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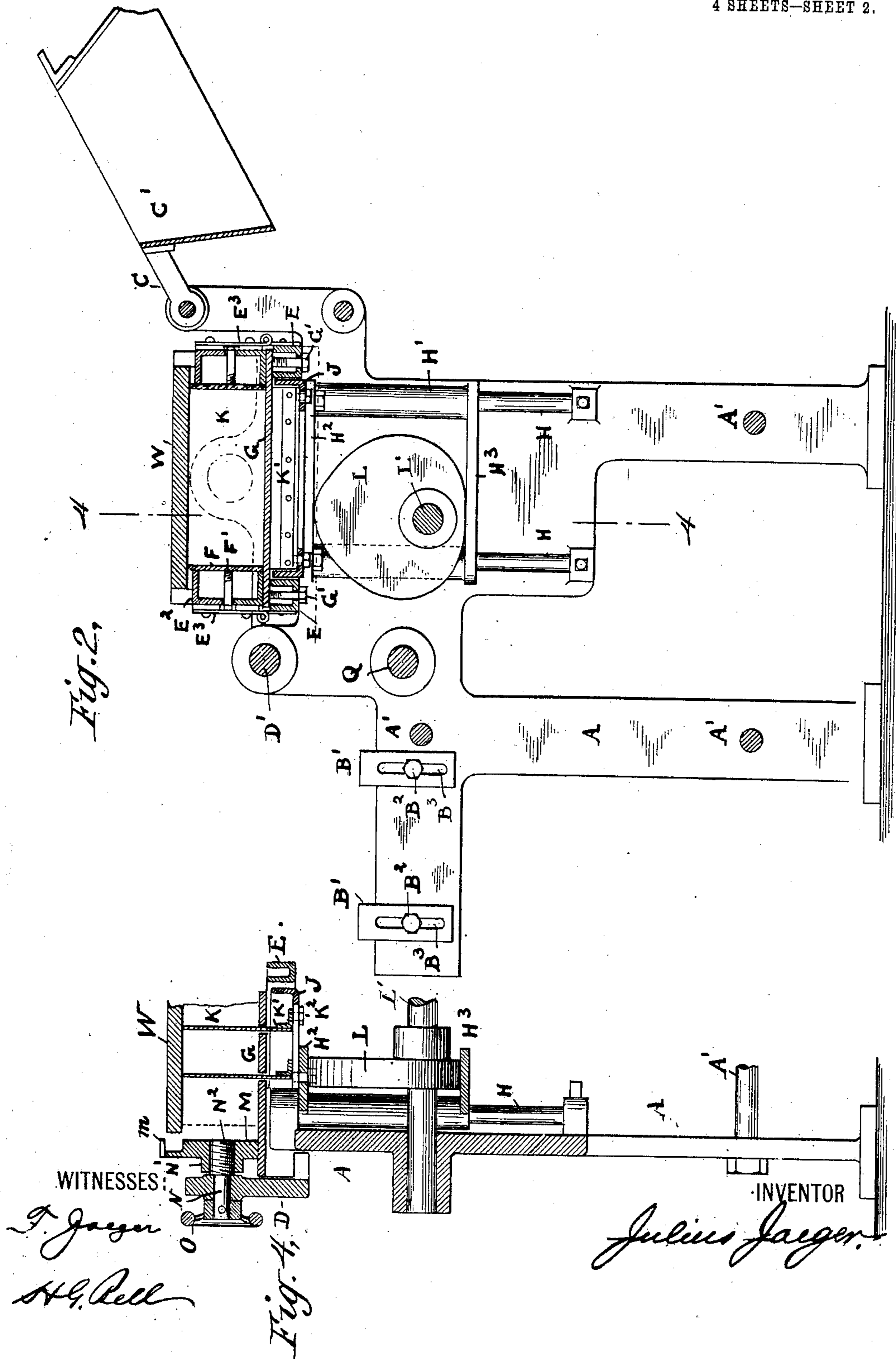
PATENTED JULY 24, 1906.

J. JAEGER.

MACHINE FOR MOLDING AND PRESSING BUILDING BLOCKS.

APPLICATION FILED FEB. 21, 1906.

