

April 28, 1942.

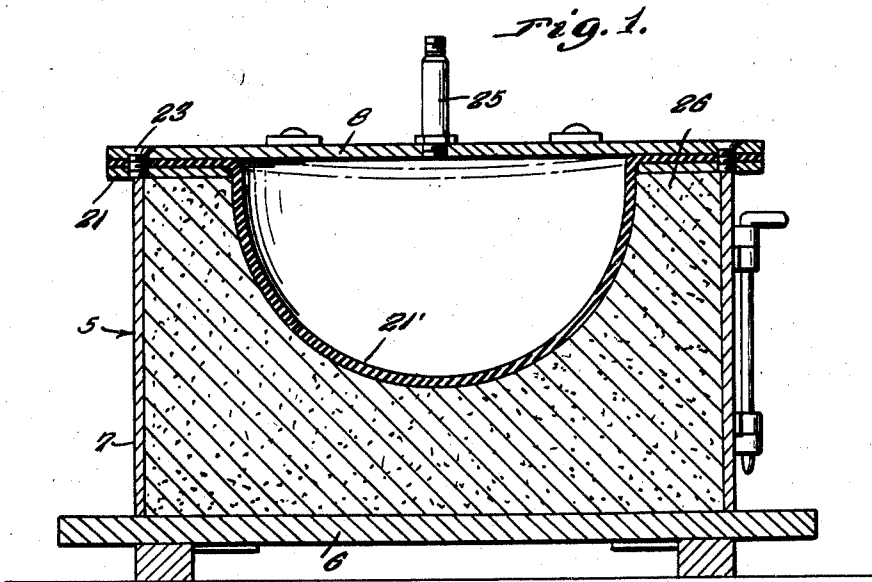
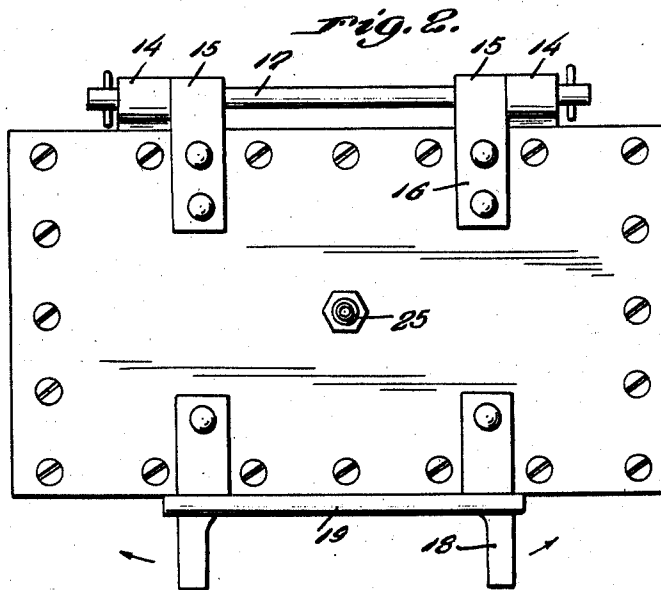
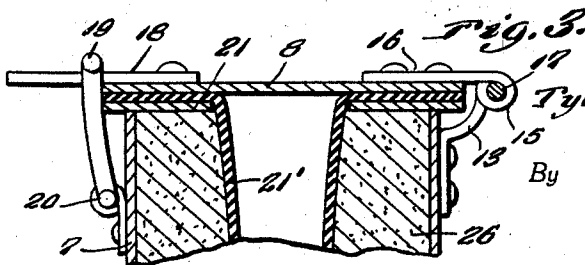
T. D. ABERCROMBIE

