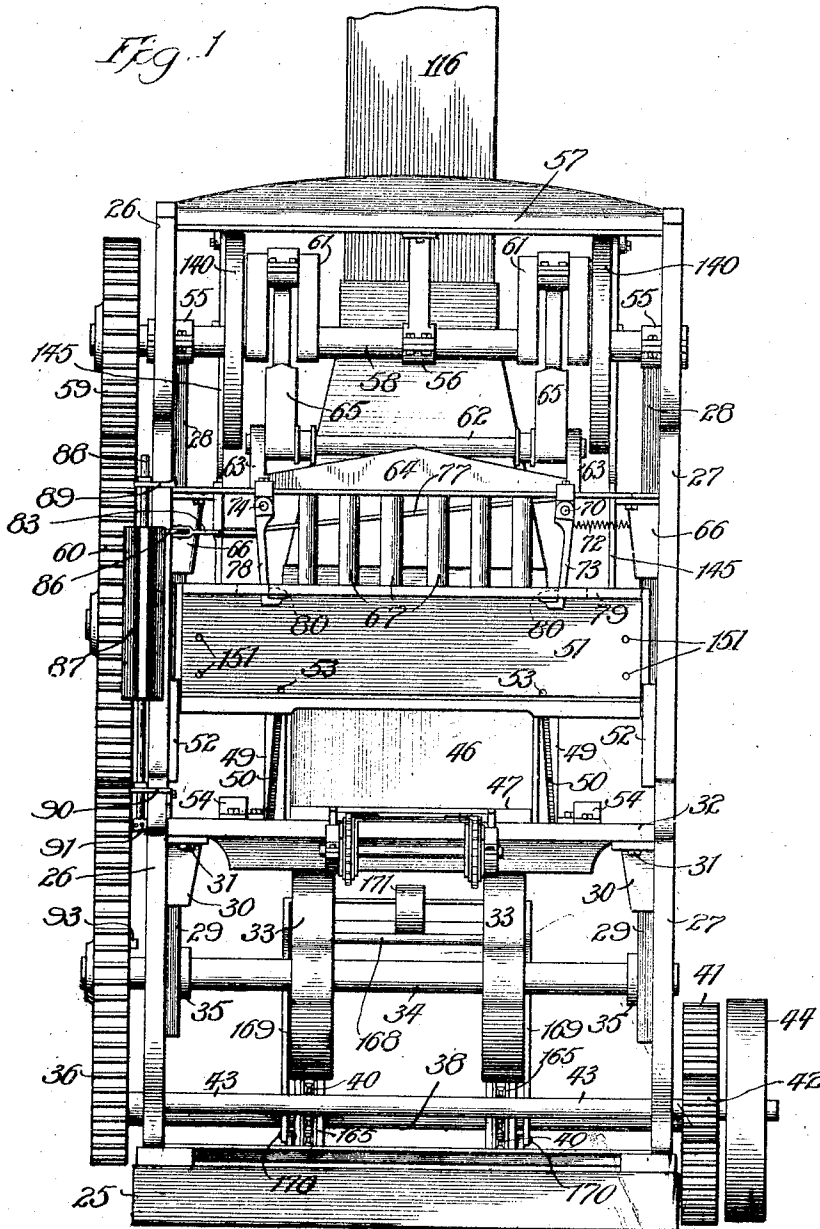


E. W. MYRICK.
CONCRETE BLOCK MACHINE.
APPLICATION FILED OCT. 16, 1909.

1,054,930.

Patented Mar. 4, 1913

8 SHEETS—SHEET 1.



Witnesses:

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Myronie J. J. J.

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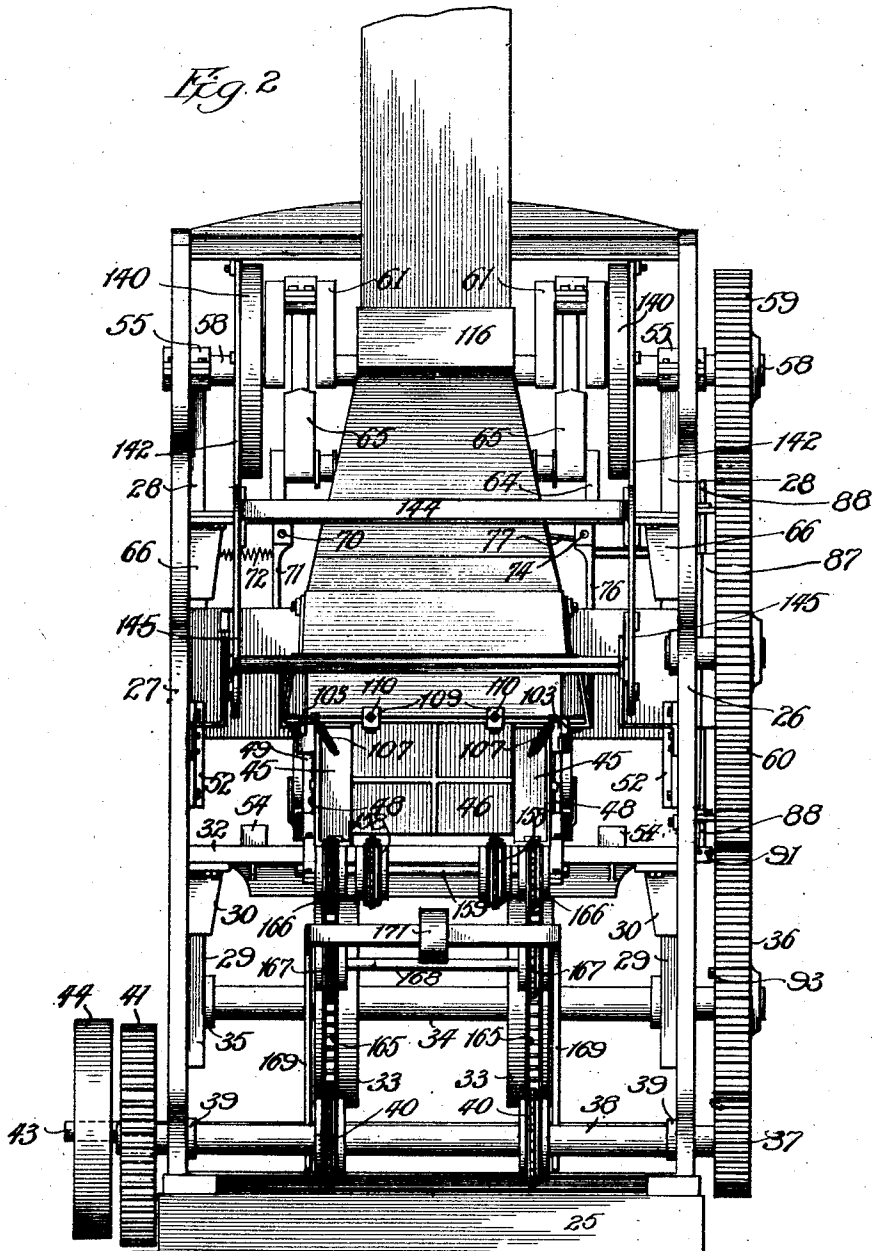
Franklin W. Myrick
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Attys.

