

No. 711,302.

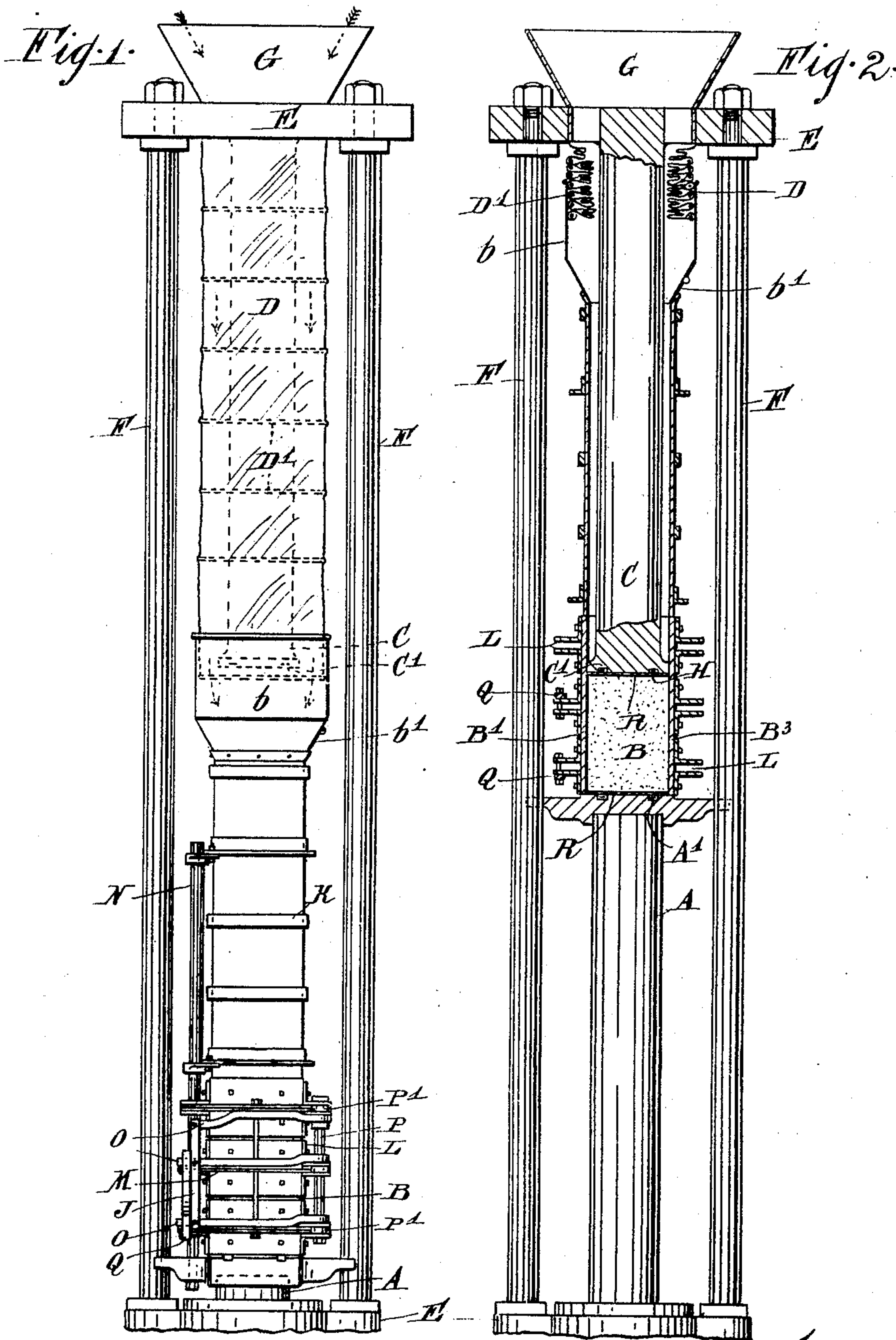
Patented Oct. 14, 1902.

