

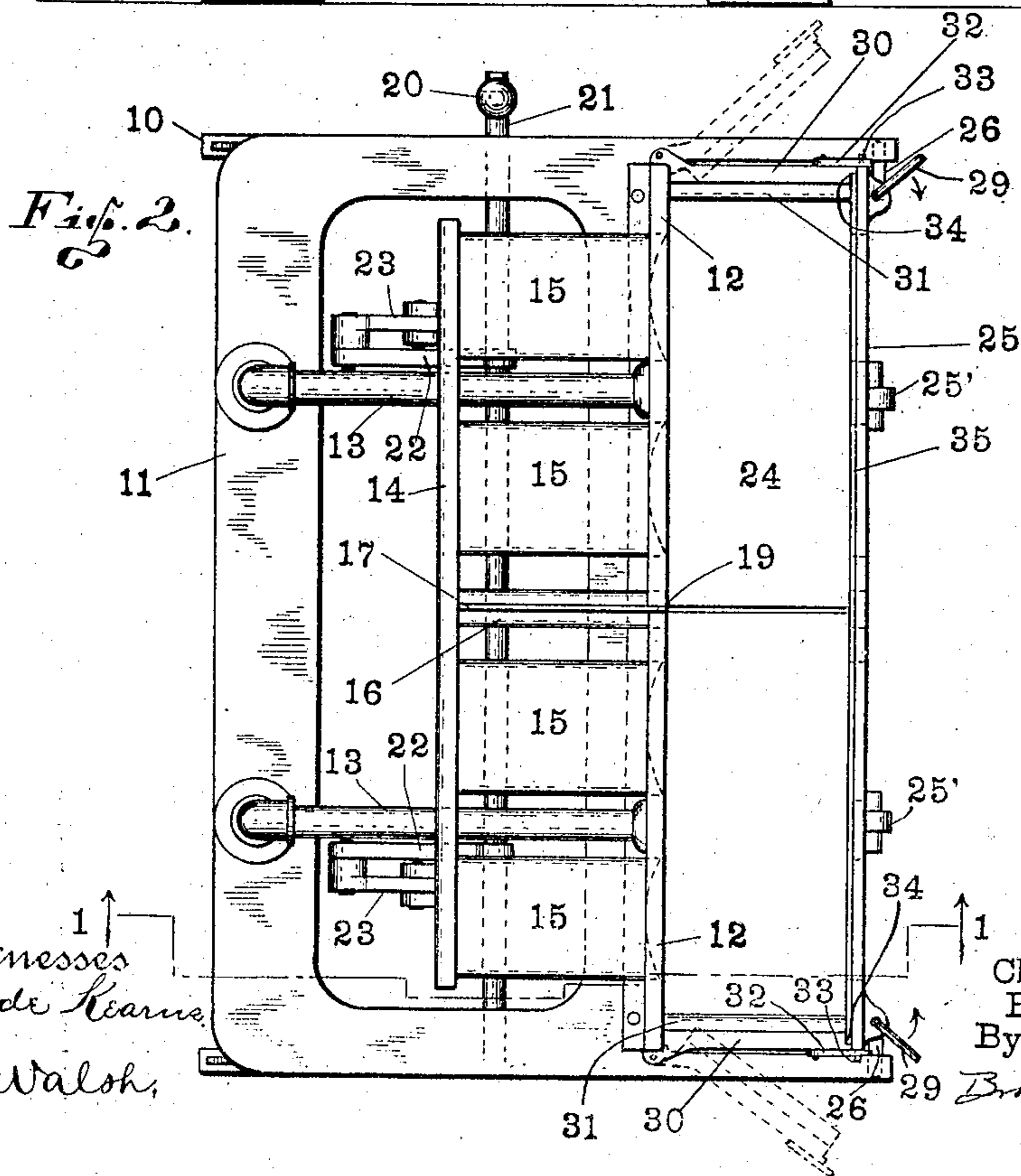