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8 SHEETS-SHEET 2.



Witnesses:
Ed. C. Dawson,
Maurice Goldberg

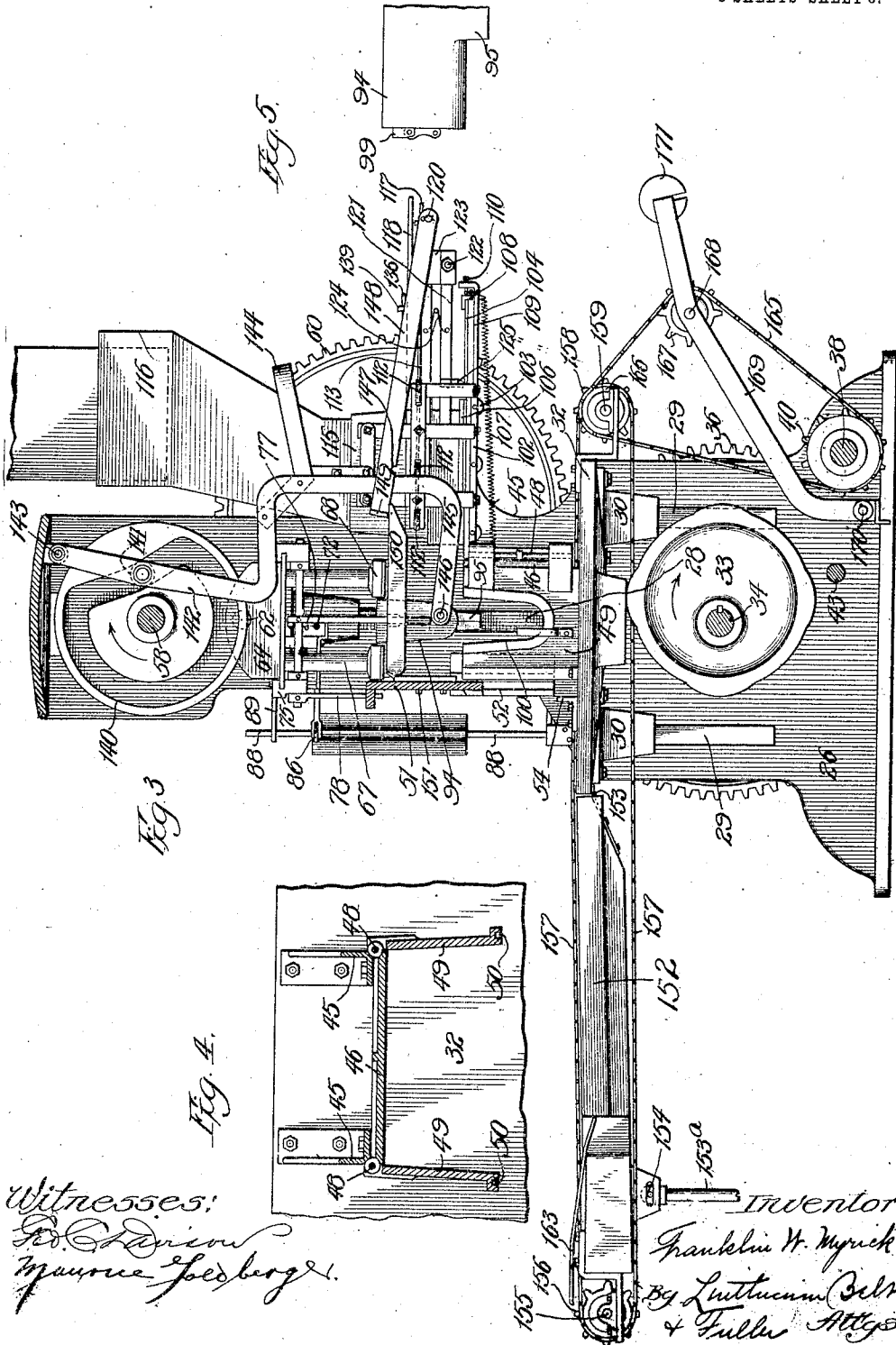
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8 SHEETS—SHEET 3.



F. W. MYRICK.

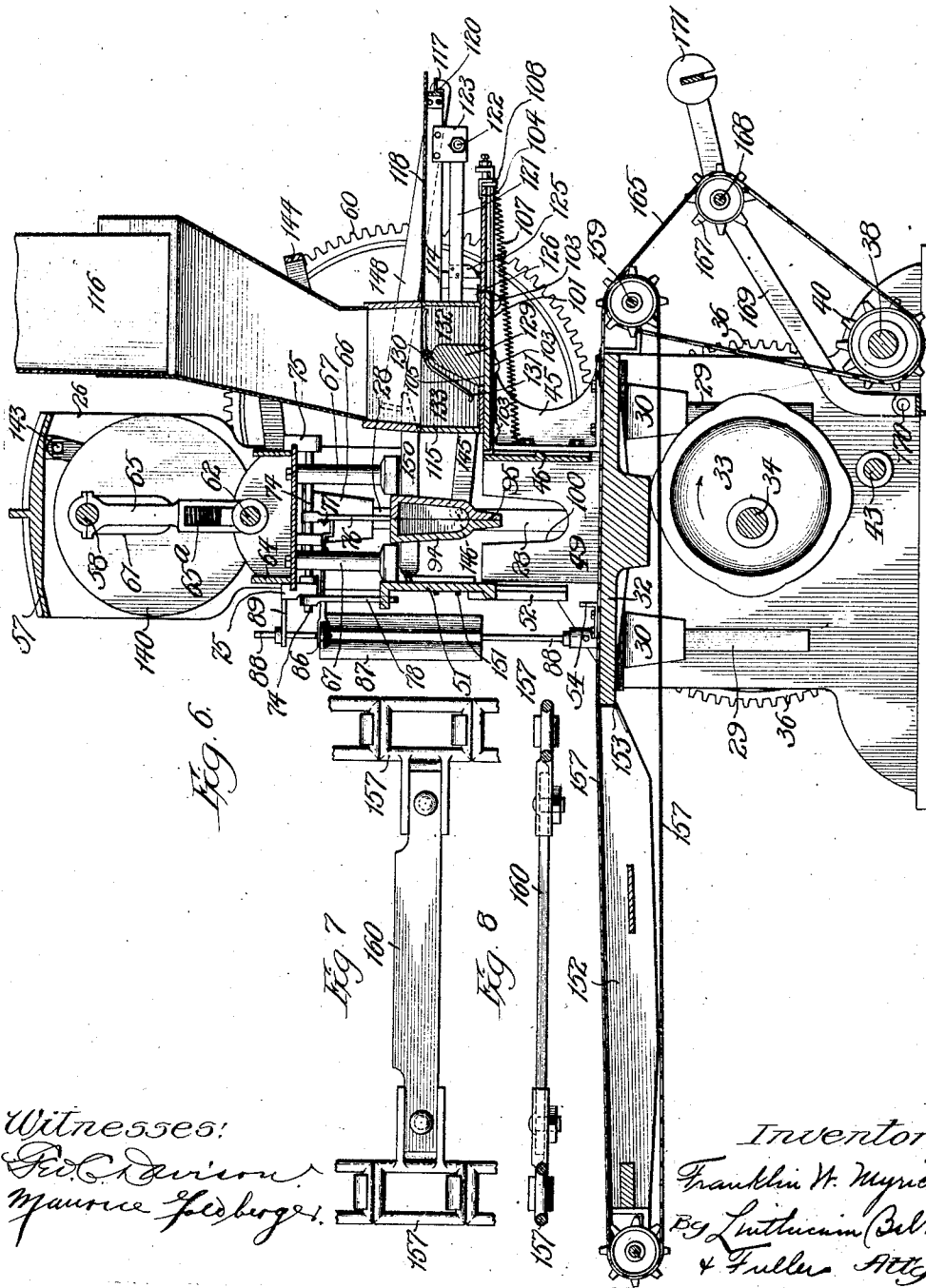
CONCRETE BLOCK MACHINE.