J. FERRIER.
FORGE PRESS.

(Application filed June 30, 1902.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses

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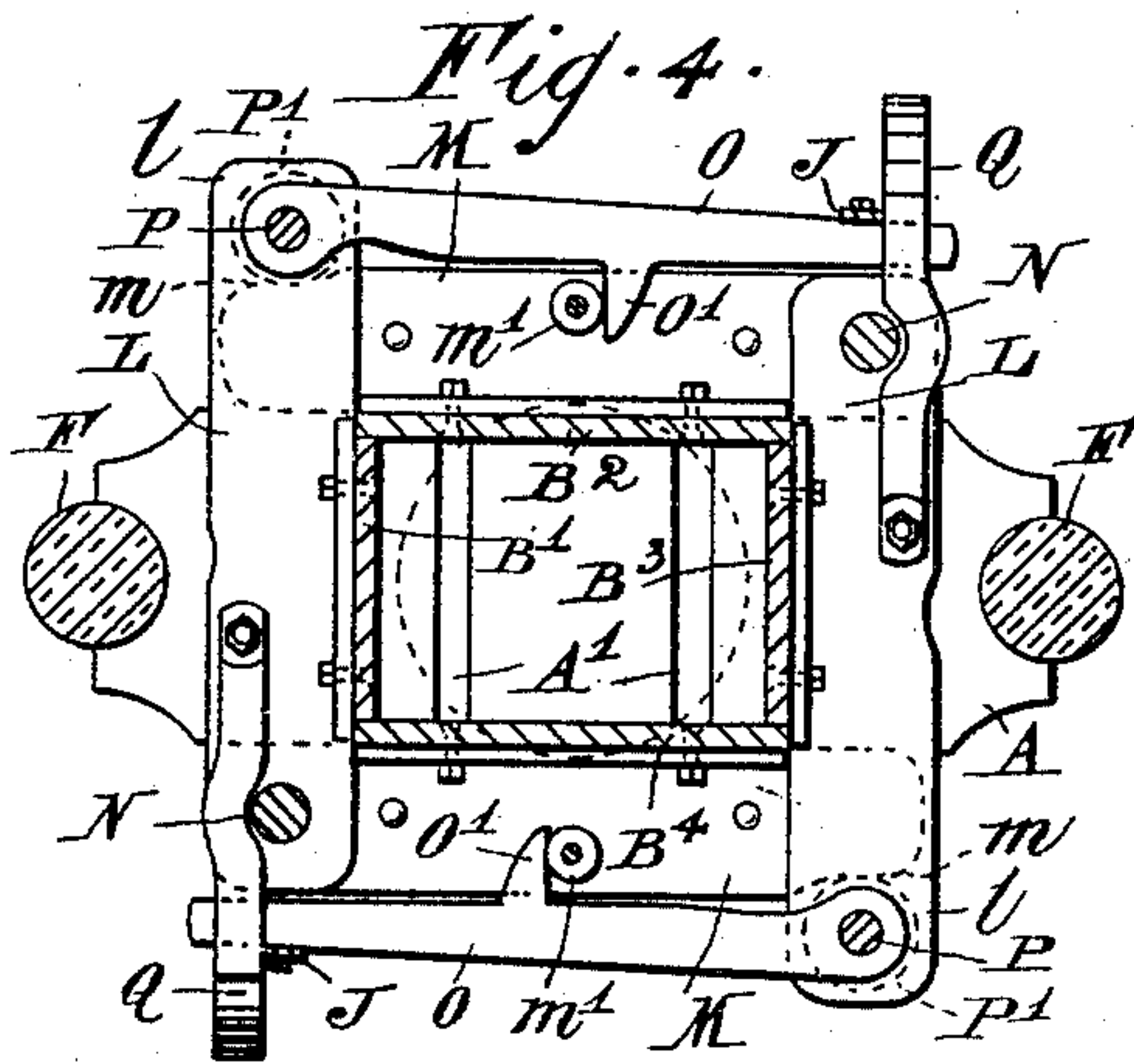
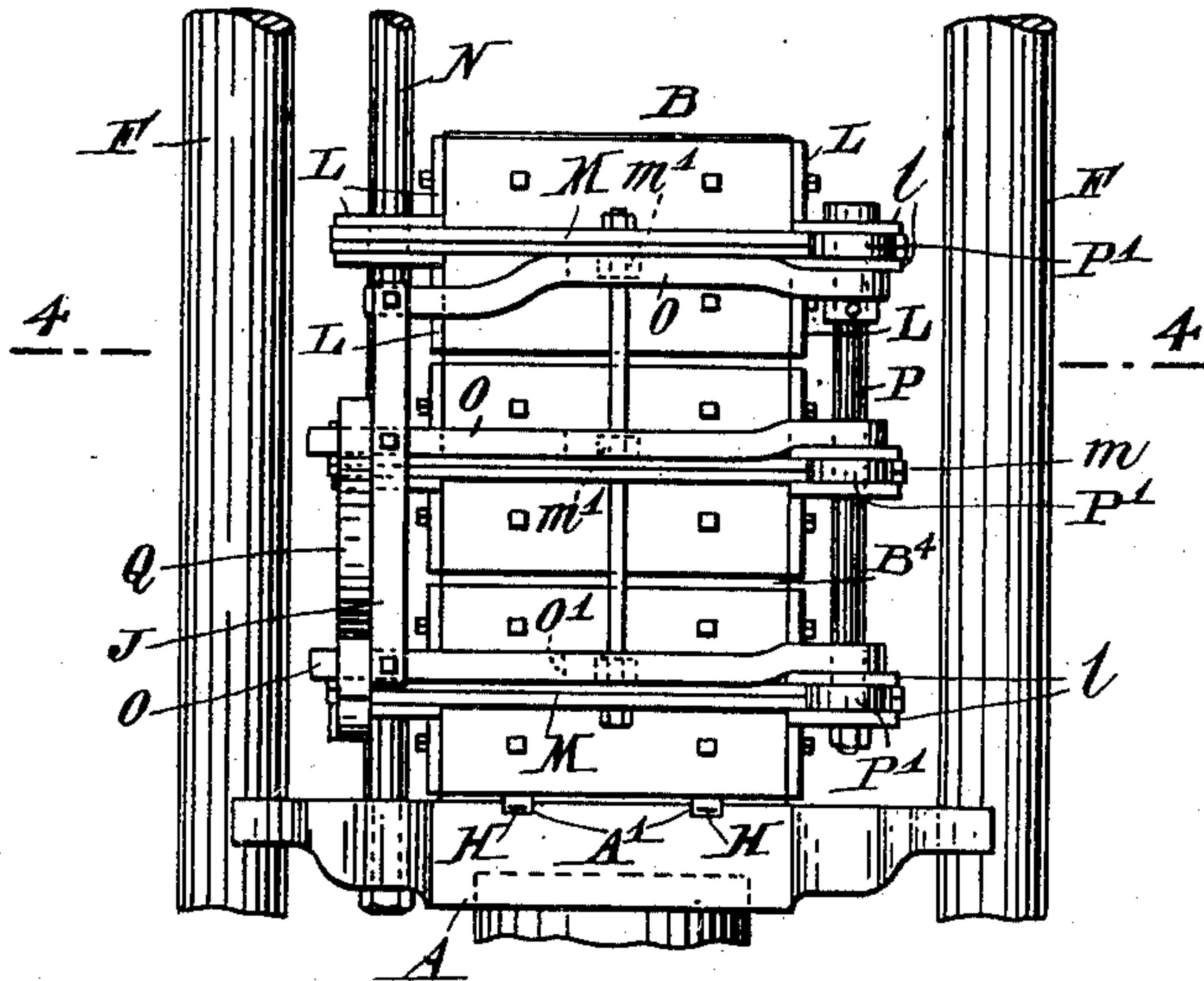
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Fig. 3.



