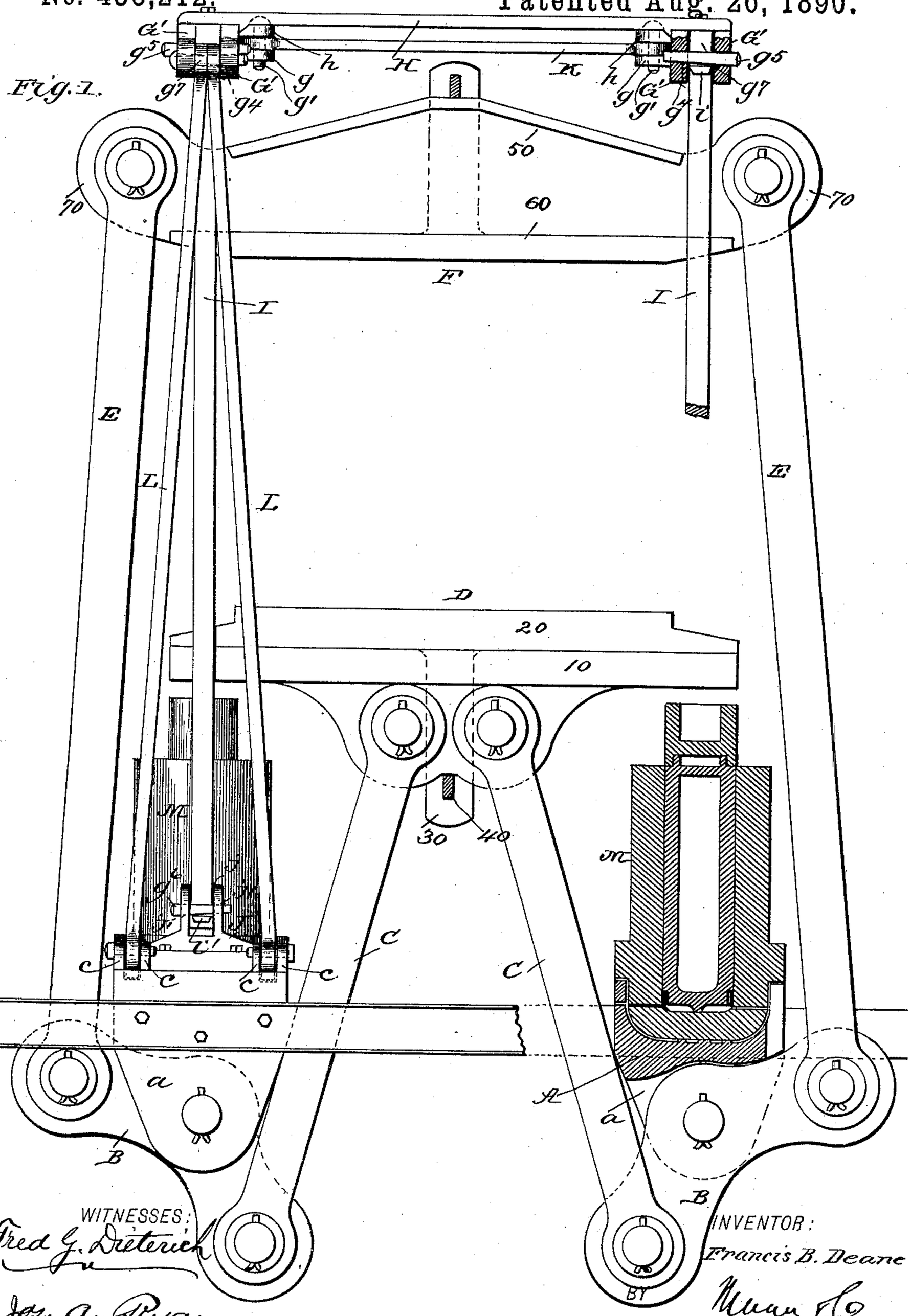
(No Model.) 2 Sheets—Sheet 1.

F. B. DEANE.

COMPOUND PRESS.

No. 435,212. Patented Aug. 26, 1890.

Fig. 1.



