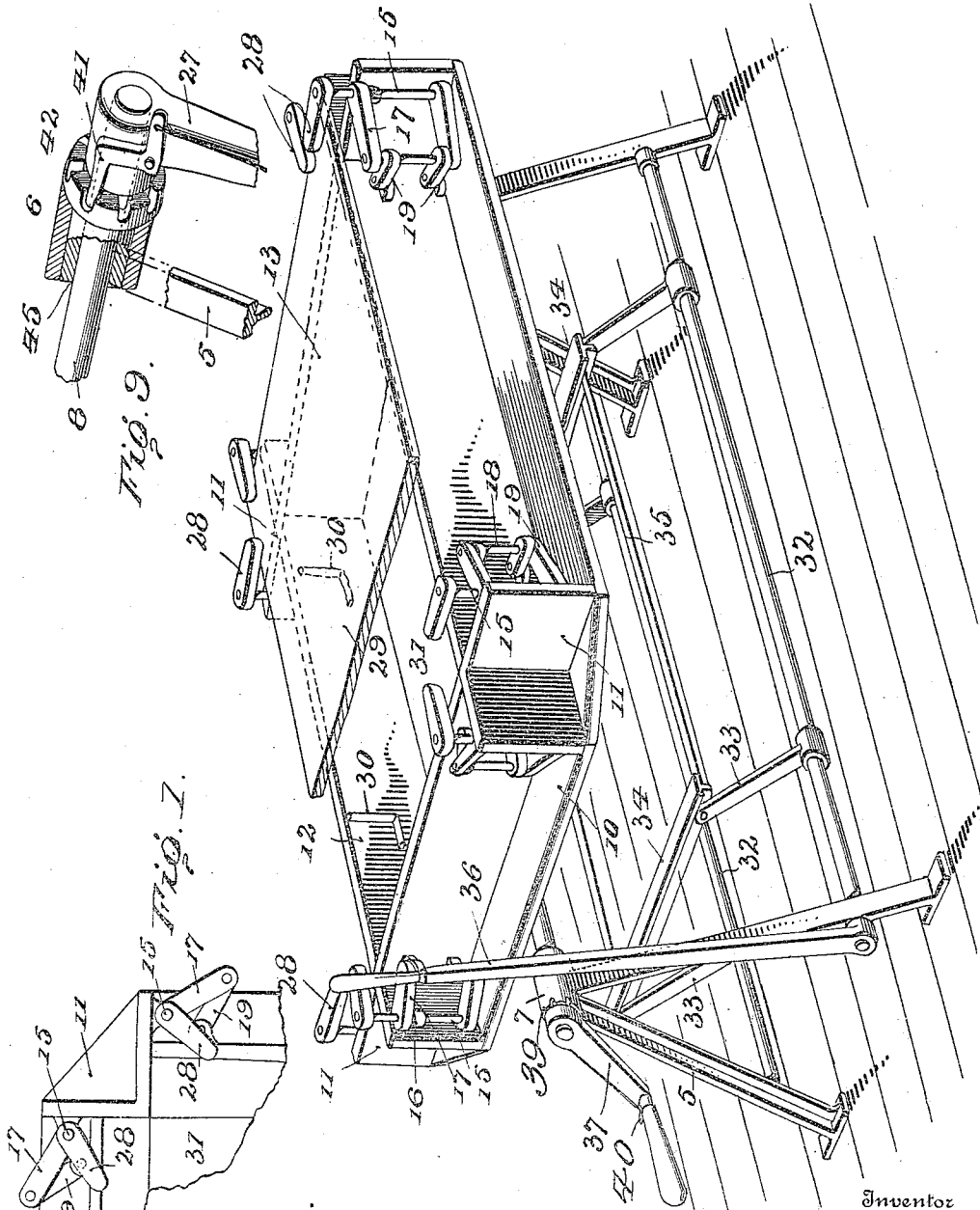


W. D. WISE.
 COMPRESSION CEMENT BLOCK MOLD.
 APPLICATION FILED MAY 12, 1909.

961,828.

Patented June 21, 1910.

3 SHEETS—SHEET 1.



Witnesses
W. D. Wise
Juana M. Tallin

Fig. 5.

Fig. 7.

Fig. 9.

