Dec. 7, 1954 W. R. VAN HOOK 2,696,033

BUILDING BLOCK MOLD BOX

Filed Aug. 24, 1953 2 Sheets-Sheet 1

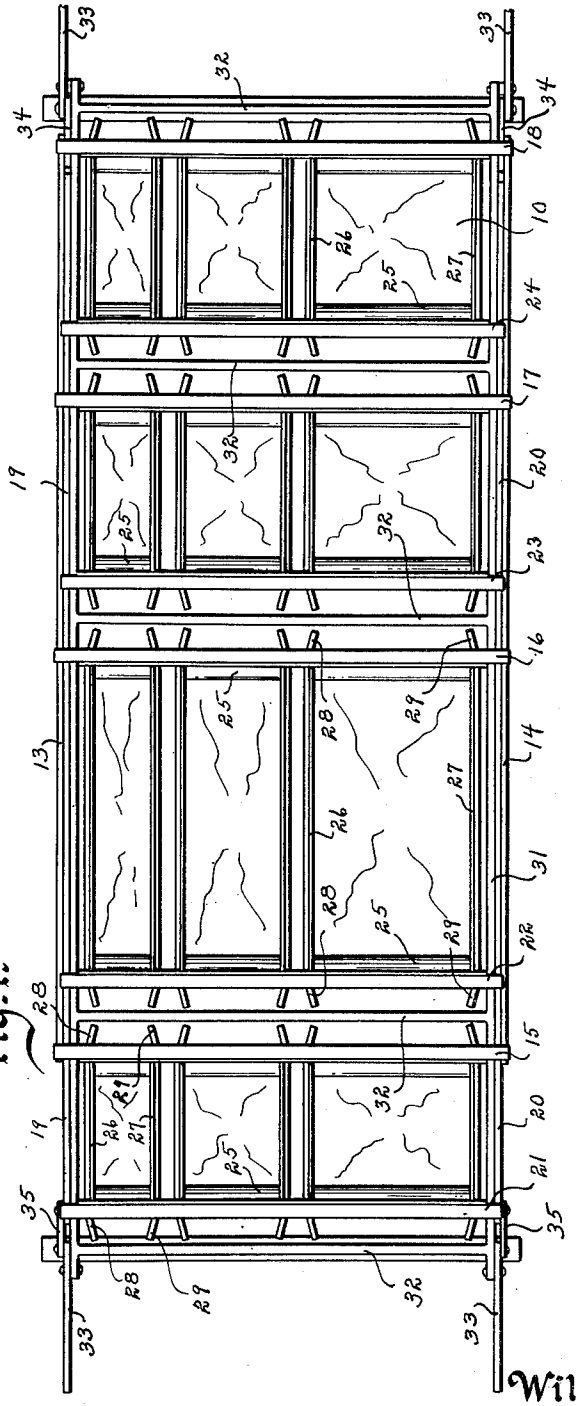


Fig. 1.

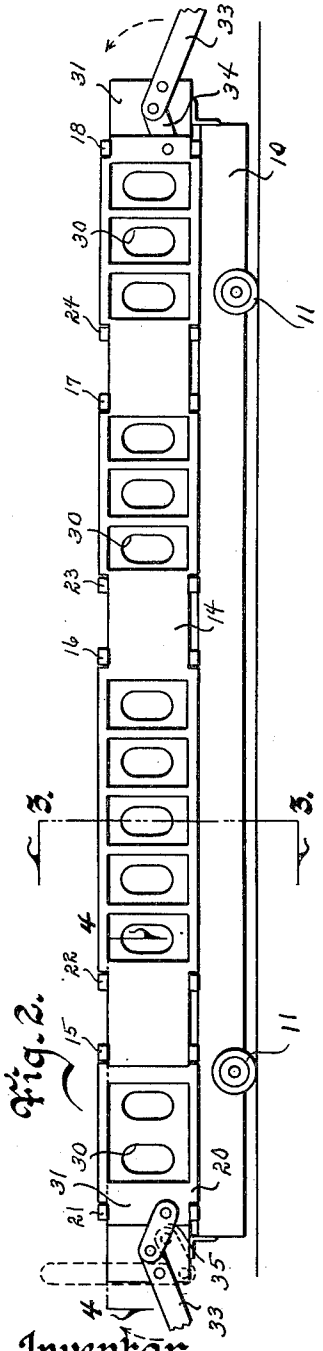


Fig. 2.