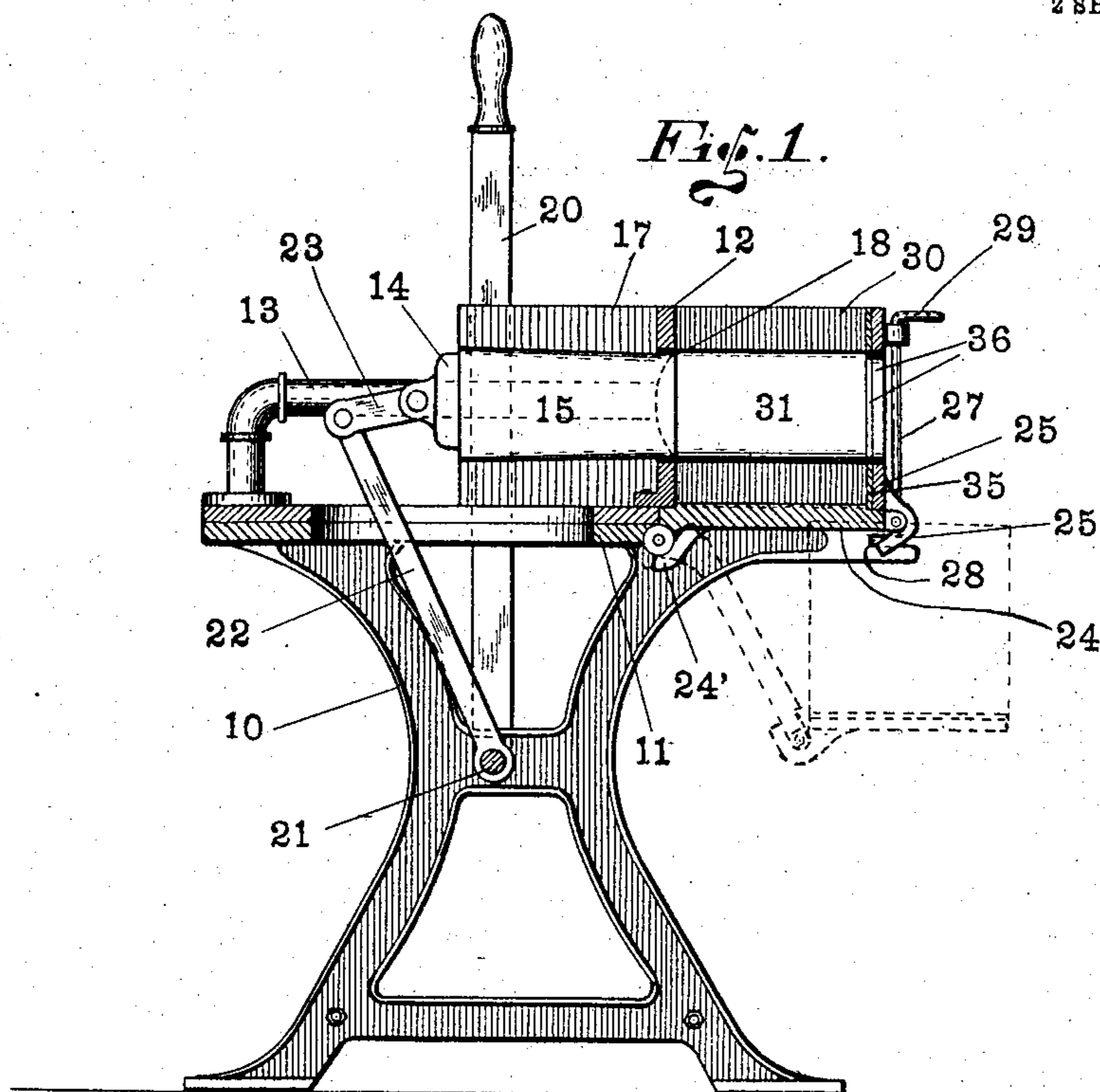
No. 781,143.

