

No. 742,019.

PATENTED OCT. 20, 1903.

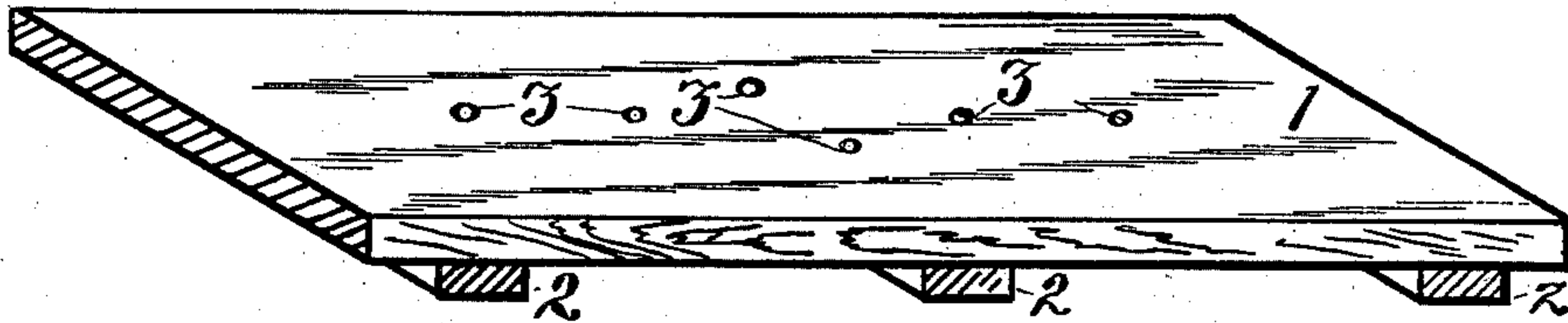
H. G. GOODWIN.

DEVICE FOR MAKING ARTIFICIAL STONE BLOCKS.

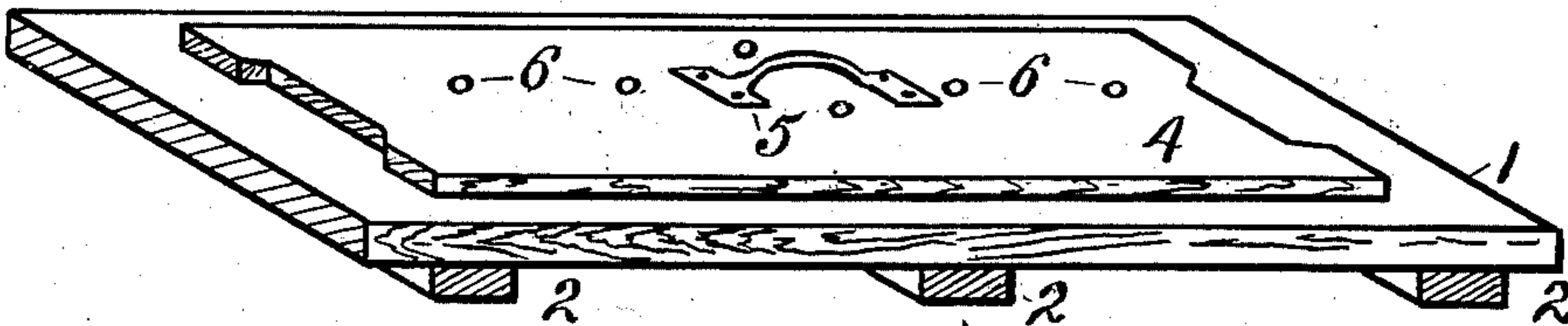
APPLICATION FILED JUNE 15, 1903.

NO MODEL.

