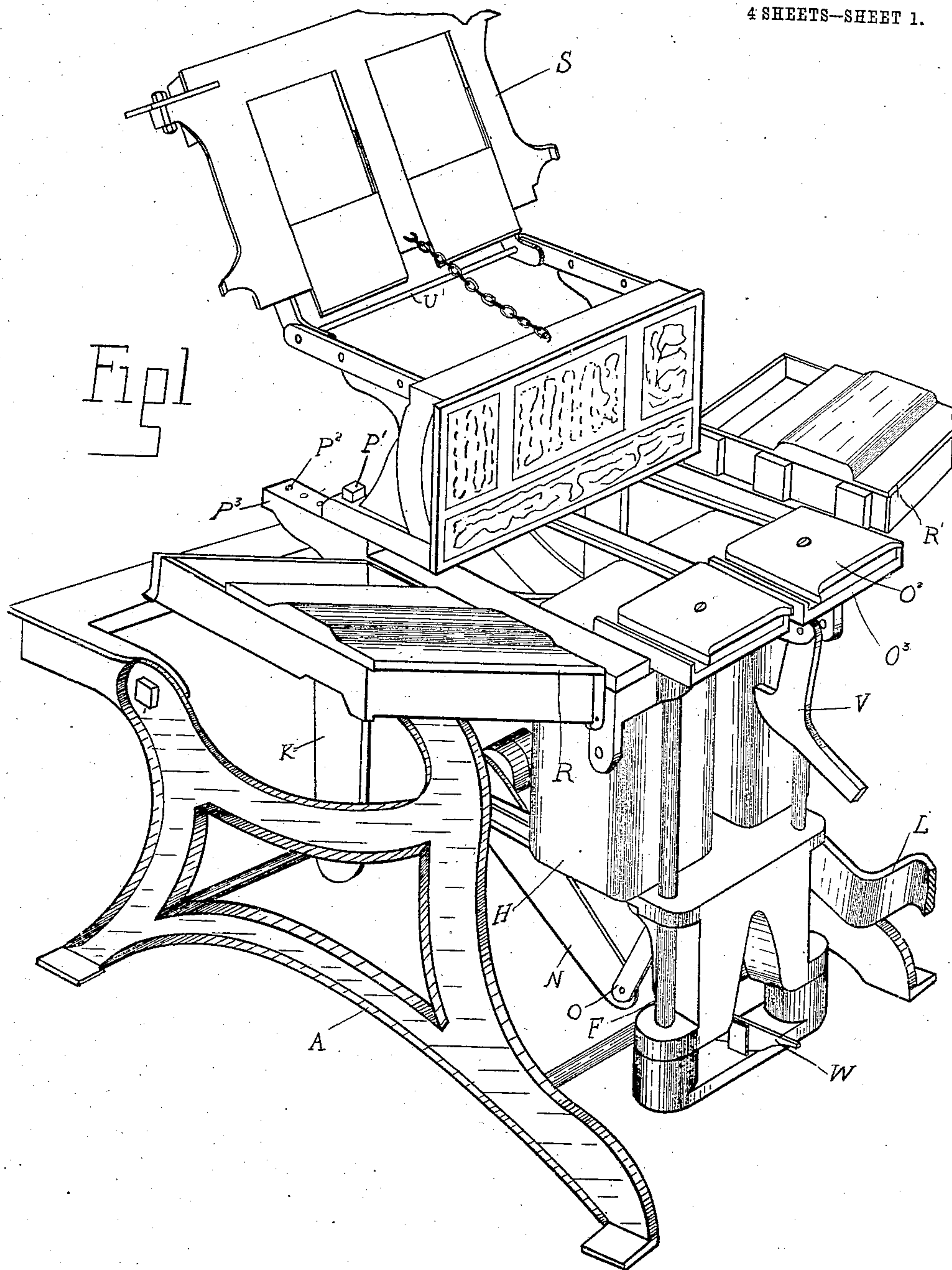


No. 884,101.

PATENTED APR. 7, 1908.