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Fig. 3.

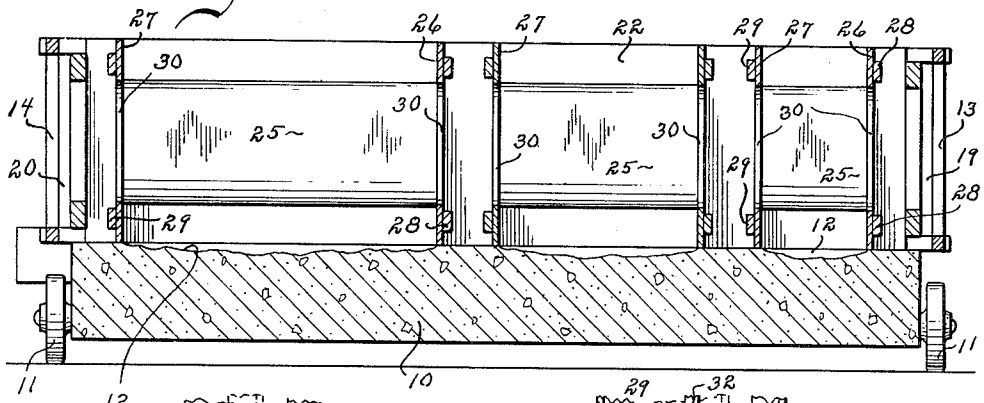


Fig. 4.

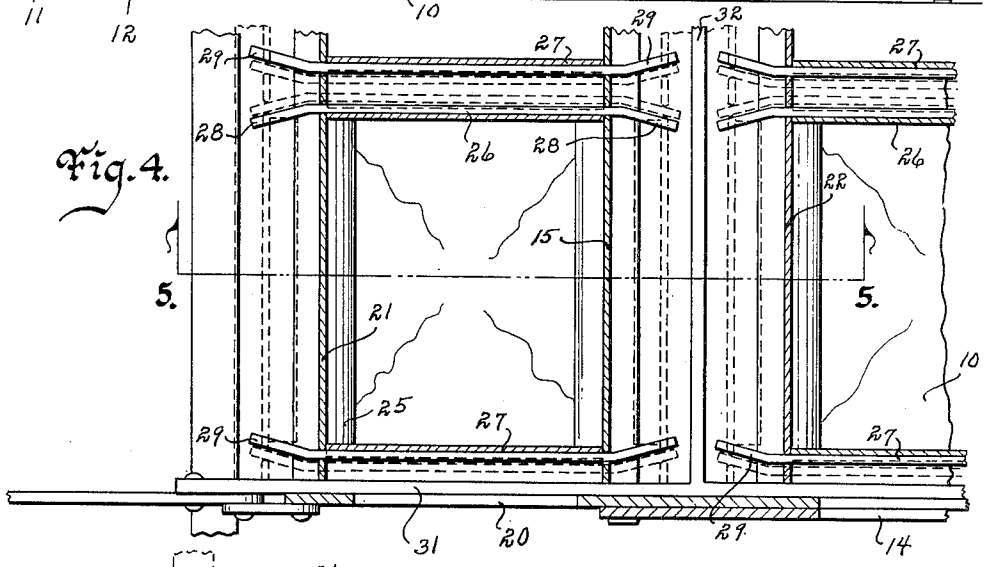
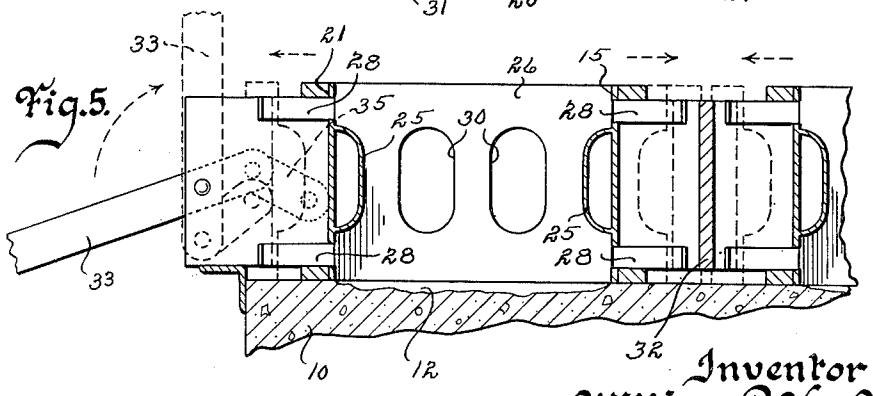