4 SHEETS—SHEET 2.



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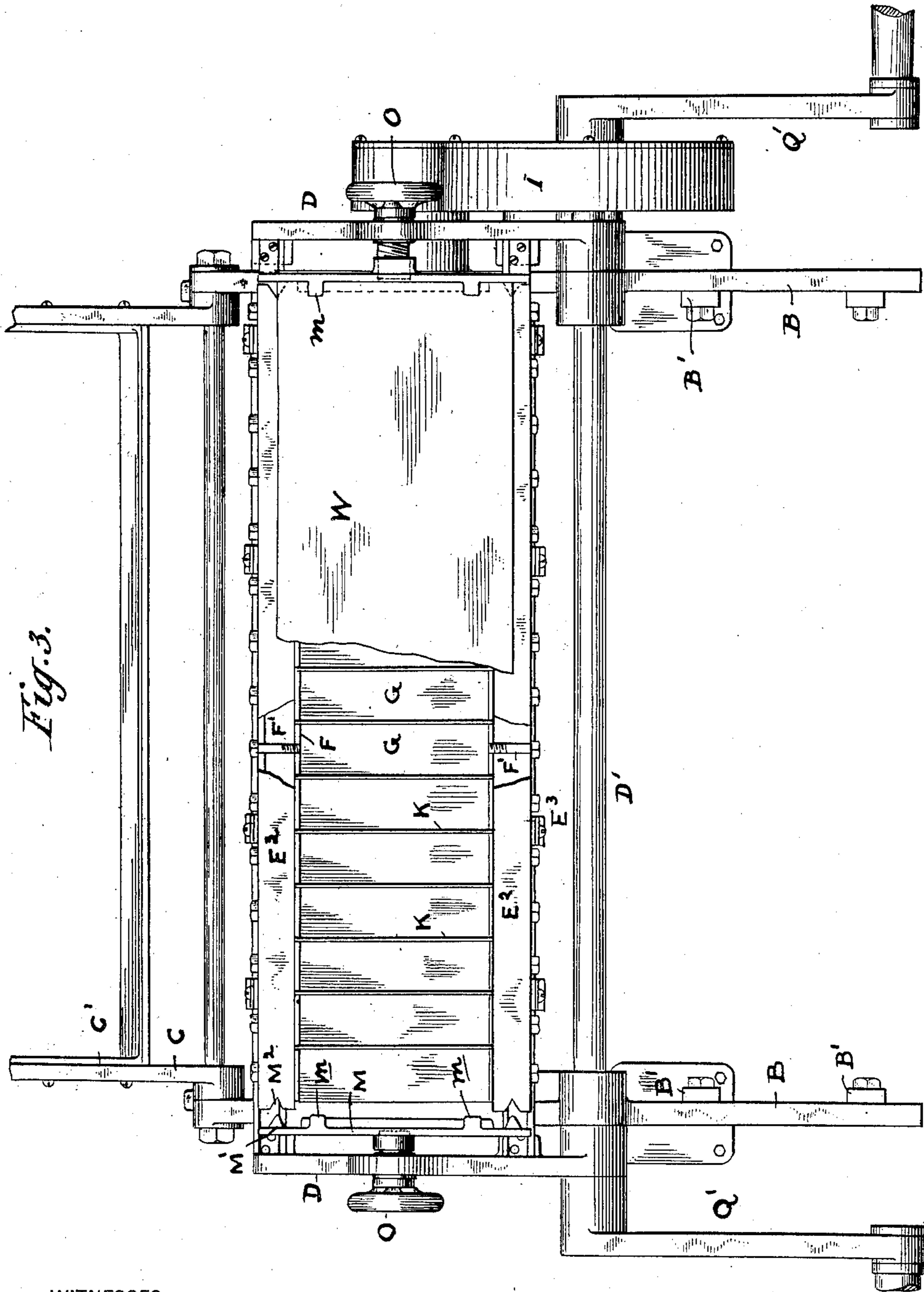
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Fig. 7.

