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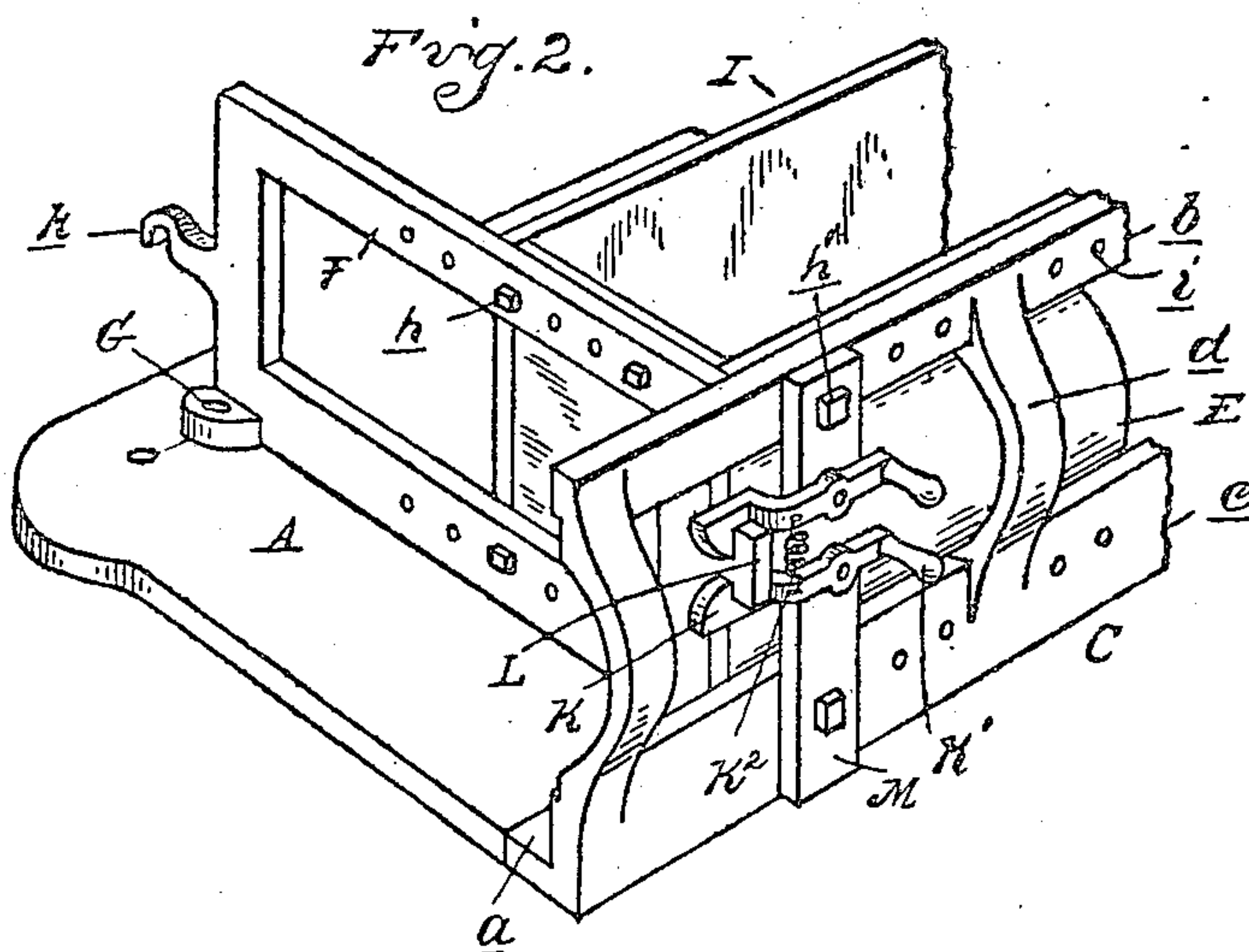
