

March 17, 1942.

E. F. ZUBER

2,276,558

CLOSED CAVITY END CONCRETE BLOCK MOLD

Filed Aug. 22, 1940

2 Sheets-Sheet 1

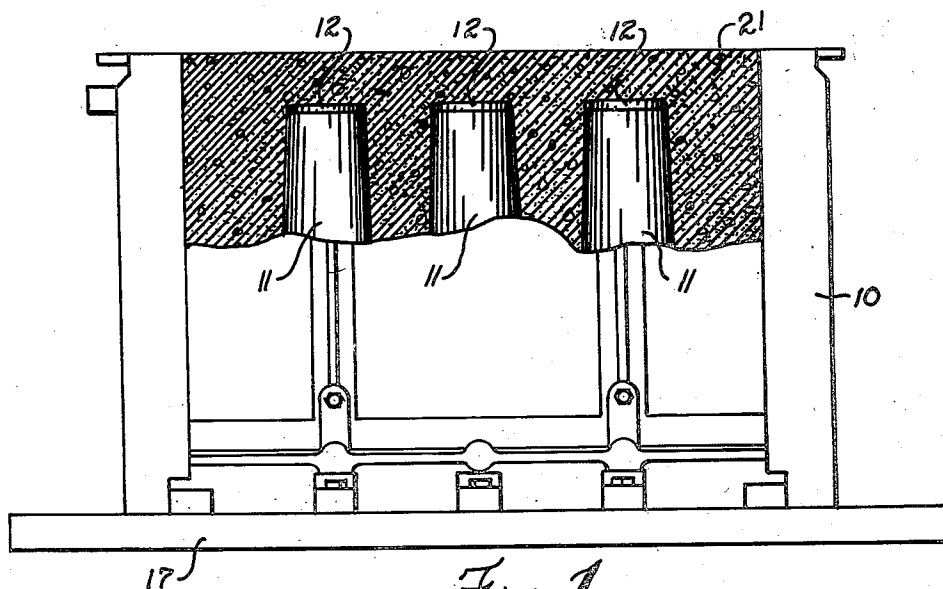


Fig. 1

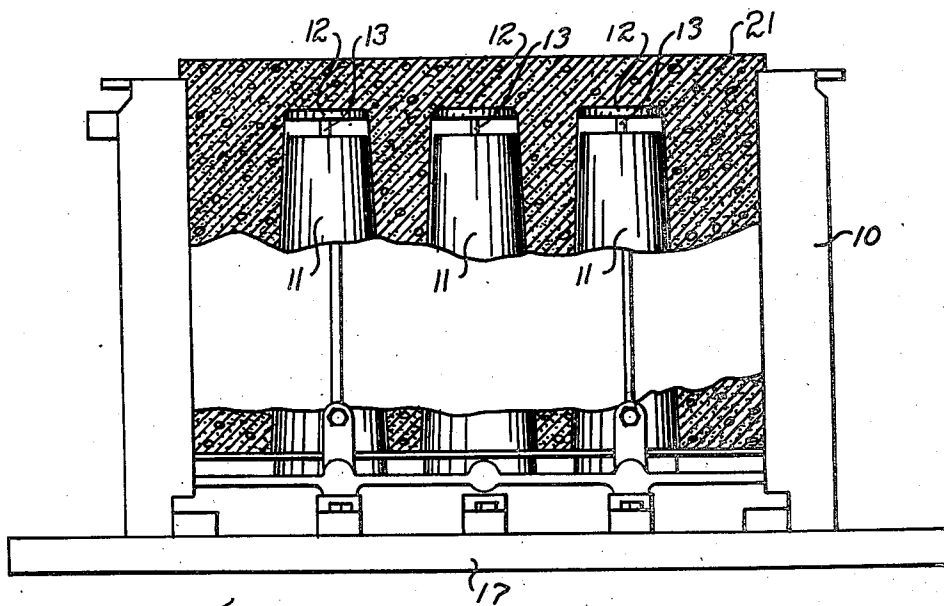


Fig. 2

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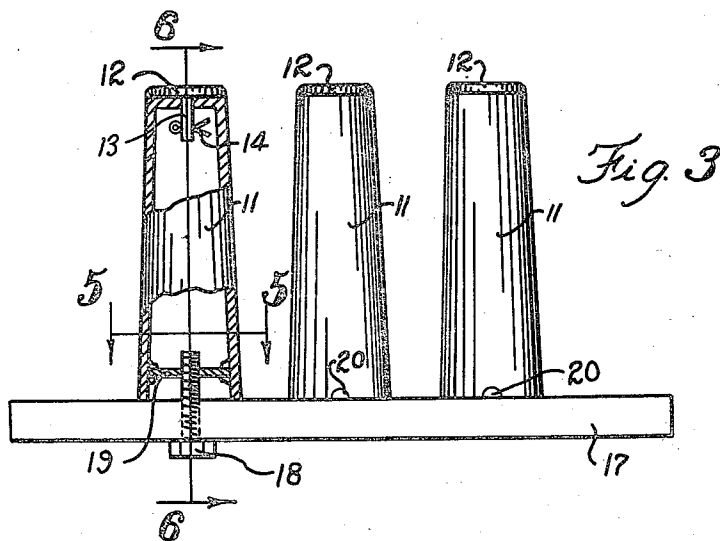
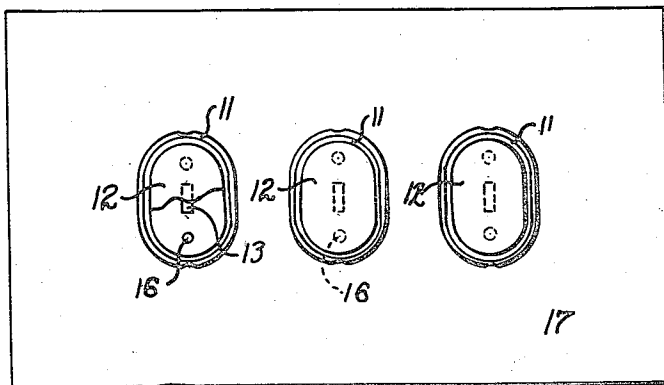
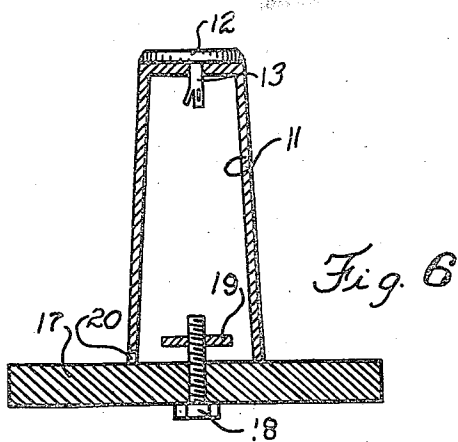
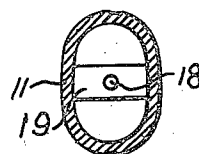
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CLOSED-CAVITY END CONCRETE BLOCK MOLD

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2 Sheets-Sheet 2



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2,276,558

CLOSED CAVITY END CONCRETE BLOCK
MOLD

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corporation of Michigan

Application August 22, 1940, Serial No. 353,645

6 Claims. (Cl. 25-41)

This invention relates to means for forming a concrete building block having the usual hollow cavities but, most importantly, having the top end solid across the upper ends of these cavities whereby the block may be used for the top course in a foundation or wall so as to prevent passage of termites or the like from the ground up through the blocks to the wooden structure thereabove.

The building code in some cities requires that on top of the last course of concrete blocks there must be build a form at least one inch high and this form filled with cement or concrete in order to form a concrete slab to seal off the hollow blocks. By use of my invention, this rather expensive operation of forming such a slab is avoided since the blocks may be molded directly to have a solid top face.

A primary advantage of the invention is that the closed end-cavity blocks may be formed just as rapidly as the customary open end-cavity blocks and without distortion or change in shape and size. My invention contemplates the shortening of the core in the block mold that forms the cavity so that the concrete may be formed directly over the ends of the cores