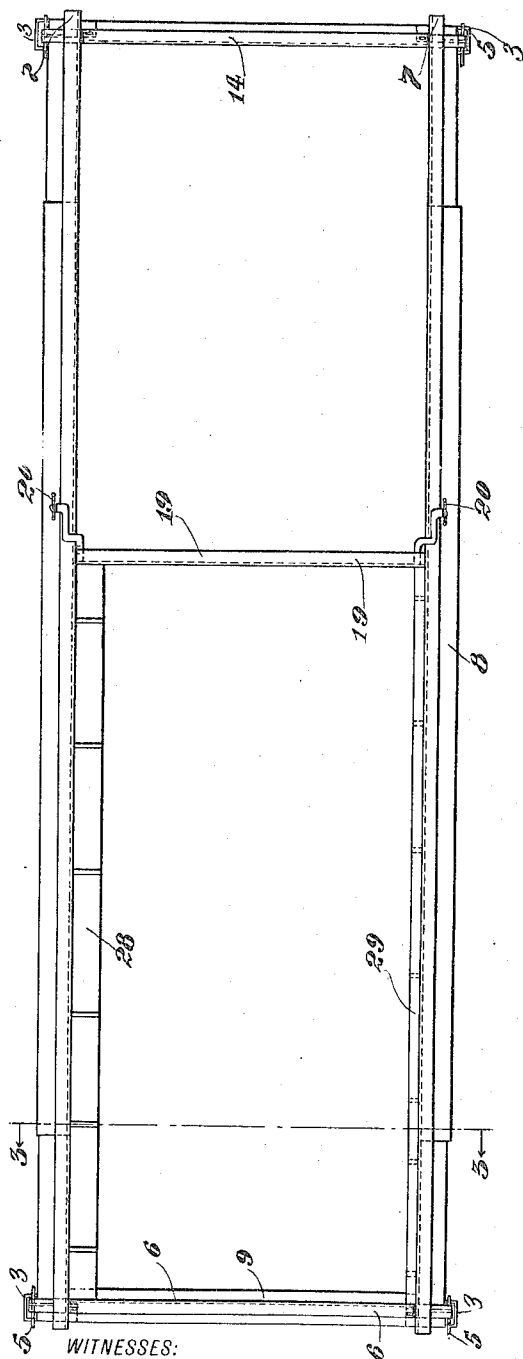


G. ATTERBURY.
 APPARATUS FOR MOLDING OR CASTING.
 APPLICATION FILED SEPT. 10, 1910.

1,207,697.

Patented Dec. 12, 1916.

3 SHEETS—SHEET 1.



WITNESSES:

C. S. Ashley
John W. Jones
Fig. 1.

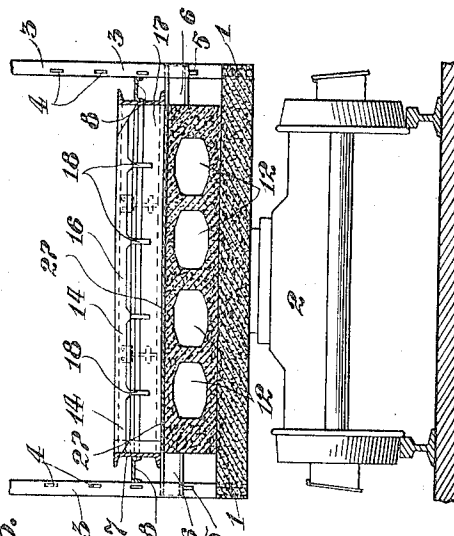


Fig. 2.

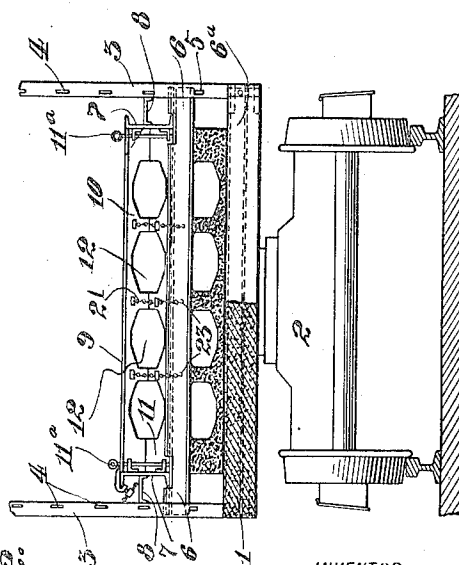


Fig. 3.