2,281,133

MOLD FOR CONCRETE BLOCKS

Filed March 4, 1940

3 Sheets-Sheet 1



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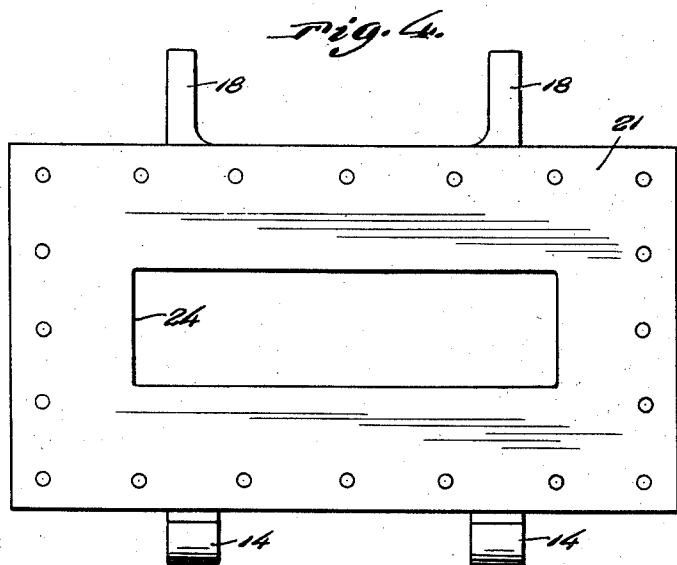
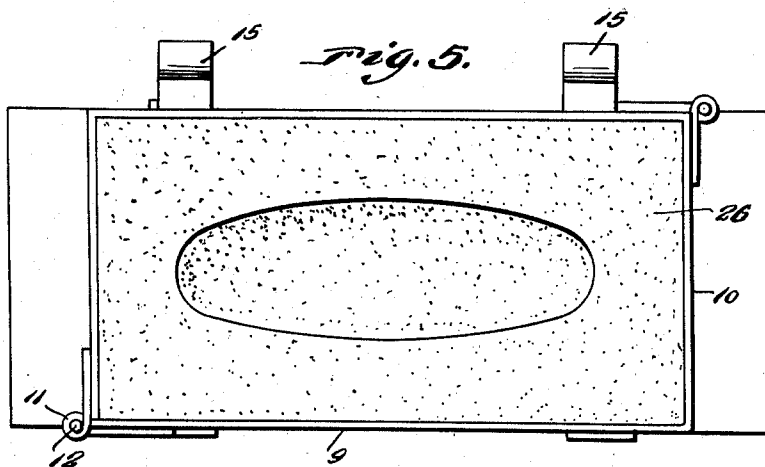
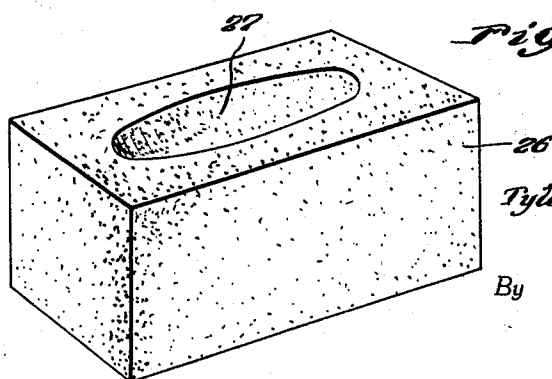
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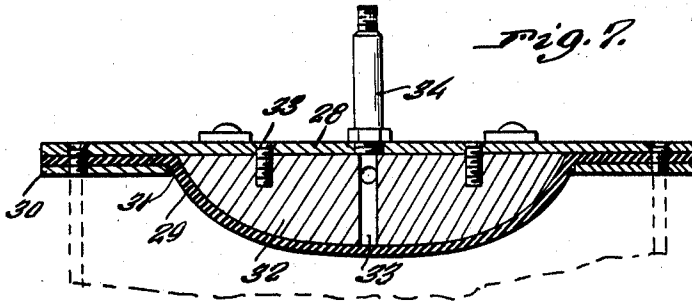
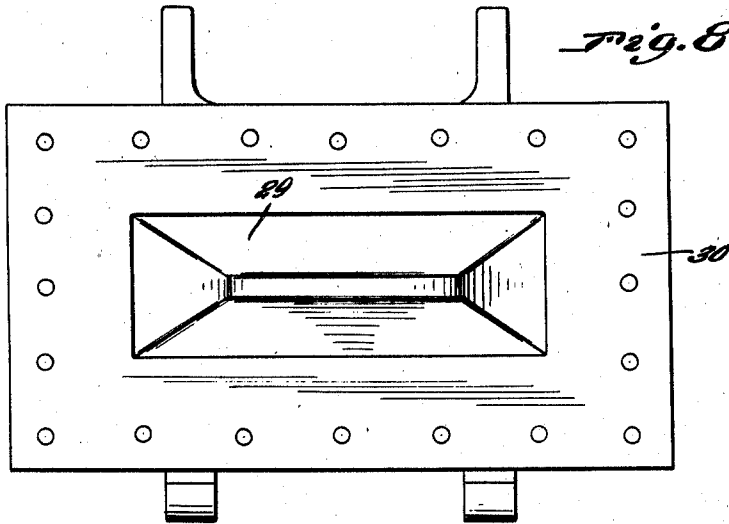
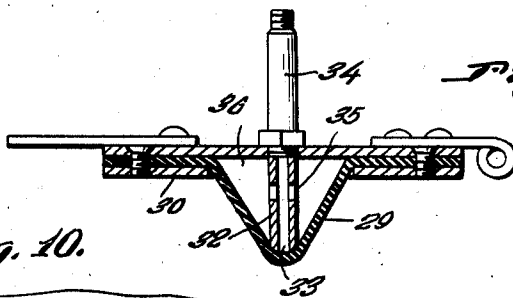
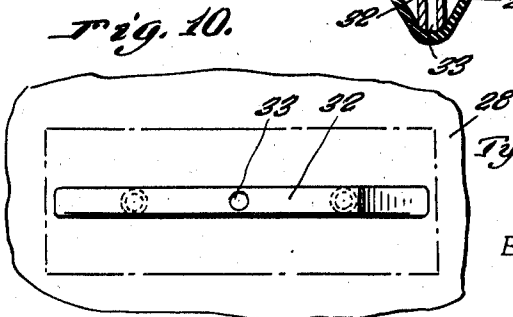
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UNITED STATES PATENT OFFICE