Fig. 5.



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BUILDING BLOCK MOLD BOX

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Application August 24, 1953, Serial No. 376,087

10 Claims. (Cl. 25—121)

This invention relates to mold boxes for casting building blocks and more particularly to blocks and equipment such as shown in my co-pending application on an Apparatus for Manufacturing Cast Building Units, filed December 18, 1950, Serial Number 201,399.

The art of mold casting blocks such as Portland cement blocks, Hadite blocks, Waylite blocks, cinder blocks, and like is very old. It is also a common practice to disassemble the sides of the mold box for the removal of the pressed block therefrom. However, in the unit casting of a plurality of cored blocks, many problems present themselves. Obviously, the extreme sides and ends of such a multiple mold box may be quite rapidly removed. The problem arises as to how the interior mold cavities can be processed for the removal of the castings. If the work is to be done by progressing inwardly, one block at a time, it is apparent that much time and effort will be lost. The worst, however, is that many of the blocks may be damaged in the process of their removal.

Therefore, the principal object of my invention is to provide a multiple cavity mold box that will simultaneously enlarge or decrease all cavities therein in four directions, thereby saving time, labor and breakage.

A still further object of this invention is to provide a multiple cavity mold box that does not require the removal of bolts, braces or like to open it.

A still further object of this invention is to provide an easily opened or closed multiple cavity mold box that is economical in manufacture and desirable in use.

These and other objects will be apparent to those skilled in the art.

My invention consists in the construction, arrangement, and combination of the various parts of the device, whereby the objects contemplated are attained as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Fig. 1 is a top plan view of my mold box ready for use,

Fig. 2 is a side view of the mold box,

Fig. 3 is an enlarged cross-sectional view of the box taken on line 3—3 of Fig. 2,

Fig. 4 is an enlarged top view of a portion of the box and more fully illustrates its construction, and

Fig. 5 is a longitudinal sectional view of the mold box taken on line 5—5 of Fig. 4.

In these drawings I have used the numeral **10** to designate the pallet or platform which serves as the bottom or floor of the entire box frame. While I show supporting wheels **11** thereon, it may be of any suitable structure and be of flat surface, or have depressions **12** for casting rock exterior appearing faces on the blocks to be formed. It is upon such a platform that my device operates and which I will now describe.

The numerals **13** and **14** designate the two outer frame sides respectively and are secured in spaced relationship by the spaced apart cross ends **15**, **16**, **17** and **18** respectively as shown in Fig. 1. By this construction, the members **13**, **14**, **15**, **16**, **17** and **18** are rigidly secured together and may be slid on the platform as a unit.

The numerals **19** and **20** designate the two inner frame sides respectively and are secured in spaced relationship by the spaced apart cross ends **21**, **22**, **23** and **24**. These members **19**, **20**, **21**, **22**, **23** and **24** are rigidly secured together and may not only be slid as a unit on the platform, but may be slid (within limits) independently of the unit composed of the parts **13**, **14**, **15**, **16**, **17** and **18**.

