

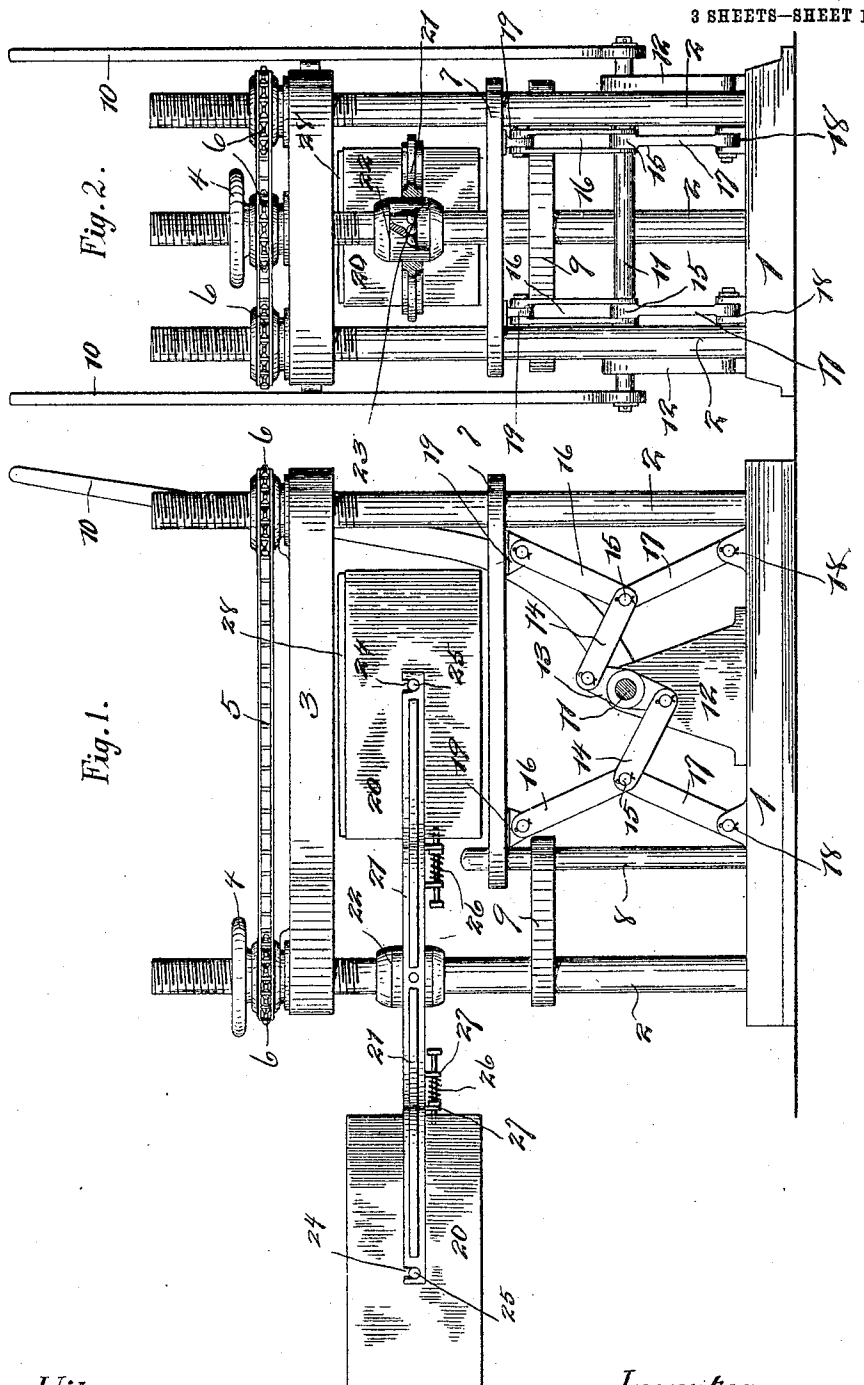
No. 812,416.

PATENTED FEB. 13, 1906.

J. A. FERGUSON.
PRESS FOR CONCRETE BUILDING BLOCKS.

APPLICATION FILED OCT. 12, 1905.

