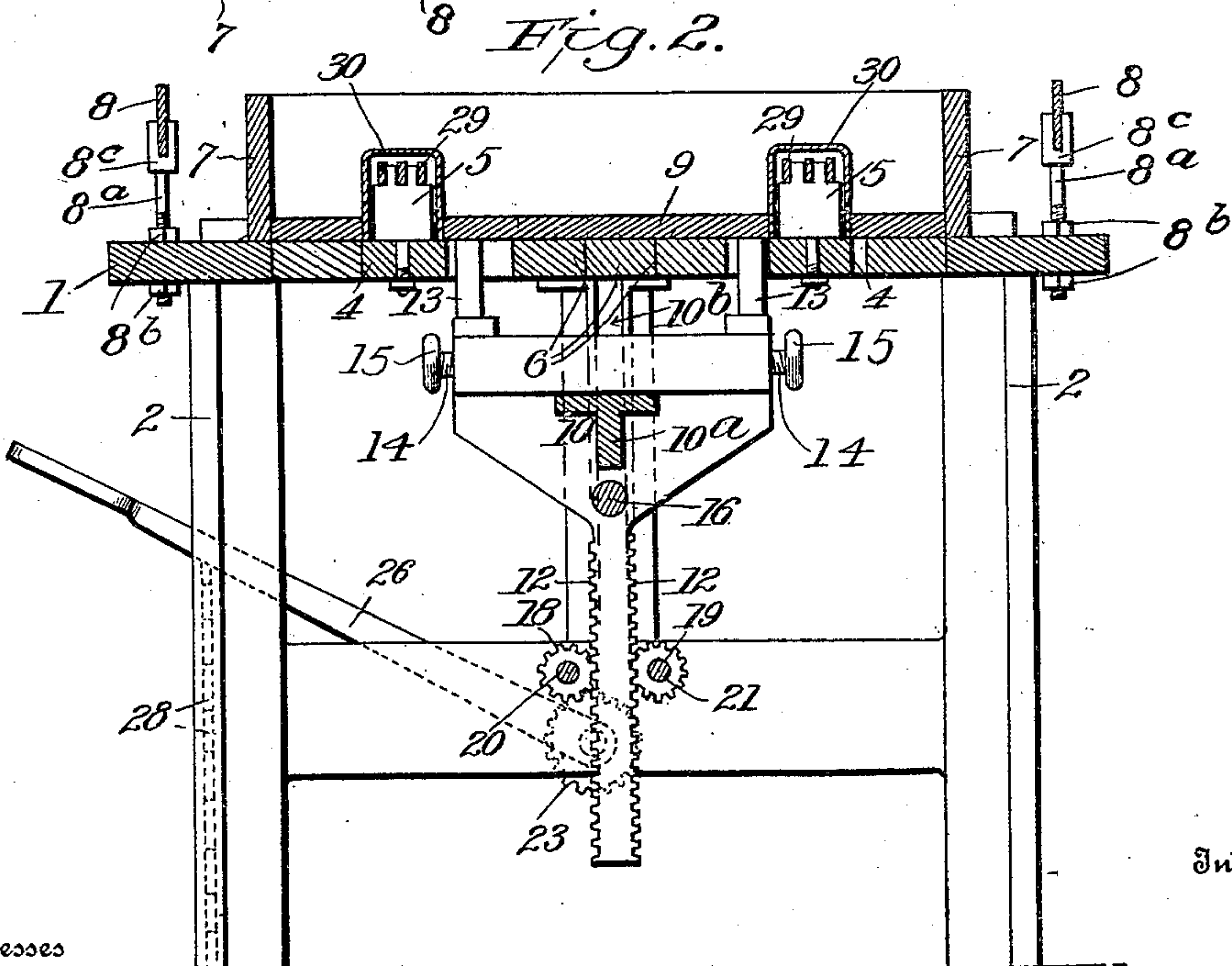