presented. However, in order to make possible the removal of the block from the cores or the cores from the block, means must be incorporated in the mold in conjunction with the cores to prevent that part of the concrete forming the closures over the cavities from being sucked downwardly into the cavity by reason of the vacuum otherwise produced. A further important advantage of the invention is that there are no parts that have to be mechanically connected with any timing or actual operating mechanism of the block forming machine, since the structure forming the invention operates automatically.

These and many other objects and advantages of the invention will become apparent to those versed in the art in the following description of one particular form of the invention as illustrated in the accompanying drawings, wherein—

Fig. 1 is a side elevation of a concrete filled block mold, a portion of the side wall of the mold being removed;

Fig. 2, a similar view showing the block in a partially removed position;

Fig. 3, a detail in side elevation and partial section of the block cores;

Fig. 4, a top plan view;

Fig. 5, a transverse section through one core on the line 5-5 in Fig. 3; and

Fig. 6, a vertical section on the line 6-6 in Fig. 3.

Like characters of reference indicate like parts throughout the several views in the drawings.

Referring to the drawings, the mold 10 is made in the usual and well known manner to carry a plurality of cores 11 entering therein from the under side, three such cores being shown to form the standard type block. Instead of continuing these cores to the top of the mold box 10, they are cut off to terminate by their upper ends at a distance therebelow as indicated in Figs. 1 and 2. A plate 12 is placed on the top end of each of the cores 11. This plate 12 has a periphery coinciding with the periphery of the core at its top end so that the side of the plate 12 forms in effect a continuation of the side wall of the core without any offset or projection therebetween.