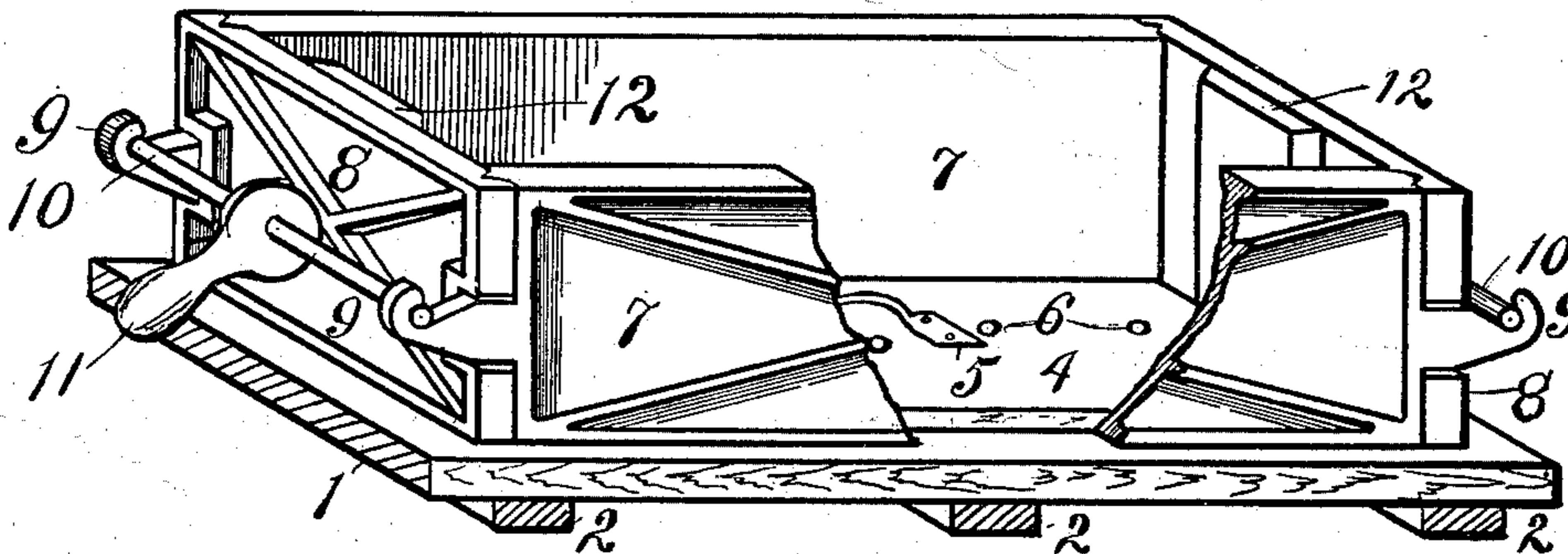
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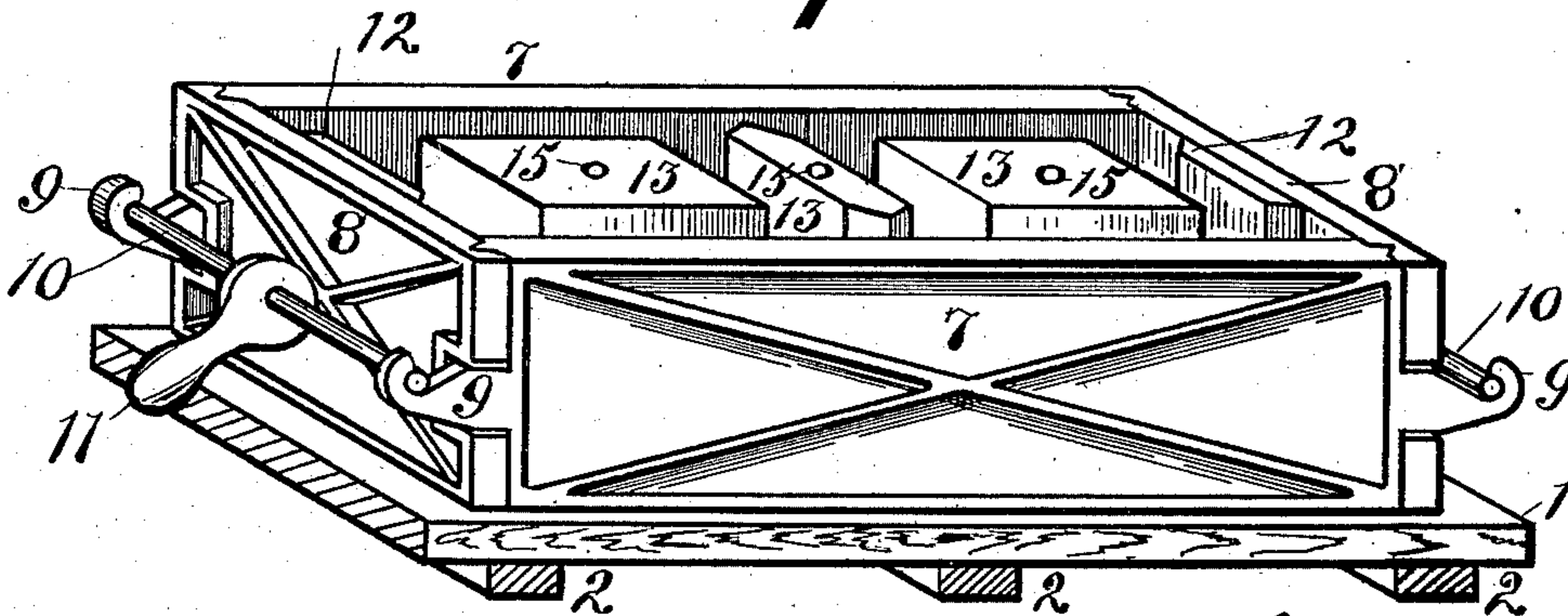
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