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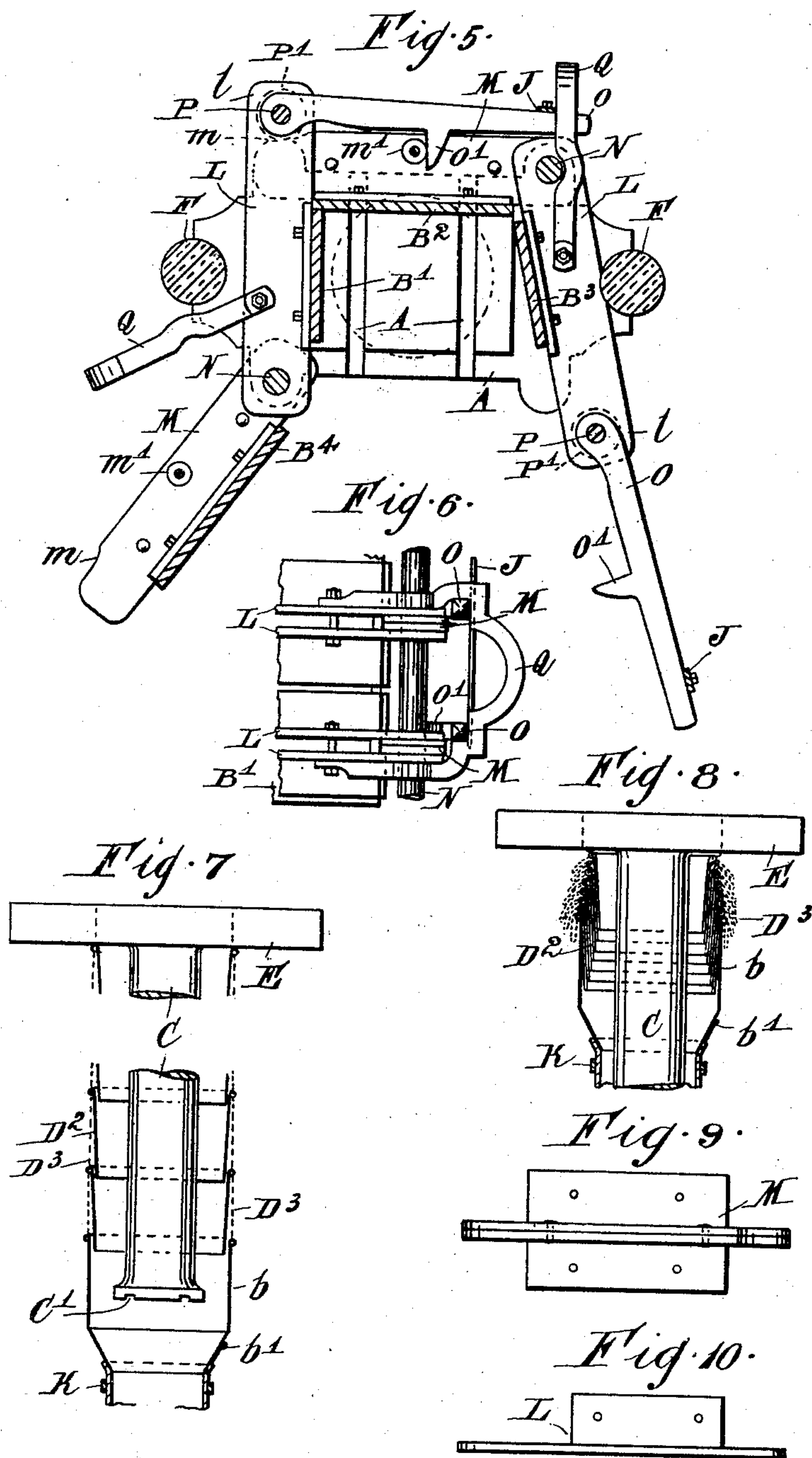
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UNITED STATES PATENT OFFICE.