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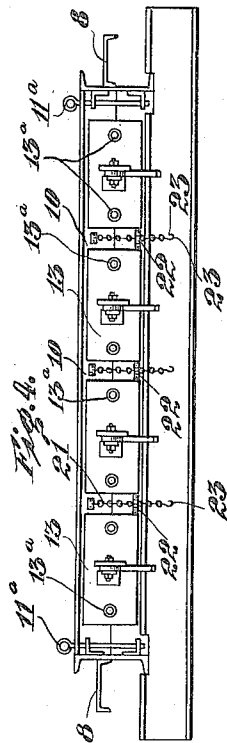
By *Butt, Shippin & Bentley*
 his ATTORNEYS

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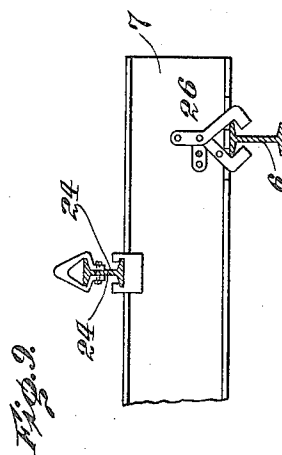
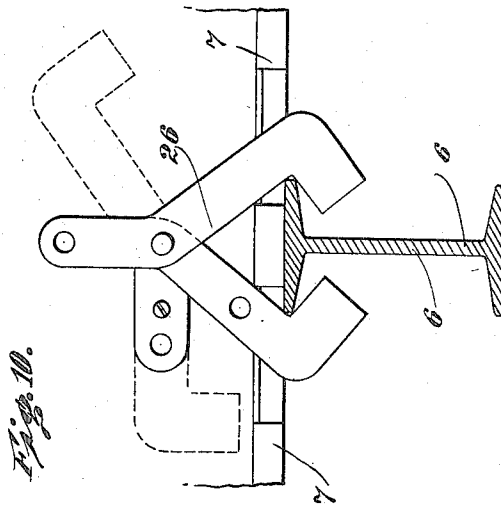
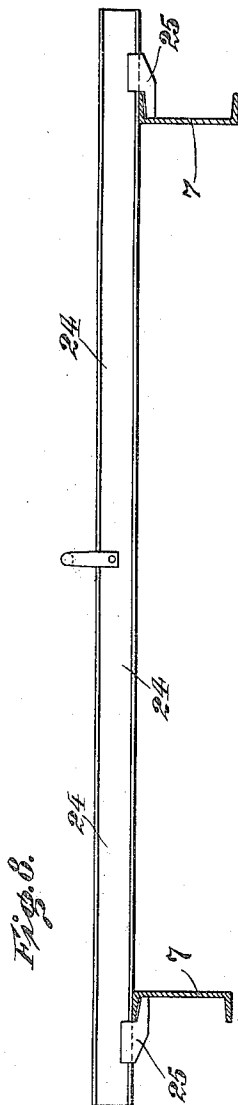
3 SHEETS—SHEET 2.



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 3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

GROSVENOR ATTERBURY, OF NEW YORK, N. Y.

APPARATUS FOR MOLDING OR CASTING.

1,207,697.

Specification of Letters Patent.

Patented Dec. 12, 1916.

Application filed September 10, 1910. Serial No. 581,340.

To all whom it may concern:

Be it known that I, GROSVENOR ATTERBURY, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Molding or Casting, of which the following is a specification.

My invention relates to apparatus for molding or casting concrete blocks and sections, and particularly to an apparatus for use in molding or casting blocks and sections of large sizes, having voids or openings therein.