3 SHEETS—SHEET 1.



Witnesses
R. R. Bond.
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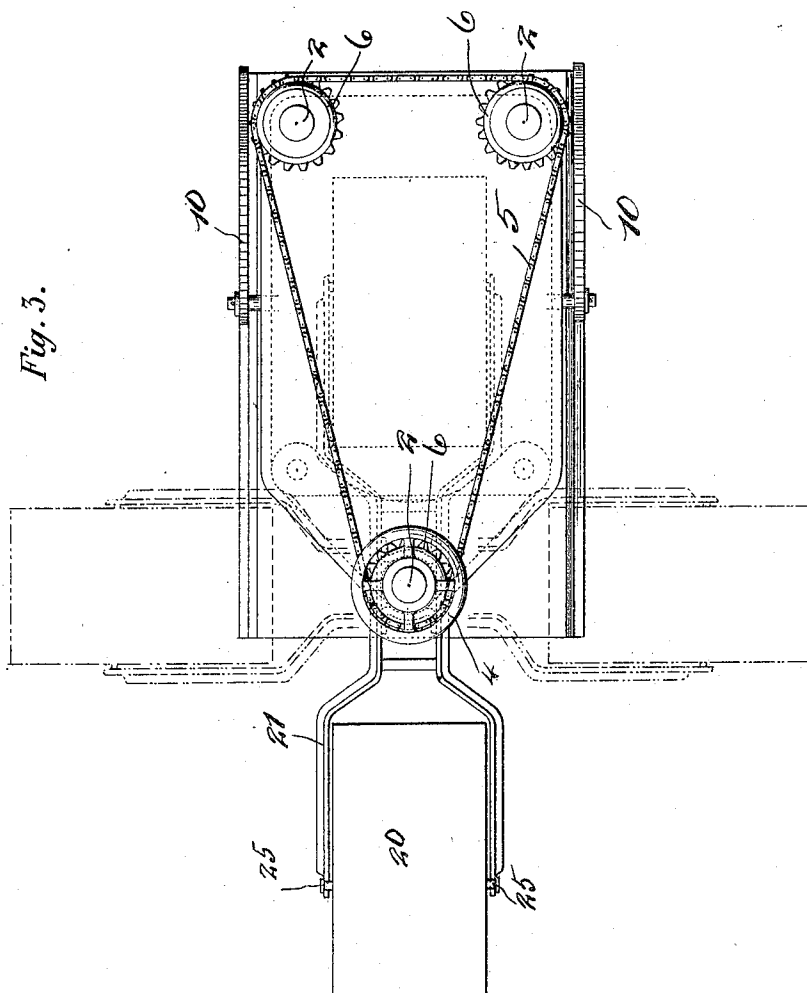
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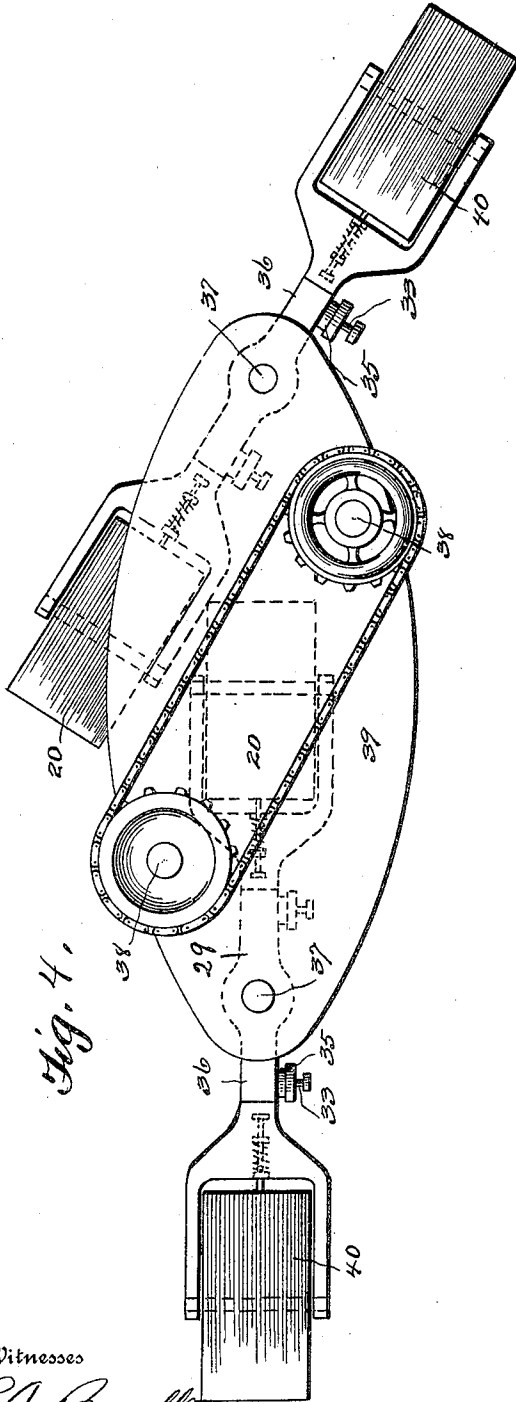
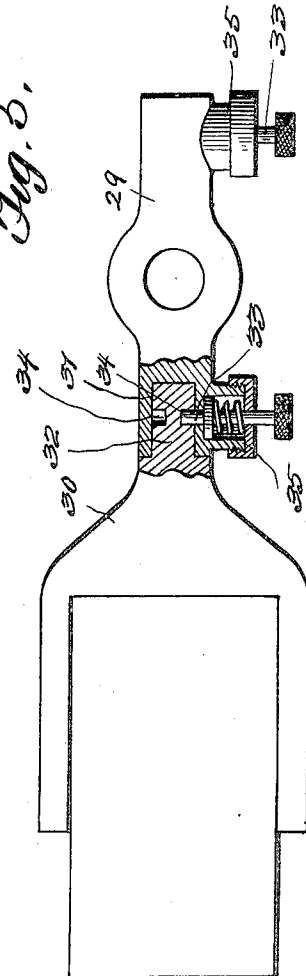