Inventor

W. D. Wise

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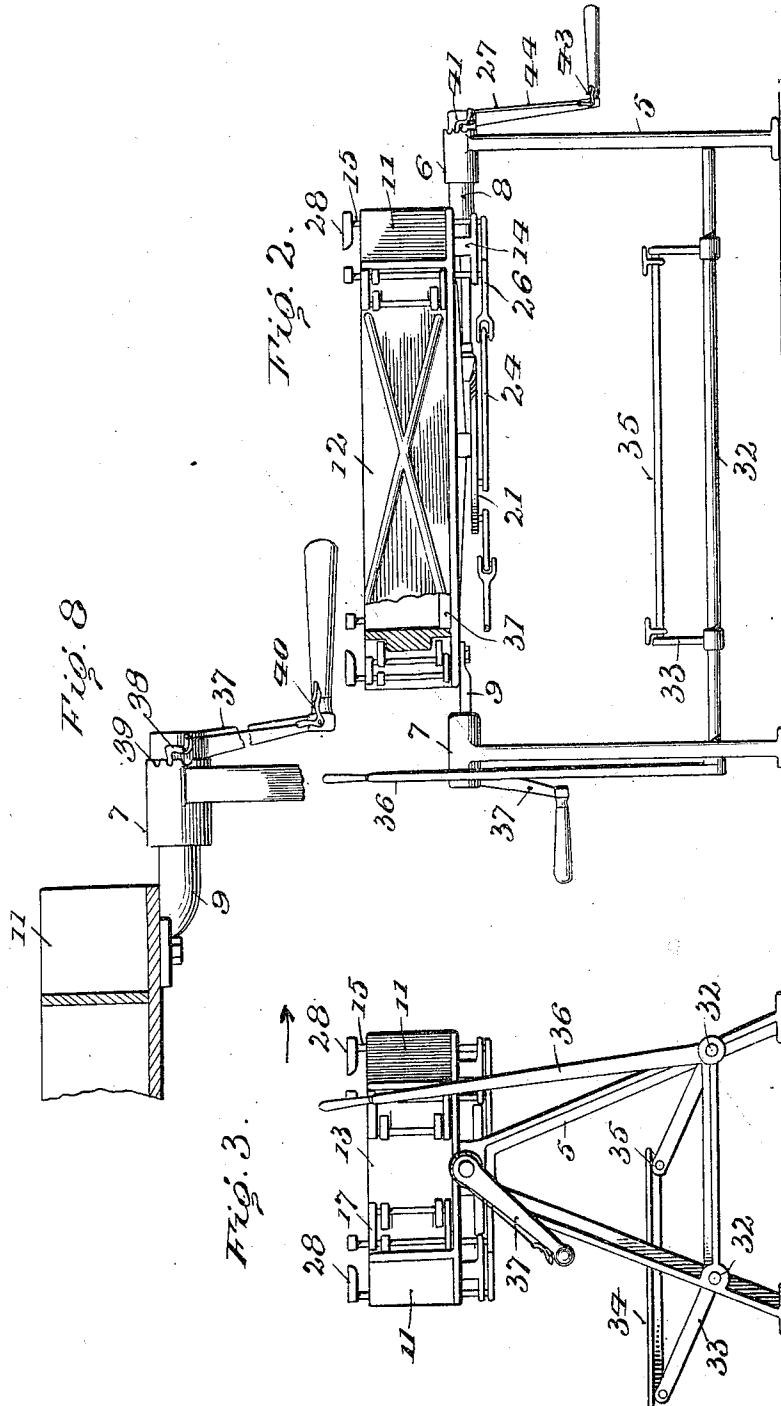
W. D. Wise
 Attorneys.

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3 SHEETS—SHEET 2.