The numeral **25** designates one-half cores formed on the

various cross-ends. The parts **15**, **16**, **17** and **18** are alternated with the parts **21**, **22**, **23** and **24** and these members together form the ends of all the resultant cavity molds. The sides of the cavity molds, however, are not formed by the side frame members **13**, **14**, **19** and **20**. The cavity sides are formed by three pairs of side plates between each of the two end cross members **21** and **15**, the two members **22** and **16**, the two members **23** and **17**, and the two members **24** and **18**. Each pair of side plates are spaced from each other, and comprise a side plate **26** and a complementary side plate **27** as shown in the drawings. The side plates **26** each have at each end two fingers **28** that extend forwardly and inwardly toward its complementary plate **27**. The side plates **27** likewise have two fingers **29** at each of their ends that extend forwardly and inwardly toward its complementary plate **26**. The number of pairs of side plates, and the number of cross end members and their size or arrangement are immaterial to this invention in multiple cavity molds. In the drawings I show twelve pairs of side plates and eight end bar plates for illustration, with such members spaced differently to provide, if desired, different sized blocks. In the side frames and the side plates I have provided core holes **30** for the insertion of core forms (not shown). The fingers **28** and **29** slidably extend through openings in the adjacent cross end plates. As an illustration, the outer fingers **28** and **29** of a pair of side plates will slidably extend through the end bar plate **21** and the inner fingers of these side plates will slidably extend through the end bar plate **15**. Obviously, if the unit composed of parts **13**, **14**, **15**, **16**, **17** and **18**, and the unit composed of the parts **19**, **20**, **21**, **22**, **23** and **24**, are moved or slid in relative opposite directions, the cross-end bar plates **21** and **15**, the cross-end plates **22** and **16**, the cross-end plates **23** and **17**, and the cross-end plates **24** and **18** will move away from each other, respectively. This will increase the length of each cavity. With the angle direction of the fingers **28** and **29** of each pair of side bar plates extending through a given pair of cross-end plates, the movement of the cross-end plates away from each other will cause the two side plates to also move away from each other, thus increasing the width of such cavity. The relative movement of the two units in the opposite direction would cause each of the four pairs of cross plates to move together and also the pairs of side plates. Thus, by moving the members **13** and **14** in one direction relative to the members **19** and **20** will increase the cavity in four directions, while if the members **13** and **14** are moved in an opposite direction from the preceding one, relative to the members **19** and **20**, the area of the cavities would be decreased in four directions. The reason the side plates **26** and **27** of each pair will move away from or toward each other, is due to the angularity at which the fingers **28** and **29** extend through the cross-plates. Obviously, the cavities of the device are reduced to their minimum capacity before the raw material is placed in them for casting. After the material has been deposited, pressed and processed for resultant blocks, the members **13** and **14** are moved in a direction relative to the members **19** and **20** to increase the capacity of each of the cavities in four directions. At this time, the finished blocks may be easily removed from the cavity or if desired, my device may be lifted upwardly from the platform, leaving the blocks free and resting on the platform **10**.

Any suitable means may be used to move the members **13** and **14** and their unit parts relative to the members **19** and **20** and their unit parts. Such means may be powered or hand operated. In the drawings I illustrate a hand operated lever means.

In the drawings I show an anchor frame means **31** resting to the inner sides of the members **19** and **20** and having a cross plate **32** at each end and also between the members **15** and **22**, the members **16** and **23**, and the members **17** and **24** as shown in Fig. 1. This anchor frame may be resting on, secured to, or detachably secured to the platform **10**. Its purpose is a guide and also a limiting means for the two units of my device herebefore described. This anchor frame ensures the uniform movement of the two units and prevents the same from any crawling movement on the

platform even when the two units are independently moved relative to each other. While either unit may be held stationary and the other unit moved to increase or decrease the size of the cavity of the molds, in the drawings I show both units capable of movement relative to the other. As before noted, this may be accomplished by any suitable means, but in the drawings I show hand levers **33** pivoted to the anchor frame and with part of such hand levers connected by a link **34** to the members **13** and **14** and with the remaining hand levers connected to the members **19** and **20** by the link **35** as shown in the drawings.

Inasmuch as there are spaces between each of the cavity molds, a grid or mask may be placed over the device so that when the cavity molds are being filled with the raw material to be cast, the same will fall into the cavity molds and not into the spaces surrounding them. In some types of equipment, the entire pallet will be lifted upwardly to the dispensing and tamping machine or the machine will be lowered to the device, with such machine automatically marking the spaces around the multiple cavities.