PATENTED JAN. 31, 1905.

C. F. HARRIS & B. W. DUCK.
CEMENT BLOCK MACHINE.

APPLICATION FILED OCT. 14, 1904.

2 SHEETS—SHEET 1.



Witnesses
Adelaide Kearns
J. A. Walsh

Inventors
Charles F. Harris
Berkley W. Duck
By
Bradford Wood
Attorneys

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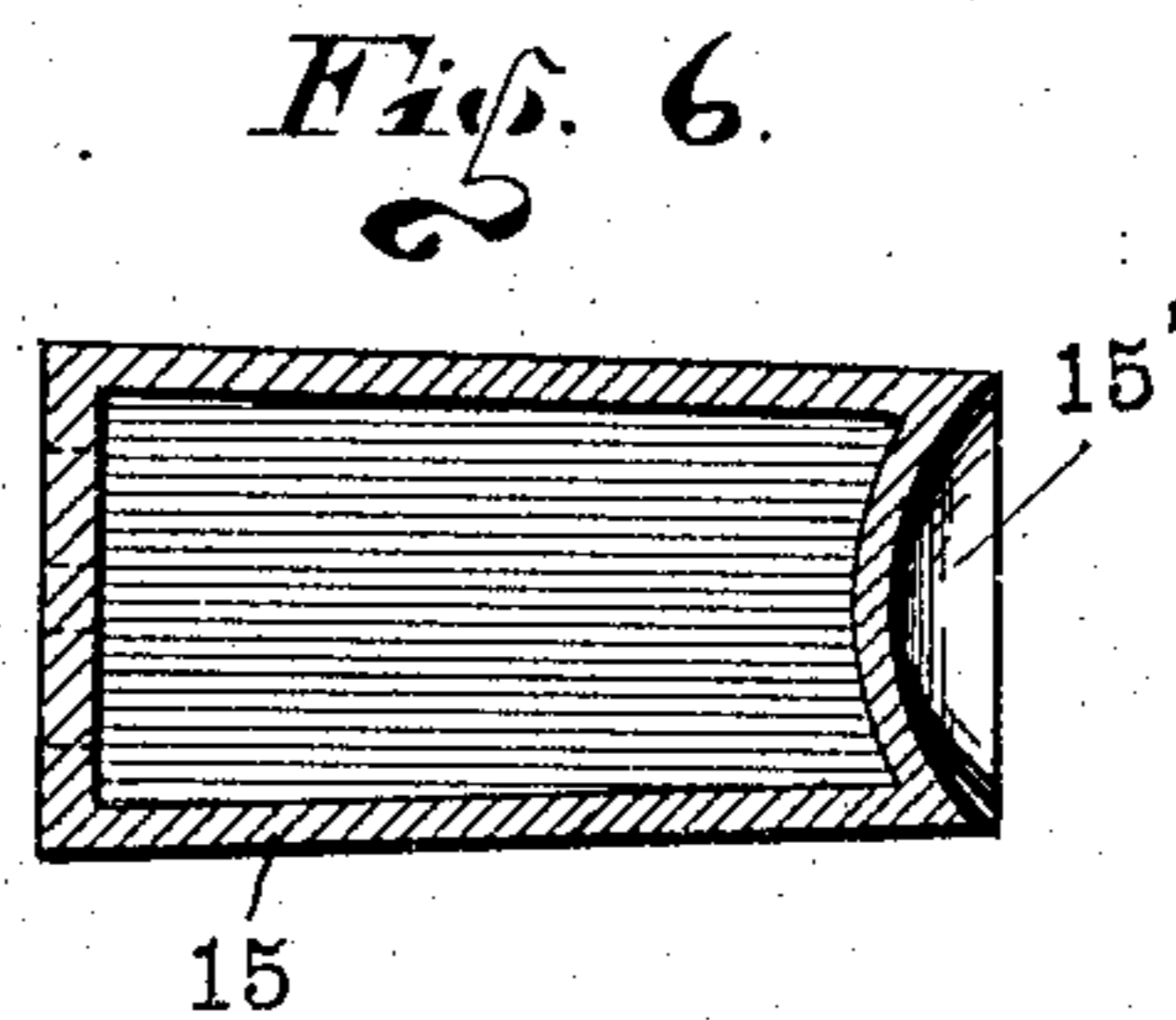
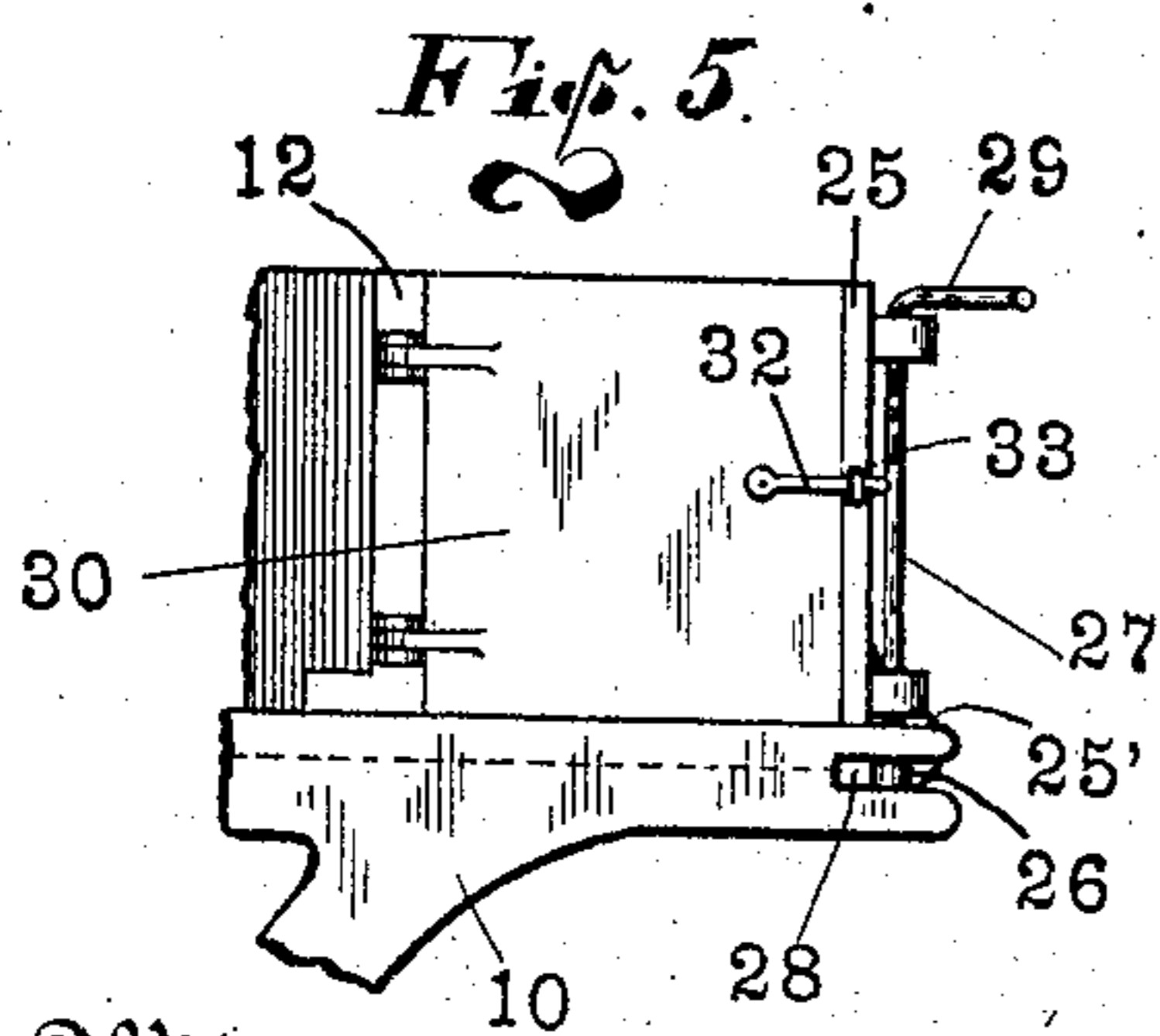
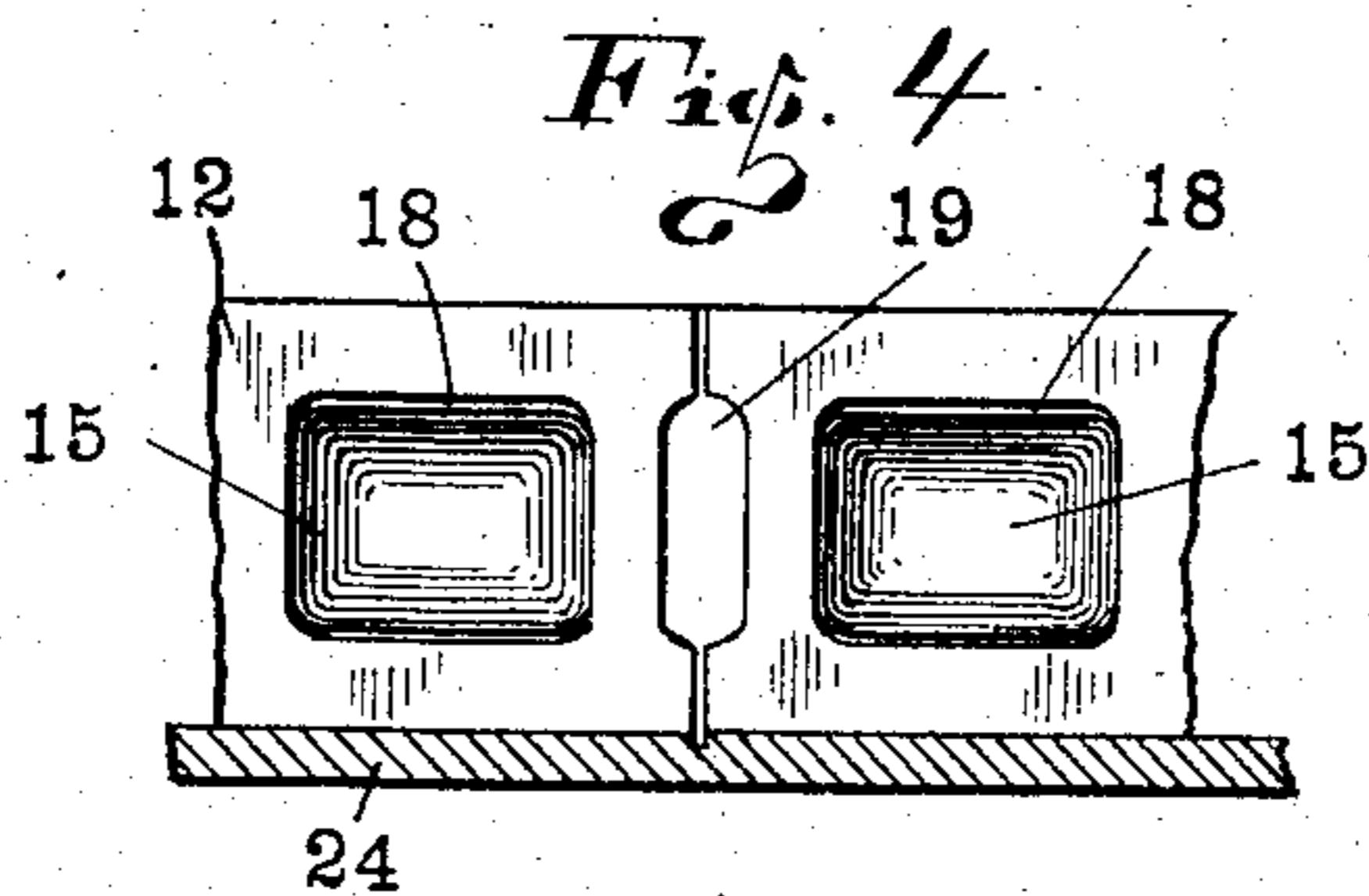