2,281,133

MOLD FOR CONCRETE BLOCKS

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Application March 4, 1940, Serial No. 322,202

5 Claims. (Cl. 25-45)

The present invention relates to the manufacture of concrete blocks, such as used for building purposes, and has for its primary object to provide a mold for the blocks and embodying expansible means within the mold for exerting pressure upon the plastic material whereby to compress the concrete mixture and thus form a more uniform texture in the material of the blocks.

A further object of the present invention is to provide a removable lid or cover plate for the mold within which is mounted a flexible diaphragm adapted to receive air under pressure for expanding the same to compress the concrete mixture in the mold.

A still further object is to provide an apparatus of this character of simple and practical construction, which is efficient and reliable in performance, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which—

Figure 1 is a vertical sectional view through one form of the mold with the diaphragm shown in expanded condition for compressing the material of the concrete block poured in the mold,

Figure 2 is a top plan view,

Figure 3 is a fragmentary transverse sectional view of the upper portion of the mold,

Figure 4 is a bottom plan view of the cover plate for the mold,

Figure 5 is a top plan view of the mold with the cover plate removed,

Figure 6 is a perspective view of one of the blocks formed in the mold,

Figure 7 is a fragmentary vertical sectional view of a modified form of cover plate,

Figure 8 is a bottom plan view thereof,

Figure 9 is a transverse sectional view of the cover plate forming the embodiment illustrated in Figures 7 and 8, and

Figure 10 is a fragmentary bottom plan view of the cover plate with the diaphragm removed and illustrating the longitudinally extending rib secured to the under side thereof.

Referring now to the drawings in detail, and with particular reference to the form of the invention illustrated in Figures 1 to 4 inclusive, the numeral 5 designates the mold generally which includes the bottom 6, side walls 7 and top 8.

The mold is of substantially rectangular form and the side walls 7 are loosely supported on the bottom 6, the said side walls being constructed of a pair of duplicate sections, each of the sections including one of the longitudinal walls 9 and one of the end walls 10 integrally formed with each other. The corners of the sections of the walls, at their free edges, are provided with aligned eyes 11 through which a pin 12 is removably inserted for releasably connecting the sections together. A pair of brackets 13 project upwardly from one of the longitudinal walls 9 and are provided at their upper ends with eyes 14 adapted to align with similar eyes 15 formed on brackets 16 secured to the top 8, the aligned eyes being adapted to receive a hinge pin 17 to thus provide a hinged connection for the top 8.

Projecting laterally outwardly from the opposite side of the lid is a pair of arms 18 adapted for engagement by a pivoted bail 19 which is swingably connected to brackets 20 formed on the side of the wall 9 opposite from the hinged connection of the lid. The bail 19 is thus adapted to clamp the lid in position on the top of the mold.

A rubber diaphragm 21' is positioned at the under side of the lid 8, the edges of the diaphragm being secured in position by a plate 21 by means of screws 23 or the like. The plate 21 at its central portion is provided with an opening 24 whereby to permit the expansion of the central portion of the diaphragm. A nipple 25 is threaded in the top 8 to which a compressed air hose may be attached for supplying air to the interior of the diaphragm 21'.