Inventor

W. D. Wise

Witnesses

W. D. Wise
Juana M. Tallin.

334

W. D. Wise

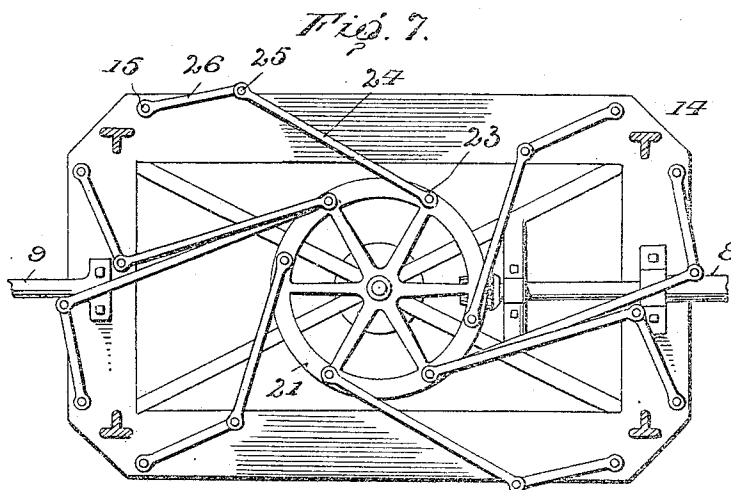
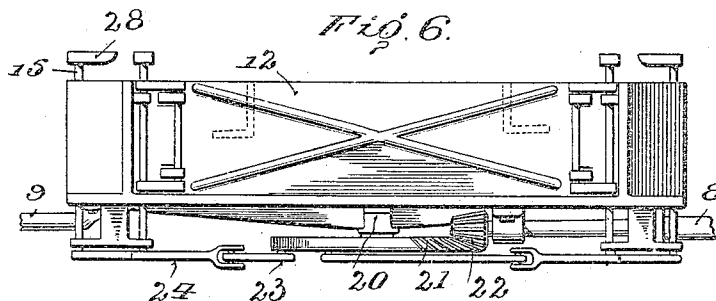
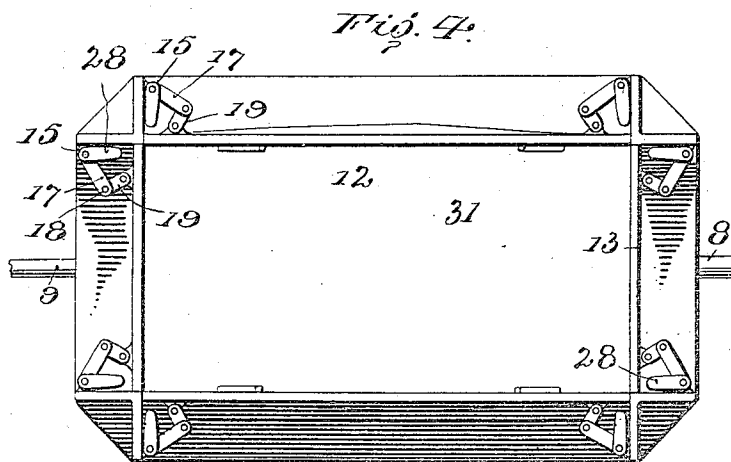
Attorneys.

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3 SHEETS—SHEET 3.



Inventor

W. D. Wise

Witnesses
M. J. Woodman,
Juana M. Fallin.

By

A. M. Racy.

Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM D. WISE, OF DETROIT, MINNESOTA, ASSIGNOR OF ONE-HALF TO CHARLES R. STONE, OF FARGO, NORTH DAKOTA.

COMPRESSION CEMENT-BLOCK MOLD.

961,828.

Specification of Letters Patent. Patented June 21, 1910.

Application filed May 12, 1909. Serial No. 495,390.

To all whom it may concern:

Be it known that I, WILLIAM D. WISE, citizen of the United States, residing at Detroit, in the county of Becker and State of Minnesota, have invented certain new and useful Improvements in Compression Cement-Block Molds, of which the following is a specification.

This invention relates to machines for making concrete blocks, and has for its object to provide a strong, durable and thoroughly efficient machine of this character by means of which artificial stone blocks or bricks may be economically and expeditiously manufactured.

A further object is to provide a molding machine in which the concrete or other plastic material is subjected to lateral pressure during the molding operation, thereby to compress the material and produce a homogeneous block of uniform density throughout its entire area without the employment of the usual tamping mechanism.

A further object is to provide means for revolving the mold, and means for delivering the molded product to a truck for transportation to the drying racks.

A further object is to form the walls of the mold with angular ribs for producing seating recesses in the brick or block for the reception of suitable tie rods so that two of the blocks may be tied or bonded together and thus permit the construction of a wall or partition having an intermediate air space or chamber.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a mold constructed in accordance with my invention; Fig. 2 is a side elevation of the same, a portion of the mold being broken away to

more clearly show the construction of the same; Fig. 3 is an end view; Fig. 4 is a top plan view showing the side and end walls moved inwardly to compress the concrete in the molding compartment. Fig. 5 is a detail top plan view showing the positions assumed by the walls of the mold when the latter are moved outwardly; Fig. 6 is an enlarged side elevation of the mold; Fig. 7 is a bottom plan view of the same, one of the depending brackets being shown in section; Fig. 8 is a longitudinal sectional view of one end of the mold showing the manner of mounting the same in the adjacent supporting bracket; Fig. 9 is a detail perspective view of the bearing on the opposite side of the mold, a portion of the bearing being broken away to show the sleeve or bushing.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved machine forming the subject matter of the present invention comprises a supporting frame including spaced side members 5 having their upper ends reduced and provided with inwardly extending bearings 6 and 7, in which are journaled the main operating shaft 8 and stub shaft 9.