J. W. MILLER.
CEMENT BLOCK MACHINE.
APPLICATION FILED MAY 13, 1907.

4 SHEETS—SHEET 1.



WITNESSES

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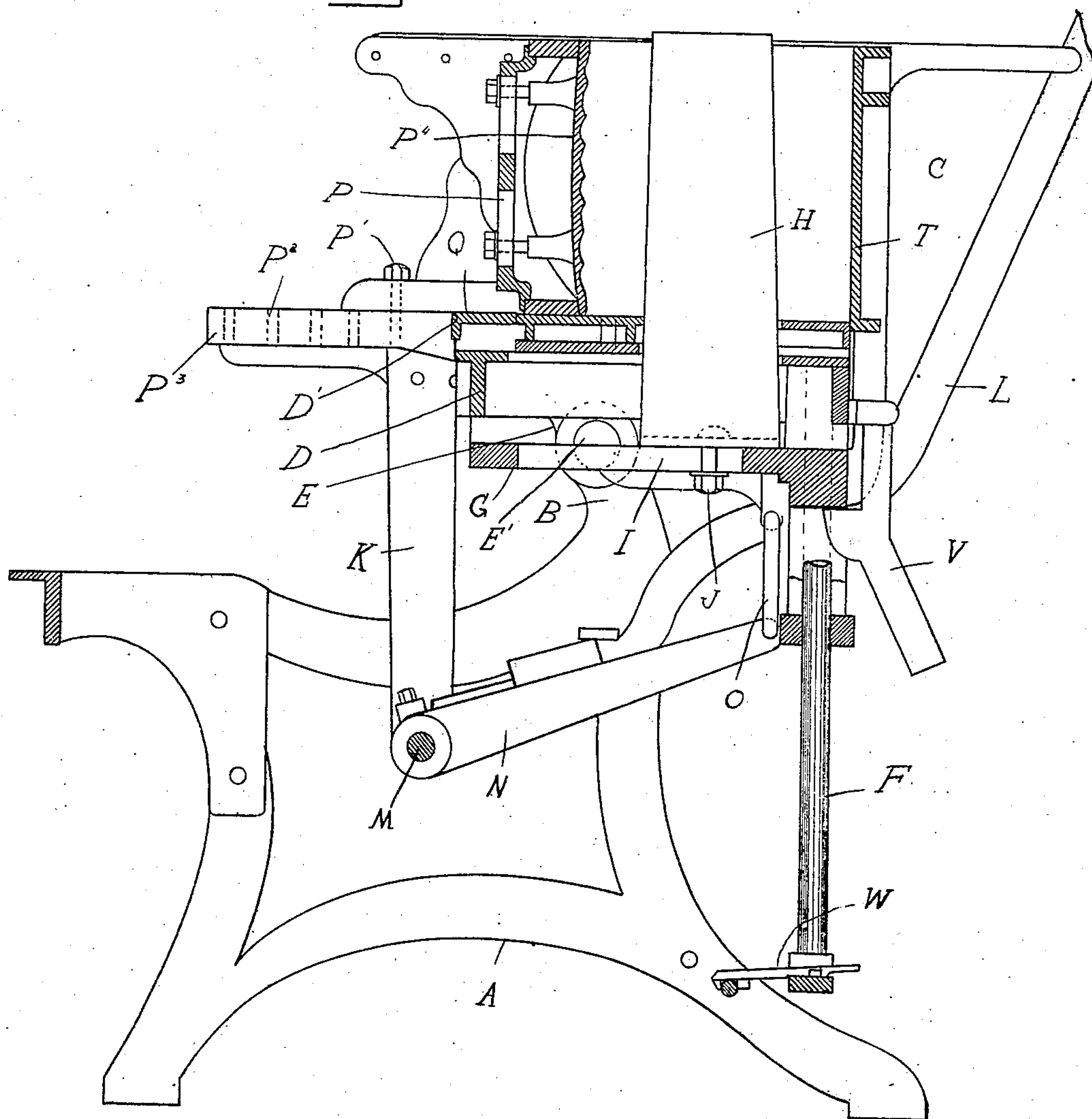
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4 SHEETS—SHEET 2.