JAMES FERRIER, OF GEELONG, VICTORIA, AUSTRALIA, ASSIGNOR TO THE VICTORIAN FORAGE PRESSING COMPANY, PROPRIETARY, LIMITED, OF GEELONG, VICTORIA, AUSTRALIA.

FORAGE-PRESS.

SPECIFICATION forming part of Letters Patent No. 711,302, dated October 14, 1902.

Application filed June 30, 1902. Serial No. 113,823. (No model.)

To all whom it may concern:

Be it known that I, JAMES FERRIER, farmer, a subject of the King of Great Britain, residing at Eastern Beach, Geelong, in the State of Victoria and Commonwealth of Australia, have invented an Improved Forage-Press, of which the following is a specification.

The object of this invention is to provide an improved press whereby forage—such as a mixture of chaff, oats, and bran—may be economically compressed into blocks of suitable sizes and more especially intended for transport.

The invention comprises various novel and essential features, more particularly (a) in the construction of the box in order that it may safely stand the enormous pressure put upon it, (b) in the means for opening the doors without violence after the material has been compressed, and (c) in the collapsible feed-chute, all of which are clearly illustrated in the accompanying drawings, wherein—

Figure 1 is a front elevation of the improved press with the ram and box at their lowest point ready to start operations, while Fig. 2 is a central vertical section thereof, but with the ram and box at their highest point and forage compressed. Fig. 3 is a front elevation of the box on an enlarged scale; and Fig. 4 is a horizontal transverse section of the box on line 4 4, Fig. 3, Fig. 5 being a similar view to Fig. 4, but showing two of the doors open. Fig. 6 is a fragmentary side elevation illustrating the locking device for the doors of the box. Fig. 7 is a sectional view showing a modified form of collapsible feed-chute in its extended position, and Fig. 8 is a similar view in the closed or “collapsed” position. Figs. 9 and 10 are details of the angle-irons hereinafter referred to.

The press consists of four main parts—viz., a movable ram A, a top and bottom box B, carried thereby, a long stationary ram C, and a surrounding collapsible feed-chute D, attached to the enlarged hopper-shaped top *b* of the box, the whole being carried by a suitable framing of cross-heads E and stanchions F.

The forage is fed into the hopper G at the top and passes down between the stationary

ram C and the collapsible chute D into the box B, which is then raised by the movable ram A to the position shown in Fig. 2, the feed-chute collapsing within the enlarged end *b* of the box and the forage being compressed to a block, which is bound by metallic strips H after the doors of the bottom box are opened, as hereinafter more particularly described.