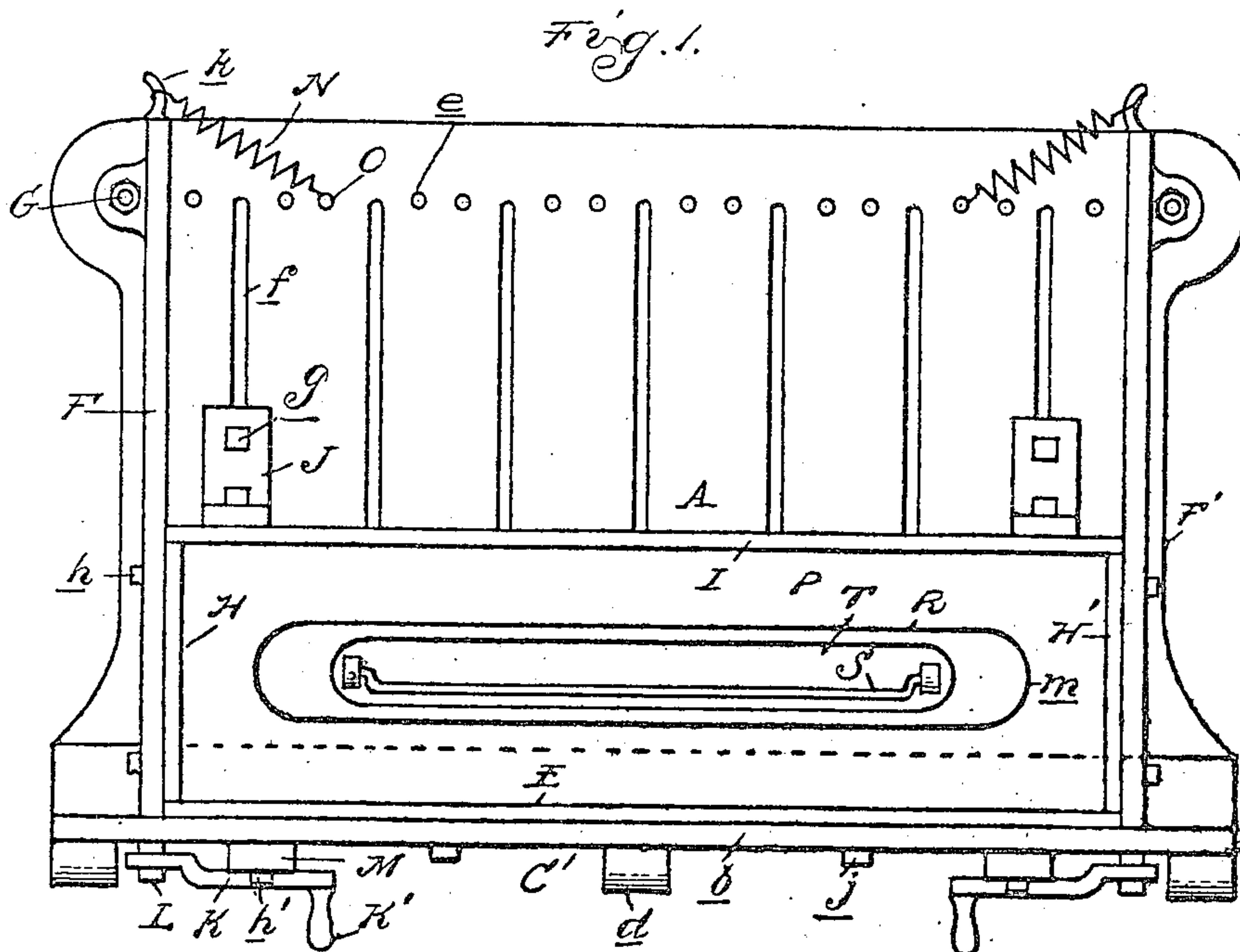
PATENTED APR. 10, 1906.