Fig 2



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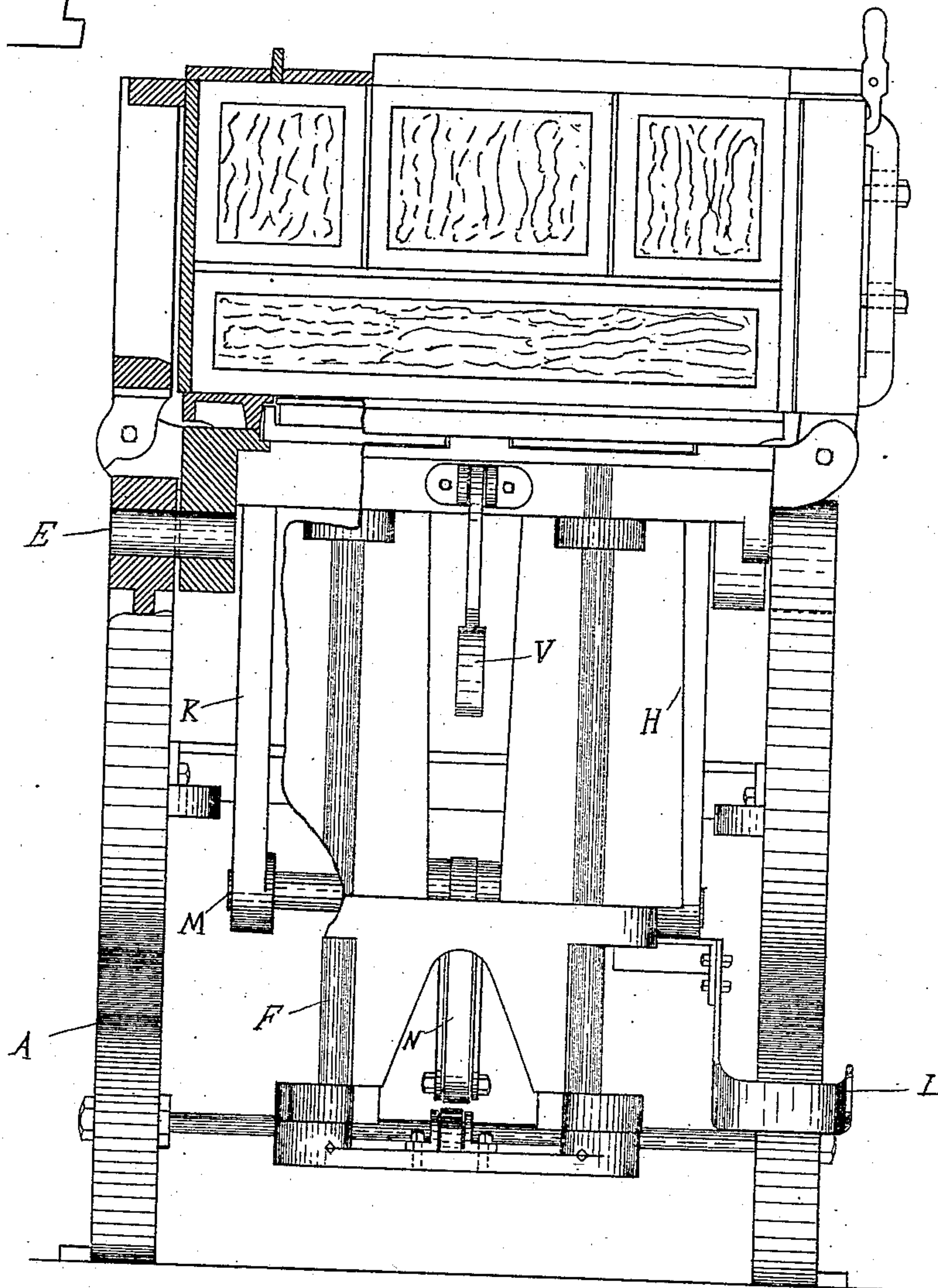
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4 SHEETS—SHEET 3.