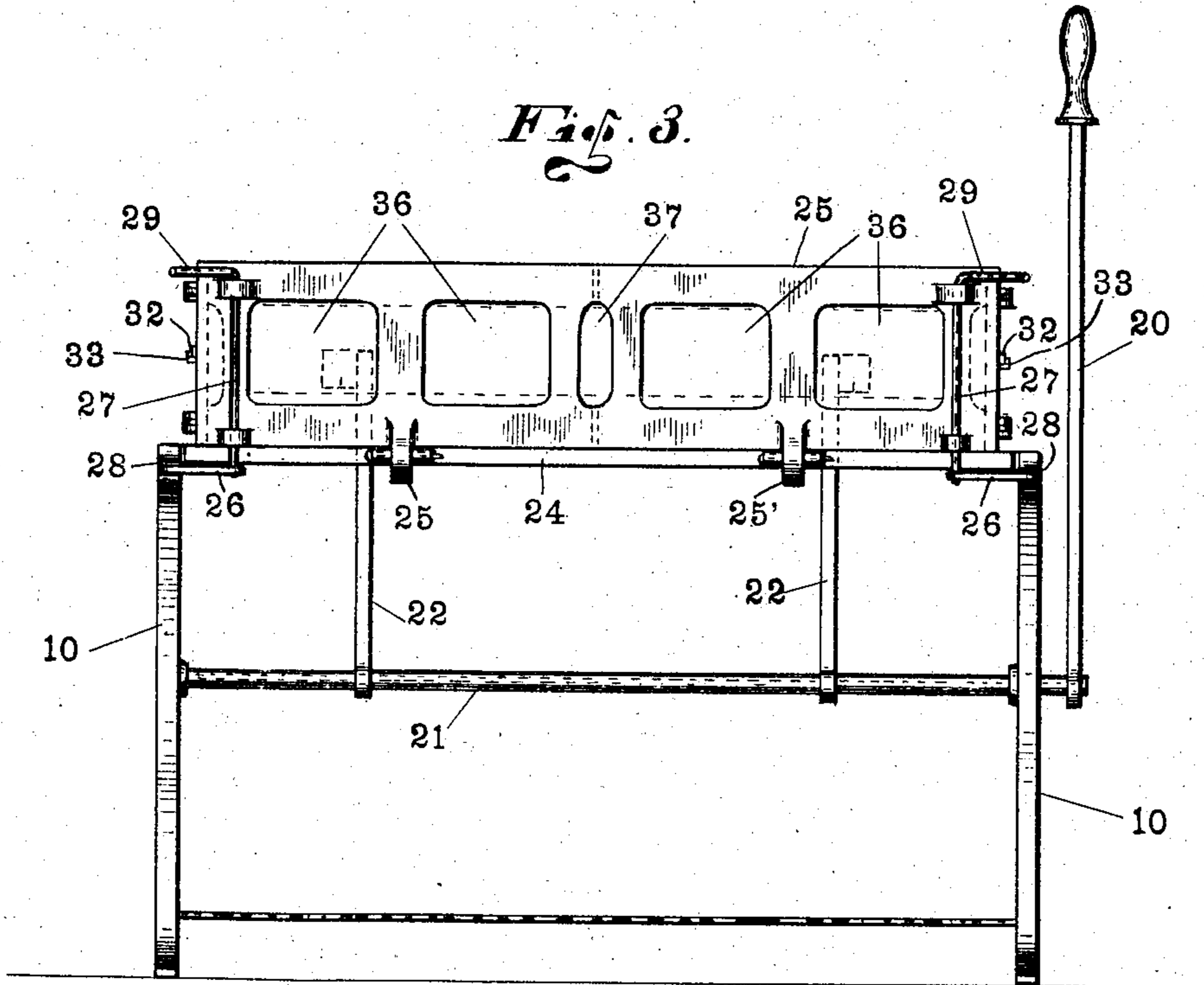
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2 SHEETS—SHEET 2.