S. L. WILTSE.

MACHINE FOR MOLDING CEMENT BLOCKS.

APPLICATION FILED MAY 20, 1905.

4 SHEETS--SHEET 1.



Witnesses
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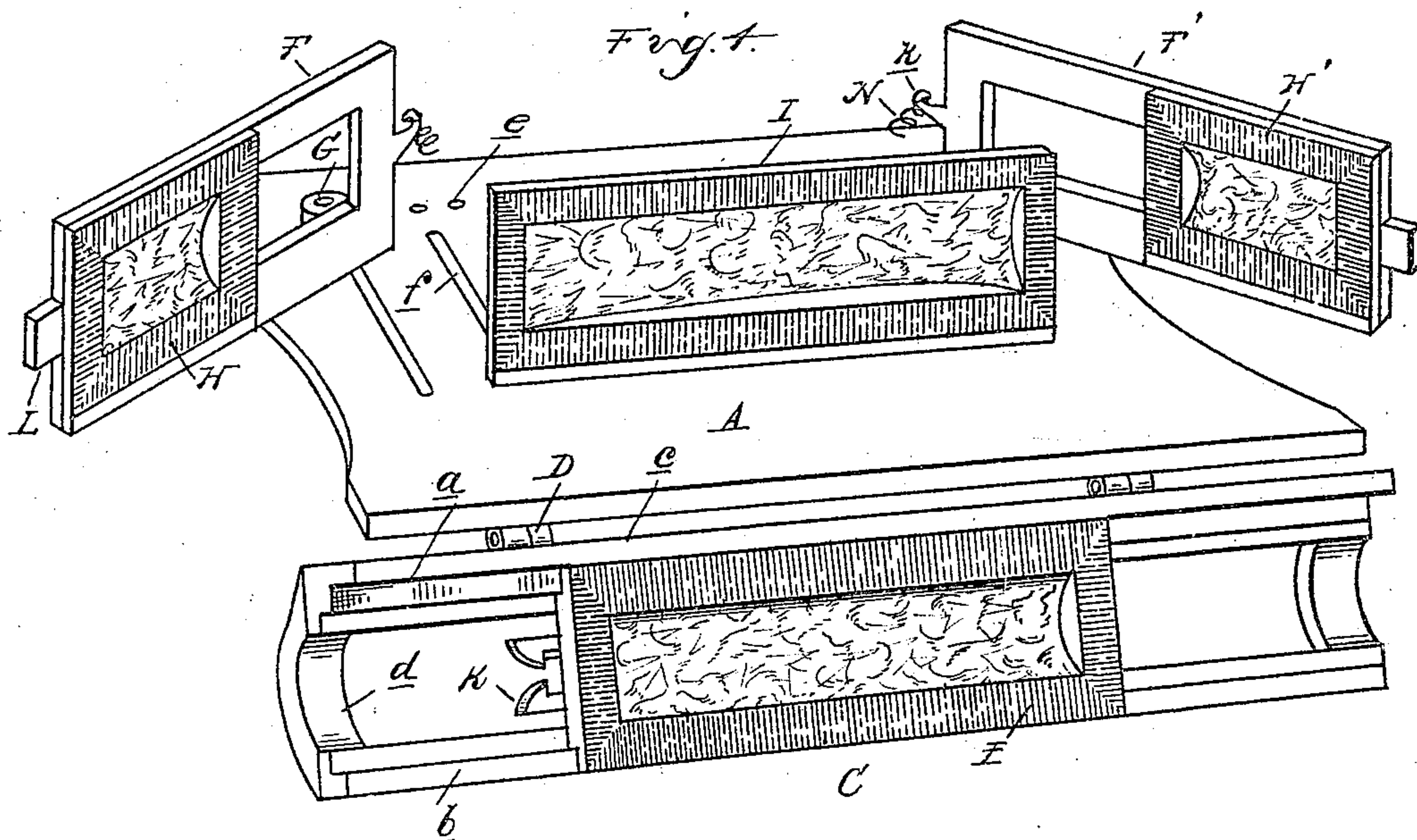
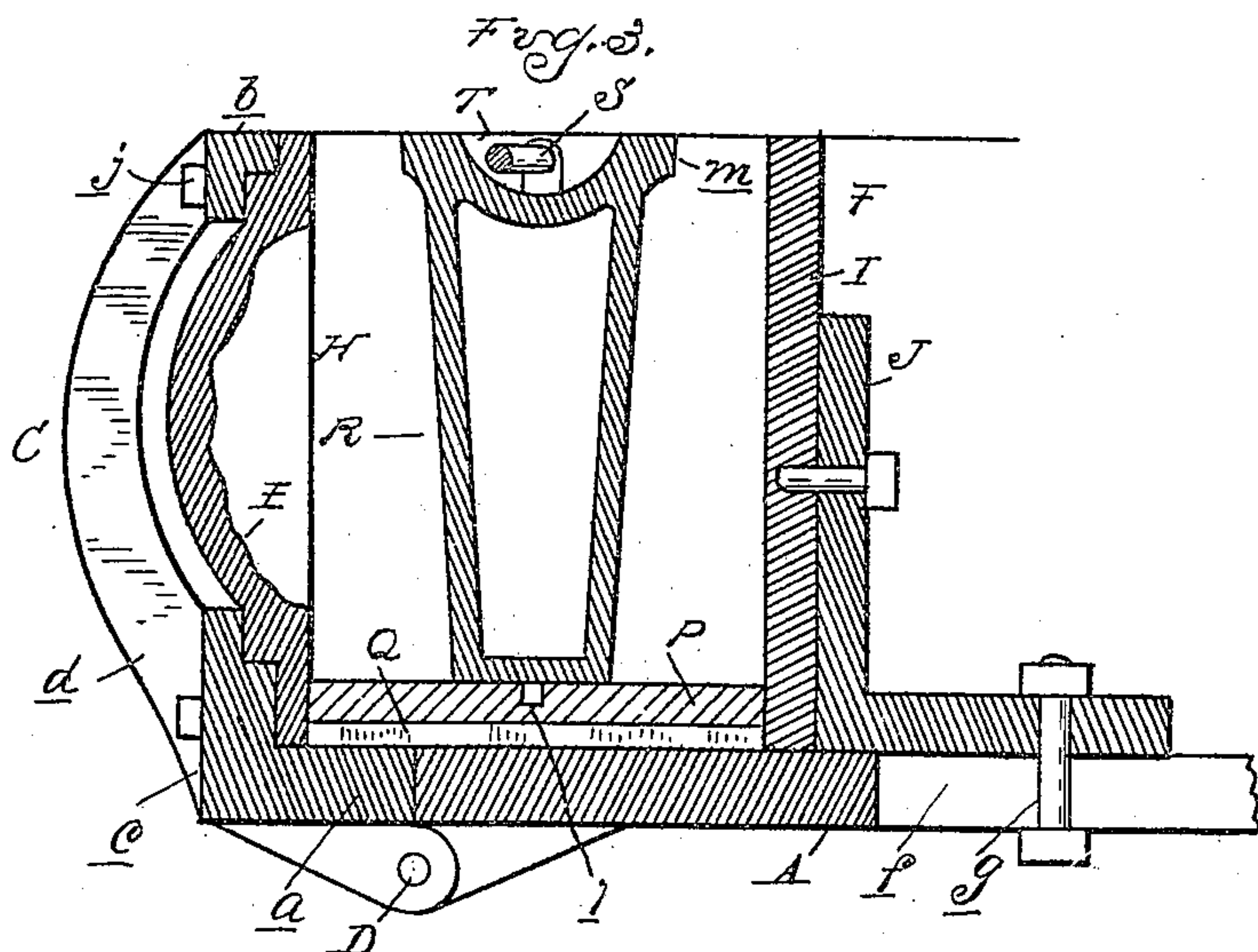
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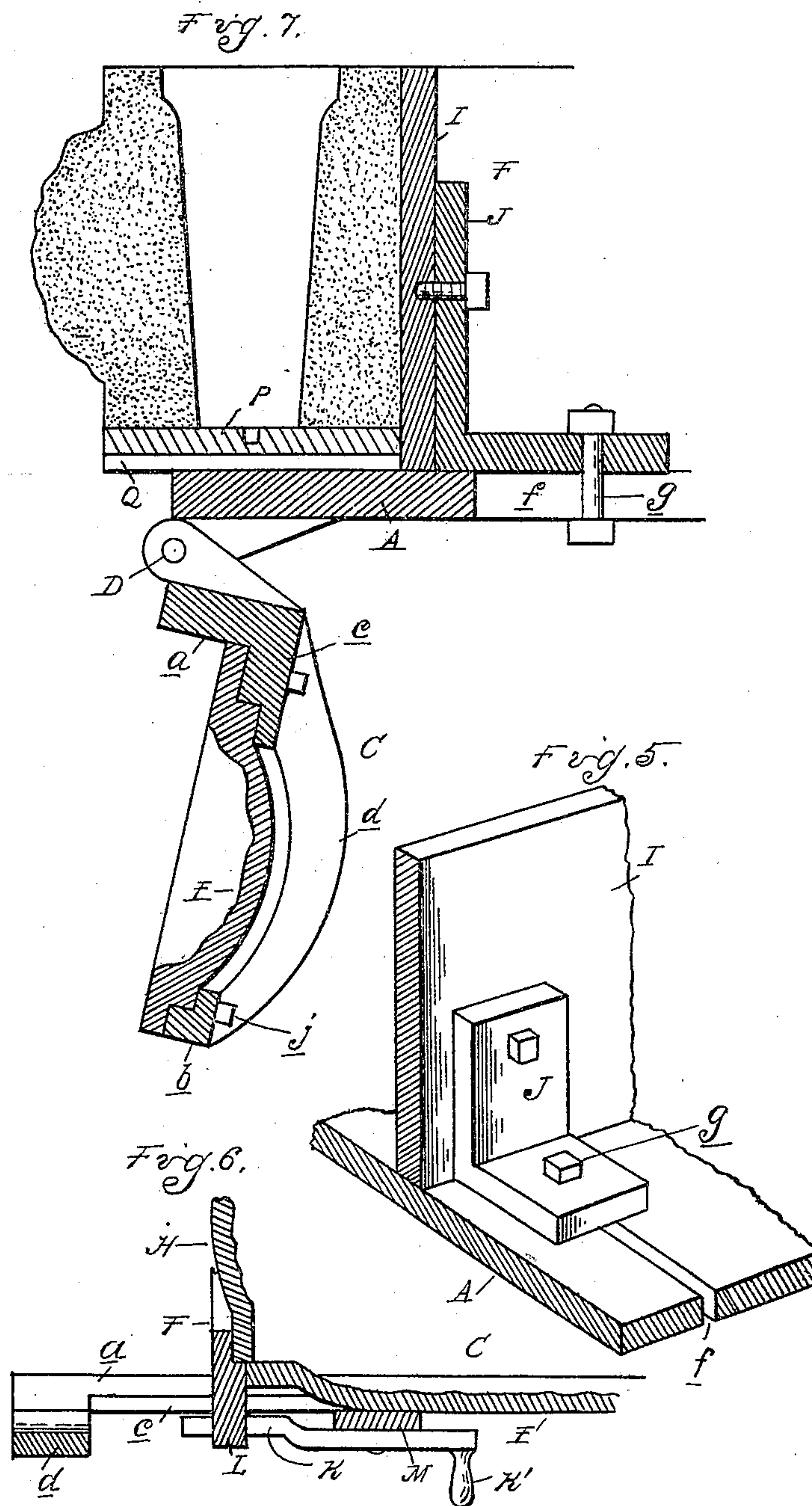
