J. B. HUNT.

BLOCK MOLDING MACHINE.

APPLICATION FILED NOV. 9, 1914.

1,131,840. Patented Mar. 16, 1915.

Fig. 1.

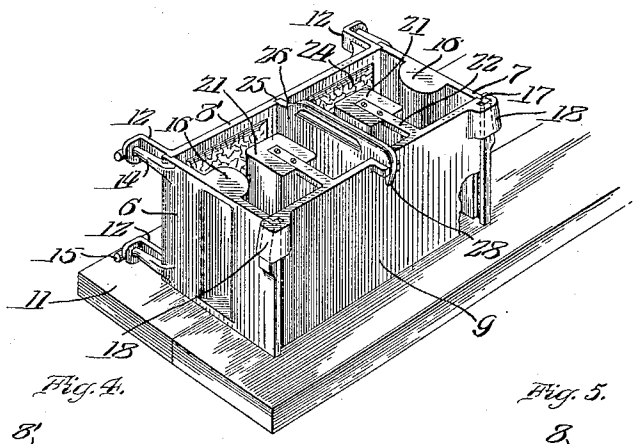


Fig. 4.

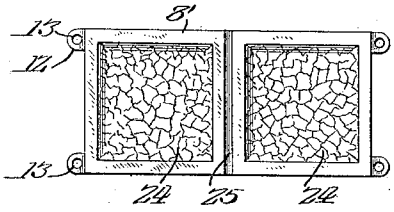


Fig. 5.

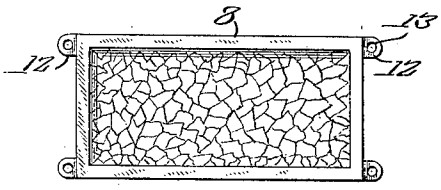


Fig. 2.

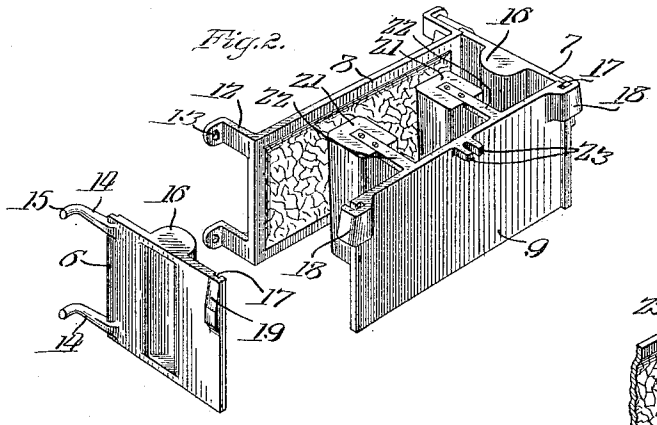
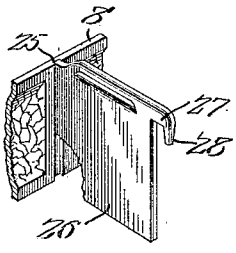


Fig. 3.



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BLOCK-MOLDING MACHINE.

1,131,840. Specification of Letters Patent. Patented Mar. 16, 1915.

Application filed November 9, 1914. Serial No. 871,044.

To all whom it may concern:

Be it known that I, JOHN B. HUNT, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Block-Molding Machines, of which the following is a specification.

This invention relates to machines for molding blocks and has more particular reference to machines adapted to mold concrete building blocks.

One of the primary purposes of my invention is to provide a block molding machine of simple and improved construction, wherein the mold is of such design that one or a plurality of blocks may be formed with few operations and to so construct the machine that its comprises but a small number of parts whereby it may be manufactured at a low cost.

More particularly, as one of the objects of my invention, I aim to provide in a molding machine a rectangular mold in which two opposite walls are so mounted as to be movable outwardly for the purpose of drawing end cores from the block being molded, a wall slidably mounted, and a core within the inclosure of the mold and being connected to said wall, whereby upon drawing the said wall from the mold the core will be likewise drawn. I also aim to provide a molding machine in which a plurality of building blocks may be formed with the same number of operations as is used when forming a single block; and with this end in view I provide a rectangular mold having a wall thereof slidably mounted on ways parallel with the plane of the wall so that it may be guided while being drawn from the mold, a plurality of cores located spaced apart within the inclosure of the mold and being connected to said slidable wall, and a detachable division-board interposed between the said cores dividing the mold into two compartments and being connected to said slidable wall, whereby upon drawing the wall from the mold, the cores and division-board will be likewise drawn, the division-board being entirely removed from the combination when it is desired to mold a single block.

