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2,389,673

BLOCK MOLDING MACHINE

Filed April 17, 1945

2 Sheets-Sheet 1

Fig. 1.

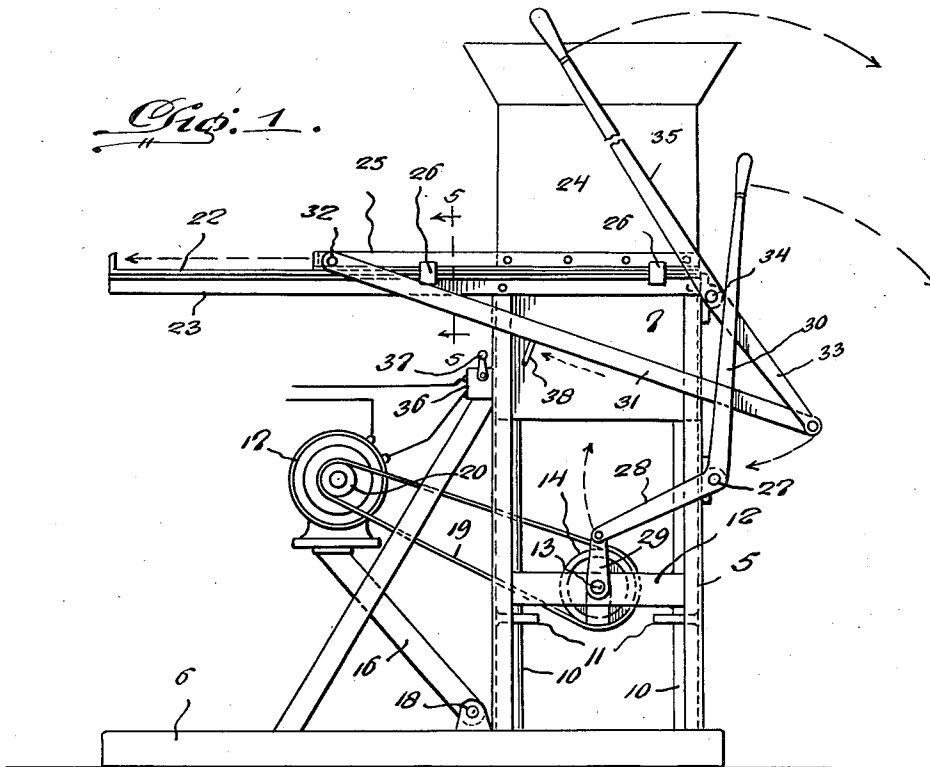


Fig. 2.

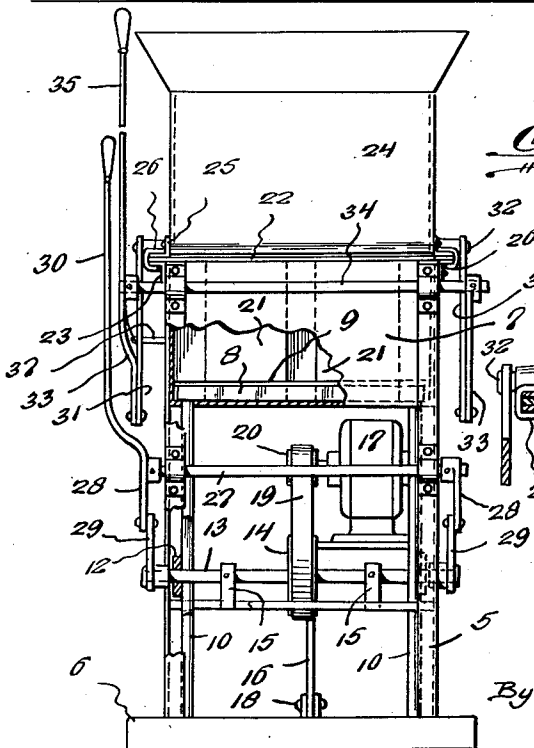
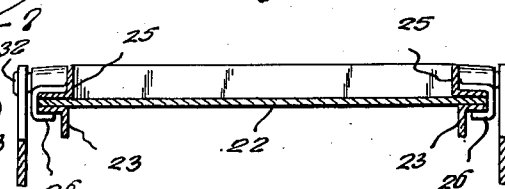


Fig. 5.



