Dec. 12, 1950 R. LEGGAT 2,533,479

MACHINE FOR MOLDING BUILDING BLOCKS OF CONCRETE OR LIKE CEMENTITIOUS MATERIAL

Filed July 22, 1948 2 Sheets-Sheet 1

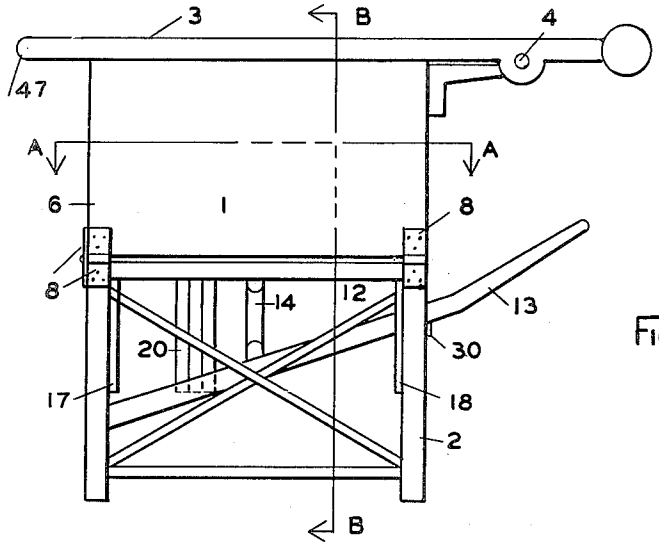


FIG I

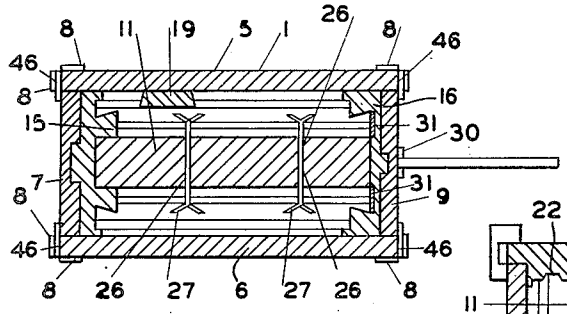


FIG II

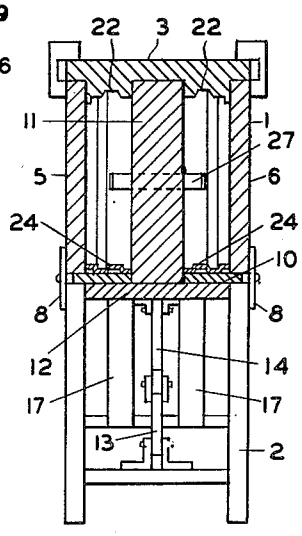


FIG III

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MACHINE FOR MOLDING BUILDING BLOCKS OF CONCRETE OR LIKE CEMENTITIOUS MATERIAL