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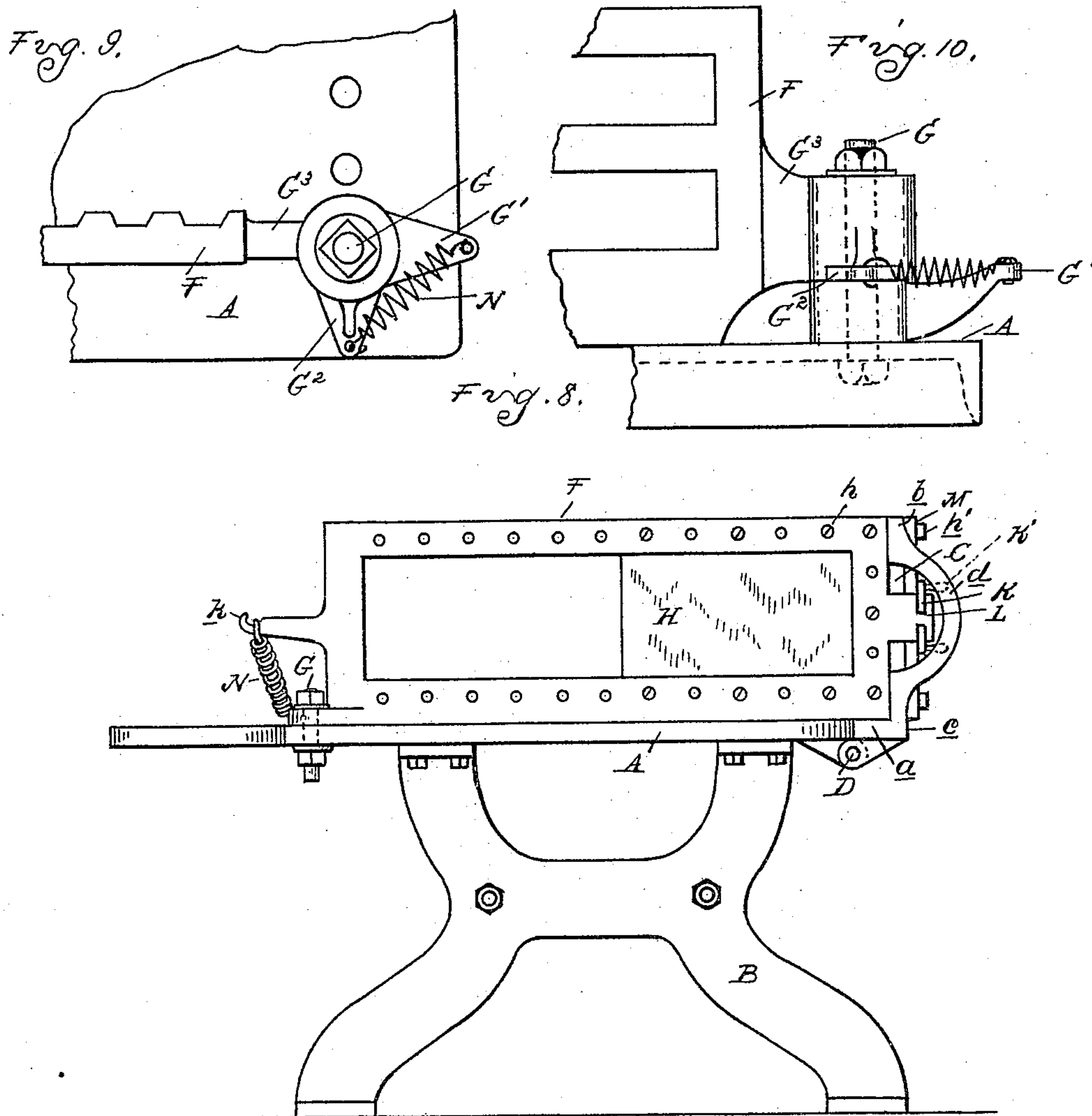
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UNITED STATES PATENT OFFICE.