Another object of my invention is to provide novel means for interlocking the walls of a mold whereby the walls may be locked in operative position without the use of auxiliary or detachable fastening means.

A further object is to provide in a molding machine having one wall slidably mounted on walls which are swingable outwardly, means for automatically interlocking these walls when the slidable wall is moved to its operative position and for automatically releasing said interlocking by the action of drawing the slidable wall from the mold.

A further object is to provide a novel means for hingedly connecting two opposite walls of a mold with a single wall whereby the two walls may be swung outwardly a predetermined distance whereby said two walls will be disconnected from the single wall upon being swung past said predetermined distance.

Other objects of my invention will be apparent as the same becomes better understood by reference to the following description when considered in view of the accompanying drawings, wherein—

Figure 1 is a view in perspective of a molding machine embodying the features of my invention, the mold being arranged to form two blocks; Fig. 2 is a view in perspective showing the machine when arranged for molding a single block, one of the end walls being shown detached from the mold; Fig. 3 is a fragmentary view in perspective illustrating the division-board and the manner of mounting it in connection with the side walls of the mold; Fig. 4 is a face view of the side wall used when molding two blocks, and Fig. 5 is a face view of the side wall used when molding a single block.

The molding machine is rectangular in form and comprises mainly, end walls 6 and 7 and side walls 8 and 9, the construction of which and the means of connecting them together being more fully described hereinafter. The machine is adapted to rest on any suitable pallet or level surface 11 upon which the block molded by the machine will rest after the machine has been removed therefrom.

The side wall 8 forms the face of the block and is usually provided with a design which in the present instance is shown as that of a rock facing illustrated in Figs. 2 and 5. The said side wall is provided at each end with a pair of arms 12 extending

outwardly at right angles to the wall, each arm being formed with an offset end provided with an aperture 13.

The end walls 6 and 7 are each provided at one end with arms 14 extending laterally therefrom, these arms terminating in hooks 15 which are adapted to locate in the apertures 13 of the arms 12 whereby the end walls are hingedly connected to the side wall 8. It will be seen that with this construction the end walls may swing outwardly from the block being molded, and since their pivot axes are considerably spaced from the adjacent corner of the block, the portions of the end walls adjacent said corner will be withdrawn a considerable distance from said corner of the box thereby insuring against marring or dislodging these corners when the mold is finally removed from the block. It will also be seen that by continuing the outward swinging movement of the end walls, the said walls may be detached from the wall 8, by reason of the hook members 15 being withdrawn from the apertures 13. Each end wall is formed on its inner side with an end core 16 and at the inner side of its outer end with a groove or way 17 extending parallel with the edge of said outer ends. The side wall 9 is slidably mounted in said grooves 17 to permit the said wall to be drawn from the mold and guided while being so drawn. Means are provided for interlocking the wall 9 with the end walls when the said wall 9 is moved to operative position. These means comprising arms 18 formed on the upper portion of the ends of the side wall 9 are shaped to engage cam faces 19 located on the outer sides of the end walls 6 and 7. Said cam faces are inclined so as to be tapered outwardly from the top of the end walls, and the arms 18 are shaped with a taper corresponding with that of the cam faces 19. It is apparent that upon moving the side wall 9 to operative position the arms 18 will engage the cam faces 19 drawing the end walls together and will lock the said side wall with the end walls, and that when the said side wall is moved initially to be withdrawn from the mold the arms 18 will be disengaged from the cam faces 19, thus permitting the end walls to swing outwardly a slight distance so that its grooved portion will not be binding upon the ends of the side wall as the same is being removed from the mold. It is obvious that the fastening means 18—19 need not necessarily be positioned at the top of the walls but might be positioned at any other point along the edges thereof and perform substantially the same functions.

A pair of center core-blocks 21 are located spaced apart within the inclosure of the mold, these cores extending from the base to the top of the mold and being formed with a slight draft so that they may be easily drawn from the top of the mold. The said cores are fixedly attached to the side wall 9 by arms 22 which hold the cores rigidly in fixed positions and draw the cores from the mold upon the side wall being removed.