Witnesses
Adelaide Kearns
J. A. Walsh

Inventors
Charles F. Harris
Berkley W. Duck
By
Bradford A. Hood
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES F. HARRIS AND BERKLEY W. DUCK, OF INDIANAPOLIS,
INDIANA.

CEMENT-BLOCK MACHINE.

SPECIFICATION forming part of Letters Patent No. 781,143, dated January 31, 1905.

Application filed October 14, 1904. Serial No. 228,427.

To all whom it may concern:

Be it known that we, CHARLES F. HARRIS and BERKLEY W. DUCK, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cement-Block Machines, of which the following is a specification.

The object of our invention is to produce a simple but efficient machine for the manufacture of cement building-blocks, the arrangement being such that the face of the block may be formed at the bottom of the mold, yet the construction of the machine being such that the formed block may be turned without lifting the block.

The accompanying drawings illustrate our invention.

Figure 1 is a vertical section on line 1 1 of Fig. 2; Fig. 2, a plan; Fig. 3, a front elevation; Fig. 4, a detail of the middle of the rear plate of the mold; Fig. 5, a detailed end elevation, and Fig. 6 a vertical section of one of the core-forming plungers.

In the drawings, 10 indicates a suitable supporting-frame provided with a top plate or table 11. Erected from the forward edge of the table 11 is a vertical wall 12, which forms the rear vertical wall of the mold. Secured to the wall 12 and forming braces therefor are guide-rods 13, upon which is slidably mounted a core-carrying bar 14, said bar carrying upon its forward face a plurality of cores or plungers 15, which are arranged parallel with the table 11. The machine shown is designed to simultaneously produce two building-blocks, and the bar 14 therefore carries a middle core 16 of a shape to produce in the adjacent ends of the two blocks a transverse socket in the usual manner, and this core 16 carries at its top and bottom a vertically-extending partition 17, which is the full height of the vertical wall 12. The wall 12 is provided with transverse openings 18, through which the cores 15 may be projected, and is also provided with a middle opening 19, through which the core 16 and attached partitions 17 may pass. The core-bar 14 may be

reciprocated on the guide-bars 13 by means of a suitable operating-lever 20. The lever 20 is attached to a shaft 21, to which are secured two levers 22, each of said levers having attached to its free end one end of a link 23, the opposite end of which is pivotally connected to the bar 14. The ends of the cores 15 are preferably cup-shaped, as at 15', in order to cut through the fresh cement.

Hinged to the forward edge of table 11, immediately beneath the vertical wall 12, is the face-forming leaf or bottom 24 of the mold, said leaf being provided with suitable stops 24', by which the downward movement of the leaf may be limited. Hinged to the forward or free edge of the leaf 24 is a leaf 25, which is adapted to be swung up parallel with the vertical wall 12. The leaf 25 is provided with stop portions 25', adapted to engage the leaf 24 and limit the movement of the leaf 25 with relation to the leaf 24. Leaf 24 is held horizontal, and leaf 25 is held vertical, by means of a pair of catches 26, carried at the lower ends of shafts 27, journaled in suitable bearings on the leaf 25, said catches 26 being adapted to enter in suitable slots 28, formed in the frame 10. Each shaft 27 is provided at its upper end with an operating-lever 29. Hinged to each vertical end of the plate 12 is an end plate 30, adapted to form one end of the mold. Each plate 30 carries upon its inner face a boss 31, the cross-section of which is substantially the same as one-half of the core 16, so as to thus form a cross depression in the end of the block. Each end 30 carries a latch 32, adapted to engage with a hook 33, carried by the adjacent end of leaf 25. Each end 30 is provided at its free end with a vertical notch 34, adapted to receive a pallet 35, which is inserted in the mold immediately adjacent leaf 25. Both the leaf 25 and the pallet 35 are provided with perforations 36 and 37, adapted to receive the ends of the cores 15 and 16, respectively.