It will be apparent from the foregoing that when the concrete 26 is poured into the mold that compressed air may be supplied to the diaphragm 21' whereby to cause the same to expand into the position shown by the full lines in Figure 1 of the drawings whereby to compress the concrete, while in its plastic state, and thus improve the texture of the concrete block after the same has been set by producing a more uniform density of the material.

After the concrete has set the air is released from the diaphragm and the top and side walls of the mold removed whereby to utilize the bottom 6 as a pallet during the curing of the block. The finished block is thus formed with the concave surface indicated at 27.

In the form of the invention illustrated in Figures 7 to 9 inclusive, the lid is designated at 28 to the under side of which is secured the diaphragm 29 by the plate 30 having the central

opening 31 therein. An arcuate rib 32 is secured to the under side of the lid 28 by means of screws 33, the rib being positioned in the opening 31 and interposed between the diaphragm and the lid to normally maintain the diaphragm in a slightly expanded position, as shown in Figures 7 and 9 of the drawings.

The rib 32 is formed with a vertically extending passage 33 which communicates at its upper portion with the nipple 34 and is open at its bottom portion to supply the compressed air to the diaphragm. Lateral openings 35 are also formed in the rib communicating with the passage 33 to admit air into the chambers 36 formed at each side of the rib inwardly of the diaphragm as shown more clearly in Figure 9 of the drawings. This construction of the diaphragm is designed particularly for use on deep molds, the admission of the air into the chambers 36 at the sides of the ribs having a tendency to press the concrete in a lateral direction toward the sides of the mold, as well as permitting the diaphragm to expand downwardly and thus provide a more uniform pressure than is possible through the use of the fiat diaphragm disclosed in Figures 1 to 4 inclusive.

It is believed the details of construction, advantages and manner of use of the device will be readily understood from the foregoing without further detailed explanation.

Having thus described the invention, what I claim is:

1. A mold for concrete blocks comprising bottom and side walls, a lid supported on the side walls, said lid embodying upper and lower rigid plates, the lower plate having an opening with its edges spaced inwardly from the side walls, a flexible sheet of material having its edges clamped between the plates to form a diaphragm movable through the opening and means for supplying air under pressure between the upper plate and the diaphragm to expand the same inwardly of the mold.

2. A mold for concrete blocks comprising a bottom, side walls loosely supported on the bottom, a top removably connected to said side walls, said top embodying upper and lower rigid plates, the lower plate having an opening with its edges spaced inwardly from the side walls, means for clamping the top in position on the mold, a rubber diaphragm having its edges clamped between

the plates and means for supplying air under pressure between the upper plate and the diaphragm for expanding the same through the opening of the lower plate into a position inwardly of the mold.

3. A mold for concrete blocks comprising a bottom, side walls loosely supported on the bottom, a top hingedly connected to the side walls, means for clamping the free edge of the top to the mold, a rubber diaphragm at the under side of the top, a clamping plate having a central opening with its edges spaced inwardly from the side walls, fastening means for clamping the edges of the diaphragm between the top and the clamping plate, said diaphragm being movable through the opening of the clamping plate and means for supplying air under pressure between the top and the diaphragm for expanding the same downwardly through the opening into the mold.

4. A mold for concrete blocks comprising a bottom, side walls loosely supported on the bottom and composed of a pair of duplicate sections, means releasably connecting the meeting edges of the sections of the walls, a top hingedly connected to said side sections, means for clamping the free edge of the top in position on the mold, a rubber diaphragm at the under side of the top, a clamping plate securing the edge portions of the diaphragms to the under side of the top, said clamping plate having a central opening with its edges spaced inwardly from the side walls to expose the central portion of the diaphragm to the concrete poured within the mold and means for supplying air under pressure between the top and the diaphragm for expanding the same downwardly into the mold.

5. A mold for concrete blocks comprising bottom and side walls, a lid supported on the side walls and embodying an upper rigid plate, a flexible diaphragm and a clamping plate having a central opening, said plates securing the edges of the diaphragm therebetween, a rib on the under side of the upper plate and projecting downwardly through the opening to form a chamber between the diaphragm and the upper plate, said rib having an air passage therein communicating with the chamber of the diaphragm and means for feeding air under pressure to said passage to expand the diaphragm.

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