WITNESSES:
Fred G. Dieterich
Jos. a. Ryan

INVENTOR:
Francis B. Deane
Munn & Co
ATTORNEYS

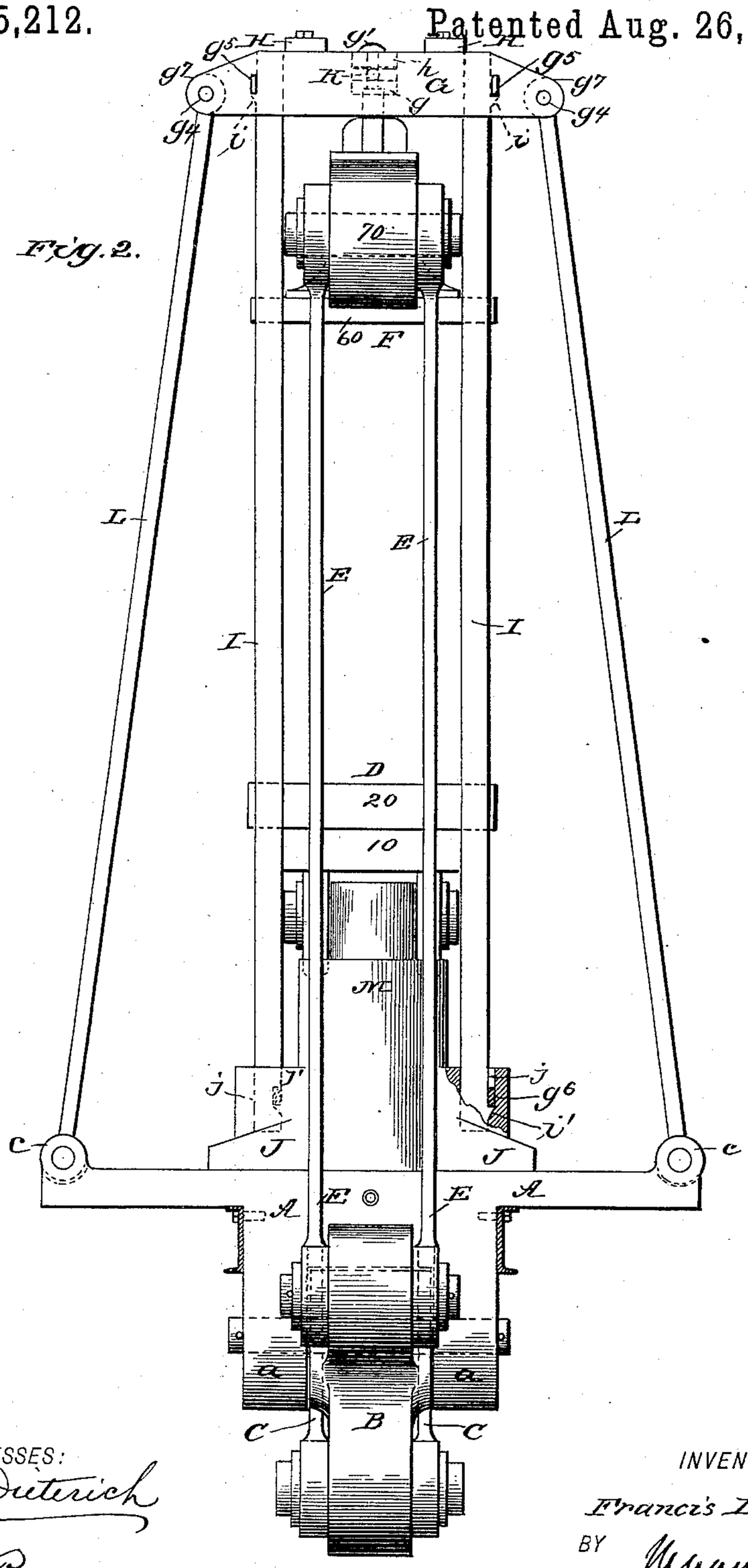
(No Model.) 2 Sheets—Sheet 2.

F. B. DEANE.

COMPOUND PRESS.

No. 435,212. Patented Aug. 26, 1890.

Fig. 2.



WITNESSES:

Fred G. Dieterich

Jos. a. Ryan

INVENTOR:

Francis B. Deane

BY Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANCIS B. DEANE, OF LYNCHBURG, VIRGINIA.

COMPOUND PRESS.

SPECIFICATION forming part of Letters Patent No. 435,212, dated August 26, 1890.

Application filed February 18, 1890. Serial No. 340,956. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS B. DEANE, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented certain new and useful Improvements in Compound Presses, of which the following is a specification.

My invention, which is in the nature of a press for compressing cotton, hay, &c., has for its object to provide a press of this character, wherein the upper and lower platens are arranged to move simultaneously toward or from each other, whereby the travel of the lever-sweep or the piston is diminished to one-half the stroke of the press, thereby accelerating the speed of the press and increasing the amount of work done in a given time.

It has also for its object to provide a press of such a construction whereby the operation thereof will be simple, positive, and effective for its desired purpose.

To this end my invention consists in the novel arrangement and peculiar combination of the several parts, all of which will hereinafter be fully described in the annexed specification, and particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a front elevation of my improved compound press, and Fig. 2 is an end elevation of the same.