Fig 3



WITNESSES

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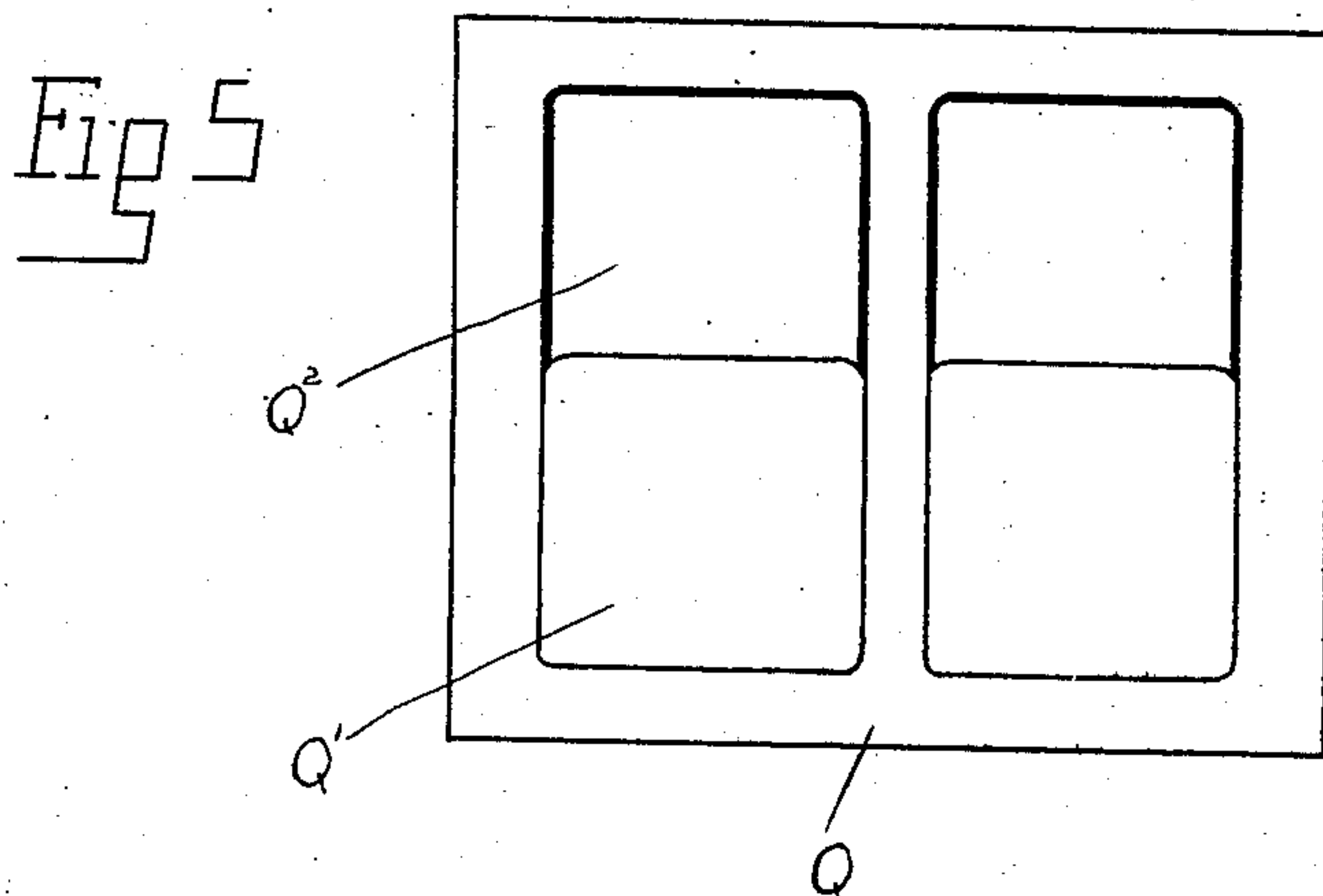