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8 SHEETS—SHEET 4.



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F. W. MYRICK.
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8 SHEETS—SHEET 5.

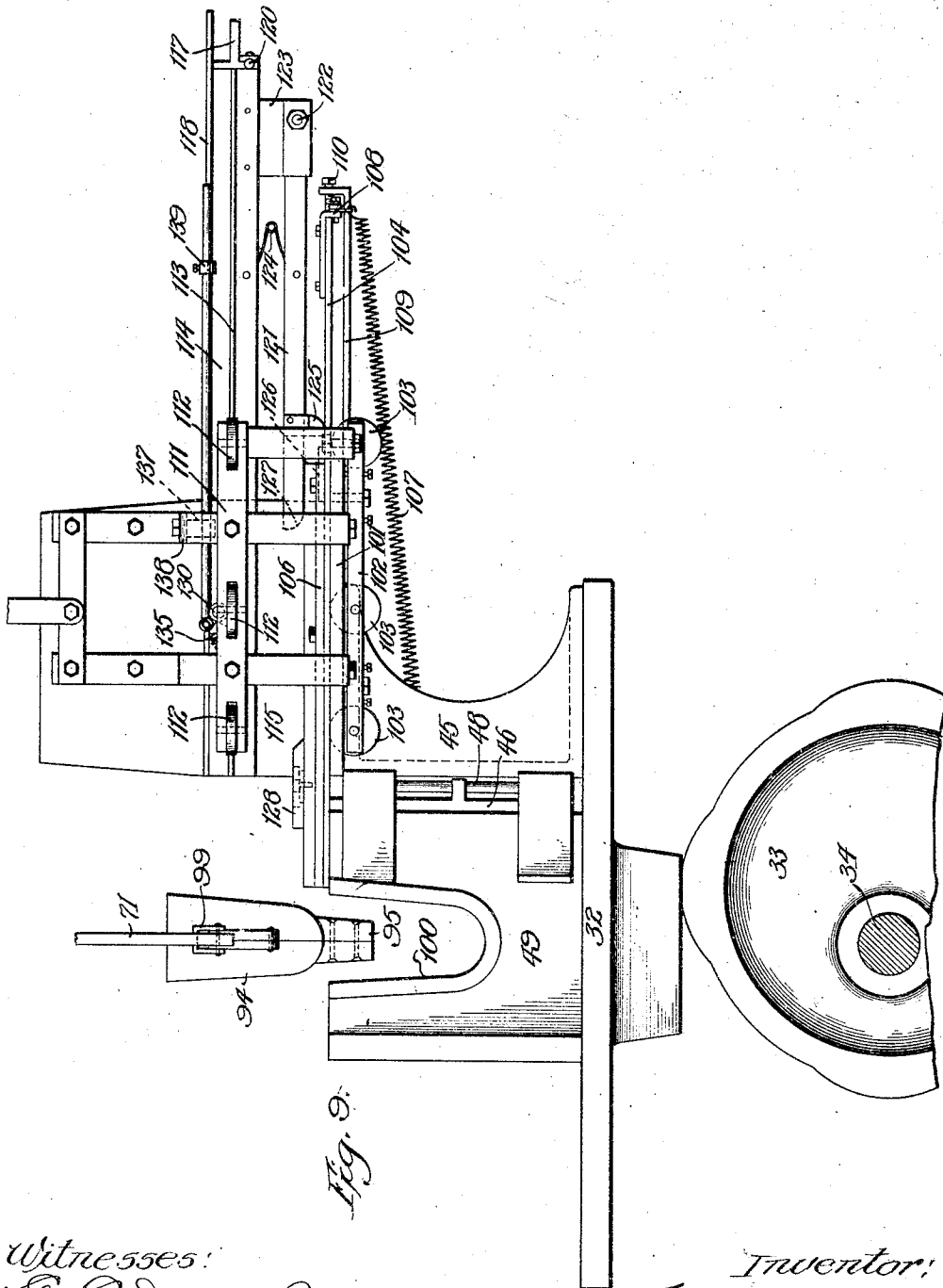


Fig. 9.

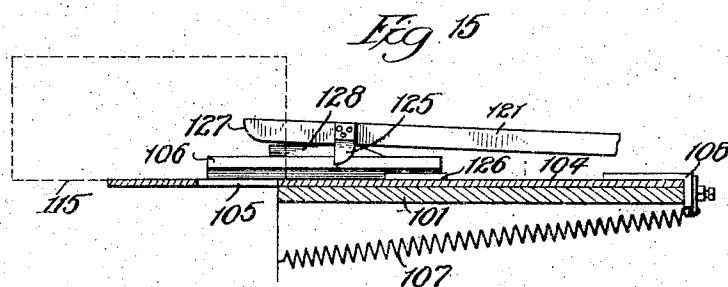
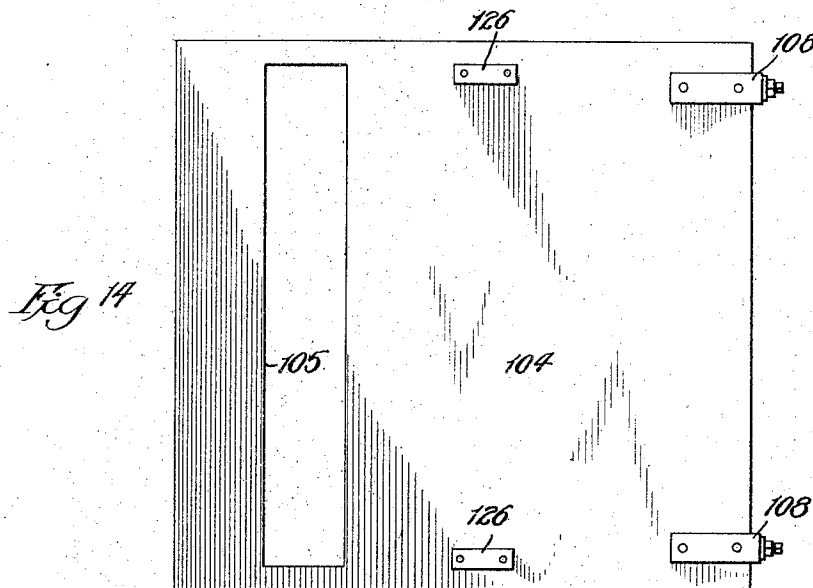
Witnesses:
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1,054,930.