*Fig. 4.*

Witnesses:  
Maude Gruber,  
Walter Bowman.

Inventor:  
Howard G. Goodwin,  
By C. E. Humphrey,  
att'y.

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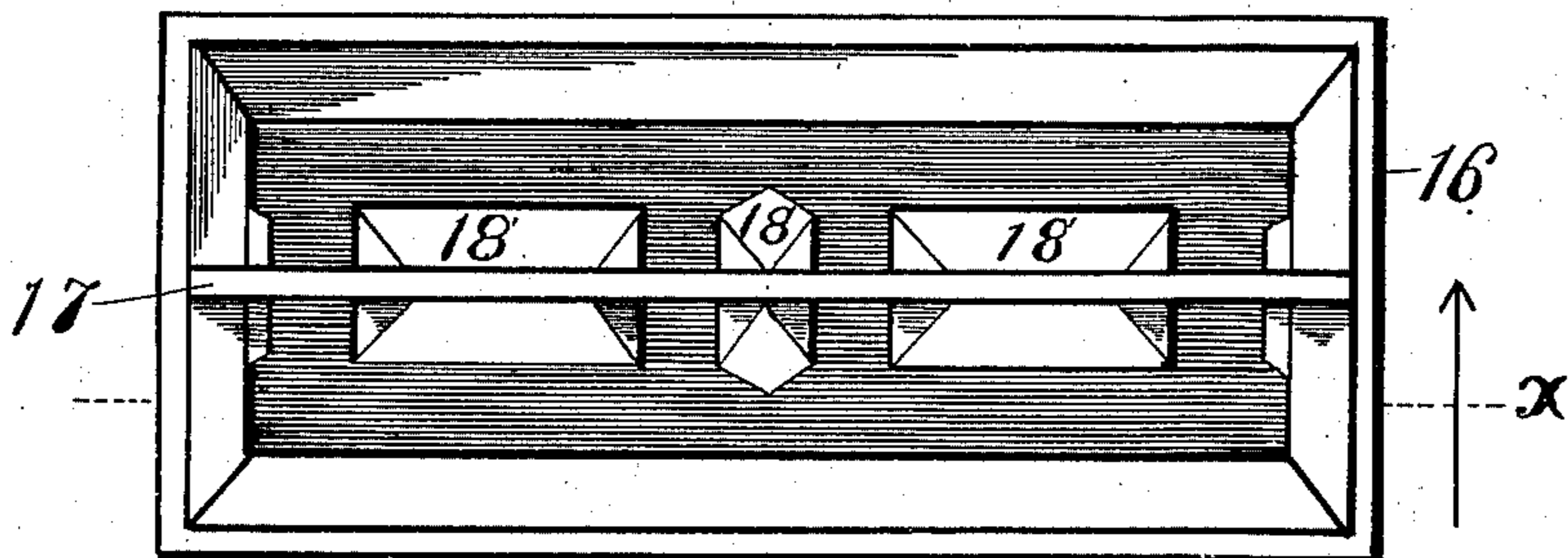