Interposed between the side members 5 of the supporting frame, is the mold box, the latter being provided with a base or supporting table 10, the opposite ends of which are secured in any suitable manner to the shafts 8 and 9 as shown, thus to permit the mold to be revolved between the side members of the frame to effect the discharge of the molded product.

The table 10 is substantially rectangular in shape as shown, and is provided at its corners with substantially triangular shaped abutments or blocks 11, between which are slidably mounted, the side walls 12 and end walls 13.

Depending from the bottom of the table 10 and preferably formed integral therewith, are brackets 14 in which are journaled vertically disposed shafts 15, the latter being also journaled in suitable brackets 16 carried by the adjacent corner blocks 11. Connected with each vertical shaft 15, are spaced links 17 which are in turn pivotally connected at 18 through the medium of relatively short links 19 with the adjacent walls of the mold, the links 17 and 19 forming

in effect knee braces and serving to force the side and end walls of the mold laterally within the molding compartment when the shafts 15 are rotated, thereby to compress the concrete in said compartment and thus produce a homogeneous block of uniform density throughout its area.

Depending from the central portion of the table 10, is a boss or projection 20 in which is journaled a mutilated gear 21, the teeth of which mesh with a pinion 22 secured to the inner end of the operating shaft 8. The gear 21 is disposed in a horizontal plane in spaced relation to the bottom of the table 10 so that the gear is housed and protected by the table during the molding operation. Secured to the peripheral edge of the gear 21, are a plurality of depending pins 23 to which are pivotally connected suitable rods or levers 24, the opposite ends of which are pivotally connected at 25 with links 26 rigidly secured to the adjacent vertical shafts 15.

The outer end of the operating shaft 8 is provided with a crank handle 27 so that by rotating said handle in one direction a longitudinal pull will be exerted on the several rods or levers 24 and 26 and thus rotate the shafts 15 in their bearings and through the medium of the knee braces move the adjacent walls of the block inwardly and compress the concrete or other plastic material in the mold, in the manner before stated.

Rigidly secured to the upper end of each vertical shaft 15, is a laterally extending clamping finger 28 adapted to engage the adjacent edge of a pallet 29 and clamp the latter in position on the top of the mold during the molding operation.

The knee braces and clamping fingers are so arranged that the initial movement of the operating handle 27 will cause the clamping fingers to engage the pallet, and a the operating handle 27 will cause the knee braces to compress the material in the molding compartment.

The machine is principally designed for making sectional blocks, the sections of which are connected or bonded together by suitable tie rods, and in order to form each section of the block with a recess for the reception of the tie rod or bond, the side walls 12 of the mold are formed with angularly disposed ribs 30 which produce corresponding grooves or depressions in the molded product. The mold is also provided with a movable bottom plate 31, which latter may be provided with a smooth surface or embossed or otherwise embellished so as to form the exposed face of the block with an ornamented surface in imitation of cut or chipped rock.

Rigidly secured in any suitable manner to longitudinal shafts 32 journaled in the members 5 of the supporting frame, are parallel

links 33 connected by substantially T-shaped bars 34, which latter are pivotally connected with the links 33 by means of longitudinally disposed rods 35.

The links 33 and bars 34 form in effect a carrier adapted to receive the molded brick or block from the mold and deliver the same to a suitable truck for transportation to the drying racks.

As a means for raising and lowering the carrier, one of the shafts rods 32 is extended longitudinally beyond the adjacent side member of the frame and provided with an operating handle 36 so that when the handle is moved in one direction the carrier will be moved to a position directly beneath the mold and in a position to receive the molded product, and when the handle is moved in the other direction, the carrier will be lowered so as to deposit the molded product on a truck.

The stub shaft 9 is provided with a crank or handle 37 by means of which the mold may be revolved so as to present the pallet side of the mold to the carrier, said mold being locked in normal or reversed positions, by means of a pawl or catch 38 pivotally mounted on the operating handle 37 and arranged to enter any one of a series of locking recesses 39 formed in the adjacent bearing 7, said catch being movable to released position by means of a bell crank lever 40 operatively connected with the catch 38, as shown.