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MACHINE FOR MOLDING CEMENT BLOCKS.

No. 817,684.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed May 20, 1905. Serial No. 261,434.

To all whom it may concern:

Be it known that I, SIDNEY L. WILTSE, a citizen of the United States, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Machines for Molding Cement Blocks, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to machines for molding cement blocks more particularly designed for use in forming building-blocks; and the invention consists in certain novel features of construction, as hereinafter set forth.

In the drawings, Figure 1 is a plan view of the machine. Fig. 2 is a perspective view of the mold thereof. Fig. 3 is a cross-section. Fig. 4 is a perspective view illustrating the mold in open position. Fig. 5 is a perspective view of the rear plate for the mold and the securing means therefor. Fig. 6 is a horizontal section illustrating the locking means for the mold-sections. Fig. 7 is a view similar to Fig. 3, showing the mold open. Fig. 8 is a side elevation of the machine. Figs. 9 and 10 are respectively a plan and a side elevation illustrating a modified construction of hinge for the side plates.

It is an object of the invention to reduce the cost of the machine, first, by obtaining a simple and inexpensive construction of parts, and, second, by providing adjustments whereby a large variety of work may be performed on a single machine.

As shown, A is the bed, which may be mounted upon any suitable standards B and upon which the side plates of the mold are secured. These sides include a front member C, which extends, preferably, the entire length of the bed and is hinged thereto, as at D. The member C is provided at its lower end with an inwardly-extending flange *a*, which in the normal position of parts extends in alinement with the bed A, as illustrated in Fig. 3. This member is also preferably formed as an open frame having parallel top and bottom bars *b* and *c*, which are connected by a plurality of cross-bars *d*, and upon this open frame is detachably mounted a panel E, which forms the mold-plate. The ends of the molds are formed by members F F', which also are preferably in the form of open frames and are pivotally connected at their rear ends, as at G, to the bed. To provide adjustment for the for-

mation of blocks of different length, the pivot G engages one of a series of apertures *e*, formed in the bed, and may be changed from one aperture to the other to alter the length of the mold. The members F F' are provided with detachably-secured panels H H', which form the end mold-plates and are adapted in the closed position of the mold to abut against the opposite ends of the panel E on the front member C.

I is the rear member of the mold, which consists of a plate of suitable length to extend between the members F F' when closed and to abut against the rear ends of the panels H H'. The plate I is secured to the bed preferably by brackets J, and the latter are adjustable forwardly or rearwardly upon the bed by providing slots *f*, with which the clamping-bolts *g* for the members J engage. Thus the member J may be arranged at different distances from the front member C and parallel thereto.

With the construction as thus far described it will be understood that the size of the mold may be varied both as to length and breadth and for the various adjustments, and instead of it being necessary to provide different mold sides the panels alone are exchanged, while the frames C F F' are the same for all sizes. These panels can be made of comparatively light castings, which are reinforced and strengthened by the mold-frames and are quickly attachable or detachable therefrom, as by means of the screws *h*. These panels may be either plain or ornamented, according to the requirements of the work. The rear mold side I, which is usually a plain surface, is formed of plates of different lengths, which may be quickly attached or detached from the bracket members J and mounted upon the bed in proper position.