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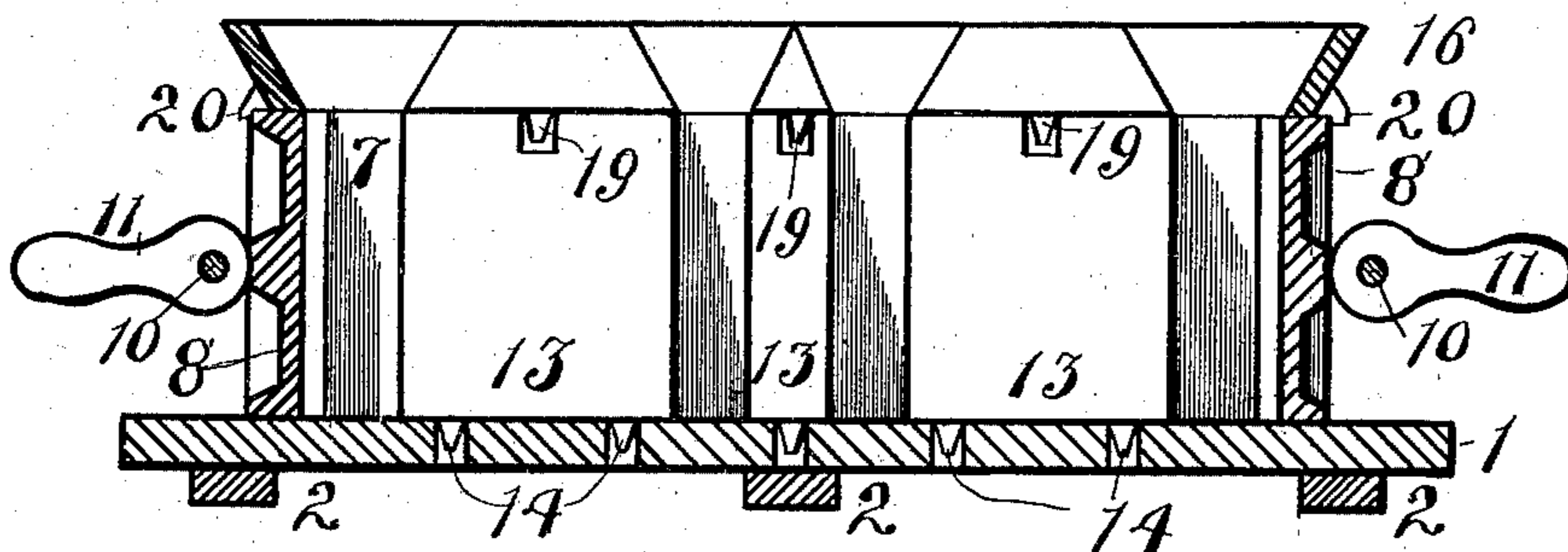
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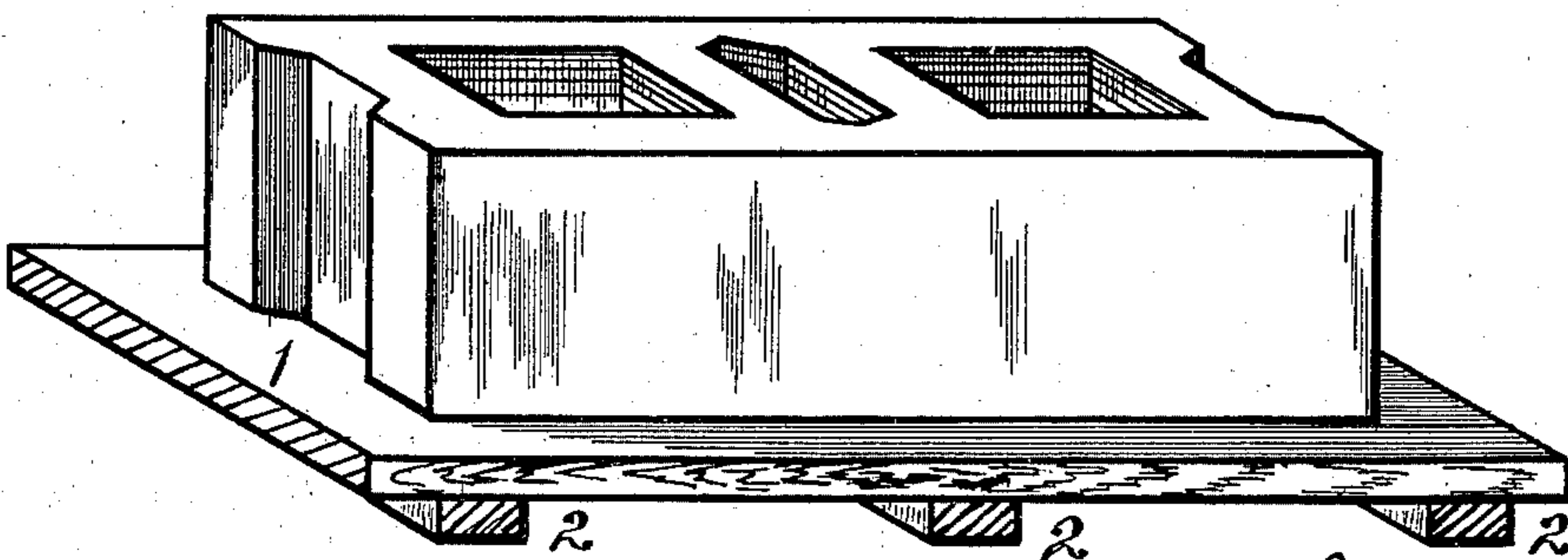
2 SHEETS—SHEET 2.