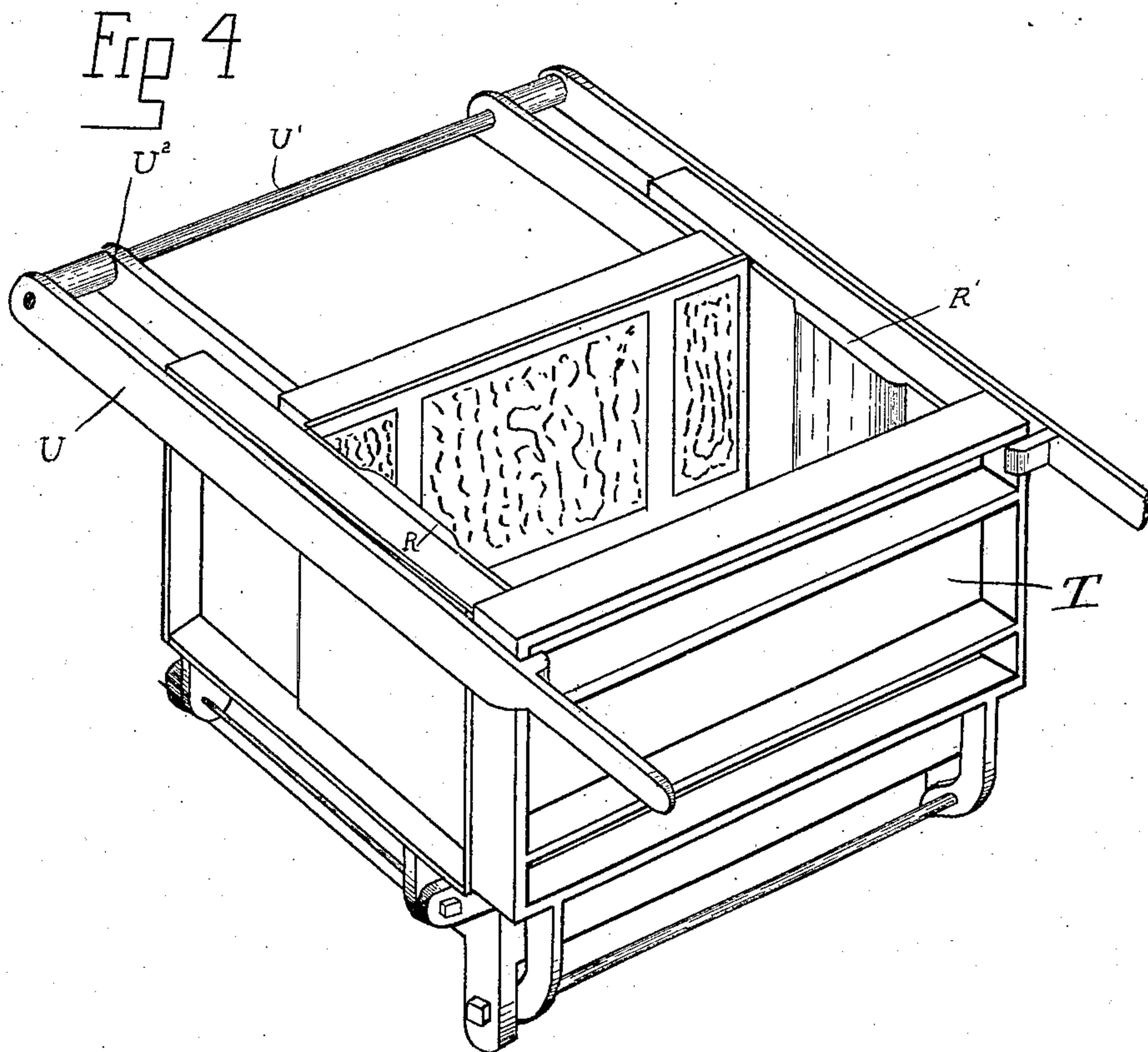
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UNITED STATES PATENT OFFICE.