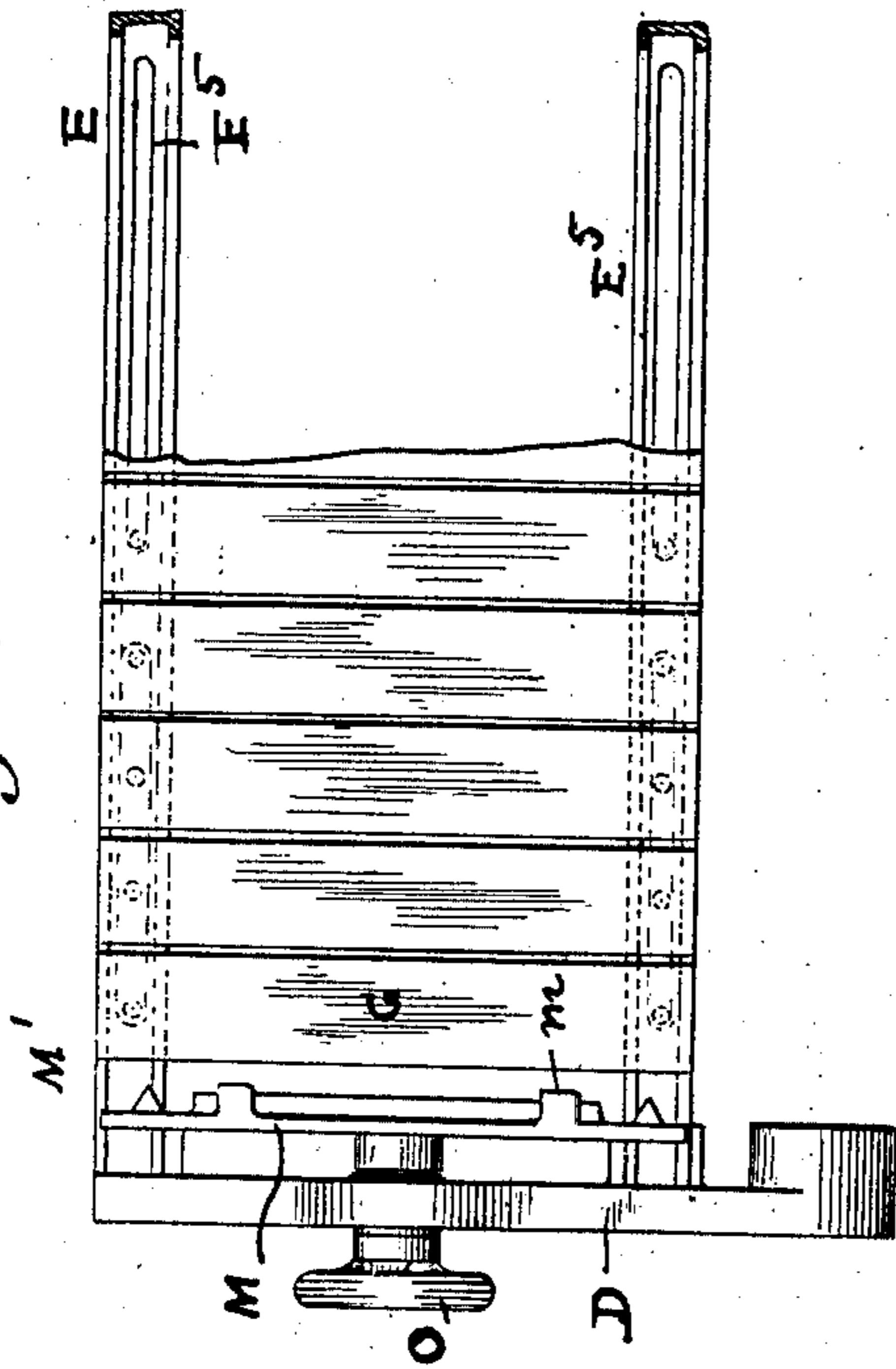


Fig. 9.