In order to hold the handle 27 in proper position during the reversal of the mold, a catch 41 similar in construction to the catch 38, is pivotally mounted on the crank or handle 27 for engagement with locking recesses or pockets 42, formed in a sleeve 45, there being a bell crank lever 43 pivotally mounted on the handle and operatively connected with the catch 41 through the medium of a flexible element 44.

The sleeve or bushing 45 extends within the bearing 6 and entirely surrounds the adjacent portion of the operating shaft 8.

In operating the machine, cement or other plastic material is shoveled or otherwise introduced into the molding compartment and the pallet 29 positioned on the upper edges of the walls thereof, after which the operating handle 27 is partially rotated in one direction which causes the clamping fingers 28 to engage the pallet and hold the same firmly in position on the walls of the mold during the inward movement of said walls to effect the compression of the concrete in the molding compartment. The locking catch 38 is then released from the recess 39 and the handle 37 rotated to revolve the mold so that the pallet side thereof will be disposed face down.

When the mold is in inverted position, the operator moves the lever 36 in the direction

of the arrow indicated in Fig. 3 of the drawings, which elevates the carrier to a position beneath the mold, and in which position the pallet carrying the molded product may be deposited thereon by rotating the crank handle 27 in the opposite direction, which movement of the handle 27 retracts the side and end walls of the mold and at the same time releases the clamping fingers 28 from engagement with the pallet so that the pallet carrying the molded product will rest on the carrier, as before stated. The operator then moves the lever 36 in the opposite direction to arrow indicated in Fig. 1 of the drawings, which lowers the carrier and block so that the latter may be readily transferred to a suitable truck for delivery to the drying racks. After the molded product has been transferred from the carrier to the truck, the handle 37 is rotated to return the mold to normal position, and in which position it will be locked against accidental tilting movement by the catch 38 and thus be in position to receive additional cement or concrete when it is desired to form another block.

If desired, the mold may be employed for making cement bricks, by positioning one or more transverse partitions within the mold, and in some cases the mold may be used for making hollow blocks or bricks by placing suitable core members on the bottom plate prior to introducing the cement or other plastic material within the molding compartment.

While the machine is principally designed for making relatively shallow blocks, the same may be used with equally good results for making blocks of any desired thickness by adding auxiliary side and end sections to the mold, without departing from the spirit of the invention.

Having thus described the invention, what is claimed as new is:

1. A machine of the class described, including a mold having movable side and end walls, means for simultaneously moving said walls inwardly to effect the compression of the concrete in the mold, a carrier, and means for rotating the mold to deliver the molded product to said carrier.

2. A machine of the class described, including a mold having movable side and end walls, means for simultaneously moving said walls inwardly to effect the compression of the concrete in the mold, a carrier, means for rotating the mold to deliver the molded product to the carrier, and means for locking the mold in normal and reversed positions.

3. A machine of the class described, including a mold having movable side and end walls, means operatively connected with said walls for simultaneously moving said walls inwardly to effect the compression of the

material in the molding compartment, means for reversing the mold, and a carrier movable to operative position beneath the mold when the latter is reversed.

4. A machine of the class described, including a mold having movable side and end walls, means operatively connected with said walls for simultaneously moving all of the walls inwardly to effect the compression of the concrete in the molding compartment, means for reversing the mold, a carrier movable to a position beneath the mold when the latter is reversed, means for locking the mold in normal position during the compression of the concrete, and means for locking the mold in reversed position.

5. A machine of the class described, including a mold having movable side and end walls, a pallet forming a closure for the top of the molding compartment, means for successively clamping the pallet in position on the mold and moving said walls inwardly to effect the compression of the concrete in the molding compartment, and means for rotating the mold to permit the discharge of the molded product.

6. A machine of the class described including a mold having movable side and end walls, a pallet forming a closure for the molding compartment, means operatively connected with said walls for first clamping the pallet in position on the mold and subsequently moving the walls inwardly to effect the compression of the concrete, means for rotating the mold to effect the reversal thereof, and a carrier movable to a position beneath the mold when the latter is reversed.

7. A machine of the class described, including a mold having movable side and end walls, a pallet forming a closure for the molding compartment, means for first clamping the pallet in position on the mold and subsequently moving the walls inwardly to effect the compression of the concrete, means for rotating the mold to reverse the position thereof, and a carrier movable to a position beneath the mold when the latter is reversed, said pallet clamping and wall operating means being actuated to release the molded product when the mold is reversed, thereby to permit the pallet carrying the mold to be deposited on the carrier.