In the accompanying drawings, A denotes the bed-castings provided with depending lugs *a a*, to which are centrally pivoted levers B, to the inner ends of which are pivoted the lower ends of the bars C C, the upper ends of which are pivoted centrally to the lower face of the platen D, while to the outer ends of said levers B are pivoted the lower ends of the bars E, pivoted at their upper ends to the upper platen F, as shown, the lower ends of the bars C and E being pivoted at the same distance from the pivotal axis of the levers B, so that the distance of the movement of the said bars C and E up or down will be the same.

G denotes the cross-head, which consists of end plates G′ G′, the cross-bars H, connecting said bars G′ G′, and the tie-rod K. In the construction shown I provide the cross-bars H with lugs *h h*, which abut against the inner faces of the inner plates G′, and form said faces with inwardly-projecting lateral apertured lugs *g g*, between which fit the apertured ends of the tie-rod, the latter being held to such lugs by the bolt *g′ g′*, as most clearly shown in Fig. 1 of the drawings.

I denotes the vertical bars, between which the ends of the platens are guided in their vertical movement, the upper ends of which are held between the bifurcated ends g^7 of the plates G′ G′, and locked therebetween from upward movement by the wedge-keys g^5 g^5, which pass through coincident apertures g^4 in the plates G′, and the under faces of which engage lugs *i i* on the bars I, as shown, the lower ends of said guides fitting in sockets *j j*, formed in base-plates J J, secured upon the bed-plate A, such ends being also provided with lugs *i′ i′*, which engage the lower edge of the wedge-keys g^6 g^6, which pass through the horizontal apertures *j j* in the base-plates J J. By this construction it will be observed that the guides for the platens can be quickly adjusted and firmly held in position.

In the bifurcated ends of the plates G′ G′, I pivotally secure the ends of the brace-rods L L, the lower ends of which are pivoted between ears *c c* on the outer ends of lateral extensions of the bed-plate A, as shown. The lower platen consists of the base 10 and the removable face-plate 20, provided with a centrally-arranged depending lug 30, which projects through a central aperture in the base 10 and is held thereto by the key 40, as shown. The upper platen consists of a cross-head 50, having a face-plate 60 on its lower face, which is secured to the cross-head in a manner similar to the connection of the face-plate on the lower platen. The ends of the cross-head 50 extend beyond the guides I, such ends being formed into apertured ears 70, to which the upper ends of the arms E E are connected.

In the practical construction of my invention I weight the lower platen to overbalance the upper platens, so as to cause them to recede from each other after the power for bringing them together is released. If desired, the platens may be of the same weight and may be forced apart by any suitable lever-power.

Any desired means may be employed to apply the pressure to the platens; but I prefer to employ the hydraulic rams M M, as shown, which are operated in the usual manner.

From the foregoing description, taken in connection with the drawings, it will be observed that while the construction of my compound press is very simple, the arrangement thereof is such as to produce a press of great strength and giving stability to the upper portion, whereby the platens will be always kept in proper alignment with each other. The movement of the piston is reduced one-half, thereby increasing the capacity for work, the connections between the platens serving to provide a strong leverage-power equally distributed thereto. It will also be observed that by connecting the short lever-arms C C centrally to the lower platen to push upward, and the long arms E E to the outer extensions of the upper platen to pull downward, the pressure is not only equalized, but the arms serve to steady and guide all of the parts and hold the same from lateral movement.

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

1. A compound press consisting of the supporting-frame, said frame formed of the bed-castings A, the cross-head G, the guides I, and brace-rods L, arranged as shown, platens D F, held to slide vertically between said guides I, the ends of the upper platen extended beyond said guides, the centrally-pivoted swinging levers B, journaled to the bed-castings, the short arms C, connected to the inner ends of said levers and to the under face of the lower platen, the long arms E, secured at one end to the outer ends of the swinging levers B and at their opposite ends to the lateral extensions of the upper platen, and means for forcing the lower platen upward, substantially as shown and described, whereby the upper platen will be drawn downward, as and for the purposes described.

2. In a compound press, the combination, with the supporting-frame, of the guides detachably held thereon, the platens D F, held to slide vertically between said guides, the lower platen formed of a heavier body than the upper platen, whereby to overbalance the same, the connections B C E intermediate said platens, whereby the upward movement of the lower platen will force the upper platen downward, and suitable power for forcing said lower platen upward, said lower platen adapted to recede when power-pressure is released, and thereby draw the upper platen up, substantially as and for the purpose described.

3. A compound press comprising a supporting-frame consisting of the casting A, the cross-head G, the brace-rods L, connected to the cross-head and the bed-plate A, and the guides I, detachably secured at their upper ends to the cross-head G and at their lower ends to the bed-plate A, the platens D F, held to slide vertically between said guides I, the intermediate devices B C E, connecting said platens, whereby they are caused to move toward or from each other, and means for raising the lower platen, substantially as shown and described.

FRANCIS B. DEANE.

Witnesses:
S. T. WOOD,
R. O. HORTON.