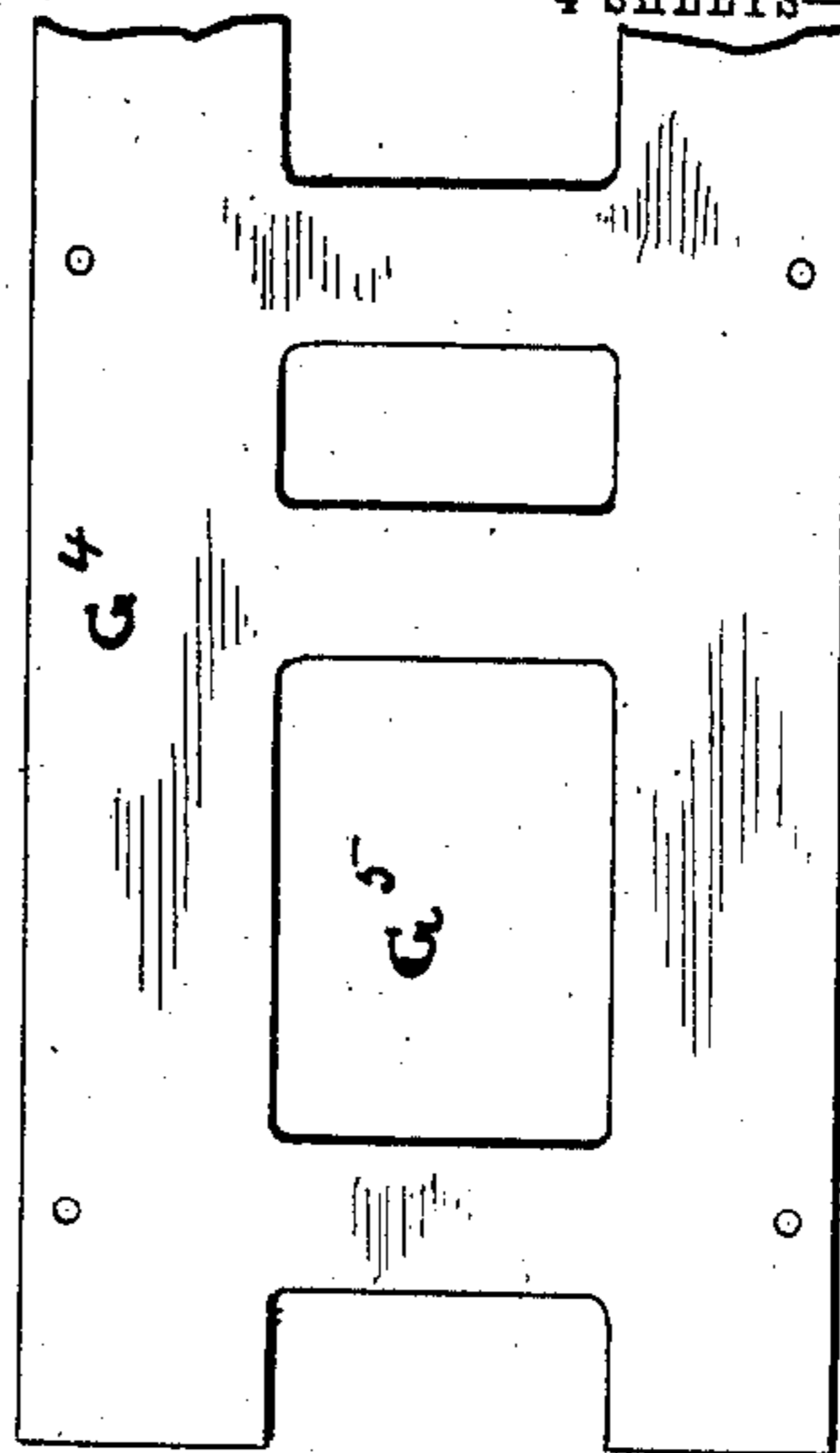


Fig. 6.