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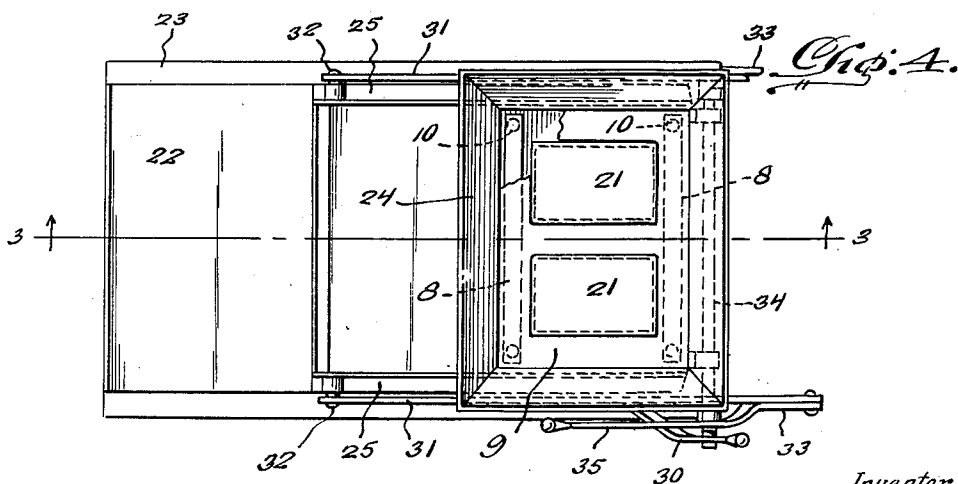
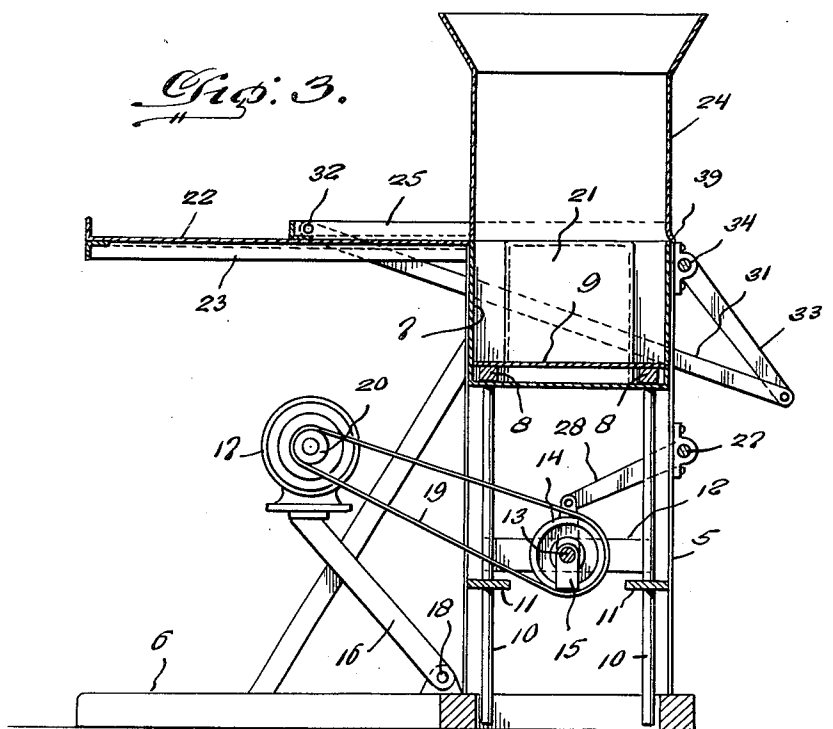
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2 Sheets-Sheet 2



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BLOCK MOLDING MACHINE

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5 Claims. (Cl. 25-41)

This invention relates to machines for making hollow blocks of cementitious material, and has particular reference to machines of that type embodying a stationary mold box, a horizontally sliding hopper, for feeding the material to the mold box, shiftable from over the latter when it is desired to eject the block from the mold, and vertically movable stripper means disposed in the mold box for ejecting the block upwardly from the latter.

The primary object of the present invention is to provide a machine of the above kind which is extremely simple and durable in construction, efficient in operation, and otherwise well adapted to meet with the requirements for successful commercial use.

A further object is to provide means for rapidly vibrating the stripper vertically so as to effectively compact the material in the mold box.

Another object is to provide a machine of the above kind in which the stripper vibrating means includes a driving motor, and wherein means is provided to automatically render said motor operative when the feed hopper is moved to a position over the mold box and to render the same inoperative when the feed hopper is moved from over the mold box to permit ejection of the block from the latter.

Further objects and features of the invention will become apparent from the following description, when considered in connection with the accompanying drawings.

In the drawings:

Figure 1 is a side elevational view of a block casting machine constructed in accordance with the present invention.

Figure 2 is an end elevation, partly broken away and in section, looking to the left of Figure 1.

Figure 3 is a vertical section taken on line 3-3 of Figure 4.

Figure 4 is a top plan view, partly broken away, of the machine shown in Figure 1.

Figure 5 is a transverse vertical section taken on line 5-5 of Figure 1.

Referring in detail to the drawings, the illustrated embodiment of the present invention includes a suitable frame 5 mounted on a base 6 and having a mold box 7 rigidly mounted in the upper portion thereof. Stripper means is vertically movable in the mold box and includes spaced bars 8 having a pallet 9 disposed thereon. Rods 10 are rigid with and depend from the ends of bars 8 and slidably extend through the bottom of mold box 7 and guides 11 carried by the frame 5

below the mold box. At each side of the machine, the guide rods 10 are rigidly connected by cross bars 12 in which is journaled a transverse horizontal shaft 13 having a pulley 14 and off-center weights 15 secured thereon.