*Fig. 5.*



*Fig. 6.*



*Fig. 7.*

Witnesses:  
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# UNITED STATES PATENT OFFICE.

HOWARD G. GOODWIN, OF AKRON, OHIO.

## DEVICE FOR MAKING ARTIFICIAL STONE BLOCKS.

SPECIFICATION forming part of Letters Patent No. 742,019, dated October 20, 1903.

Application filed June 15, 1903. Serial No. 161,584. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD G. GOODWIN, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Devices for Making Artificial Stone Blocks, of which the following is a complete specification.

My invention has relation to devices for the manufacture of artificial blocks formed from a composition of matter in which are commonly employed cement, sand, and water.

The objects of my invention are to produce a device which will manufacture artificial stone blocks without the necessity of inverting the block after it has been formed and before it has acquired its final set.

Another object of my invention is to produce a device wherein the blocks are made upon a bottom board surrounded by suitable side retaining devices, which may be removed as soon as the block has been formed, leaving it resting upon the bottom board, thereby enabling the side frames of the device to be removed and set up on another bottom board, thus rendering the continuous use of the side frames feasible so long as a sufficient supply of bottom boards is provided.

Heretofore in the use of devices for producing artificial building-blocks it has been necessary to invert the blocks before the outside frame or mold can be removed from connection with the block. This contains a serious objection, in view of the fact that the blocks do not set firmly for quite a length of time after being manufactured, and hence the liability of fracture or injury to the soft block is very great, and the inverting thereof previously spoken of greatly increases this liability of damage to the block.