F. W. MYRICK.
CONCRETE BLOCK MACHINE.
APPLICATION FILED OCT. 16, 1909.

Patented Mar. 4, 1913.
8 SHEETS—SHEET 7.



Witnesses:
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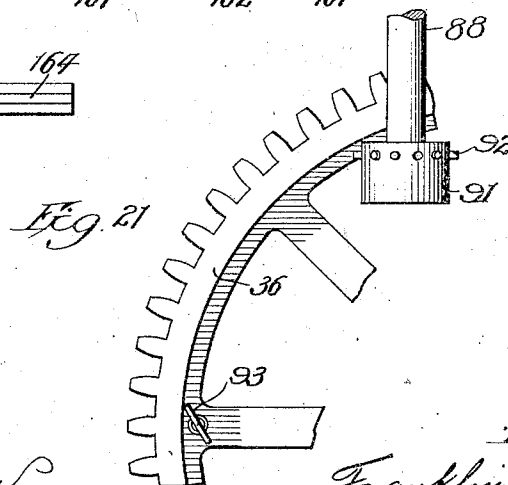
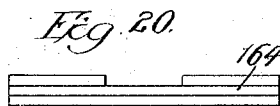
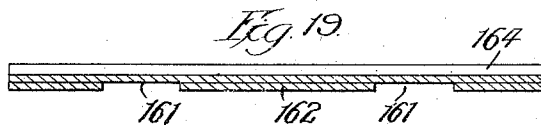
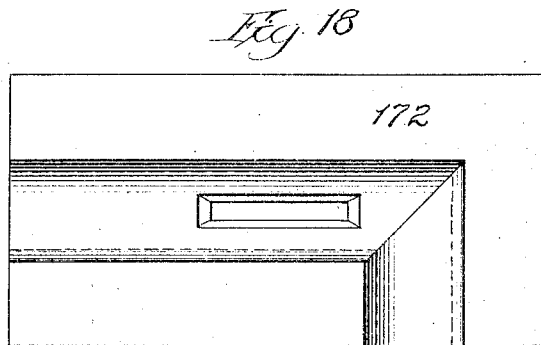
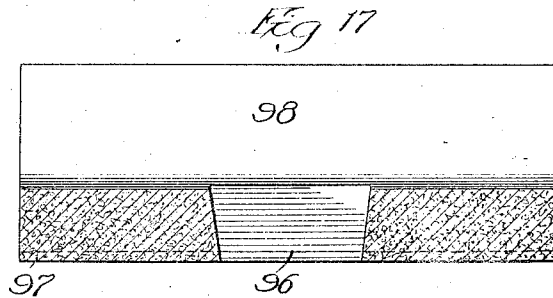
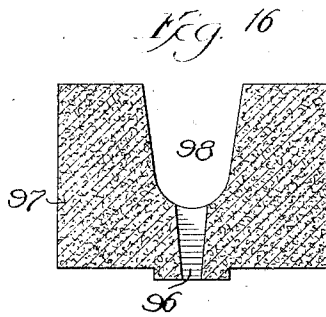
Inventor:
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F. W. MYRICK.
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APPLICATION FILED OCT. 16, 1909.

1,054,930.

Patented Mar. 4, 1913.

8 SHEETS—SHEET 8.



Witnesses:
Ed. O'Brien
Maurice Goldberger

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UNITED STATES PATENT OFFICE.

FRANKLIN W. MYRICK, OF CHICAGO, ILLINOIS.

CONCRETE-BLOCK MACHINE.

1,054,930.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed October 16, 1909. Serial No. 523,042.

To all whom it may concern:

Be it known that I, FRANKLIN W. MYRICK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Concrete-Block Machines, of which the following is a specification.

This invention relates to improvements in machines and devices for the production of blocks of concrete or other plastic material, and is aimed to improve the construction of the molding machine set forth in United States Patent No. 839,125, granted to Walter Dyer, December 25, 1906. In connection with the machine described in such patent one or more attendants are necessary for carrying on the proper operation of the device for the successful manufacture of the concrete blocks, and one leading aim and purpose of my present invention is to render the machine entirely automatic, it being merely necessary for the operator to insert the pallets from time to time.

Various features of novelty and improvement in the construction and operation of the various parts of the machine will be made apparent from a consideration of the following description of a preferred embodiment of the invention.

In the accompanying drawings I have illustrated such embodiment, and in these drawings—

Figure 1 is a front elevation of such machine with certain parts omitted for the sake of clearness of illustration; Fig. 2 is a rear elevation of the machine; Fig. 3 is a longitudinal section adjacent to one of the side standards or supports; Fig. 4 is a horizontal section through the mold, illustrating the hinge attachment between the ends and back of the mold; Fig. 5 is a fragmentary elevation of an end portion of the core; Fig. 6 is a substantially-central longitudinal vertical section through the machine; Figs. 7 and 8 are detail views on an enlarged scale of a fragment of the means provided for conveying away the finished blocks; Fig. 9 is an elevation on an enlarged scale of the mold and charging devices and their operating members; Fig. 10 is a plan view of the charger; Fig. 11 is an end view of the construction shown in Fig. 10; Fig. 12 is a horizontal sectional view of the core and mold front plate latch operating mechanism; Fig. 13 is a front elevation of the same;

Fig. 14 is a plan view of the valve plate of the charging device; Fig. 15 is a sectional view of the operating mechanism controlling the discharge of the plastic material from the charger; Fig. 16 is a transverse vertical section through one of the finished concrete blocks; Fig. 17 is a longitudinal vertical section through the same; Fig. 18 is a plan view of a corner block; Fig. 19 is a central longitudinal section of the pallet for supporting the block; Fig. 20 is an end elevation of such pallet; and Fig. 21 is a fragmentary detail of a portion of the operating mechanism controlling the actuation of the core and the front plate of the mold.

Referring to these drawings, it will be noticed that the machine is provided with a base 25, upstanding from the opposite ends of which is a pair of vertical supports or standards 26 and 27, each having on its inner face an upper guiding rib 28 and a pair of similar lower guides 29, with the latter of which cooperate the two pairs of guiding shoes 30 secured by means of bolts 31 to the under surface of the end of a vertically-reciprocatory table 32, the sliding movements of which on these guides are accomplished by means of a pair of cams 33 bearing against the under surface of the table and fixed to a horizontal cam shaft 34 rotatable in a pair of bearings 35, 35 in the standards or uprights 26 and 27. This cam shaft is rotated by means of a gear 36 fixed to the end thereof protruding outside of the standard 26, which gear meshes with a pinion 37 on a lower back sprocket shaft 38 rotatable in bearings 39 of the standards and equipped intermediate of said standards with a pair of sprocket wheels 40, the object and purpose of which is indicated hereinafter, the end of such shaft remote from the pinion 37 having fixed thereto a gear 41, the teeth of which mesh with those of a small pinion 42 on a front lower driving shaft 43 journaled in the standards and equipped outside of the pinion 42 with a driving pulley 44.