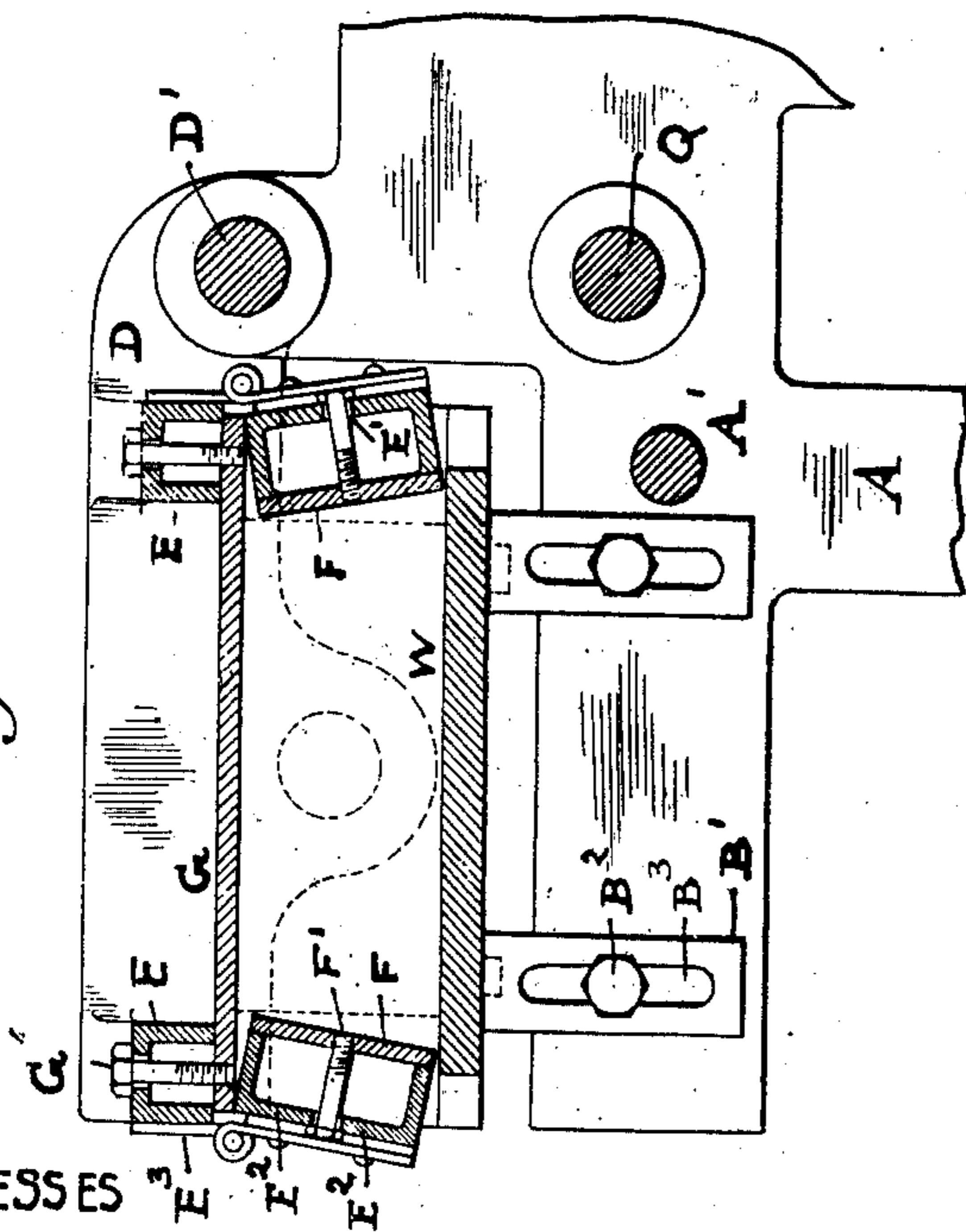
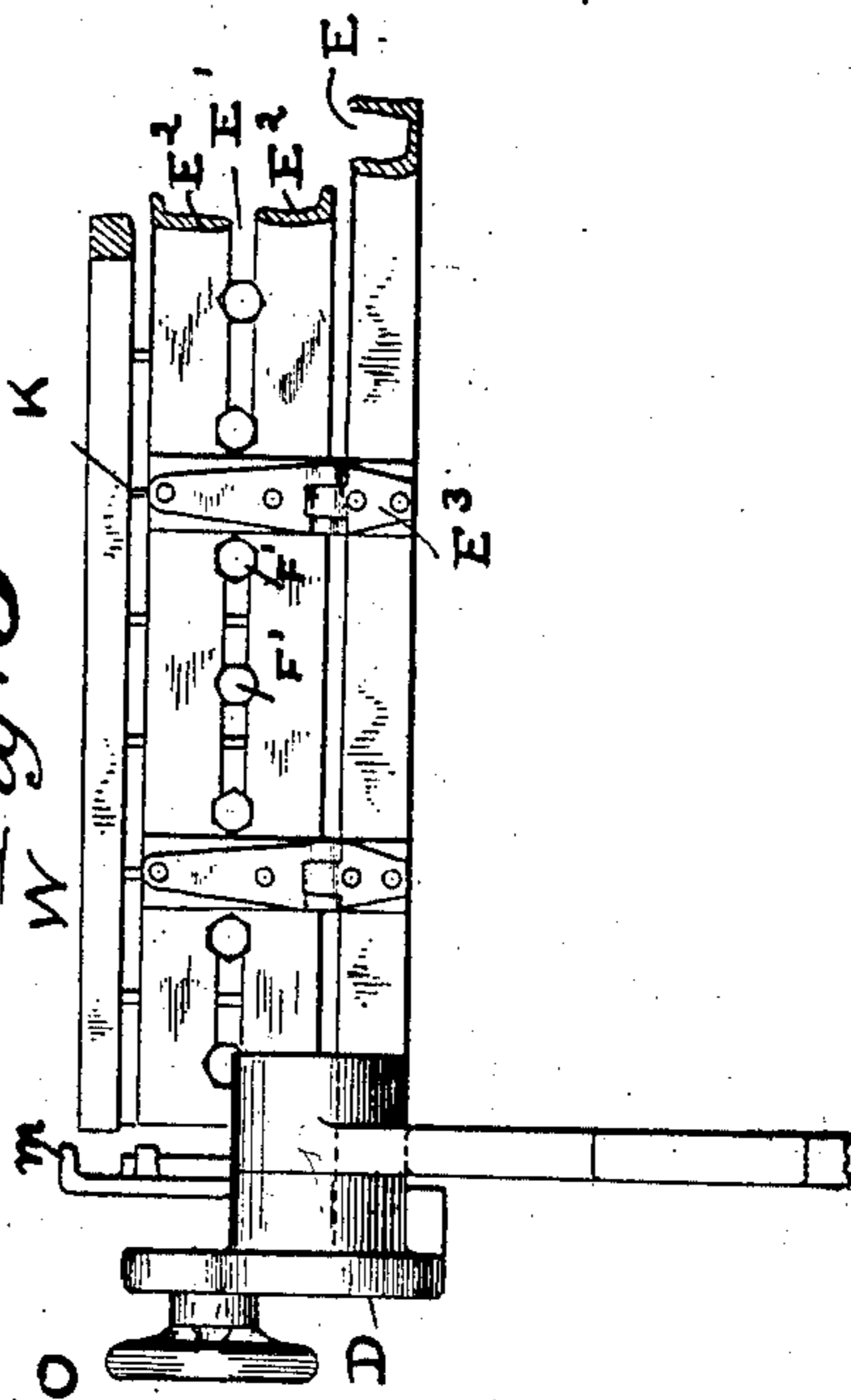


Fig. 8.



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JULIUS JAEGER, OF RUTHERFORD, NEW JERSEY.

MACHINE FOR MOLDING AND PRESSING BUILDING-BLOCKS.

No. 826,576.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed February 21, 1906. Serial No. 302,168.

To all whom it may concern:

Be it known that I, JULIUS JAEGER, a citizen of the United States, and a resident of Rutherford, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Machines for Molding and Pressing Building-Blocks, of which the following is a specification.

This invention relates to improvements in machines for molding and pressing building-blocks of cement mixture, clay, or other compositions.

The object of my invention is to provide a new and improved machine of this kind which is simple in construction, and permits of making a number of blocks at the same time and in such a manner that the faces of the blocks are fully exposed for curing and are finished in a neat and perfect manner.

A further object is to provide a machine in which the outer face of the block can be made of finer material than the balance of the block and thoroughly incorporated and united with the coarser material forming the balance of the block, and a further object is to provide means for making blocks of different sizes and shapes.