8. A machine of the class described including a mold having a supporting base, corner blocks secured to the base, side and end walls normally bearing against and slidably mounted between the corner blocks to prevent the escape of material in the molding compartment, and means operatively connected with said walls for moving the latter inwardly to effect the compression of the material in said molding compartment.

9. A machine of the class described, including a mold having a supporting base and provided with corner blocks, side and

end walls slidably mounted between said corner blocks, a pallet bearing against the upper edges of the walls of the mold, and means operatively connected with the side and end walls for first clamping the pallet in engagement with the walls and subsequently actuating the walls to effect the compression of the concrete in the molding compartment.

- 10 10. A machine of the class described including a mold having a supporting base and provided with corner blocks, a pallet forming a closure for the top of the mold, a gear wheel mounted for rotation on the base of the mold, vertical shafts journaled in said base and operatively connected with the gear wheel and provided with clamping fingers adapted to engage the pallet, knee braces forming a connection between the vertical shafts and the walls of the mold to actuate the latter to effect the compression of the concrete in the molding compartment, and an operating shaft provided with a pinion arranged to engage the teeth of the gear for rotating the latter to first actuate the clamping fingers and subsequently actuate the knee braces.

11. A machine of the class described including a mold having a base provided with corner pieces, side and end walls slidably mounted between said corner pieces, a pallet resting on the walls of the mold, vertical shafts journaled in the base and provided with clamping fingers adapted to engage the pallet, knee braces forming a connection between the vertical shafts and the adjacent walls of the mold, and means operatively connected with said shafts for first actuating the clamping fingers and subsequently moving the walls of the mold inwardly to effect the compression of the material in the molding compartment.

12. A machine of the class described including a supporting frame, a mold mounted for rotation on the frame and provided with movable side and end walls, a pallet forming a closure for the molding compartment, means operatively connected with the walls of the mold for first clamping the pallet in position on the mold and subsequently moving all of said walls inwardly to effect the compression of the material in the molding compartment, and a carrier pivotally mounted on the frame and adapted to receive the molded product when the actuating means is released.

13. A machine of the class described including a supporting frame, an operating shaft journaled on one side of the frame and provided with a crank handle, a stub shaft journaled on the other side of the frame and provided with a similar handle, a mold including a base having a connection with the operating handle and stub shaft respectively, corner pieces carried by the base, side and

end walls slidably mounted between the corner pieces, a pallet engaging the side and end walls and forming a closure for the molding compartment, means for clamping the pallet in position on the mold, means operatively connected with the operating shaft, mold walls and pallet clamping means respectively, for first actuating the pallet clamping means and subsequently moving the walls of the mold inwardly to effect the compression of the material in the molding compartment, and a carrier pivotally mounted on the frame and movable to a position beneath the mold to receive the molded product.

14. A machine of the class described including a supporting frame, an operating shaft journaled in one side of the frame and provided with a beveled gear, a stud shaft journaled in the other side of the frame and provided with an operating shaft, a mold including a base secured to the operating shaft and stub shaft respectively, corner pieces carried by the base, side and end walls slidably mounted between the corner pieces, a pallet bearing against said walls and forming a closure for the molding compartment, means for clamping the pallet in operative position, a gear wheel mounted for rotation on the base and meshing with the pinion on the operating shaft, and means operatively connected with the gear wheel, mold walls and pallet clamping means for first actuating the pallet clamping means and subsequently moving the mold walls inwardly to effect the compression of the material in the molding compartment.

15. A machine of the class described including a supporting frame, an operating shaft journaled on one side of the frame and provided with a pinion, a stub shaft journaled on the other side of the frame and provided with a terminal crank, a mold having a base secured to the operating shaft and stub shaft respectively, corner pieces carried by the base, side and end walls operating between the corner pieces, a pallet forming a closure for the molding compartment, a gear wheel journaled on the base and meshing with the pinion on the operating shaft, vertical shafts journaled in the supporting base and provided with clamping fingers for engagement with the pallet, knee braces forming a connection between the vertical shafts and the adjacent walls of the mold, and pivotally connected rods forming a connection between the lower ends of the shafts and the peripheral edge of the gear wheel.

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

WILLIAM D. WISE. [L. s.]

Witnesses:

C. R. STONE,
ADELINE E. ALWARD.