Fig. 4.

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Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN A. FERGUSON, OF DENVER, COLORADO.

PRESS FOR CONCRETE BUILDING-BLOCKS.

No. 812,416.

Specification of Letters Patent.

Patented Feb. 13, 1906.

Application filed October 12, 1905. Serial No. 282,405.

To all whom it may concern:

Be it known that I, JOHN A. FERGUSON, a citizen of the United States of America, and a resident of Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Presses for Concrete Building-Blocks, of which the following is a specification.

This invention relates to certain new and useful improvements in presses for concrete building-blocks; and it has for its object, primarily, to provide a simple and efficient press in which the mold is so mounted and disposed that it may be swung in a horizontal plane, so that it may be filled, and then swung into position in the press and the press actuated to compress the plastic material and then swung out again, the mold inverted to discharge the block, then thrown into its normal position to be again filled and the operation repeated. I may employ one, two, or more molds, and in case of a single mold a suitable counterbalance therefor should be provided. When two molds are employed, the one counterbalances the other. The molds may be mounted for reversal or inversion in any suitable manner. Suitable means are provided for holding the molds in proper position.

Other objects and advantages of the invention will be hereinafter described, and the novel features thereof will be particularly pointed out in the appended claims.

The invention is capable of embodiment in a variety of forms, some of those which at the present time I consider preferable being herein shown by way of illustration; but it is apparent that modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. I therefore do not intend to restrict myself to the details of construction herein disclosed, but reserve the right to make such changes, variations, and modifications as come properly within the scope of the protection prayed.

The invention in its preferred forms is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of a press constructed in accordance with my present invention. Fig. 2 is a view at right angles to Fig. 1 with a portion in section and a part

broken away. Fig. 3 is a top plan view. Fig. 4 is a top plan of a modified form of press embodying the same principle. Fig. 5 is an enlarged plan view with a portion broken away and parts in section of one of the mold-supporting arms.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the details of the drawings, 1 designates the bed or base piece of a press, which in the form seen in Figs. 1, 2, and 3 comprises the posts or uprights 2, the number in this instance being three, upon which are supported the mold-boxes, and the means for adjustment of the plate 3, which is adapted to be adjusted vertically to compensate for the varying heights of the mold-boxes or to vary the pressure. This adjustment is attained by means of the hand-wheel 4 on one of the posts and the sprocket-chain 5, passing around the sprocket-wheel 6 on said posts, in a manner well known in this art and to which no claim is herein made.

7 is the presser-plate, guided upon two of the posts 2 and upon the upright 8, rising from the bed 1, and braced from the other post 2 by the horizontal brace 9. This presser-plate is designed to be actuated by the levers 10, one upon either side of the press, said levers being secured to the transverse shaft 11, mounted in suitable bearings in the uprights 12. 13 represents rocker-arms carried by said shaft 11, and to each end of said rocker-shaft is connected a link 14, the outer ends of which are pivotally connected, as at 15, with the toggles 16 and 17, as seen in Figs. 1 and 2. The opposite ends of the toggles are pivotally connected with ears or lugs 18 and 19, extending in opposite directions from the bed and presser-plate, respectively, as seen best in Fig. 1. By this means I obtain great pressure by little power and provide for the operation from both sides of the press. Other means, however, may be provided for actuating the presser-plate.