To lock the mold members together, locking-latches K are preferably secured to the front member C and are arranged to engage with the projecting lugs L at the front ends of the frames F F'. These lugs L extend through the open center of the front frame C in contact with the ends of the detachable panel E, while the latches K are so adjusted as to hold the lugs in this position. Inasmuch as the panels E are of different length, an adjustment must be provided for the latches K, which, as shown, is formed by mounting the latter upon a member M, extending from the

bottom to the top member of the frame C and bolted thereto by the screws *h'* engaging with a series of threaded apertures *i*. The latches K, as shown, comprise two levers pivoted to the member M, having the outwardly-projecting handles K' yielding connected to each other by the spring K².

The panel E is secured to the frame C preferably by rabbeting the bars *c* and *b* of the latter and forming complementary faces on the panel. The clamping-screws *j* are employed to secure the panel to the frame, and the cross-bars *d* for the frame C are arranged so as not to interfere with the adjustment of the panel E. This panel is frequently of a bulging form, as indicated in Fig. 3, and projects outward through an opening in the frame. The bars *d* are therefore curved forward sufficiently to provide clearance for these panels and the lugs L on the frames F F'. The construction and manner of securing the panels H H' to the frames F F' is substantially the same as with the front frame.

To facilitate the operation of the machine, I provide means for automatically opening the end sections of the mold when unlatched. This, as shown, is effected by a rearward extension *k* on each of the frames F F', to which is connected a spring N, and the opposite end of said spring is detachably secured by a pin O, engaging one of the apertures *e* of the bed. The pin O is suitably placed in various adjustments of the frames F F', so as to tension the spring N when the mold is closed. Thus as soon as the latches K are disengaged the springs will automatically swing the frames F F' outward.

In molding the blocks it is usual to support the block upon a bottom plate or pallet, upon which it remains after removal from the mold and until the same is sufficiently hardened to be self-supporting. As a large number of these plates are necessary, I preferably provide an inexpensive construction formed of a slab of wood P, which is held from warping by cross-cleats Q on its lower face. For forming hollow blocks a core R is provided, this being preferably in the form shown, tapering from top to bottom and rounded at its opposite ends. The core is positioned by pintles *l*, engaging with suitable apertures in the pallets P, upon which the core rests. S is a handle by means of which the core may be lifted after the molding of the block, and this handle is arranged within a recess T at the upper end of the core, so that when not in use it will extend down below the plane of the upper end of the core. Thus the striking off of the cement can be accomplished without interference from the handle. The core R is further preferably provided with rounded projections *m* at its upper end, which form an enlarged opening in the molded block to prevent danger of breaking the corners during the removal of the core.

With the construction described in operation the mold is adjusted in size by selecting panels of suitable length and securing them to the frames C F F'. A rear plate I of suitable length is also selected and attached to the supporting-brackets J. The frames F F' are then adjusted in position, so that the panels H H' will abut against the ends of the panel E, this adjustment being effected by removing the pin G and moving the frames to the proper position and then reengaging the pin G with one of the apertures *e*. The rear plate I is then adjusted by sliding the bolts *g* in the slots *f* in the bed until the plate I abuts against the rear ends of the panels H H'. When the parts are thus secured in position and the springs N are placed under tension, the machine is ready for operation. The operator then turns down the front section C, placing a pallet P in position upon the bed with its rear edge contacting with the plate I. The hinged forward section C is then turned upward and the two end sections F F' drawn inward until the lugs L thereon engage with the latches K. This latching not only locks the end frames F F' in position, but also secures the front frame C, so that all the sides of the mold are held in rigid relation to each other. The core R being then placed in position, the plastic material is filled into the mold, and after tamping and striking off the core is lifted by the handle S. The latches are then disengaged, which may be done by grasping both of the handles K' of each pair in drawing them together. This will release the lugs L and permit the springs N to swing the frames F F' outward. The operator then drops the front frame C, after which the pallet and the molded block thereon may be removed. It will be observed that in dropping the frame C the pallet projects beyond the forward edge of the bed A, so that it may be easily removed.