On the reciprocatory table 32 on a pair of upright supports 45, 45 (Fig. 2) I mount vertically the back plate 46 of the mold, the lower edge 47 of such mold plate or wall being raised slightly above the top surface of table 32 for a purpose hereinafter indicated. At its ends this back wall or plate 46 has hinged thereto at 48 in any approved

manner the mold end plates or walls 49, which reach down to the table top, as is shown in Fig. 1, and which have on their front edges the converging or inclined cam grooves 50.

The front plate 51 of the mold is longer than the rear plate 46 and is intended to slide vertically in the pair of guides 52, 52 (Fig. 1), the inner face of such plate having a pair of inwardly-extended pins 53 taking in the grooves 50 of the mold end plates, and adapted by coöperation therewith to open and close said end plates by swinging the same slightly on their hinge connections with the mold back plate 46. In order to sustain such front plate in proper operative relation with the table top, the latter is provided with a pair of abutments 54 which may be in the form of small angles to engage the outer face of the lower portion of the mold front plate 51 and prevent its displacement during compacting or compressing of the concrete.

Extended across the top of the machine and rotatable in a pair of bearings 55 on the frame standards and also in a central bearing 56 depending from the top cross plate or member 57 connecting together the upper ends of the standards 26 and 27, I provide a crank shaft 58 having on its protruding end a driving gear 59 driven from the gear 36 mentioned above through an intermediate gear 60. The pair of cranked portions 61, 61 of this shaft are operatively connected to a shaft 62 mounted in a pair of standards or uprights 63 on a plunger frame 64 by a pair of pitmen or connecting rods 65, which, if desired, may have a spring connection with the shaft 62, as is shown at 65'. Obviously, this operating mechanism causes the vertical reciprocation of the plunger or compression frame 64, the latter being guided in its movements by a pair of shoes 66 co-acting with the guides 28 previously mentioned, and disposed on the inner faces of the standards 26 and 27. This plunger or compression frame has depending therefrom a plurality of compression plungers or stampers 67 provided with enlarged feet 68, (Fig. 3) disposed above the open top of the mold carried on the upper surface of the sliding table 32.

On its lower surface and at one end the compression frame 64 carries a pair of depending bearings or brackets 69 (Figs. 12 and 13) in which a rock shaft 70 is rotatable, such shaft at its center having fixed thereto a core latch 71 spring-pulled toward the standard 27 of the machine frame by a coil contractile spring 72. Shaft 70 at its front end carries a mold front plate latch 73, the object and purpose of which will be presently set forth. At its other end the compression frame 64 is supplied with another latch shaft 74 rotatable in a pair of bear-

ings 75 carried by the compression frame, such shaft having at its center a mold latch 76 constituting a companion for the latch 71, these two latches being connected together by a rod 77, the point of connection with the latch 76 being below the shaft 74, while the point of connection of the rod with the latch 71 is above its shaft 70, whereby when the shaft 74 is oscillated both latches will approach one another or recede from one another. At its front end shaft 74 has fixed thereto another hook or latch 78 forming a companion for the latch 73 and adapted to coöperate with the front plate 51 of the mold, the top outstanding flange 79 of which is apertured at 80, 80 for the passage of such latches through the flange to engage with the under surface of the same. Also depending from the compression frame 64 is a block 81, to the lower end of which at 82 is fulcrumed a lever 83 connected to a short arm 84 on shaft 74 by a pair of parallel links 85. The other end of lever 83 carries a roller 86 coöperating with an elongated corrugated cam 87 on an upright shaft 88 rotatable in a pair of brackets 89 and 90 secured to the upright standard 26, such cam having alternately disposed deep and shallow longitudinal parallel grooves into which the roller 86 is adapted to take, this roller being maintained in contact with the surface of the cam at all times by the action of spring 72. At its bottom end (Figs. 1 and 21) shaft 88 carries a wheel 91 provided with a plurality of outstanding radial pins 92 which coöperate with a lug or projection 93 on the inner face of gear 36. Obviously, then, as the gear 36 rotates, the bracket 93 by coöperation with the pins 92 of the wheel 91 will give the upright shaft 88 an intermittent rotation, thereby bringing the longitudinal grooves of the elongated cam 87 into successive contact with the roller 86, which rotation of the cam causes the intermittent actuation of the pair of core latches and pair of mold front wall latches toward and from one another, as will be readily understood.

The core referred to is characterized 94 and is indicated perhaps most clearly in Figs. 3, 6 and 9, such core being hollow and composed of two parts riveted together. This core, a fragment of which is shown in Fig. 5, has at its center a lower projection 95 to form an aperture 96 in the finished block 97 indicated in Figs. 16 and 17, the main body of the core forming the longitudinal recess 98 in the top of such block. At each end this core has pivoted thereto a link 99 to enable the core hooks or latches above mentioned to secure engagement therewith, these portions of the core when the same is in the mold being accessible to the action of such latches, owing to the fact that the end walls of the mold are cut away

at 100 to provide seats for the ends of the core. A horizontal plate 101 is mounted on the brackets or supports 45 and has bolted to its bottom surface at its opposite ends a pair of bars 102 providing bearings for a plurality of anti-friction rollers 103 extending through slots or openings in the plate 101 and acting as supports for an apertured horizontal valve plate 104 supplied with an elongated opening 105, the edges of such valve plate being guided and held down by guides 106 bolted on the top of the supporting plate 101. This valve plate is connected to the standards 45 by an expansion recoil spring 107, the outer ends of which are joined to brackets or abutments 108 fastened to the edge of the plate, as shown for example in Figs. 9 and 14. Bolted to the under surface of the supporting plate 101 are a pair of bars 109 supplied at their outer ends with screw-threaded adjustable stops or abutments 110, and adapted to limit the outward travel of the valve plate 104. Also bolted to plate 101 at each side of the machine is a supporting frame work 111 carrying a number of horizontal guiding rollers 112 co-acting with the outstanding flanges 113 of T-shaped guide bars 114 bolted or otherwise secured to the ends of a hollow box or charger 115 resting upon the valve plate 104 and adapted to receive its charges of plastic material or concrete from a superposed telescoping supply or admission chute 116. As is indicated, the rear ends of these bars 114 are cross-connected by another bar 117 supporting an unapertured valve plate 118 disposed on a level with the top of the charger box and fastened to the bar 117 in any approved manner as by a plurality of screws 119. It should also be noticed that the ends of the bar 117 are supplied with pintles or journals 120 for the attachment of operating means. Latches 121 pivoted at 122 to a pair of brackets 123 depending from the T-bars 114 are normally spring-pressed downwardly by the springs 124 and carry feet or projections 125 adapted to engage and coöperate with the rear edges of a pair of blocks 126 fastened to the top of valve plate 104. As is clearly indicated in Fig. 11, the forward ends of these arms 121 are curved or beveled at 127, such ends being adapted to co-act with a pair of beveled blocks 128 adjustably fastened to the stationary guides 106.