In the accompanying drawings, in which like letters of reference indicate like parts in all the figures, Figure 1 is a vertical transverse sectional view through one end part of my improved machine for making building-blocks. Fig. 2 is a similar sectional view at the other end. Fig. 3 is a plan view, parts being broken away. Fig. 4 is a vertical longitudinal sectional view of one end part of the machine on the line 4-4 of Fig. 2. Fig. 5 is a detail sectional plan view showing one end of the mold-box. Fig. 6 is an enlarged detail transverse sectional view through the mold-box reversed. Fig. 7 is a plan view of the bottom of the mold-box, parts being broken away and others shown in section. Fig. 8 is a side view of the mold-box closed, parts being broken away. Fig. 9 is a plan view of a modified form of the base-plate.

The machine is constructed with two end standards A, united by a series of longitudinal horizontal rods A'. Each end frame of the machine is provided with a horizontal bracket-arm B, on which supports B' are held vertically adjustable by bolts B², passing through longitudinal slots B³ in said supports. To the tops of the frames A at the rear an open frame C is hinged, on which a hopper C' is formed, which frame and hop-

per can be swung down into horizontal position, as shown in dotted lines in Fig. 1, or can be swung back out of the way, as shown in full lines in Figs. 1 and 2. A mold-box is formed and held between two side arms D, one at each end of the machine, which side arms are secured at their front ends to a rotatable shaft D', mounted in the upper parts of the frames A at the front thereof, so that by turning the shaft D' the mold-box can be swung from the position shown in Fig. 2 through an arc of one hundred and eighty degrees into the position shown in Fig. 6 above the brackets B, said mold-box being thereby completely reversed while moving from the position shown in Fig. 2 to the position shown in Fig. 6. The mold-box has a base-frame formed of two longitudinal channel-bars E, the ends of which are secured to the two side arms D, and to the outer members of these channel-bars the mold-box sides are hinged by strap-hinges E³, which sides are formed of two angle-bars E², between which a longitudinal slot E' is formed. Through the slots E' screw-bolts F' are passed, the threaded inner ends of which are screwed into suitable threaded holes in vertical plates F, which form the interior side walls of the mold-box. Said plates F may extend the entire length of the mold-box if a single block is to be formed at each operation or may be composed of as many vertical plates F as blocks are to be made at one time. For example, if fifteen blocks are to be made at one time, then fifteen vertical plates F are held by the screws F' against the free edges of the flanges of the angle-bars E² of each side, the side edges of these plates F being held apart a short distance—say about one-eighth of an inch, more or less—for a purpose that will appear later on. The base-plates G of the mold-box rest upon the free edges of the flanges of the bars E, and each base plate or section thereof is held in place by two screw-bolts G' passed through longitudinal slots E⁵ in the bottom of the channel-bars E and having their upper threaded ends screwed into threaded holes in those parts of the plates G resting on the flanges of the channel-bars E. There are as many plates G in the bottom of the mold-box as blocks are to be made, and for each pair of opposite side plates F there is one bottom plate G, and a space is left between the adjacent edges of each two bottom plates G of the same width as the space between the vertical plates F.

On the inner side of each end frame A two vertical rods H are mounted in brackets on the frame, and on said rods two sleeves H' are mounted to slide vertically, which sleeves are united by a top plate H² and a bottom plate H³. Two angle-bars J unite the top plates H² at the front and rear of the machine in such a manner that these angle-bars can pass within the space bounded by the inner flanges of the channel-bars E—that is to say, the channel-bars J can pass up into the space bounded by the channel-bars E. Each angle-bar J has a longitudinal slot J' in its bottom flange, and the angle-bars are secured on the plates H² by screw-bolts passing through slots J² in the plates H², so as to permit of adjusting the bars J toward and from each other. A series of partition-plates K of such thickness—say about one-eighth of an inch, more or less—that they can pass through the slots between the vertical plates F and the horizontal plates G of the mold-box are secured at their lower ends to angle-bars K', which in turn are adjustably secured by bolts K² passing through the slots J' in the bottom flanges of the angle-bars J, so that these partition-plates K can readily be adjusted on the angle-bars J and so that these partition-plates K will be in exact alinement with the slots between the vertical plates F and horizontal plates G.

A cam-disk L is located between the top and bottom plates H² and H³ on each side of the machine, and these cams are secured on a rotatable shaft L', extending horizontally and lengthwise of the machine, so that when this shaft L' is rotated in one direction or the other the cams L will lower or raise the united plates H² and H³, and thereby lower or raise the partitions K. When the plates H² H³ are lowered, the partition-plates K are withdrawn entirely beneath the upper surface of the bottom plates G of the mold-box, and when the plates H² H³ are raised to the full limit the partitions K extend to the top of the sides of the mold-box. The end plates M of the mold-box rest upon the upper surface of the extreme end plates G and can move horizontally and on edge on the same, and these end plates are provided with triangular or like ridges M', which can pass into corresponding recesses M² in the ends of the angle-bars E², forming the front and rear sides of the mold-box, as shown in Fig. 3. Each end plate M is provided with an internally-threaded hub N', in which a screw N² is mounted to turn, which screw is formed on the inner end of a short shaft N, mounted to turn in one of the pivoted side bars D, and to the outer end of said shaft N a wheel O for turning said shaft is secured, as shown in Fig. 4. At the top edge each end plate M is provided with a hook-lug m, extending toward the interior of the mold-box. A shaft Q, mounted longitudinally and horizontally in