In my system of building houses of concrete or cementitious blocks or sections, it is desirable to cast the blocks or sections as large as possible, in order to reduce the expense of assembling, and to secure strength and rigidity in the assembled structure. As an instance, it is frequently desirable to cast the blocks forming the floor sections, of such length that they may be supported at their ends on the side walls, thus rendering the use of joists or other supporting means unnecessary.

While there are great advantages incident to the use of large blocks and sections, they cannot be used commercially without special apparatus for molding or casting them. No apparatus has heretofore been devised for this purpose which has not been cumbersome and so heavy as to require a large amount of labor in handling, and besides, has not been sufficiently flexible or adaptable to form blocks of various sizes to permit its general use.

I have succeeded in devising an apparatus for casting blocks of this kind, which is strong and light in proportion to its size, which can be easily manipulated, and which requires only a small amount of manual labor in its operation. Moreover with it, a large number of blocks can be cast in rapid succession and may be formed one over another upon the bed of the casting apparatus, thus saving the time usually consumed in removing one block before beginning the formation of another.

In the drawings accompanying and forming a part of this specification, I have illustrated one embodiment of my apparatus.

Referring to the drawings: Figure 1 is a plan view of the casting frame, in which the blocks or sections are formed. Fig. 2 is an end view of the same, partly in section,

showing the casting frame mounted on trucks so as to be readily moved from place to place. Fig. 3 is a transverse sectional view of the construction shown in Fig. 1, taken on the line 3—3 of that figure. Fig. 4 is a detail view of the end of the casting frame, showing the cores in position. Fig. 5 is a detail view showing the means of shifting the adjustable end plate and securing the same in position. Fig. 6 is a detail view showing the means of securing the upper section of the end wall of the casting frame to the structure so as to allow the cores to be removed. Fig. 7 is a detail view showing the means employed for securing together and supporting the corners of the casting frame. Fig. 8 is a detail view showing the removable lifting bar used in connection with the casting frame. Fig. 9 is a detail view showing the lifting bar in position on top of the frame and the detachable means for securing the horizontal supports to the casting frame. Fig. 10 is another detail view showing the means whereby the horizontal supports are secured to the casting frame.

Throughout the several views, the same reference numerals are employed to designate the same parts.

The numeral 1 designates the bed on which the blocks are formed and supported. This bed is preferably made of concrete reinforced with steel, and is mounted on trucks 2, which are of the ordinary construction. At each corner of the bed 1 there are provided adjustable and removable upright supports or standards 3 formed of channel irons, having openings 4 spaced at uniform intervals and adapted to receive the pins 5 on which the horizontal supporting members 6 rest. These horizontal supports are provided in order that the casting frame may be raised a fixed distance each time, thus avoiding accumulating errors which would be possible were the frame supported on the newly formed block. In order that the blocks may be easily removed from the bed, lifting members 6^a are placed in grooves extending transversely across the bed so that the top of the lifting members will be flush with the top of the bed, see Figs. 2 and 7.

The casting frame comprises side members 7, formed of channel irons and reinforced at their center by plates 8, so as to resist the side-thrust of the material in the mold. The front end wall 9 is formed in two sec-

tions, a top section 10 and a lower section 11. These sections are secured in place between the side walls by means of the pins 11^a. The front end wall is provided with openings 12 adapted to receive cores 13 in the manner shown in Fig. 4. These cores are preferably made like the cores described in my pending application Serial Number 581,341, are collapsible and are preferably provided with steam coils for heating the block and causing the rapid setting of the concrete.

At the rear of the casting frame an end wall 14 is provided and is formed of an upper section 16 and a lower section 17. Openings 18 are provided in this end wall adapted to receive the ends of the cores and support them. An adjustable end wall 19 is provided for casting blocks of varying length. This end wall is secured to the sides of the casting frame by means of set screws 20, one at each end of the adjustable wall. These set screws permit the easy adjustment of the wall and firmly secure it in any desired position. Forming plates 28 and 29 may be secured on the inner sides of the side walls 7 in order to give special shapes to the sides of the blocks or sections.