In Figs. 9 and 10 I have illustrated a modified construction of hinge for the side sections of the mold in which the tension-spring N is mounted to be carried by the hinged bracket to its various positions of adjustment. As shown, the lug G³, which is pivoted upon the pin G, has projecting therefrom an arm or lateral lug G². Another arm G' is secured to a bearing member for the lug G³ and extends laterally at a different angle from the arm G². The spring N is secured at opposite ends to these two arms G' G², and as both are secured in position by the pin or bolt G it is evident that an adjustment of the pivot does not alter the tension.

While I have described my machine for forming blocks to be used chiefly in the walls of the building, it is evident that it is equally well adapted for the manufacture of sills, caps, copings, columns, lintels, and circles.

What I claim as my invention is—

1. A machine for molding cement blocks

comprising a bed, a mold side hinged thereto to extend normally in a plane perpendicular to the plane of the bed, said side being provided with a projecting flange forming an extension of the bed.

2. A machine for molding cement blocks comprising a bed, a plurality of mold sides mounted thereon, and a complementary mold side hinged to the forward edge of said bed, being provided with a rearwardly-extending flange forming a complementary portion of the bed.

3. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, and an adjoining mold side pivoted to said bed to swing in a horizontal plane, with its forward end adjoining the inner face of the first-mentioned mold side, and means of laterally adjusting the pivotal point of the last-mentioned mold side.

4. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, an adjoining mold side pivoted to swing in a horizontal plane, and mold-plates of variable length detachably connected to said first-mentioned mold side and means for adjusting the pivot of said second-mentioned mold side, whereby said side may be arranged to abut against the end of plates of different length attached to the first-mentioned mold side.

5. In a machine for molding cement blocks, the combination with a bed, of adjoining mold sides mounted thereon, one of said sides being adjustable longitudinally of the other side a third side adjustable longitudinally of said adjustable side toward or from the other side, and the mold plates or panels of variable length detachably connected to the first two mentioned sides, the end of each detachable panel forming a shoulder against which the adjacent side abuts.

6. In a machine for molding cement blocks, the combination of a bed, of a plurality of open frame mold sides mounted upon said bed, two of said sides being pivoted to swing in a horizontal plane, and a third side being hinged to swing in a vertical plane and hinged adjacent to the edge of the bed, mold plates or panels of variable size detachably connected to said mold-frames, and a complementary side of variable length adjustably mounted upon the bed.

7. In a machine for molding cement blocks, the combination with a bed, of an open-frame mold side hinged to the edge of said bed to swing in a vertical plane, of an adjoining mold side pivoted to said bed to swing in a horizontal plane and having its pivot adjustable longitudinally of said first-mentioned side, a panel of variable length detachably connected to said first-mentioned mold side, and against the end of which said last-men-

tioned mold side is adapted to abut, a lug on said last-mentioned mold side projecting through said open frame, and locking means for engaging said lug adjustably secured to the outer side of said open frame.

8. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, a pair of mold sides pivotally mounted to said bed to swing in a horizontal plane and adjustable longitudinally of said first-mentioned mold side, and a complementary side of variable length mounted upon said bed, its opposite ends abutting against said horizontal swinging sides, and said complementary sides being adjustable toward or from the first-mentioned side.

9. In a machine for molding cement blocks, the combination with a bed, of swinging mold sides adjustably mounted thereon, a complementary mold side of variable length extending between opposite swinging sides, and angle-brackets detachably connected to said complementary side and adjustably secured to said bed.

10. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to the edge of said bed to swing in a vertical plane, a pair of oppositely-arranged mold sides mounted on said bed to swing in a horizontal plane, their free ends abutting against the first-mentioned mold side, pivots for said oppositely-arranged mold sides adapted for engagement with a series of apertures in said bed, extending longitudinally of said first-mentioned mold side, a complementary mold side of variable length extending between said oppositely-arranged mold sides, and a clamping-bolt for said complementary side engaging a slot, whereby it may be adjusted toward or from said first-mentioned side.

11. In a machine for molding cement blocks, the combination with a bed, of a mold side hinged to one edge of said bed to swing in a vertical plane, a pair of oppositely-arranged mold sides pivotally mounted upon said bed to swing in a horizontal plane, means for locking the ends of said opposite mold sides to the first-mentioned mold side, and means whereby said opposite mold sides are automatically swung outward when unlocked from said first-mentioned side.

12. In a machine for molding cement blocks, the combination with the bed and a mold-side plate, of a pivot for said side plate adjustable in position upon said bed, and a tension device for swinging said side plate carried by said pivot in its adjustment.

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

SIDNEY L. WILTSE.

Witnesses:

E. B. WOOD,

JOHN C. LAUTENSLAGER.