the frames A, is provided with a crank-handle Q' at each end outside of the frames A, and at one end this shaft Q carries a small cog-wheel Q², which engages a larger cog-wheel Q³, fixed on one end of the shaft D'. The cog-wheel Q² also engages a cog-wheel Q⁴, which in turn engages a cog-wheel Q⁵, secured on the shaft L', previously mentioned. The cog-wheel Q³ is mutilated and is devoid of teeth at the parts b and d, and at d an arm R, secured to the side of the cog-wheel Q³, projects beyond the rim of the same and can be engaged by a pin R', projecting laterally from the cog-wheel Q². The cog-wheel Q⁵ is devoid of teeth at the part g and at g is provided with an arm S, projecting beyond the rim of the cog-wheel Q⁵ and adapted to be engaged by a pin T, projecting from the side of the cog-wheel Q⁴.

The operation is as follows: When a series of blocks are to be made, the partitions K are all in raised positions—as shown, for example, in Fig. 4—and are held in this raised position by the cams L. The mold-box is in the position shown in Fig. 2, and the hopper is swung over the mold-box, as shown in dotted lines in Fig. 1. The material for making the blocks—for example, a cement mixture—is fed into the hopper and passes from the same into the molds formed between the partitions K, and the material is carefully tamped in these molds. When a block with an extra surface finish is to be made—for example, a block or brick to be used as a front brick—finer material or colored material is placed in the bottom of each mold to a thickness of about one-half of an inch, more or less, and is tamped, and then the coarser material is placed upon the finer material in the bottom of each mold and also carefully tamped. The hopper is then swung back into position shown in Figs. 1 and 2 and the material scraped off the top of the mold-box flush with the upper edges of the partitions K. A plate W, made of cast metal or of slate of such dimensions as to fit over the mold-box, is placed upon the upper edges of the partitions K and between the end plates M, as shown in Fig. 4, and then the wheels O at the two ends of the machine are so turned as to press the end walls M firmly against the ends of the sides of the mold-box, these end walls having been temporarily withdrawn to permit inserting the plate W. The ridges M' pass into the recesses M², whereby the mold is securely locked, and at the same time the hook-lugs m pass over the upper surface of the plate W at the ends thereof, thus securely locking the plate W in place on the top of the mold-box. By turning the crank-shaft Q in the direction of its arrow, Fig. 1, the cog-wheel Q² is turned in the direction of this arrow without, however, affecting the cog-wheel Q³, as the blank space d in the rim of the same is now at the highest point of the cog-wheel Q². By rotating the cog-wheel Q² in the direction of its arrow

the cog-wheel Q^4 is turned in the direction of its arrow and the cog-wheel Q^5 is turned in the direction of its arrow until the teeth of the wheel Q^4 arrive at the blank space g of the cog-wheel Q^5 . By that time the shaft L' has been turned to such an extent that the cams L have forced down the plates H^2 H^3 and the angle-irons J and the partitions K on these angle-irons, whereby these partitions K are withdrawn through the slots between the bottom plates G until these partitions are entirely withdrawn from that part of the mold-box above the bottom plates G . By this time the pin R' on the wheel Q^2 has arrived at the arm R and engaging the same pushes the cog-wheel Q^3 in the direction of its arrow until the teeth at the left of the recessed part d of the cog-wheel Q^3 engage the teeth of the cog-wheel Q^2 , whereby the cog-wheel Q^3 and its shaft D' are turned in the direction of the arrow of the cog-wheel Q^3 and whereby the arms D are swung in the direction from right to left—that is, from the position shown in full lines in Fig. 2 into the position shown in Fig. 6—whereby the mold-box is reversed and the upper surface of the plate W (now the under surface) rests upon the upper edges of the supports B' of the brackets B . The hand-wheels O are now turned so as to withdraw the end partitions M , whereby the side walls of the mold-box are released and can swing outward slightly, as shown in Fig. 6, and at the same time the plate W is released from the end plates M . The blocks or bricks made now rest entirely upon the plate W . The crank-shaft is now turned in the inverse direction whereby the cog-wheel Q^3 is turned in the inverse direction and the arms D are turned back one hundred and eighty degrees into their original position, the mutilated part d of the cog-wheel Q^3 being brought back into the position shown in Fig. 1. At the same time the cog-wheel Q^4 is turned in the inverse direction of its arrow, but without any effect, as the recessed part g of the cog-wheel Q^5 is now at the rim of the cog-wheel Q^4 ; but by this time the pin T of the cog-wheel Q^4 has arrived at the arm S and has turned the cog-wheel Q^5 in the inverse direction of its arrow, so that the teeth of the cog-wheel Q^5 are again engaged with the teeth of the cog-wheel Q^4 and the shaft L' is turned in the inverse direction of its arrow, whereby the cams L are so turned as to force the partitions K up through the slots in the bottom of the mold and into the position shown in Fig. 4, when blocks can again be made in the manner described.