The hollow interior of the charging box 115 is of substantially the same length and breadth as the mold and of one-half its depth, so as to have practically one-half of its capacity, and extended across the interior of such box is a thick division or partition 129 above which is journaled a small shaft 130 having projecting from its opposite sides a number of bent discharge arms 131. It will be apparent that the division or par-

tion 129 divides the charger into two parts or compartments 132 and 133, the two sets of discharge arms operating in these two parts of the box. On its protruding end shaft 130 is supplied with a short crank arm 134 (Fig. 10) connected to one of the bars 114 by a coil contractile spring 135, which tends normally to rock the arms of shaft 130 into the dotted line position shown in Fig. 11. This crank arm has pivoted thereto a rod 136 sliding in a bearing 137 mounted on a horizontal inwardly-extended portion 138 of the frame 111, such rod carrying near its free end an adjustable stop collar 139 adapted to swing shaft 130 and its arms 131 in one direction by engagement with the bearing 137 while the charger is traveling in one direction, the spring 135 swinging the arms in the opposite direction during the opposite sliding travel of the charger. Referring now to the operating mechanism for this charger, it will be noticed that the top shaft 58 outside of its cranked portions is supplied with a pair of cams 140, traveling in the cam grooves of which are rollers 141 on a pair of bent arms 142 fulcrumed to the top of the machine frame at 143 and connected together back of the feed chute 116 by a bent bar 144 constituting a connecting yoke. The lower ends of these bars 142 are bent forwardly to provide the substantially-horizontal portions 145 each of which carries at its end a pin or roller 146 adapted under certain conditions to enter the notch 147 in the lower edge of a coöperating connecting bar 148, two of which are used and are pivoted or hung on the pins 120 of the frame secured to the charging box. As is shown in Fig. 3, the front ends of these bars 148 are turned outwardly to form fingers 149 with which coöperate the pair of lifting bars 150 fastened to the inner face of the front mold plate 51 outside of the mold ends by means of screws or bolts 151. The cams 140 are so proportioned that the portions 145 will move back far enough for the rollers 146 to be engaged by the notches 147 when the connecting bars 148 are lowered by the downward movement of the lifting bars 150.

The mechanism for transporting away the finished compressed blocks of concrete or other material consists of a leaf 152 hinged at 153 to the front edge of the table 32, the free end of such leaf being pivotally supported on a pair of posts or standards 153^a by the pin and slot connection shown at 154, the heights of said posts being such that the leaf inclines slightly downwardly from the main table 32. At the front end of such leaf on a rotary shaft 155 I mount a pair of sprocket wheels 156 around which pass a pair of sprocket chains 157, which also co-act with similar sprocket wheels 158 on a shaft 159 at the back end of and sup-

ported by the table 32. These chains 157 are connected together at one point in any suitable manner by a cross-bar 160 which is adapted to travel across the top of the table and remove the finished blocks of concrete on their pallets 164. These pallets, as shown in Figs. 19 and 20, on their under surfaces are cut away or recessed at 161 for the accommodation of this pair of sprocket chains, the cross-bar 160 being adapted to engage the part 162 of the pallet between the grooves and push the pallet and block across the table and down the leaf, the pallet being supported by these members, the sprocket chains merely acting as conveyers, and when the pallet and finished block reach the lower end of the front table leaf they travel up the pair of slightly inclined supporting bars 163 which act to raise that portion 162 of the pallet with which the bar 160 coöperates above the path of travel of the latter, so that the pallet and its finished block are left resting on supports 163 ready for removal by the workmen. Shaft 159 and its conveyer sprocket wheels are rotated by means of a pair of sprocket chains 165 passing around a pair of other sprocket wheels 166 on shaft 159 and also around sprocket wheels 40 of shaft 38 mentioned above. In order to maintain these sprocket chains in their proper tight relation during all positions of the vertically-reciprocable table, I provide them with a pair of sprocket wheel idlers 167 mounted on a shaft 168 carried in a frame 169, fulcrumed or hinged to the base of the machine at 170, and provided at its rear end with a weight 171, the function of which, as will be readily understood, is to apply the idlers with pressure to their corresponding sprocket chains.

In Fig. 18 I have indicated another form of concrete block 172 which may be manufactured in a machine of this kind, this particular block being especially suitable for use in corner wall constructions. It is apparent that a modified style of core is necessary to produce a block having the structural features of that indicated, but I have deemed it unnecessary to illustrate this part of the device in detail since the heart and essence of the invention are found in the machine already described.

The operation of this device is substantially as follows: The table 32 and the compressor frame carrying the plungers 67 are constantly reciprocated, the conveyer chains 157 also constantly traveling in a direction to remove the finished block and pallet, it being understood that the back wall or plate of the mold is positioned sufficiently above the top of the table (Fig. 6) to permit the passage of these chains beneath the same. The projection 93 on gear 36 having operated on the pin wheel 91 so as to rotate the shaft 88 to bring one of the deep grooves

of the elongated cam 87 opposite the roller 86, it will be apparent that the lever 83 will have swung into such position as to bring the core latches 71 and 76 and the front wall mold latches 73 and 78 into such position that they secure operative engagement with the ends of the core and with the front plate 51 of the mold. Consequently, as the compression frame 64 rises, due to the action of the crank shaft 58 and the connections described, and the descent of the table 32, due to the rotation of the pair of operating cams, the roller 86 will travel longitudinally in its deep groove of cam 87, maintaining the latches in operative engagement with the core and front wall of the mold, lifting these two parts with the compression frame, and as the front wall of the mold ascends, because of the cam action between the pins 53 and the inclined grooves 50 of the end walls of the mold, the latter are opened up slightly, permitting the operator to readily insert a pallet in the bottom of the mold over the pair of chains 157. During this comparatively slight descent of the table 32 the feed chute 116 elongates because of its telescopic construction, and as the mold front plate 51 ascends it carries its arms 150 upwardly into engagement with the ends 149 of the arms 148, raising the latter sufficiently so as to prevent operative engagement of the rollers or pins 146 of the constantly oscillating frame composed of the arms 142 and yoke 144 with the notches 147; consequently, during this insertion of the pallet into the mold there is no actuation or sliding of the charger box, and therefore there is no feeding of plastic material to the mold. Then the compression frame and its plungers and the core and front wall of the mold latched thereto descend, the rollers 86 still traveling longitudinally in the same groove of the cam 87, and the table 32 rising somewhat due to the action of its operating cams 33. When the front wall of the mold 51 rests upon the table 32, that is, in such position that it closes the mold, it being understood that during such descent it swings the end walls in slightly, the core at the same time rests in the seats 100 of the mold end walls, and simultaneously the projection 93 on gear 36 operates the corrugated cam 87 so as to shift lever 83 and separate the latches, which results in releasing the mold front wall and the core, leaving them in operative relation with the mold. It should also be understood that since the arms 150 are attached to and travel with the front wall 51, they remain in their lowermost position so that as the compression frame 64 ascends without the core and mold front wall, the pins 146 of the connected levers 142 engage the notches 147 of arms 148 and act, as soon as the compression plungers have been elevated sufficiently, to slide forwardly