The above described machine is adapted to mold a single building block which would contain two center cores formed by the core-blocks 21 and two end cores formed by the core-blocks 16. In making this single block, after the mold is in operative position and has been filled with concrete or other plastic material and the same is suitably rammed, the operator will loosen the side wall 9 and the core-blocks 21 from the concrete by rapping upwardly on the laterally projecting studs 23 located centrally on the upper outer edge of the side wall 9. This also disengages the arms 18 from the cam faces 19, and the side wall is drawn from the mold by the operator grasping the said wall at its lug portions 23. When the side wall and core-blocks 21 have been removed, the end walls 6 and 7 may be swung outwardly thereby withdrawing the core-blocks 16 from the molded block, and the said end walls together with the side wall 8 may be withdrawn together leaving the molded block resting upon the pallet 11.

When it is desired to mold a plurality of building blocks in the mold, the end walls 6 and 7 would be detached from the side wall 8 in the manner above described and would be attached to the side wall 8′ which is constructed similar to the side wall 8 with the exception that it is provided with a plurality of separate rock-face plates 24 which are separated by a vertical groove 25 which divides the side wall into two equal block-faces. The side wall 9 would then be mounted in connection with the end walls 6 and 7, thus completing the outer casing of the mold and providing two center core-blocks, as is shown in Fig. 1. A division-board 26 is adapted to be placed in the mold intermediate the center core-blocks for dividing the mold into two compartments whereby two separate molds may be formed. The said division-board is detachably mounted in connection with the mold and is held in operative position by having one edge thereof slidably mounted in the groove 25, its opposite edge merely abutting the inner side of the wall 9, and by having a lateral extension 27 at its upper end adjacent the side wall 9 provided with a depending lug 28 which fits between the lugs 23 on the side wall. The division-board is so held in connection with the side wall 9 that upon drawing the said side wall from the mold in the manner above described, the division wall will likewise be drawn together with the center core-blocks. The side wall 9, division-board and center core-

blocks having been removed in one operation, the end walls 6 and 7 would be swung outwardly and removed from the pallet together with the side wall 8′, thus leaving the two complete blocks resting upon the pallet.

From the foregoing, it will be apparent that a simple device is provided whereby either one or a plurality of cored building blocks may be molded with very few operations. In block molding machines in ordinary use the center core-blocks are removed in an operation separate from the removing of the mold, and by the arrangement and construction of the mold which I have provided, the center core-blocks will be drawn upon drawing one of the side walls from the mold. If it should be desired, instead of employing two center core-blocks 21 in forming a single block, a single center core-block might be used and would occupy substantially the area of the combined core-blocks 21 and the space intermediate the same. This construction in order to carry out the molding of a plurality of blocks, would either necessitate the division-board being shaped at its central portion to fit over the center core or the provision of an auxiliary side wall 9 provided with a plurality of center cores as is shown in the drawings. It is further manifest that by the provision of means for interlocking the walls whereby the locking and unlocking is automatically effected, the molding operation is further simplified.

I claim:

1. A machine for molding blocks, comprising a rectangular mold one side wall of which is flexibly connected at its ends to the end walls, a core disposed within the casing and being fixedly connected to the other side wall, and means for slidably mounting the last named side wall in connection with the end walls, whereby the said side wall may be drawn from the mold together with said core and the end walls may be swung outwardly away from the block which is formed by the mold.

2. A machine for molding blocks, comprising a rectangular mold one side wall of which is flexibly connected at its ends to end walls, the other side wall being slidably mounted in connection with the end walls on ways parallel with the plane of the side wall so that the slidable side wall may be drawn from the mold, a division-board connected to the slidable side wall and being arranged to divide the inclosure of the mold into two compartments, and a core located in each compartment and being connected to said slidable side wall, whereby the side wall may be drawn from the mold together with the division-board and cores.

3. A machine for molding building blocks and the like, comprising a mold having one wall thereof slidably mounted to draw from the mold in the plane of said wall, and a core located within the mold and being connected to said wall whereby to be drawn with the drawing of said wall.

