5.) The retraction of the frame J is ef-

5 fected by the action of the pin *n* on the arm  
 P, and as soon as the mold is again brought  
 under the opening *s* the plunger is permitted  
 to descend, so that the mold is in condition to  
 10 receive a fresh charge of plastic material prior  
 to a repetition of the above-described opera-  
 tions. The amount of pressure to which the  
 mass in the mold is subjected cannot exceed  
 that exerted upon the cross-bar *b* by the  
 15 springs *d*, the top frame, D, of the press yield-  
 ing as soon as the pressure thereupon exceeds  
 the downward pressure of the springs, which  
 is transmitted to said top frame through the  
 medium of the bolts *a*.  
 20 The pivoting of the top frame, D, is effected  
 simply by means of a bar, *x*, adapted to seg-  
 mental recesses in the said frame and in the  
 back frame, E, as shown in Fig. 2, so that on  
 removing the nuts from the upper ends of the  
 25 bolts *a* the said frame D can be readily re-  
 moved to permit access to the frame J and its  
 mold.

A vibrating frame, J, may, if desired, be  
 used in place of the reciprocating frame, as  
 25 shown in Fig. 8, the cam N in this case acting  
 on anti-friction rollers carried by arms on the  
 frame J.

I claim as my invention—

- 30 1. The combination of the fixed frame of  
 the machine, having a feed-opening, *s*, and  
 press-block *w*, the sliding frame J, carrying  
 the mold, a plunger adapted to the mold and  
 guided in the sliding frame, and mechanism  
 for moving the said frame and for operating  
 35 the plunger, all substantially as set forth.
2. The combination of the mold, the plunger  
*g*, having a cross-head, I, with inclined face *i*,

the shaft F, having an eccentric, K, and the  
 block *k*, carried by said eccentric and having  
 an inclined face, *i'*, adapted to act on the in- 40  
 clined face *i* of the cross-head, as set forth.

3. The combination of the mold, the plunger  
*g*, having a cross-head, I, with inclined face *i*  
 and projection I', the shaft F, having an ec- 45  
 centric, K, and cam M, and the block *k*, car-  
 ried by said eccentric and having an inclined  
 face, *i'*, as set forth.

4. The combination of the fixed frame, hav-  
 ing a feed-opening, *s*, and press-block *w*, the  
 sliding frame J, having the mold and plunger, 50  
 with guided cross-head I, the shaft F, with ec-  
 centric-block *k*, and cam M, for actuating the  
 plunger, and the shaft G, with cam mechan-  
 ism, substantially as described, for acting on  
 the frame J, as set forth. 55

5. The combination of the frame J, having  
 the mold and plunger, mechanism for operat-  
 ing said plunger, the fixed frame, having a  
 pivoted top frame, D, with feed-opening *s*  
 and press-block *w*, and means, substantially 60  
 as described, for confining said frame D with  
 a yielding pressure, as set forth.

6. The combination of the top frame, D, and  
 rear frame, E, each having a segmental recess,  
 with the bar *x*, adapted to said recesses and 65  
 serving to pivot the frames together, as set  
 forth.

In testimony whereof I have signed my name  
 to this specification in the presence of two sub-  
 scribing witnesses.

SAMUEL McCARTER.

Witnesses:

J. P. HALE JENKINS,  
 F. L. MURPHY.