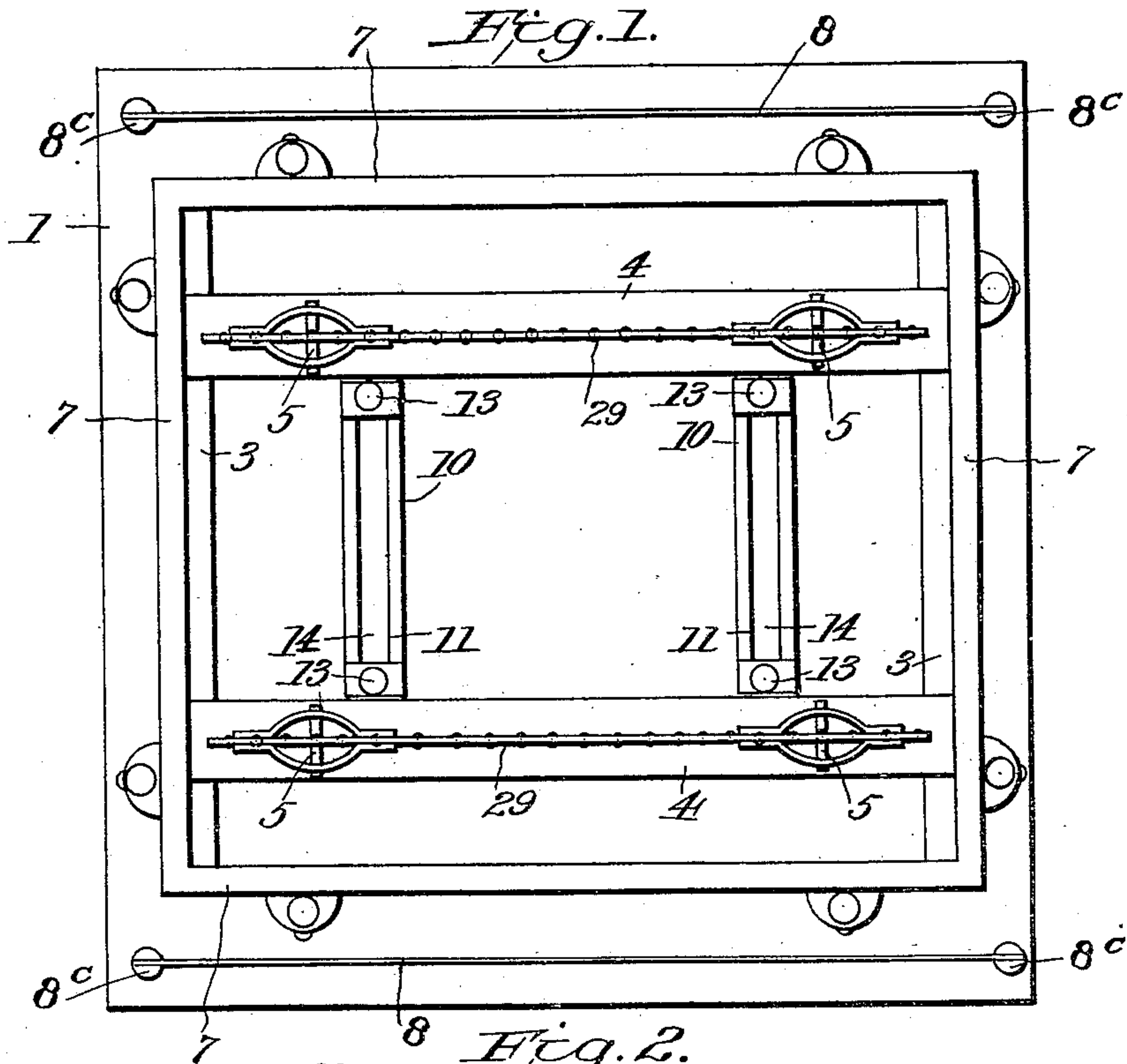