The box B is made in two parts, called the “top” and “bottom” box, respectively, the top box being of half-inch and the bottom box of three-quarter-inch sheet-metal plates in order to withstand the great pressure—upward of fifteen hundredweight per square inch—which is put upon them. The top box is reinforced by metal hoops or bands K, while the four plates B^1 B^2 B^3 B^4 , constituting the doors of the bottom box, are each carried by three transverse double half-inch angle-irons L and M, those on the sides (L) being set apart, as seen in Fig. 2, while those on the front and back (M) are riveted together, as seen in Figs. 1, 3, 4, and 5, constituting complete T-irons. These angle-irons are pivotally mounted on rigid vertical standards N, situated diagonally opposite each other, so that any two doors may be opened at the same time.

In Fig. 4 the doors are closed, the ends *m* of angle-irons M fitting between the ends *l* of the angle-irons L. O represents the opening and closing levers, joined together by a brace J and pivoted on vertical rods P, connecting the free or outer ends of the angle-irons of the two side doors B^1 and B^3 and adapted to be closed, so that the lateral projections *O'*, engage rollers *m'*, mounted on studs on the angle-irons M, while the rollers *P'* on the vertical rods P travel up the inclined or curved end *m* of the angle-irons M and tightly close the box, which is locked by passing the hinged yokes Q over the ends of the locking-levers O. When the pressure is on, these doors may be opened without the usual bursting violence, owing to the gradual opening motion attained by the construction described, the yokes Q being thrown out of engagement with the ends of the levers O, the projections *O'*

running off the rollers m' , and the rollers P' gently sliding off the curved ends m of the angle-irons M . The long standards N extend upwardly and support the top box by brackets, as shown in Fig. 1.

The collapsible feed-chute D , which is attached to the enlarged hopper-shaped end of the top box, is made of canvas or similar material, the proper section being maintained by iron ribs D' , as shown in Figs. 1 and 2, or, if preferred, said collapsible chute may be made wholly of metallic sections D^2 , (see Figs. 7 and 8,) each adjacent section being connected together by chain D^3 and adapted to telescope into one another, as illustrated.

On the face of each ram is a pair of slots A' and C' , respectively, to receive the usual hoop-iron band for binding the block of compressed forage, said bands being placed in the slots before compression and buttoned or fastened together after the doors are opened.

In lieu of the wedges usually employed to keep the forage out of said slots during compression thin boards R are provided, which also serve as a protection to the blocks during transport or subsequent handling. The bottom board is inserted before the material is fed into the box, while the top board is inserted through a small door b' made for the purpose in the enlarged end of the top box. This upper board is preferably inserted after the forage has been partly compressed and the ram again depressed for the purpose.

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

1. An improved forage-press consisting of a top and bottom box, the top box being provided with an enlarged upper end, a stationary ram, a movable ram to carry said boxes and compress the forage against the stationary ram into the bottom box and a collapsible feed-chute connected to the enlarged end of the top box substantially as described and illustrated.

2. In a forage-press, a box having a front door, a rear door, and two side doors, the front door and one of said side doors being

pivoted together at one of the front corners of said box, and the rear door and the other side door being pivoted together at the diametrically opposite rear corner of said box, inclined portions on said front and rear doors, means on each side door for riding up the inclined portion of the corresponding front or rear door, and means for locking said doors together.

3. In a forage-press, a box consisting of a front door, a rear door, and two side doors, angle-irons on said doors, the free ends of the angle-irons on the front and rear doors having inclined surfaces, means on the angle-irons of the side doors for riding up said inclined surfaces, and means for locking said doors together.

4. In a forage-press, a box consisting of a front door, a rear door and two side doors, angle-irons on said doors, the free ends of the angle-irons on the front and rear doors having inclined surfaces, rollers mounted on the angle-irons of the side doors and adapted to ride up the inclined surfaces of said angle-irons on the front and rear doors, fixed rollers on the angle-irons of the front and rear doors, locking-levers on the free ends of the angle-irons on the side doors, lateral projections on said locking-levers adapted to engage said fixed rollers, and means for holding said locking-levers against movement when said doors are in closed position.

5. In a forage-press, the combination of a stationary ram and a movable ram, a box mounted between said rams, and a collapsible chute connected to said box.

6. In a forage-press, the combination of a stationary ram and a movable ram, a box mounted between said rams, and a collapsible feed-chute connected to said box and surrounding one of said rams.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES FERRIER.

Witnesses:

EDWARD WATERS,

EDWARD WATERS, Jr.