Obviously, with all of the cavities capable of simultaneously increasing their capacity in four directions, all of the formed blocks will be freed from the molds quickly and without damage or breakage to the blocks. Inasmuch as the core bar openings **30** extend through the side plates, anchor frame and like, the same will have to be withdrawn prior to the removal of the cast blocks and in case where my device is lifted from the pallet prior to the cast blocks, such core bars would have to be withdrawn before my device can be lifted upwardly from the pallet platform.

Some changes may be made in the construction and arrangement of my building block mold box without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, and mold side plates extending between said mold end plates.

2. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, and mold side plates slidably extending between said mold end plates.

3. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, and pairs of mold side plates slidably extending between each alternate set of mold end plates.

4. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, pairs of mold side plates slidably extending between each alternate set of mold end plates, and means associated with said mold end plates for causing each pair of said side plates to spread apart when said alternately arranged mold end plates are moved away from each other.

5. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, pairs of mold side plates extending between each alternate set of mold end plates, and angular fingers on each end of each of said mold side plates extending at an angle and slidably through the adjacent mold end plates for causing each pair of said side plates to spread apart when said alternately arranged mold end plates are moved away from each other.

6. In a device of the class described, a platform, two spaced apart side frame members movable on said platform, mold end plates extending between said side frame members, two spaced apart side frame members inside said first two mentioned side frame members and movably on said platform, mold end plates extending between said two last mentioned side frame members; said first mentioned mold end plates being alternated with said second mentioned mold end plates, a means for producing relative movement of said first mentioned side frames and said second mentioned side frames in two directions, pairs of mold side plates extending between each alternate set of mold end plates, angular fingers on each end of each of said mold side plates extending at an angle and slidably through the adjacent mold end plates for causing each pair of said side plates to spread apart when said alternately arranged mold end plates are moved away from each other, and a frame means for guiding and limiting the movement of said first and second mentioned side frame members.

7. In a mold box, a platform, a frame means movable on said platform, at least one mold end plate secured to said frame, a second frame means movable on said platform, at least one mold end plate secured to said second frame means and spaced parallel and apart from said first mentioned mold end plate, at least two spaced apart mold side plates extending between said first and second mold end plates, at least one finger on each of said mold side plates slidably extending at an angle through one of said mold end plates, and at least one finger on each of said mold side plates slidably extending at an angle through the other adjacent mold end plate.

8. In a mold box, a platform, a frame means movable on said platform, at least one mold end plate secured to said frame, a second frame means movable on said platform, at least one mold end plate secured to said second frame means and spaced parallel and apart from said first mentioned mold end plate, at least two spaced apart mold side plates extending between said first and second mold end plates, at least one finger on each of said mold side plates slidably extending at an angle through one of said mold end plates, at least one finger on each of said mold side plates slidably extending at an angle through the other adjacent mold end plate, and a means for moving said first frame means relative to said second frame means.

9. In a mold box, a platform, a frame means movable on said platform, at least one mold end plate secured to said frame, a second frame means movable on said platform, at least one mold end plate secured to said second frame means and spaced parallel and apart from said first mentioned mold end plate, at least two spaced apart mold side plates extending between said first and second mold end plates, at least one finger on each of said mold side plates slidably extending at an angle through one of said mold end plates, at least one finger

on each of said mold side plates slidably extending at an angle through the other adjacent mold end plate, and a means for moving said first frame means relative to said second frame means in at least two relative directions.

10. In a mold box, a platform, a frame means movable on said platform, at least one mold end plate secured to said frame, a second frame means movable on said platform, at least one mold end plate secured to said second frame means and spaced parallel and apart from said first mentioned mold end plate, at least two spaced apart mold side plates extending between said first and second mold end plates, at least one finger on each of said mold side plates slidably extending at an angle through one of said mold end plates, at least one finger on each of said mold

side plates slidably extending at an angle through the other adjacent mold end plate, and a means for simultaneously giving relative movement of said two frame means.

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