Filed July 22, 1948 2 Sheets-Sheet 2

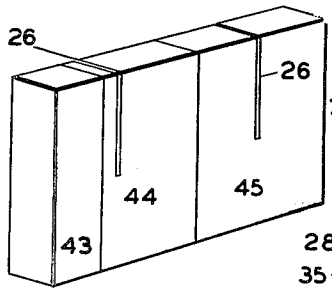


FIG V

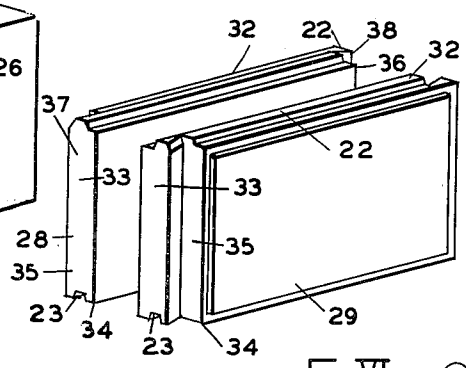


FIG VI

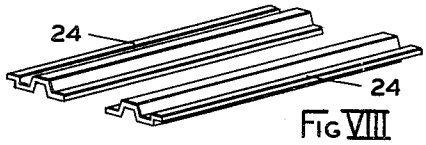


FIG VIII

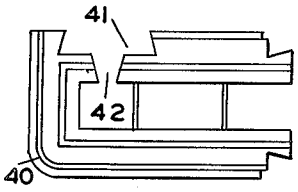


FIG VII

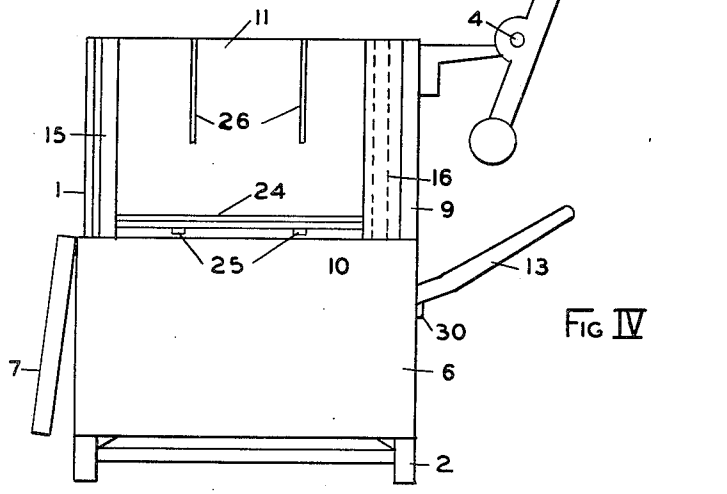


FIG IV

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Patented Dec. 12, 1950

2,533,479

UNITED STATES PATENT OFFICE

2,533,479

MACHINE FOR MOLDING BUILDING BLOCKS OF CONCRETE OR LIKE CEMENTITIOUS MATERIAL

Robert Leggat, Pretoria, Transvaal, Union of South Africa

Application July 22, 1948, Serial No. 40,136

In the Union of South Africa August 12, 1947

2 Claims. (Cl. 25—41)

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This invention relates to a machine for moulding building blocks from concrete or like cementitious material and in particular to a manually operated machine.

The object of the invention is to provide a machine capable of producing blocks comprising two slabs which in their vertical and normal position are fastened together by transverse ties having their ends moulded into the slabs and for producing modified forms of similar blocks such as are used for corners and other positions in a building. Said blocks have their ends and top and bottom surfaces shaped to lock into contiguous blocks.

The machine according to this invention consists in a moulding box having a fixed base and a hinged cover. The two side walls and the front wall are hinged to fall away from the moulded block and the base of the box is perforated to enable the core and the end and any special side moulds to be withdrawn downwardly. Removable platens are provided to form the underside and support for the finished block, the cover carries moulds to finish the top of the block and provision is made for the insertion of relieving strips to ease the downward withdrawal from the block of the end moulding pieces.

The moulds at the ends and, where necessary, in the side walls of the box are made replaceable to enable the machine to be used for blocks of different shapes to suit their position in the building.

The invention is illustrated by the accompanying diagrammatic drawings in which:

Fig. I is a side elevation of the machine.

Fig. II is a plan on A—A Fig. I.

Fig. III is a section on B—B Fig. I.

Fig. IV is a similar view to Fig. I but with parts in the open position.

Fig. V is a detail of a core for the block.

Fig. VI is an isometric view of a block of normal shape.

Fig. VII is a plan view of one modified form of block.

Fig. VIII is an isometric view of a pallet for the block of normal shape.

In the drawings 1 is the moulding box, rectangular in form, mounted in a frame 2 and provided with a lid 3 hinged at 4. The two side walls 5, 6 and the end wall 7 are hinged at 8 so that they may be made to fall away from the moulded block.

The end 9 remains rigidly connected to the frame 2. The base 10 of box 1 is fixed in position to frame 2 but it is perforated so that core

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11 for the block passes through it. 12 is a plate which carries core 11 and can be moved close up under base 10 or be carried downwardly so as to withdraw the core 11 from the box 1. Such movement is made by lever 13 and link 14. Mounted on and fixed to plate 12 are end moulding forms 15, 16 for forming the ends of the block. The base 10 is perforated for their passage and rigid slides 17, 18 allows for their support and easy sliding movement.

In addition form moulds 19 may be fixed where necessary at the sides of the box and be secured to plate 12 and guided by slides 20.

The lid 3 on its under side is provided with moulding pieces 21 to form a ridge 22 on the top of the block to correspond with the groove 23 made in the bottom of the block which is formed by a pallet 24 placed on the base 10 of the box 1. 25 are transverse recesses adapted to receive the prongs of a lifting fork for the removal of the block while mounted on pallet 24.