The upper section 10 of the front end wall has secured thereto chains or elongated members 21 adapted to slide in members 22. To the lower ends of the members 21 are attached hooks 23 and the arrangement is such that the upper section of the end wall may be raised vertically and swung outwardly so as to clear the ends of the cores and to remain suspended by the members 21 until it is to be again placed in operative position. The members 21 prevent the upper section from falling away from the apparatus and make it easier to replace in its operative position.

The lifting device for the casting frame shown in Fig. 8 comprises a bar 24, having slidably secured thereto members 25 adapted when closed to engage the flanges of the sides 7 of the casting frame, and when opened or slid outwardly, to permit the removal of the lifting device. The horizontal supports 6 are detachably secured to the side walls 7 by means of the latches or hooks 26, which are shown in their closed and supporting position in Fig. 9, and in their open position in dotted lines in Fig. 10. These hooks are useful because when the casting frame is raised from one position to another, the supports 6 are raised also by the same operation and when the casting frame is lowered so as to cast the first block on the bed 1, the support 6 may be removed so as to allow the frame to rest directly on the bed.

The operation of the apparatus is as follows: The casting frame is lowered until it rests directly on the bed 1. The cores are

placed in position and the frame is filled with concrete. Steam is then preferably passed through the cores, which causes a rapid setting of the concrete. After this has continued for a short time, the cores are withdrawn and the frame is raised by means of the lifting device shown in Fig. 8 and a suitable crane or block and tackle until the lower edges of the frame are even with the top of the newly formed block. The horizontal supports 6 are then placed and secured in position. A layer of paper or oiled, soaped or paraffined cloth, shown at 27 in Fig. 3, is then placed on the newly formed block which now serves as a bottom for the casting frame. I prefer to use the cloth treated as above, as it is easier to obviate air bubbles between the block and the cloth and as it may be used a number of times. The cores are inserted and another block is cast on top of the first one. The frame is again raised, the cloth or paper applied to the surface of the last block, and another block cast. This operation is continued until the car has received its full load of blocks, after which it is run onto a side track where it is allowed to stand for a sufficient time to permit the hardening of the blocks so that they can be handled, placed in position in a house, or shipped to their destination. It will thus be seen that with this apparatus and method of operation, very little time is lost after forming one block before the same apparatus is ready for use in forming another. All that is necessary is to raise the casting frame a few inches, and as this is readily done by means of the lifting device, which operates to lift the entire casting frame including the support 6, it is a comparatively easy and simple operation.

In using the device, a suitable crane or lifting means should be provided for raising the casting frame and for use in handling the cores. Such a device, and a device for use in lifting the cores, is described in my pending application Serial Number 541,432.

While I have described only one embodiment of my apparatus and one method of using the same, I am aware that these may be modified by those skilled in the art without departing from the spirit of my invention or the scope of my claims.

What I claim is:

1. A molding or casting apparatus comprising a bed, vertical standards secured thereto, a bottomless frame supported thereon by means of adjustable horizontal members and having sectional end walls adapted to receive and support cores, and an adjustable transverse wall, substantially as described.

2. A molding or casting apparatus comprising a bed, vertical standards secured thereto, a bottomless frame supported thereon by means of adjustable horizontal mem-

bers and having horizontally sectional end walls adapted to receive and support cores, and an adjustable transverse wall, substantially as described.

5 3. A molding or casting apparatus comprising a bed, vertical standards secured thereto, a bottomless frame supported thereon by means of adjustable horizontal members and having sectional end walls adapted
10 to receive and support cores, means to connect the sections in separated position, and an adjustable transverse wall, substantially as described.

4. A molding or casting apparatus comprising a bed, vertical standards secured
15 thereto, a bottomless frame supported thereon by means of adjustable horizontal members and having sectional end walls adapted to receive and support cores between them
20 and an adjustable transverse wall, substantially as described.

GROSVENOR ATTERBURY.

Witnesses:

FREDERICK W. MAGDEBURG,
JOSEPH P. MARSHALL.

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