20 represents the mold-boxes. They are designed to be swung into the press and then out from the same to discharge the molded block. This may be accomplished in a variety of ways. In Fig. 1 I have shown two mold-boxes arranged so as to counterbalance each other. The mold-boxes themselves may be of the usual or any approved form of construction designed to be filled in the usual manner. In Fig. 1 each mold-box is carried

by an arm 21, and the arms are shown as projecting diametrically oppositely from a hub or head 22, which is mounted for revolution upon one of the posts 2, ball-bearings, as seen at 23 in Fig. 2, being provided, if desired. In the form seen in Fig. 1 the arms 21 are bifurcated, as seen clearly in Fig. 3, and in the outer ends of the bifurcations thereof are the open-ended slots or sockets 24, in which are received the horizontal pins 25, projecting from the sides of the mold-box. These open-ended slots serve a double function. They permit of the ready insertion or removal of the mold-boxes from their supports and allow the mold-box to be raised vertically when in position in the press and to drop back into its normal position when the presser-plate is lowered. The mold-box is designed to be turned on the pivots 25 to allow it to be inverted to discharge the finished block. To lock the mold-box in its horizontal position and prevent its inversion except at the proper time, any suitable means may be provided. In Fig. 1 I have shown a simple and convenient means, consisting of a spring-actuated bolt 26, mounted for longitudinal movement in suitable guides 27 on the under side of the arm 21 and adapted to engage in an opening in the end of the box. This bolt is normally pressed by the spring into its opening, and when it is desired to turn the box on its pivots the bolt is withdrawn, so as to permit the mold-box to be inverted.

One, two, or more mold-boxes may be employed. Each mold-box is filled with the plastic material while it is out of the press, and then the pallet 28 is placed on the top of the same, the mold-box swung into the press, and the presser-plate elevated to compress the material. The presser-plate is then lowered and the mold-box swung out of the press, as indicated in Figs. 1 and 3, and the mold-box inverted to discharge the completed block onto a lowering stand or the like. (Not shown.) While one mold-box is in the press another is being filled, and as the one which has been pressed is swung out of the press another is swung in. After the completed block has been discharged the mold-box is turned on its pivot into its normal position ready for refilling and automatically locked in such position. When but one mold-box is employed, it should be counterbalanced in any suitable manner. When two are employed, the one counterbalances the other, as will be readily understood.

Instead of mounting the mold-box so that it may be inverted on its pivots, as above described in connection with Fig. 1, I may sometimes obtain the same results in a different way. In Fig. 5 I have shown one of the various forms that will be found efficient. As therein seen, the arm carrying the mold-box is composed of two parts—the member 29, which is mounted for revolution on the post,

and the member 30, which is bifurcated to receive the mold-box. The member 29 has a socket 31 in its outer end to receive the pintle or cylindrical reduced portion 32 on the member 30. This cylindrical portion is rotatably mounted in the said socket and is automatically held in either of its two required positions to hold the mold-box upright to be filled or inverted to discharge its contents by means of a spring-actuated bolt 33, adapted to engage either of the holes 34 in the pintle 32, the said spring-actuated bolt being mounted in a suitable lateral socket in the member 29, which socket is provided with a detachable cap 35. Although ordinarily but one of these provisions for inversion of the mold-box will be employed at a time, both forms may be present in the one arm, if desired, as indicated at the left in Fig. 4. In this instance, however, the socket in which the pivots of the mold-box are received should not be open-ended. When the form indicated in Fig. 5 is employed alone, the member 30 is preferably integral or rigid with the mold-box.

In Fig. 4 is indicated another form of press, in which the arms 36 are mounted on posts 37 outside of and independent of posts 38 of the press, the base or bed 39 being of substantially the form shown in Fig. 4. In this form each arm carries at one end a mold-box at 20 and at the other end a counterbalance 40. Each box is designed to be swung out to be filled and then swung into the press, where the plastic material in the mold is compressed, and as one box is swung out the other may be swung in. When the mold-box with the completed block is swung out, the mold-box is inverted and the block deposited on a lowering stand, (not shown,) the mold-box returned to normal position, and the operation repeated, and so on.

What I claim as new is—

1. In a press, the combination with the presser-plate and its actuating means, of an eccentrically-mounted mold-box and a support therefor mounted for movement above said presser-plate and to swing in a horizontal plane into and out of operative relation to said presser-plate.

2. In a press, the combination with the presser-plate and its actuating means, of a mold-box eccentrically pivoted to automatically swing through an arc of more than ninety degrees and a support therefor mounted to swing in a horizontal plane into and out of operative relation to said presser-plate, said mold-box being mounted for inversion.

3. In a press of the character described, the combination with the bed, of posts rising therefrom, an adjustable upper plate on said posts, a presser-plate guided vertically on a portion of said posts, a shorter vertical guide rising from the bed and braced from another of said posts, a mold-support mounted for rotation on said last-named post and adapted

to swing above said guide and between said plates and means for raising and lowering said presser-plate.

5 4. A press and a mold mounted to swing horizontally into and out of the press, said mold being eccentrically pivoted to swing beyond a vertical center by gravity.

Signed by me at Washington, District of Columbia, this 9th day of October, 1905.

JOHN A. FERGUSON.

Witnesses:

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E. H. BOND.