4. A machine for molding building blocks and the like, comprising a mold having one wall thereof slidably mounted to draw from the mold in the plane of said wall, a division-board located within the mold and dividing the inclosure thereof into two distinct compartments, and means connecting the division-board to said wall comprising a member extending from the division-board outwardly over the top of the wall and means fixed on the outer side of the wall and shaped to engage said member for holding the same from lateral displacement and serving as means by which to draw the wall and division-board from the mold simultaneously.

5. A machine for molding building blocks and the like, comprising a mold formed of side and end walls, one of the side walls being flexibly connected at its ends to the end walls to permit the said end walls to swing outwardly, the other side wall being slidably mounted at its ends in ways on the end walls parallel with the plane of the side wall so that the said side wall may be drawn from the mold, and a core located in the mold and being fixedly connected to said slidable side wall whereby to be drawn from the mold by drawing of said side wall.

6. A machine for molding blocks comprising a rectangular mold, one of the walls of the mold being flexibly connected at its ends to the adjoining walls, the wall opposite the first named wall being slidably mounted at its ends in ways at the inner sides of said adjoining walls and arranged parallel with the plane of the slidable wall, a core located within the mold and being connected to the slidable wall to be drawn therewith, and means for holding the said adjoining walls in connection with the slidable wall.

7. A machine for molding blocks comprising a rectangular mold, one of the walls of the mold being flexibly connected at its ends to the adjoining walls whereby said adjoining walls may swing outwardly, the wall opposite the first named wall being slidably mounted at its ends in ways at the inner sides of said adjoining walls and arranged parallel with the plane of the slidable wall, said adjoining walls having each an inclined cam face on its outer side, and means carried by the slidable wall for engaging said inclined cam faces, the incline of said cam faces being arranged to lock the slidable wall in connection with the adjoining walls when the former wall has been moved to operative position.

8. A machine for molding blocks comprising a rectangular mold, one of the walls of the mold being flexibly connected at its ends

to the adjoining walls whereby said adjoining walls may swing outwardly, the wall opposite the first named wall being slidably mounted at its ends in ways at the inner sides of said adjoining walls and arranged parallel with the plane of the slidable wall, and means for automatically interlocking the slidable wall in connection with the said adjoining walls when the former wall has been moved to operative position.

9. A machine for molding blocks, comprising a rectangular mold two opposite walls of which are movable outwardly with respect to the form being molded, one of the walls connecting said opposite walls being slidably mounted on ways parallel with the plane of the slidable wall, a core located within the mold and being connected to the slidable wall whereby to be drawn from the mold by drawing of the slidable wall therefrom, and means for interlocking the said opposite walls and the slidable wall by movement of the latter to its operative position.

10. A machine for molding blocks, comprising a rectangular mold formed of end and side walls, the end walls being flexibly connected to one of the side walls so as to be movable outwardly, the other side wall being slidably mounted on ways parallel with its plane so that the side wall may be drawn from the mold, and a division-board located within the mold dividing the same into two compartments, the division-board being slidably mounted in ways on the first named side wall and being connected to the slidable side wall whereby to be drawn from the mold when the latter is drawn.

11. A machine for molding blocks, comprising a rectangular mold two opposite walls of which are movable outwardly with respect to the form being molded, one of the walls connecting said opposite walls being slidably mounted on ways parallel with the plane of the slidable wall, a core located within the mold and being connected to the slidable wall whereby to be drawn from the mold by drawing of the slidable wall therefrom, and means for interlocking the said opposite walls and the slidable wall when the latter is in operative position and for entirely releasing the interlocking connection by the action of drawing the slidable wall from the mold.

12. The combination of a mold adapted for molding one or a plurality of blocks and having side and end walls, one of the side walls having a vertically disposed way intermediate its ends, end walls flexibly connected to one of the said side walls so as to be swingable outwardly, the side wall opposite said flexibly connected side wall being slidably mounted on the end walls on vertical ways, and a division-board removably connected to the slidable side wall and being slidably mounted on the said vertical way on said side wall, whereby when the slidable wall is drawn from the mold the division-board will be likewise drawn.

13. A machine for molding blocks comprising a mold formed of end and side walls, the end walls being each provided at its inner side with an end core and being flexibly connected to one of the side walls so as to be movable outwardly, the other side wall being slidably mounted on ways parallel with the plane of the side wall, and a core located in the mold and being connected to the slidable side wall, whereby the latter side wall and the core may be simultaneously drawn from the mold and the end walls may be swung outwardly to draw their cores from the form being molded.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."