The mold-box can be adjusted in width to make bricks of any desired length, and the base and side plates can be adjusted for making blocks of various sizes. For example, the base-plates G may be replaced by a single plate G^4 , having a series of openings G^5 for

cores of various sizes. I represents a casing inclosing the gearing.

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

1. In a machine for molding and pressing building - blocks, the combination with a mold-box pivoted to swing in an arc of one hundred and eighty degrees, of a vertically-movable set of partitions mounted to pass into and out of the mold-box and means for lowering and raising said partitions, substantially as set forth.

2. In a machine for molding and pressing building - blocks, the combination with a mold-box pivoted to swing in an arc of one hundred and eighty degrees, of a vertically-movable set of partitions mounted to pass into and out of the mold-box and means for lowering and raising said partitions, and a common gearing for successively raising or lowering the partitions and swinging the mold-box in an arc of one hundred and eighty degrees, substantially as set forth.

3. In a machine for molding and pressing building - blocks, the combination with a mold-box pivoted to swing in an arc of one hundred and eighty degrees, of a vertically-movable set of partitions mounted to pass into and out of the mold-box and means for lowering and raising said partitions, means driven from a common shaft for first moving the partitions downward and then keeping them at rest, then swinging the mold-box one hundred and eighty degrees in one direction and then swinging the mold-box one hundred and eighty degrees in the reverse direction, then keeping the mold-box at rest and then raising the partitions, substantially as set forth.

4. In a machine for molding and pressing building - blocks, the combination with a frame, of a rotatable shaft, two arms on said shaft, two longitudinal sides of a mold-box secured to said arms, mold-box ends movable in the direction of the sides of the box, and a removable top plate for the mold-box, means for holding the same on the mold-box and means for swinging said arms and mold-box in an arc of one hundred and eighty degrees and from one horizontal position into another and means for supporting said mold-box in either horizontal position, substantially as set forth.

5. In a machine for molding and pressing building-blocks, the combination with two bottom mold-box side bars, of bottom plates for the mold-box, secured on said bottom side bars, upper side bars of the mold-box hinged to the bottom side bars, vertical plates secured to the inner face of the hinged side bars and movable end plates for the mold-box, substantially as set forth.

6. In a machine for molding and pressing

building-blocks, the combination with two
bottom mold-box side bars, bottom plates
for the mold-box resting on said bottom side
bars, bolts passed through slots in the bot-
5 tom side bars and screwed into said plates,
upper side bars for the mold-box hinged to
the bottom side bars, vertical plates on the
inner sides of said upper side bars, bolts
passed through slots in the hinged side bars
10 and into the vertical plates and movable end
plates for the mold-box, substantially as set
forth.

7. In a machine for molding and pressing
building-blocks, the combination with two
15 standards, of a mold-box hinged to said
standards, which mold-box has transverse
slots in its sides and bottom, two vertical
movable plates guided on the side standard,
cams acting on said plates to raise and lower
20 them, bars connecting said two plates on the
opposite standards, and a series of vertical
partitions secured to said bars, substan-
tially as set forth.

8. In a machine for molding and pressing
25 building-blocks, the combination with a
mold-box mounted to swing in an arc of one
hundred and eighty degrees, of a frame
mounted to move vertically toward and
from the mold-box and a common set of
30 gearing for swinging the mold-box and mov-
ing said frame vertically toward and from
the mold-box, substantially as set forth.

9. In a machine for molding and pressing
building-blocks, a mold-box composed of

bottom side bars, upper side bars hinged to 35
the bottom side bars, end plates removable
toward and from the ends of the swinging
side bars and adapted to engage said swing-
ing side bars, adjustable side plates held on
the swinging side bars and adjustable bot- 40
tom plates held on the bottom side bars, sub-
stantially as set forth.

10. In a machine for molding and pressing
building-blocks, the combination with end
uprights, of a mold-box mounted pivotally 45
on said uprights to swing in an arc of one
hundred and eighty degrees, movable end
plates for said mold-box, a removable top
on said mold-box and means on said mov-
able end plates for engaging said removable 50
top plate and holding it on the mold-box,
substantially as set forth.

11. In a machine for molding and pressing
building-blocks, the combination with stand-
ards, of a mold-box mounted pivotally on said 55
standards to swing in an arc of one hundred
and eighty degrees, swinging sides on said
mold-box, a removable top plate for said
mold-box, and movable end plates for said
mold-box, which end plates are provided 60
with means for engaging the movable sides
of the box and the removable plate on the
mold-box, substantially as set forth.

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Witnesses:

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