H. B. COPELAND.
MACHINE FOR MOLDING PORTABLE WALL BLOCKS, SLABS, &c.
APPLICATION FILED JUNE 14, 1907.

935,246.

Patented Sept. 28, 1909.
2 SHEETS—SHEET 1.



Inventor:

Witnesses

C. M. Walker,
W. J. Veihmeyer.

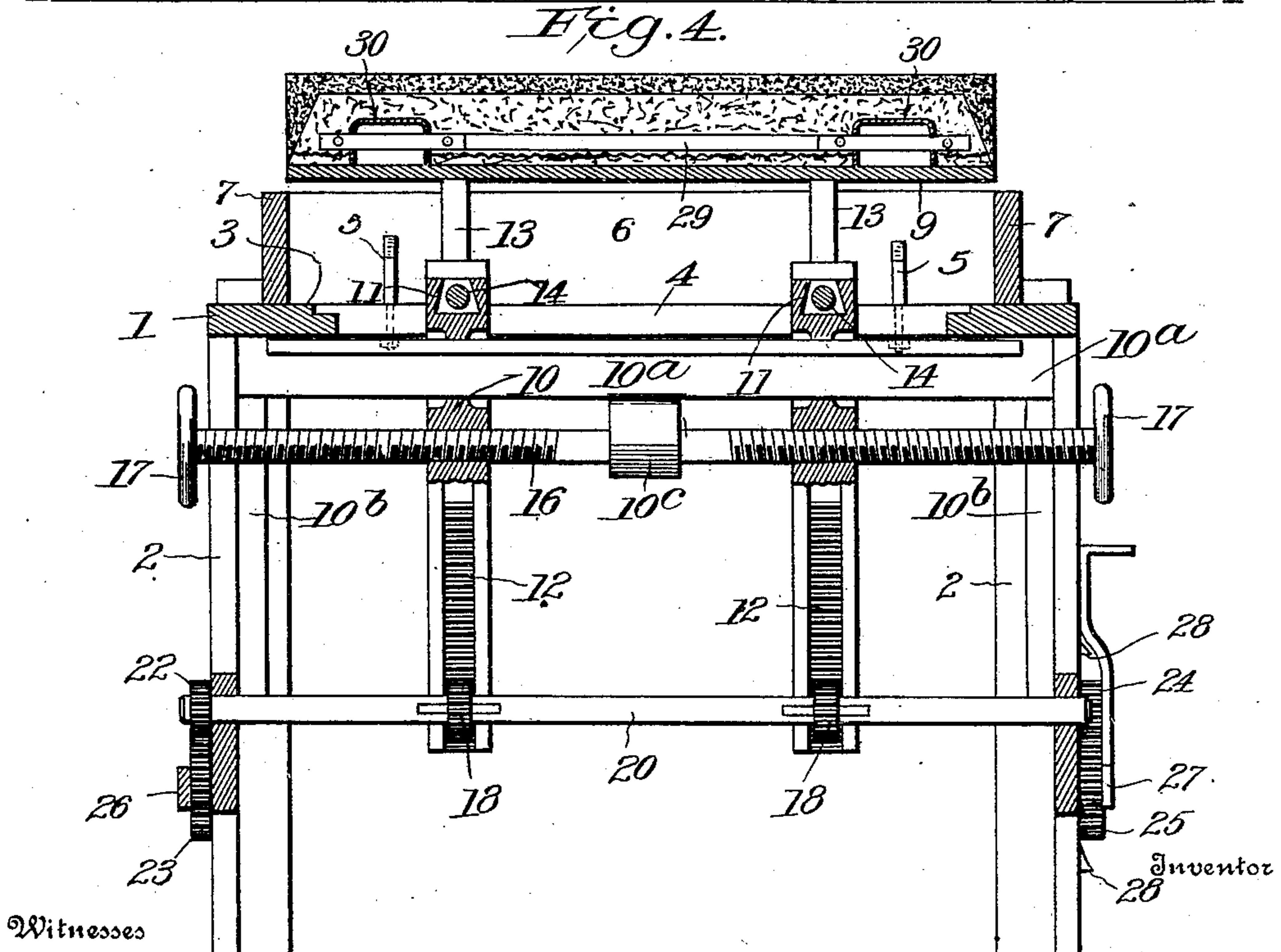
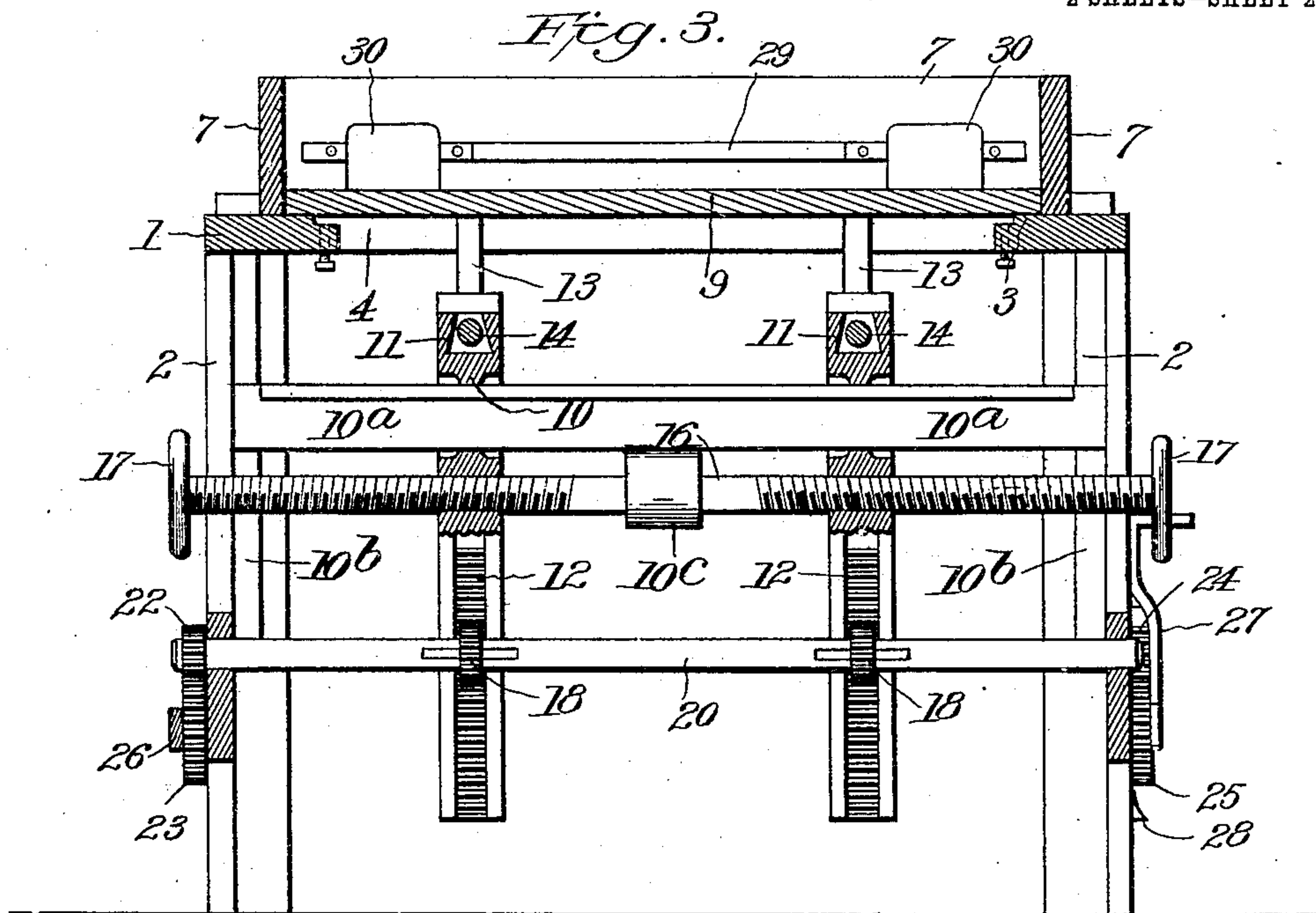
By Hugh B. Copeland,
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UNITED STATES PATENT OFFICE.