In order to locate and maintain the plate 12 in alignment with its core 11, a stem 13 is fixed to the under side of the plate 12 and is carried down through a slot in the top end of the core 11. In order to prevent revolution of the plate about the end of the core 11, the stem 13 is formed in a rectangular shape to fit slidably within a hole of like conformation in the end of the core 11. Preferably the stem 13 extends downwardly within the core 11 a sufficient distance to permit bending or otherwise deforming the lower end of the stem so as to limit the upward travel of the plate 12 from the core 11. In the present form, the lower end of the stem 13 is split and one side bent outwardly as indicated in Fig. 6. Of course, the stem may be drilled through to receive a cotter pin 14 as a stop. In any event the plate 12 is free to be lifted above the end of the core 11 until the stop on the stem 13 arrests further travel.

The top end of each core 11 is provided with one or more air vents or holes 16, herein shown as two in number, one on each side of the hole through which the stem 13 passes. The core 11 in each instance is secured to the floor 17 of the mold by any suitable means, herein shown as by a cap screw 18 extending up through the floor 17 and screw-threadedly engaging a bar 19 extending transversely across the hollow interior of the core and being secured to the core wall on each end by any suitable means, such as by welding. The core 11 in each instance is provided with a base air hole 20, here shown as in the lower end of the side wall immediately at the base or floor 17.

To use the invention, the cores above described

are positioned within the core box 10, as indicated in Figs. 1 and 2. Referring to Fig. 1, the cement or concrete is placed in the box 10 and tamped down in the usual manner to form the block as indicated. As will be noted, the block is closed across its upper end by reason of the cores 11 and their plates 12 terminating at an elevation below the top of the box 10 so as to permit concrete or cement to be carried entirely across and over the upper ends of the cores 11 and their plates 12 so that no opening is left in any instance from the top side of the block 21 into the top ends of the cavities formed by the cores 11.

Following the placing and tamping of the concrete, the block 21 is relatively shifted upwardly in the usual manner so as to remove it from the box 10 and the cores 11. Referring to Fig. 2, the block 21 is shown as having been shifted in relation to the box 10 a slight distance. In this initial shifting, it is to be noted that the plate 12 follows upwardly with the block due to the fact that a slight vacuum is created within the space above the plates 12 and the under side of the concrete which is in contact with the plate 12. The upper portion of the block 21 is thus supported and prevented from being pulled inwardly by the vacuum above the cores as the block 21 is relatively moved from the cores. However, the slight initial upward travel of block 21 immediately clears air holes 20 and air passes at once through these holes and upward through holes 16 to the space between cores 11 and plates 12; thence it finds its way around the edges of plates 12 and relieves the partial vacuum between plates 12 and the concrete above plates 12. To facilitate this air movement, the edges of plates 12 are beveled as shown. With the partial vacuum removed, plates 12 immediately drop back down onto the ends of cores 11 in every instance.

If the cores 11 are slightly tapered, as is quite customary to facilitate their withdrawal and as is shown in the drawings, then the initial relative travel of block 21 away from cores 11 lets air also travel along outer walls of cores 11 to reach the space between cores 11 and plates 12 without passing through holes 20 and 16.

The stops on the stems 13, of course, prevent undue travel of the plates 12 away from their cores 11 as well as prevent misalignment therewith so that the plates 12 are always automatically repositioned and ready for use in subsequent molding operations.

While I have herein shown and described my invention in the one particular form, it is obvious that structural variations may be employed without departing from the spirit of the inven-

tion and I, therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

I claim:

1. In a concrete block mold, a core, a plate on the end of the core, said plate being shiftable in relation to the core in the direction of the axis of the core, means maintaining the plate in alignment with the core, and stop means limiting the travel of the plate from the core.

2. In a concrete block mold, a core, a plate on the end of the core, said plate being shiftable in relation to the core in the direction of the axis of the core, means maintaining the plate in alignment with the core, and stop means limiting the travel of the plate from the core, said core having one or more air vents in said end under said plate.

3. In a concrete block mold, a core, a plate on the end of the core, said plate being shiftable in relation to the core in the direction of the axis of the core, means maintaining the plate in alignment with the core, and stop means limiting the travel of the plate from the core, said core having an air vent in its side wall at its base.

4. In a concrete block mold, a core, a plate on the end of the core, said plate being shiftable in relation to the core in the direction of the axis of the core, means maintaining the plate in alignment with the core, and stop means limiting the travel of the plate from the core, said core having one or more air vents in said end under said plate, said core having an air vent in its side wall at its base.

5. For molding plastic articles to have a cavity therein opening from one side of the article and closed at the other side, a tapered core having an outer transverse end wall shiftable in relation to the core in the direction of the axis of the core, said core having one or more air vents through the core opening under said wall, whereby relative movement between the article molded over the core and the core for core withdrawal allows said wall to move initially with the article until the cavity is vented through said vent.

6. For molding plastic articles to have a cavity therein opening from one side of the article and closed at the other side, a core having an outer transverse end wall shiftable in relation to the core in the direction of the axis of the core, whereby relative movement between the article molded over the core and the core for core withdrawal allows said wall to move initially with the article until the cavity is vented.

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