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OF JACKSON, MICHIGAN.

CEMENT-BLOCK MACHINE.

No. 884,101.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed May 13, 1907. Serial No. 373,348.

To all whom it may concern:

Be it known that I, JOHN W. MILLER, a citizen of the United States of America, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Cement-Block Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

In the present state of the art, in the manufacture of cement building blocks, two types of machine have been extensively used. In the one type, the blocks are molded and removed from the mold in upright position; that is, in the position which they subsequently occupy in the wall of the building. In the other type, the mold is first arranged, with the plate for forming the face of the block at the bottom, and after being filled with the plastic material is given a partial rotation to deliver the block in upright position. Each of these types has its peculiar advantages. Thus, where the blocks are plain faced, the first type, or upright machine, is the simplest and best adapted for the work. On the other hand, where the blocks are provided with ornamental faces, and particularly where a richer quality of cement is used for the facing, the second type of machine is preferable.

It is the object of the present invention to secure the advantages of both types of machine in a single structure, and to this end the invention consists in the construction as hereinafter set forth.

In the drawings, Figure 1 is a perspective view of the machine with the mold arranged for forming blocks in upright position; Fig. 2 is a longitudinal section thereof; and Fig. 3 is a front elevation, partly in section. Fig. 4 is a perspective view of the mold as arranged for side face molding; and Fig. 5 is a plan view of the pallet.

A is a suitable supporting stand or frame provided with the upright extensions B, in which is pivotally mounted a mold frame C. This frame C includes a portion D, to which the pivot bearings E are attached, and upon which are mounted guides F for a suitable core-supporting head G. The cores H, for forming the hollow spaces within the blocks, are mounted upon the head G, and are adapted to be projected through apertures in the frame portion D. They are also adjustable laterally of the head G, preferably by forming slots I therein, with which the clamp-

ing bolts J are engaged. K are arms projecting from the frame portion D to form a fulcrum for a lever L employed for sliding the head G and cores H upon the guides F. This lever L is attached to a rock shaft M journaled in the arms K, and N is a rock arm also attached to said shaft, and connected by the pivoted link O to the head G. Thus, by means of said lever, the cores H may be either projected through or withdrawn from the apertures in the frame portion D.

The member D forms the supporting base for a knockdown mold comprising a side member P mounted in fixed angular relation to the member D, and a plurality of hinged sections for completing the sides and ends of the mold. The side member P is used for supporting the patterned face, where one is employed, and is adjustable laterally with respect to the plane of movement of the cores H to form molds of different widths. This adjustment may be effected by securing the member P by clamping bolts P' engageable with a plurality of different threaded apertures P² in a flange P³ of the member D, or by any other suitable means. The removable pallet Q is arranged to lie adjacent to the plate or frame D, said frame being provided with shoulders D', against which the inner edge of the pallet Q bears, and the arrangement being such that in the adjustment of the member P, and the pattern plate P⁴ secured thereto, they will overlap the pallet Q. Thus, with a standard size of pallet, various widths of block can be molded. R and R' are end molding plates, which are hinged to the plate or frame member D, and arranged to overlap the ends of the side member P. S is a side molding plate, preferably hinged to the member P, and T is another side molding plate hinged to the frame member D.

The mold, constructed as above described, is adapted to be arranged with the movable cores either in a horizontal or in a vertical plane. When arranged vertically, the machine has the essential characteristics of the first type previously referred to, and the blocks may be molded and removed without rocking the mold frame. In this operation, the end plates R R' and side plate T are turned up and locked by suitable clamping devices, such as the levers U, illustrated in Fig. 4. These levers are detachably secured by a rod or bolt U' to rearwardly extending arms U² on the member P, said arms U² also

constituting the hinge member for the plate S when the latter is employed. After the side plates are thus locked in position and the cores H raised by means of the lever L the operator fills in the plastic material, tamps it, and strikes off the top in the usual manner. The cores are then lowered, and side and end plates unlocked and turned down, and the block removed upon the pallet.

Where it is desired to form an ornamental face upon the block, the patterned plate, such as P⁴, is secured to the member P and, after closing the end plates R R', the side plate S is also closed and locked, and the frame C is rocked so as to arrange the cores H in a horizontal plane. In this position, the mold is supported by resting upon the main frame A, and the operator is permitted to first place the facing material in the bottom of the mold against the plate P⁴, and subsequently fill the mold with the body material. The frame C is then rocked into a position where the cores are vertical, and, by then operating the lever L, the cores are withdrawn, after which the side plates are unlocked and turned down, and the molded block removed as previously described.

It will be observed that the side plates S and T are only employed alternatively and that in the first operation the plate T is used, while in the second operation the plate S is employed. This is for the reason that it is unnecessary to provide a molding plate for the top of the mold, this side of the block being formed by striking off the plastic material in the mold with a straight edge, or scraper. These extra side plates do not interfere with the operation of the machine, but, if desired, either plate may be quickly removed by withdrawing the pivot bolt of the hinge.