A vertically swinging support 16 for a motor 17 is hinged at 18 to the base 6, and a power transmission belt 19 extends around the pulley and a pulley 20 on the power shaft of motor 17. The motor 17 and its support 16 gravitate to always keep the belt 19 in a taut or tightened condition, and when the shaft 13 is driven by the motor, the off-center weights 15 cause rapid vibration of the stripper bars 8 and pallet 9 to cause the cementitious material in mold box 7 to settle in a compacted condition. Pallet 9 surrounds the cores 21 of the mold box and is vertically movable in the latter relative to said cores.

Rigid with and extending forwardly from the top of frame 5 is a horizontal apron 22 supported by bars 23, and slidable on this apron is a feed hopper 24 having forwardly projecting bars 25 secured to the sides thereof at the bottom of the same. The bars 25 rest on apron 22, and guide members 26 are fixed to said bars 25 and embrace the side edge portions of apron 22 and its supporting bars 23 to guide the feed hopper in its movement onto apron 22 from over the mold box 7 and off of apron 22 to a position over said mold box.

Journaled on the back of frame 5 is a rock-shaft 27 connected by arms 28 and links 29 with the ends of shaft 13, one of said arms forming part of a hand lever 30 by means of which the stripper bars 8 and pallet 9 are raised to eject the block from the mold box.

Links 31 are pivoted at their forward ends to the forward ends of bars 25, as at 32, and the rear ends of these links are pivoted to arms 33 secured on the ends of a transverse rockshaft 34 journaled on the back of frame 5 near the top of the latter. One of the arms 33 forms part of a hand lever 35 by means of which the feed hopper 24 is shifted to a position over the mold box 7 or from over said mold box onto apron 22.

Mounted on the front of frame 5 is a switch 36 which controls the motor 17 and includes a contact actuating element 37 arranged in the path of a lug 38 carried by one of the links 31. The arrangement is such that when the feed hopper 24 is moved from over the mold box 7 onto apron 22, lug 38 engages and actuates element 37 so as to render the motor inoperative, and when the feed hopper is moved to a position over the mold box said lug actuates element 37 to render the

motor operative. The lower edge 39 of the rear wall of hopper 24 forms a scraper for smoothing the top of the block when said hopper is shifted forwardly from the mold box onto apron 22.

In operation, assuming that the hopper 24 has been shifted onto apron 22 and filled with cementitious material the lever 30 is operated to lower stripper bars 8 and pallet 9. The hopper 24 is then moved over the mold box 7 by operation of lever 35, lug 38 actuating switch element 37 so as to throw motor 17 into operation. Motor 17 actuates shaft 13, and weights 15 cause rapid vertical vibration of the stripper bars 8 and pallet 9 so as to cause the material to settle in compacted condition in the mold box as it feeds into the latter from the hopper. When the mold box is filled and the material is sufficiently compacted therein, the hopper is shifted from over the mold box onto apron 22. When this is done, switch 36 is actuated to stop motor 17, and when the material has set sufficiently, the molded block or hollow tile is ejected upwardly from the mold box by operating lever 30 so as to raise pallet 9 to the top of the mold box. The block is removed from the pallet, and then the same cycle of operation is repeated to produce another block. As the shaft 13 moves vertically, motor 17 and its support 16 are raised or allowed to lower by gravity to keep the belt 19 taut.

From the foregoing description, it will be seen that the present machine is such as to effectively carry out the stated objects of the invention. Minor changes in form and details of construction may be resorted to, such as fall within the spirit and scope of the invention as claimed.

What I claim is:

1. A machine for making hollow blocks, in-

cluding, in combination, a mold box, vertically movable stripper means operable in the mold box, motor operated means for rapidly vibrating said stripper means vertically, and manually operable means to elevate said stripper means to eject the block from the mold box.

2. The construction defined in claim 1, wherein the stripper means vibrating means includes a shaft vertically movable with the stripper means and having off-center weights.

3. The construction defined in claim 1, wherein the stripper means vibrating means includes a shaft vertically movable with the stripper means and having off-center weights, a vertically swinging support for the motor of said motor operated means, and driving means between said motor and said shaft including a driving belt maintained in tightened condition by gravitation of the motor and its support.

4. The construction defined in claim 1, in combination with an apron, a feed hopper movable over the mold box and from over the mold box onto the apron, a switch for controlling the motor of said motor operated means, and manually operable means for moving the hopper including an element arranged to actuate said switch so as to stop the motor when the hopper is moved onto the apron and to start the motor when the hopper is moved to a position over the mold box.

5. The construction defined in claim 1, wherein the stripper means includes transverse pallet supporting bars having rigid guide rods depending from the ends thereof, and guides for said rods, said vibrating means including a shaft supported by said guide rods and having off-center weights.

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