over the mold, the charger with its load previously received from the chute and the apertured valve plate 104. The latter is operated by means of the fingers 125 on the arms 121 abutting against the blocks 126. This valve plate, however, does not travel entirely over the mold but ceases its travel as soon as the arms 121 are raised sufficiently to destroy the engagement between the parts 125 and 126 by means of the stationary wedges or cams 128. The valve plate does travel sufficiently, however, to prevent the charge of concrete in the portion 133 of the charger from depositing in the portion of the mold back of the core. Just as the charger with its load of concrete is brought into register with the top of the mold, the collar 139 strikes the bearing 137, resulting in the turning of shaft 130 so as to swing the arms 131 downwardly in the portion 132 of the charger and upwardly in the part 133 which will act to facilitate the discharge of the concrete from the charging box into the mold. Just as the charger starts to move back, the shaft 130 is turned, through the action of spring 135, in the opposite direction, swinging the arms 131 downwardly in the portion 133 of the charging box and upwardly in part 132 and acting to deliver or assist in the discharge of all the concrete. During the forward travel of this charger the plate 118 acts to close the lower end of the feed chute 116 so as to prevent the escape of any of its contents until the charger has again assumed its rearmost position. As the charging box slides back it picks up the valve plate 104 by engaging the blocks 126 so that the valve plate travels along with the charger, the arms 121 dropping down into operative position again as soon as they leave the cam blocks 128. As soon as the charging box is out of the way the compression arm 64 and its stamping or pressure members 67 descend, the table and the mold at the same time ascending, due to the rotation of cams 33, so as to effect an efficient compression or compacting of the contents of the mold, which at this time is about half filled. The compression frame and its plungers then rise, the table at the same time descending, the charger moves forwardly delivering a second supply of material to the mold, the charger retreats, the compression members again descend, while the table rises only slightly, it being in a lower position this time than before to compensate for its having been half filled previously. After this compressing act, as the frame 64 rises it carries the core 94 and the mold front plate 51 with it, the latches having been moved to operative position, owing to a partial rotation of the elongated corrugated cam 87. Also the arms 150 move upwardly with the mold front plate 51, lifting the arms 48 sufficiently so as to prevent

an operative connection between the pins or rollers 146 and the notches 147. Consequently, there is no charging or forward movement of the charging box at this time. As the front plate of the mold goes up, due to the cooperation of the pins 53 with the cam slots 50, the ends of the mold are swung outwardly slightly away from the pallet and the formed block, and as the front plate 50 reaches the uppermost limit of its travel the cross-bar 160 of the conveyer chains 157 passes beneath the back plate 46 of the mold, engages the portion 162 of the pallet, and carries the latter with its formed concrete block down the leaf or shelf 152, the pallet riding on the latter and being conveyed merely by the chains and cross-bar. As the pallet and block continue their forward travel they travel up the inclined tracks 163, where their movement ceases owing to the fact that the pallet is raised by such tracks above the path of travel of the cross-bar 160. The compression frame 64, its plunger 67, the core and the front plate again descend, and again ascend without any charging occurring, the operator during this ascent of the parts being enabled to insert the new pallet, after which the series of operations or steps described above are repeated. It will, therefore, be understood that the compression frame ascends twice in succession carrying with it the core and mold front plate, permitting during the first ascent the removal of the block and pallet, and during the second ascent permitting insertion of the new pallet. The compression frame then ascends twice in succession without carrying with it the core and mold front plate, and during the two descents corresponding to the ascents referred to two compressions of the material in the mold are secured. The operation of the charger corresponds, as will be readily understood, to the operation of the mold front plate, that is during the two periods of movement of the compression frame with the front plate remaining resting on the table, two chargings of the mold occur, while during the two movements of the front plate upwardly with the compression frame no charges are delivered to the mold.

Whereas I have herein indicated one especial and particular embodiment of the invention, it is to be understood that the same is susceptible of a variety of embodiments, and that the structural features and characteristics of many of the parts of the mechanism herein set forth may be varied considerably without departure from the substance and essence of the invention and without the sacrifice of any of its benefits and advantages.

I claim:

1. In a device of the character described, the combination of a mold, a core and means

automatically actuated by the device to remove the core from the mold to permit removal of the molded block and also to permit the core to remain in the mold during the charging and compression thereof, including a trip, a cam, and means actuated by a part of the device to move the cam into and out of the path of the trip, substantially as described.

2. In a device of the character described, the combination of a mold, a core, reciprocating means for compressing material in the mold, and means controlled by the compressing means to remove the core from the mold to permit removal of the molded block and to permit the core to remain in the mold during the charging and compression thereof, substantially as described.

3. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, a core, a detachable connection between said core and compression means, and automatic means operating in proper timed relation to control the actuation of said detachable connection including a trip, a cam, and means actuated by a part of the device to move the cam into and out of the path of the trip whereby to permit the core to remain in the mold during the charging and compression and to remove the core to permit removal of the finished molded block, substantially as described.

4. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, a core, one or more latches adapted to detachably connect said core to said compression means, means to reciprocate said compression means, a cam, means carried by the compression means and cooperating with the cam to control the actuation of said latch or latches whereby to permit the core to remain in the mold during the charging and compression and to remove the core to permit the removal of the finished molded block, and means for actuating said cam, substantially as described.

5. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, a core, one or more latches adapted to detachably connect said core to said compression means, means to reciprocate said compression means, a rotatable cam, means carried by the compression means and cooperating with the cam to control the actuation of said latch or latches whereby to permit the core to remain in the mold during the charging

and compression and to remove the core to permit removal of the finished molded block, and means for intermittently actuating said cam, substantially as described.

6. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, a core, a pair of latches connected together to approach one another simultaneously and to recede from one another simultaneously and adapted to form a detachable connection between said core and said compression means, means to reciprocate said compression means, and means for automatically controlling the actuation of said latches including a trip, a cam, and means actuated by a part of the device to move the cam into and out of the path of the trip, whereby to permit the core to remain in the mold during the charging and compression and to remove the core to permit removal of the finished molded block, substantially as described.

7. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, a core, a pair of latches connected together to approach one another simultaneously and to recede from one another simultaneously and adapted to form a detachable connection between said core and compression means, means to reciprocate said compression means, and means to control the actuation of said latches whereby to permit the core to remain in the mold during the charging and compression and to remove the core to permit the removal of the finished molded block, including an elongated longitudinally-grooved intermittently-actuated cam, substantially as described.

8. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, means to reciprocate said compression means, one wall of said mold being adapted to slide, a detachable connection between said compression means and mold wall, and means to govern said detachable connection, whereby said mold wall may be moved with said compression means or may remain in operative position with relation to the other walls of the mold, substantially as described.

9. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, means to reciprocate said compression means, one wall of said mold being movable, one or more

latches detachably connecting said wall to said compression means, and a cam to control the actuation of said latch or latches, whereby said mold wall may be moved with

5 said compression means or may remain in operative position with relation to the other walls of the mold, substantially as described.

10. In a device of the character described, the combination of a mold, means to charge
10 said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, means to reciprocate said compression means, one wall of said mold being movable, a detachable
15 connection between said mold wall and compression means including a pair of latches connected together to approach one another simultaneously and to recede from one another simultaneously, and means to govern
20 the operation of said latches, whereby said mold wall may be moved with said compression means or may remain in operative position with relation to the other walls of the mold, substantially as described.

25 11. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, means to
30 reciprocate said compression means, one wall of said mold being movable, a detachable connection between said compressing means and said mold wall including a pair of latches connected together to approach one
35 another simultaneously and to recede from one another simultaneously, means to govern the operation of said detachable connection including an elongated longitudinally-grooved intermittently-rotatable cam, and means to operate said cam, substantially
40 as described.

12. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed,
45 reciprocatory compression means adapted to act on the material in the mold, a core, a detachable connection between said core and compression means, means to reciprocate said compression means, one wall of said
50 mold being movable, a detachable connection between said compression means and mold wall, and means to control the actuation of said detachable connection, whereby to permit the core to remain in the mold
55 and the mold wall to remain in operative relation to the other walls of the mold during the charging and compression, and to remove the core and move said mold wall to permit removal of the finished molded block, substantially as described.

13. In a device of the character described, the combination of a mold having one wall thereof movable, means to charge said mold with material to be compressed, reciproca-
65 tory compression means adapted to act on

the material in the mold, means to reciprocate said compression means, a core, a detachable connection between said compression means and core including a pair of latches connected together to approach one
70 another simultaneously and to recede from one another simultaneously, a detachable connection between said compression means and said movable mold wall including a pair of latches movable with said core
75 latches, and means to control the actuation of said core and mold wall detachable connections whereby to permit the core to remain in the mold and the mold wall to remain in operative relation to the other walls
80 of the mold during the charging and compression, and to remove the core and move said mold wall to permit removal of the finished molded block, substantially as described.

14. In a device of the character described, the combination of a mold, means to charge said mold with material to be compressed, reciprocatory compression means adapted to act on the material in the mold, means to reciprocate said compression means, a core, a detachable connection between said core and compression means including a pair of latches connected together to approach one
90 another simultaneously and to recede from one another simultaneously, one wall of said mold being movable, a detachable connection between said compression means and movable mold wall, including another pair of latches operatively connected to said core
95 latches, means to govern the actuation of said detachable connections including an elongated longitudinally-grooved intermittently-rotatable cam, and means to rotate said cam intermittently, whereby to permit
100 the core to remain in the mold and the mold wall to remain in operative relation to the other walls of the mold during the charging and compression, and to remove the core and move said mold wall to permit removal
105 of the finished molded block, substantially as described.

15. In a device of the character described, the combination of a mold back plate, hinged end plates for said mold, a sliding
115 front plate for said mold, means to slide said front plate, and connections between the inner face of said front plate and the adjacent edges of said end plates to swing the latter on their hinges during the sliding
120 of said front plate, substantially as described.

16. In a device of the character described, the combination of a mold having a pair of hinged end plates and a sliding front plate,
125 said end plates having cam grooves in their edges adjacent to said front plate, pins on said front plate cooperating with said cam grooves, and means to slide said front plate whereby during its sliding movements said
130

end plates are swung on their hinges, substantially as described.

17. In a device of the character described, the combination of a mold, a charger adapted to be moved over and away from said mold, operating means for said charger having a detachable connection, and means actuated by a part of the device to automatically detach the parts of said operating mechanism to render said charger inoperative at intervals and to return said parts to their operative relation, substantially as described.

18. In a device of the character described, the combination of a mold, a sliding charger cooperating therewith, a cam, charger operating means between said cam and charger and operated by the former, said charger operating means having a detachable connection, and means automatically operated by a part of the device to detach said connection at intervals to prevent movement of the charger and to return said connection to its operative relation, substantially as described.

19. In a device of the character described, the combination of a mold, a charger cooperating therewith, means to operate said charger detachably connected thereto, compression means for the contents of said mold, means to actuate said compression means, and means operated by said compression means and adapted when moved with said compression means to detach the charger from its operating means, whereby to render the charger temporarily inoperative, substantially as described.

20. In a device of the character described, the combination of a mold having a movable wall, a charger cooperating with said mold, operating means for said charger detachably connected thereto, means to move said mold wall, and means carried by said movable mold wall adapted to detach said charger from its operating means, whereby to render said charger temporarily inoperative, substantially as described.

21. In a device of the character described, the combination of a mold having a sliding wall, a charger cooperating with said mold to feed thereto the material to be compressed, operating means for said charger detachably connected thereto, compression means adapted to act on the contents of the mold, means to actuate said compression means, a detachable connection between said compression means and sliding mold wall, means governing said latter detachable connection, and means actuated by said sliding

mold wall and adapted when the latter is moved with said compression means to detach the charger from its operating means, whereby to render the charger temporarily inoperative, substantially as described.

22. In a device of the character described, the combination of a mold, a sliding charger adapted to feed material to said mold, means to slide said charger, a rock shaft in said charger, arms on said rock shaft adapted to assist in the delivery of the material to said mold, a crank on said rock shaft, a spring connected to said crank to rock said shaft in one direction, a stationary bearing, a rod sliding in said bearing and pivoted to said crank, and a collar on said rod adapted by engagement with said bearing to rock said shaft in the opposite direction in opposition to the action of said spring, substantially as described.

23. In a device of the character described, the combination of a vertically reciprocatory table, a mold on said table, a leaf hinged to said table, and unitary conveyer means passing over said table and leaf, and adapted to remove the pallet and finished block from the mold, substantially as described.

24. In a device of the character described, the combination of a vertically reciprocatory table, a mold on said table, an extension hinged to said table, sprockets on said table and extension, a pair of sprocket chains on said sprockets and passing over said table and extension and beneath the mold, and a cross-bar connecting said chains together, said cross-bar adapted to cooperate with the pallet on which the block is formed in the mold to remove said pallet and finished block from said mold and carry the same along said table and leaf, substantially as described.

25. In a device of the character described, the combination of a mold, a movable charger adapted to feed material to said mold, means to move said charger, an apertured valve plate beneath said charger, a connection between said charger and valve plate, and means to break said connection during the travel of the charger toward the mold, whereby to stop the travel of said valve plate before the charger comes into register with said mold, substantially as described.

FRANKLIN W. MYRICK.

Witnesses:

WALTER M. FULLER,
M. A. KIDDIE.