The pallets Q, as previously stated, are formed of a standard width, which is substantially that of the widest block to be molded. To permit of adjusting the cores for various widths of blocks, the pallets are formed with apertures Q' therein, which are of a width to receive the largest core used. When the mold is adjusted for forming a narrower block, smaller cores are substituted and the spaces in the pallet are closed by filler plates O². These are preferably detachably secured to slides O³ engaging transversely extending bearings on the frame member D, and thus said filler plates are not removed from the machine with the pallet, but remain in position for engagement with each succeeding pallet employed. The slides O³ permit the filler plates O² to move with the pallet when first drawn forward to disengage its rear edge from the over-hanging member P and plate P⁴ secured thereto.

For operating the machine, I preferably employ the single lever L both for raising and lowering the cores H, and for rocking the

mold from face-down to upright position. To permit of this double function of the lever, I provide latches V and W, the former for locking the cores in raised position, and the latter for locking the frame C from rocking on the pivots E'. Both of these latches are preferably gravity actuated so as to be automatically engaged or released by the operator, according to which operation he desires to perform. The latch V may be released by the hand, and the latch W by the foot.

What I claim as my invention is:

1. In a block molding machine, the combination with a supporting frame, of a mold pivotally supported in said frame comprising two sides in fixed angular relation to each other, and a plurality of hinged sides for alternatively completing an open top mold with either of said fixed sides forming the bottom.

2. In a block molding machine, the combination with a frame, of a mold pivotally mounted in said frame and comprising two side members fixed in perpendicular relation to each other, and a plurality of hinged side members, said hinged side members being adapted to alternatively complete an open top mold with either of said perpendicular side members at the bottom.

3. In a block molding machine, the combination with a frame, of a mold pivotally mounted in said frame comprising two side members in fixed angular relation to each other, a core member movably mounted upon one of said side members to be projected or withdrawn through an aperture therein, and a plurality of side members adapted to alternatively complete an open top mold with said cores arranged in either a vertical or a horizontal plane.

4. In a block molding machine, the combination with a frame, of a mold pivotally mounted in said frame comprising two side members in fixed angular relation to each other, a core member movable through an aperture in one of said side members, a guide on which said core is slidably mounted secured to said side member, a lever for moving said core, a member projecting from said side member to which said lever is fulcrumed, and hinged side members for alternatively completing the open top mold, with said core arranged in either a vertical or horizontal plane.

5. The combination with a frame, of a mold rockable thereon to either side-facing or down-facing position, said mold being adapted for filling with plastic material in either position.

6. The combination with a frame, of a mold rockable thereon to either side-facing or down-facing position, said mold being adapted for filling with plastic material from the top in either of said positions.

7. The combination with a frame, of a mold rockable thereon to either side-facing or down-facing position, said mold comprising bottom, face and end plates, and side and top plates for alternative use for down-facing or side-facing positions.

8. The combination with a frame, of a mold rockable thereon to either side-facing or down-facing position, said mold comprising bottom, face and end plates, top and side plates for alternative use respectively to down-facing and side-facing positions, and means for locking either of said alternative plates to said bottom, face and end plates.

9. In a machine for molding blocks, the combination with a frame, of a mold rockable thereon to either side-facing or down-facing positions, reciprocatory cores, and a common means for rocking said molds and actuating said cores.

10. In a machine for molding blocks, the combination with a frame, of a mold rockable thereon to either side-facing or down-facing position, reciprocatory cores rockable with said mold, a common actuating device for

rocking said mold and reciprocating said cores, and means for alternatively locking said mold from rocking and said cores from reciprocating.

11. The combination with a frame and a mold adapted for lateral movement whereby mold cavities of different widths are formed, of reciprocatory cores for insertion through the bottom of said mold, and a single sized removable pallet apertured for the passage of said cores and adapted for all adjustments of the mold.

12. The combination with a mold and a removable core, of an apertured pallet through which said core passes, a filler block for fitting said aperture to said core, and a slide on said mold with which said filler block is engaged permitting the lateral adjustment thereof during the removal of said pallet.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN W. MILLER.

Witnesses:

SIDNEY L. WILTSE,
JAMES P. BARRY.