In operation, the several portions of the machine are first brought to the positions shown in full lines in Figs. 1 and 2 and the block-forming plastic is placed in the interior of the

mold upon the leaf 24 until it rises to about the lower line of the various cores. The cores are then projected into the mold and the plastic filled in around and over them. The cores are then withdrawn, the latches 32 are lifted, and the ends 30 swung into the positions shown in dotted lines in Fig. 2. The operator then grasps the two levers 29 and swings them in the direction indicated by the arrows in Fig. 2 to withdraw the catches 26 from engagement with the frame. The two leaves 24 and 25 then, because of their own weight and the weight of the block, swing down to the positions indicated in dotted lines in Fig. 1, the finished block at all times moving downward and at the same time turning to the position indicated in dotted lines in Fig. 1, where it rests upon the pallet 35.

It will be noticed that in this movement it is not necessary for the operator to sustain the entire weight of the block, and at no time is he required to lift the block. As a consequence the operation is extremely convenient and easy. When the parts have been brought to the positions indicated in dotted lines in Fig. 1, the pallet may be taken by two operators and the finished blocks laid to one side to harden. Another pallet is inserted in the mold and the operation repeated.

We claim as our invention—

1. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged at the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the forward edge of said bottom member so as to swing outwardly therefrom and adapted to be moved into opposition with the first-mentioned vertical mold member, end mold members cooperating with said mold members, and means for holding said several parts in mold-forming position, the arrangement being such that the formed block may be swung downward and turned during said downward movement.

2. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged at the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the free edge of said bottom member so as to swing outwardly therefrom, means for holding said members in mold-forming position, end mold members, cores mounted on the main frame, and means for projecting said cores into the mold and for withdrawing said cores from the mold, the arrangement being such that the formed block may be swung downward and turned during said downward movement.

3. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-

bottom hinged at the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the free edge of said bottom member so as to swing outwardly therefrom, means for holding said members in mold-forming position, and end mold members one hinged to each end of the first-mentioned vertical mold member.

4. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged to the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the free edge of said bottom member so as to swing outwardly therefrom, means for holding said members in mold-forming position, end mold members one hinged to each end of the first-mentioned vertical mold member, core members mounted on the main frame, and means for projecting said core members into the mold and for withdrawing the same from the mold, the arrangement being such that the formed block may be swung downward and turned during said downward movement.

5. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged at the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the free edge of said bottom member so as to swing outwardly therefrom, a pair of catch-shafts journaled on said second vertical mold member and each provided with a catch member adapted to engage a portion of the main frame when the bottom member is in mold-forming position, operating members carried by said catch-shafts, and end mold members cooperating with the vertical mold members and the bottom member, substantially as and for the purpose set forth.

6. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged at the lower edge of said vertical mold member so as to swing downwardly therefrom, a second vertical mold member hinged to the free edge of said bottom member so as to swing outwardly therefrom, a pair of catch-shafts journaled on said second vertical mold member and each provided with a catch member adapted to engage a portion of the main frame when the bottom member is in mold-forming position, operating members carried by said catch-shafts, and end mold members one hinged to each end of the first-mentioned vertical mold member, substantially as and for the purpose set forth.

7. In a cement-block-forming machine, the combination, with a main frame and a vertical mold member carried thereby, of a mold-bottom hinged to the lower edge of said verti-

cal mold member so as to swing downwardly therefrom, and a receiver carried adjacent the outer edge of the bottom mold member and adapted to swing outwardly with relation thereto, whereby after the block has been formed the mold-bottom may be swung downwardly from the vertical mold member and the receiver may be swung outwardly from the bottom so that the formed block may be moved first downwardly upon the axis of the hinge of the mold-bottom and then outwardly

upon the axis of the receiver on the mold-bottom.

In witness whereof we have hereunto set our hands and seals, at Indianapolis, Indiana, this 11th day of October, A. D. 1904.

CHARLES F. HARRIS. [L. S.]
BERKLEY W. DUCK. [L. S.]

Witnesses:

ARTHUR M. HOOD,
JAMES A. WALSH.