In using this device my main object is to provide a sufficient number of bottom boards on which the blocks are to be formed to last through the length of time necessary for the first block made to sufficiently harden to permit its being pushed off or being slid from its bottom board. From this it will be seen that by using one set of molds or frames and a large number of bottom boards the work can be kept up continuously and uninterruptedly throughout the day.

To the accomplishment of the aforesaid ob-

jects my invention consists in the peculiar and novel construction, arrangement, and combination of the various parts hereinafter described and then specifically claimed, reference being had to the accompanying drawings, forming a part hereof.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is a perspective view of one of the bottom boards; Fig. 2, a similar view of a bottom board with a templet or guide-board temporarily placed thereon; Fig. 3, a perspective view of the bottom board with the side frames of the mold placed thereon, one of the front faces of which is broken away to show the internal construction thereof; Fig. 4, a perspective view of the mold and bottom board with cores situated therein to form openings in the finished product; Fig. 5, a plan view of the mold complete and ready for use with the filling-hopper placed on top thereof; Fig. 6, a section at the line *x* of Fig. 5, and Fig. 7 a perspective view of the building-block complete and resting on the bottom board after the removal of the sides of the mold.

In the drawings, 1 is the bottom board, which may be one single board or several nicely matched together with the grain of each successive piece reversed, so as to prevent the warping incident to the moisture contained in the block to be constructed, and to keep this bottom board 1 from contact with the ground and permit the circulation of air thereunder there are placed a number of cleats 2, which are firmly fastened to the bottom board 1. Through the bottom board 1 are bored a number of dowel-pin holes 3, whose location will be determined by the class of block to be constructed on this board. A large number of these boards 1 are provided and placed in suitable location for the successive use of each of them in order until all are exhausted or until the first one used is no longer needed for the reason that the block situated thereon has acquired sufficient firmness to be removed therefrom. The next step in using this device is to place upon the bottom board 1 a templet or guide-board 4, having a handle 5, by which it is raised and lowered. The vertical thickness of this board 4 is of no great consequence and may be comparatively thin.

Its exterior dimension and configuration are that of the outside configuration which is to be imparted to the finished block. From the under face of this guide-board 4 depend 5 dowel-pins 6, which enter the dowel-pin holes 3, thereby accurately locating its position upon the board 1. The next step in using this apparatus is to place around this guide-board 4 the sides of the mold or frame, which 10 consist of two long side pieces 7 7, preferably provided on their exterior with ribs to obtain the necessary strength as well as lightness. The ends of these sides 7 7 are provided with pointed tenons, which are intended to enter 15 in correspondingly-shaped recesses or mortises in the end pieces 8 8. From both ends of the side pieces 7 7 project hooks 9, which pass through recesses cut in the ends of the end pieces 8. These end pieces 8 are pro- 20 vided with strengthening-ribs similar to those on the side pieces 7 7. As soon as this frame has been set up as described shafts 10 are placed in the hooks 9, and cams 11, having handles which are placed centrally on the 25 shafts 10, are swung down, causing that portion of the cams of the greatest diameter to encounter the intersecting portion of the ribs on the ends 8 and simultaneously cause the pressing inward of the end pieces against the 30 side pieces 7 to form as tight a joint as is possible between the sides constituting the mold. In making certain styles of blocks with this device I place inwardly-projecting strips 12 on the inner faces of the under pieces 8 to 35 cause corresponding depressions in the ends of the finished block. The next step in using this device is to remove from the bottom board 1 the guide-board 4 by simply taking hold of the handle 5 and raising the board 4 40 vertically until entirely free from the mold itself. This board is then placed on the next succeeding bottom board and the process just described repeated. Then I place upon the bottom board, between the sides constituting 45 the mold, cores 13, which consist of blocks having the configuration such as it is desired to impart to the interior of the finished building-blocks. These cores 13 have on their lower faces dowel-pins 14, which enter the 50 dowel-pin holes 3 3, thereby accurately locating their position within the mold. These cores have on their upper surfaces dowel-pin holes 15 for a purpose to be stated. I then place on top of the mold a filling-hopper 16, 55 which consists of a frame having inwardly-projecting sides and ends to permit of the more ready descent of the composition from which the block is to be made into the mold. Centrally and longitudinally of this filling-hopper 16 extends a bridge 17, to the under 60 face of which are attached caps 18, whose external configuration is identical with the exterior configuration of the core over which these caps are to be placed. The tops of 65 these caps are downwardly inclined in all directions to permit the sliding therefrom of the material of which the blocks are to be