HUGH BLACK COPELAND, OF DENVER, COLORADO.

MACHINE FOR MOLDING PORTABLE WALL BLOCKS, SLABS, &c.

935,246.

Specification of Letters Patent. Patented Sept. 28, 1909.

Application filed June 14, 1907. Serial No. 379,056.

To all whom it may concern:

Be it known that I, HUGH BLACK COPELAND, a citizen of the United States, residing at Denver, in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Machines for Molding Portable Wall Blocks, Slabs, &c., and do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in machines for molding composition building blocks or the like.

It has for its object to provide a machine for this purpose which may be adjusted to form or mold various sizes and shapes of blocks and to eject said blocks when formed.

The invention consists in the features of construction and combinations of parts hereinafter described and specified in the claims.

In the accompanying drawings, illustrating the preferred embodiment of my invention: Figure 1 is a plan view of the machine or mold before the pallet has been put in. Fig. 2 is a vertical sectional view taken from front to back of the machine as shown in Fig. 1 and showing the pallet and formers in place. Fig. 3 is a vertical sectional view taken from side to side of the machine as shown in Fig. 1 and showing the material in the mold, and Fig. 4 is a similar view showing the pallet bearing the formed block raised from the mold.

Referring more particularly to the drawings, 1 designates the top frame or rim of the machine which is supported on corner legs 2. The inner edge of said frame has ledges 3 to support cross pieces 4 to which are secured the formers or cores 5. Said cross pieces are provided with a series of holes or sockets whereby said cores may be attached thereto at different points to suit requirements according to the size of the block to be made, etc. After the cross pieces 4 are fastened to the ledges 3 in the desired positions, the remaining space is filled in with other cross pieces 6, certain of said latter cross pieces having perforations for the passage of the push pins presently described.

The sides 7 of the mold are secured to the frame 1 substantially as shown. Gage bars 8 are also mounted on said frame at each side to gage off the top of the material in

the mold. The pallet or carrying board 9 is placed upon the cross pieces 4 and 6 and fits within the sides 7, perforations being formed in said pallet for the passage of the cores 5.

Below the frame 1 are mounted triangular shaped parts 10, preferably two in number as shown, although more may be employed if the size of the mold requires it. The horizontal portions of said parts or members 10 are grooved or troughed at 11 and from their lower pointed extremities extend vertical double faced rack bars 12. The push pins 13 are mounted or dove-tailed in the troughs 11, two or more being arranged in each trough. As shown in the drawing, two pins are mounted in each trough and connected by an adjusting screw 14 having right and left threads on its opposite ends. Hand wheels 15 are mounted on the opposite ends of said screws whereby said push pins may be brought closer together or farther apart to suit requirements. The triangular members 10 are connected near their lower pointed extremities by a right and left screw 16 which projects from the sides of the machine and also carries hand wheels 17. By means of this construction the triangular members may be adjusted with relation to each other while the push pins may be adjusted on said triangular members by means of the screws 14. Said triangular members 10 are guided upon a horizontal angle-bar 10^a, the ends of which run in grooves 10^b in the frame of the machine. It will be noted that this bar 10^a prevents the members 10 from moving endwise and holds them in proper alinement in their vertical as well as horizontal movement. The screw 16 has a central bearing in a projection 10^c on said horizontal guide bar. On each side of the rack bars 12 are arranged gears 18 and 19 preferably splined on shafts 20 and 21 respectively. The shaft 20 projects at one side of the machine and carries a gear 22 meshing with a gear 23 on one of the legs. The other shaft 21 extends from the other side of the machine and is similarly provided with a gear 24 meshing with another gear 25 on another leg. Foot levers 26 and 27 are connected respectively to the gears 23 and 25 whereby the shafts 20 and 21 are revolved to raise the triangular members carrying the push pins for the purpose of removing the blocks when formed from the mold. Series of notches or projections 28 on two of the legs are adapted to

hold said foot levers at any point desired. It will be noted that the appliance just described for removing the block from the mold may be operated from either side of the machine by one or the other of said foot levers.

When a block is to be formed in the mold, before any concrete or other material is poured in, fastening or anchor bars 29 are adjusted on the ends of the cores with their enlarged end portions engaging projections on said cores. Covers 30 are then placed over the cores and constitute linings for the cavities to be formed in the block. Said covers are slotted to fit over the narrow portions of the anchor bars and rest upon the pallet. Only a thin layer of concrete, cement or whatever other material the block is to be made of, is placed in the mold first, after which a sheet of wire netting is introduced. Another layer of concrete is then put on and shaped around the edges as shown in Figs. 3 and 4. Then the mold is filled above the top with cement which is well tamped or pressed and gaged off to nearly the desired thickness. The surface may be finished off with a trowel or other tool in any desired manner. When the block is completed, the push pins are operated to raise it on the pallet from the mold by depressing one or both of the foot levers already described. The block may then be removed on the pallet to a convenient place for it to harden and another pallet placed in the mold for supporting the next block to be made.

The gage bars 8 are mounted in slotted heads 8^c of screw threaded bolts 8^a which pass loosely through holes or slots in the frame of the machine. Said bolts are adjusted by means of nuts 8^b to raise or lower said gage bars to suit the thickness of the blocks to be molded. In view of the construction shown, said bolts may engage screw threaded perforations in the frame in which case the nuts would not be needed but the heads should be swiveled to permit of adjustment without removing the gage bars from said heads.

Any suitable fastening devices may be used in conjunction with the anchor bars and cavities formed by the cores and covers in the mold whereby the block may be secured to another block or to any structure on which it is to be used.

I claim:

1. In a machine of the character described, the combination with a mold, of devices for ejecting the formed article from the mold, and means to adjust said ejecting devices longitudinally and laterally with relation to one another whereby they are adapted to raise various sizes and shapes of molded articles.