The core 11 is slotted down half way by slots 26 into which may be passed ties 27 for holding together the two slabs 28, 29 forming the shape of the normal block. A suitable catch 30 is provided to hold up the lever 13.

31 shows relieving strips of spring brass or similar material which are used on the face of the form 16. They are secured at their top ends in recesses in the top of end member 9, as indicated in Fig. IV. Their purpose is to form a relieving clearance between the block face 33 and the form 16 and prevent tearing of the surface of the moulded block when the form 16 with the core 11 and form 15, and 19 if used, are withdrawn by the lowering of plate 12. In other words the strip remains stationary when the form 16 is moved downwardly from the moulded block, but holds the block consolidated.

The normal blocks made by this block moulding machine are as mentioned above made of two slabs 28, 29 having their top faces 32 provided with ridges 22 and their bottom faces 34 with corresponding recesses 23.

The ends 35, 35 are normally formed with the complementary shapes of a male and female dovetail 37, 38, so that on assembly they may lock together.

The forms 15, 16 may be replaced by forms of any other shape which will leave the moulded block undamaged when they are removed by a downward movement. For example for moulding the block shown in Fig. VII, the form 15 is changed for a mould providing a form of block shown at 40. Said block or any other form of

block may have a dovetail recess 41 placed on its side so that when used at the corner of a building the block in the wall at right angles to it may be locked in place. To provide the recess the form 19 sliding on 20 may be used. Conveniently when form 19 is used on a block as shown in Fig. VII, it is extended inwards to form the gap 42 in the block In the case of the block as shown in Fig. VII the core 11 must be shortened in a manner well known in the trade. It is convenient for this purpose to have the core made up of sections such as 43, 44, 45 as shown in Fig. V, so that any portion may be withdrawn. The width of the sections will be determined by the particular shape of block required.

Innumerable moulding forms may be used in the box 1 for forming the different shaped blocks required in a building.

In use the moulding forms are fastened in position to plate 12. Plate 12 is raised also the walls of the box which are tied together as by suitable latches at 46. The ties 27 are slipped into place, the relieving strips 31 are properly positioned, and a measured or weighed quantity of the cementitious material, which should be of a damp sandy consistency, run in between the core 11 and the side walls 5, 6. When the box is full the cover 3 is slammed down to beat the material down into the box 1. Because the hinge 4 of the lid 3 is towards the form 16 the material tends to pack tighter towards 16 than towards 15 hence the use of the relieving strips 31 at this end. 47 is a handle for use in slamming down the lid 3.

If desired when the block has received its initial compression one or other of the sides 5, 6 or 7 may be lowered to enable the moulded block to be inspected. It is known to give moulded blocks a surface of, for example, plaster or of special stone or other chippings and when desired such a surface may be placed in position during this inspection by any known method, and before the box is reclosed.

When the material has been tamped down by the lid 3 until the lid descends fully onto the top of the moulding box 1 the block is properly moulded. The lid 3 is lifted and the core 11 and the forms 15, 16, and 19 if used, are withdrawn downwardly by the lowering of plate 12. These parts are relieved slightly upwardly of their

height in the well known manner to facilitate such withdrawal. That is, they taper very slightly towards their top edges. The three sides 5, 6, 7 are lowered and the block is lifted out on its pallet 24 and stacked for maturing. The parts of the machine are again placed in position to enable the next block to be moulded.

This invention provides a manually operated machine for moulding building blocks, which may, if desired, be made in special and variable shapes.

What I claim as new and desire to secure by Letters Patent is:

1. A machine for moulding building blocks comprising a moulding box, a frame supporting the box, a base for the box, and a side of the box rigidly fixed to the frame, three sides of the box hinged to the frame, a support below the base, a slotted core and moulding form, mounted on said support and perforating said base, a pallet resting on said base, a lever and linkages lowering said support, a lid for the box hinged to the side of the box fixed to the frame of the machine, and relieving strips facing the moulding forms on the side to which the lid is hinged.

2. A machine for moulding building blocks comprising a moulding box, a frame supporting the box, a base for the box, and a side of the box rigidly fixed to the frame, three sides of the box hinged to the frame, a support below the base, a slotted core and moulding forms mounted on said support and perforating said base, a pallet resting on said base, a lever and linkages lowering said support, a lid for the box hinged to the side of the box fixed to the frame of the machine, and relieving strips facing the moulding forms on the side to which the lid is hinged and fixed to the fixed side of the box.

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