composed, and from the lower faces of these caps 18 project dowel-pins 19, which enter the dowel-pin holes 15 in the tops of the cores. 70 On the outer sides of this filling-hopper 16 are downwardly-projecting lugs 20, which fit over the tops of the sides of the mold, and thereby serve to center and steady the hopper on the mold. The dowel-pins 19, entering 75 the tops of the cores 13, serve to steady and accurately locate them and keep them from motion during the tamping necessary to the manufacture of this class of building-blocks. The space surrounding the cores 13 and in- 80 closed by the sides 7 7 and 8 8 is now filled from above with a mixture sufficiently moistened to make it pack firmly. This is tamped thoroughly as the material is placed therein until the mold is completely filled. The hop- 85 per 16 is then lifted off and a straight-edged tool is drawn across the top of the mold on a line with the upper surfaces of the sides 7 7 8 8, which thereby forms a flat even surface for the top of the finished product. Then 90 the cores 13 are lifted out, leaving the openings which are to form the hollow portions of the building-blocks. The cams 11 are then released and they and their shafts removed and the end pieces 8 withdrawn, which is also 95 followed by the immediate removal of the side pieces 7, leaving the finished block standing on the bottom board 1. The pieces composing the mold are then taken to the next bottom board and the process just described 100 repeated indefinitely. The finished block (shown in Fig. 7) is allowed to remain from twenty-four to forty-eight hours on the bottom board, by which time it has acquired sufficient rigidity to be removed therefrom for use. 105

It will be seen from the description heretofore given that at no time is it necessary to invert the mold to remove the building-block after it has been made, thereby avoiding all danger of fracture or injury to the block 110 while it is in a comparatively green and soft condition.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a series of bottom 115 boards, of a guide-board arranged to be placed thereon temporarily, of side pieces capable of being fastened together whose location on said bottom boards will be determined by said guide-board, and a filling-hopper to be placed 120 on said side boards and means to locate the position of said filling-hopper with reference to said sides.

2. The combination in a device of the class stated of a series of bottom boards, a guide- 125 board to be placed thereon, and means to locate the position of said guide-board on said bottom boards definitely.

3. The combination with a series of bottom boards, of a frame or mold to be placed there- 130 on, a guide-board to definitely locate the position of said frame or mold on said bottom boards, means to locate said guide-board on said bottom boards, means readily detach-

able to hold the sides of said mold together, substantially as shown and described.

4. The combination with a series of bottom boards, of a mold or framework to be placed thereon, means readily detachable to hold said framework together, and a board to locate the position of said framework on said bottom boards, a core or cores adapted to be placed on said bottom boards to locate in openings  
10 used to locate said guide-board, substantially as shown and described.

5. The combination with a series of bottom boards, a mold or framework to be placed on said bottom boards, means to locate the posi-

tion of said mold or framework on said bottom boards, cores located on said bottom boards, means to locate the position of said cores with relation to said mold or framework, a filling-hopper adapted to rest on said mold or framework and means to connect temporarily said  
15 filling-hopper and said cores. 20

In testimony that I claim the above I hereunto set my hand in the presence of two subscribing witnesses.

HOWARD G. GOODWIN.

In presence of—

MAUDE ZWISLER,  
C. E. HUMMPHREY.