2. In a machine of the character described,

the combination, with a mold, of a pallet placed in the bottom of said mold, devices adapted to engage said pallet for ejecting the formed article from the mold, and means to adjust said ejecting devices longitudinally and laterally with relation to one another whereby they are adapted to raise various sizes and shapes of molded articles.

3. In a machine of the character described, the combination with the sides of a mold, of a sectional bottom for said mold comprising a plurality of cross pieces, certain of said cross pieces carrying cores and being interchangeable with the other cross pieces of said bottom to suit the size and shape of the article to be molded, a pallet placed upon said bottom with said cores projecting there-through, and devices adapted to engage said pallet for ejecting the formed articles from the mold.

4. In a machine of the character described, the combination, with the sides of the mold, of a sectional bottom including cross pieces carrying cores and interchangeable with the other sections of the bottom to suit the size and shape of the article to be molded, a pallet placed upon said bottom with said cores projecting therethrough, devices extending through said bottom and engaging the pallet for ejecting the formed article from the mold and means to adjust said ejecting devices relative to one another for the purpose specified.

5. In a machine of the character described, the combination, with the sides of a mold, of a sectional bottom for said mold comprising a plurality of cross pieces, certain of said cross pieces carrying cores and being interchangeable with the other cross pieces of said bottom to suit the size and shape of the article to be molded, means to adjust said cores on said cross pieces, a pallet placed upon said bottom with said cores projecting therethrough, and devices adapted to engage said pallet for ejecting the formed article from the mold.

6. In a machine of the character described, the combination, with the sides of a mold, of a sectional bottom for said mold comprising a plurality of cross pieces, certain of said cross pieces carrying cores and being interchangeable with the other cross pieces of said bottom to suit the size and shape of the article to be molded, an anchor bar mounted on said cores, a pallet placed upon said bottom with said cores projecting there-through, and devices adapted to engage said pallet for ejecting the formed article from the mold.

7. In a machine of the character described, the combination, with a mold and a pallet in said mold, of vertically movable members arranged below said mold and having troughs in its horizontal surface, pins mounted in said troughs and engaging said pallet, screws,

having right and left threads on the opposite ends thereof, engaging said pins, means for turning said screws, and means to raise said members and pins to eject the pallet 5 from the mold.

8. In a machine of the character described, the combination, with a mold and a pallet in said mold, of vertically movable members arranged below said mold, pins mounted on 10 said members and engaging said pallet, means to adjust said pins horizontally on said members to suit the size and shape of the article to be molded, means to adjust said members relative to each other, for the pur- 15 pose specified and means to raise said members and pins to eject the pallet from the mold.

9. In a machine of the character described, the combination, with a mold and a pallet in 20 said mold, of vertically movable members arranged below said mold, pins mounted on said members and engaging said pallet, means to adjust said pins horizontally on said members, a screw right and left thread- 25 ed on its opposite ends and engaging said members, means to turn said screw, and means to raise said members and pins to eject the pallet from the mold.

10. In a machine of the character de- 30 scribed, the combination, with a mold and a pallet in said mold, of a horizontal member arranged below said mold and having vertical movement, pins mounted on said horizontal members and engaging said pallet for 35 ejecting the formed article from the mold, means to adjust said pins on said horizontal members to suit the size and shape of the

articles to be molded, means to adjust said members with relation to each other, a shaft carrying gears meshing with said rack bars 40 and means to revolve said shaft for the purpose specified.

11. In a machine of the character described, the combination, with a mold and a pallet in said mold, of vertically movable 45 members arranged below said mold, pins mounted on said members and engaging said pallet, means to adjust said pins horizontally on said members and means to adjust said members relative to each other whereby they 50 are adapted to raise various sizes and shapes of molded articles, a horizontal guide for said members, and means to raise said members and pins to eject the pallet from the 55 mold.

12. In a machine of the character described, the combination, with a mold and a pallet in said mold, of vertically movable 60 members arranged below said mold, pins mounted on said members and engaging said pallet, means to adjust said pins horizontally on said members, means to adjust said members relative to each other, a horizontal guide 65 bar passed through ways in said members and having its ends running in vertical grooves in the main frame of the mold, and means to raise said members and pins to eject the pallet from the mold.

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

HUGH BLACK COPELAND.

Witnesses:

JOHN A. MATHESON,
ALEX McDERMID.