W. LAKE.

KNOCKDOWN APPARATUS FOR FORMING ARTIFICIAL STONE BLOCKS.

APPLICATION FILED APR. 22, 1909.

970,727.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.

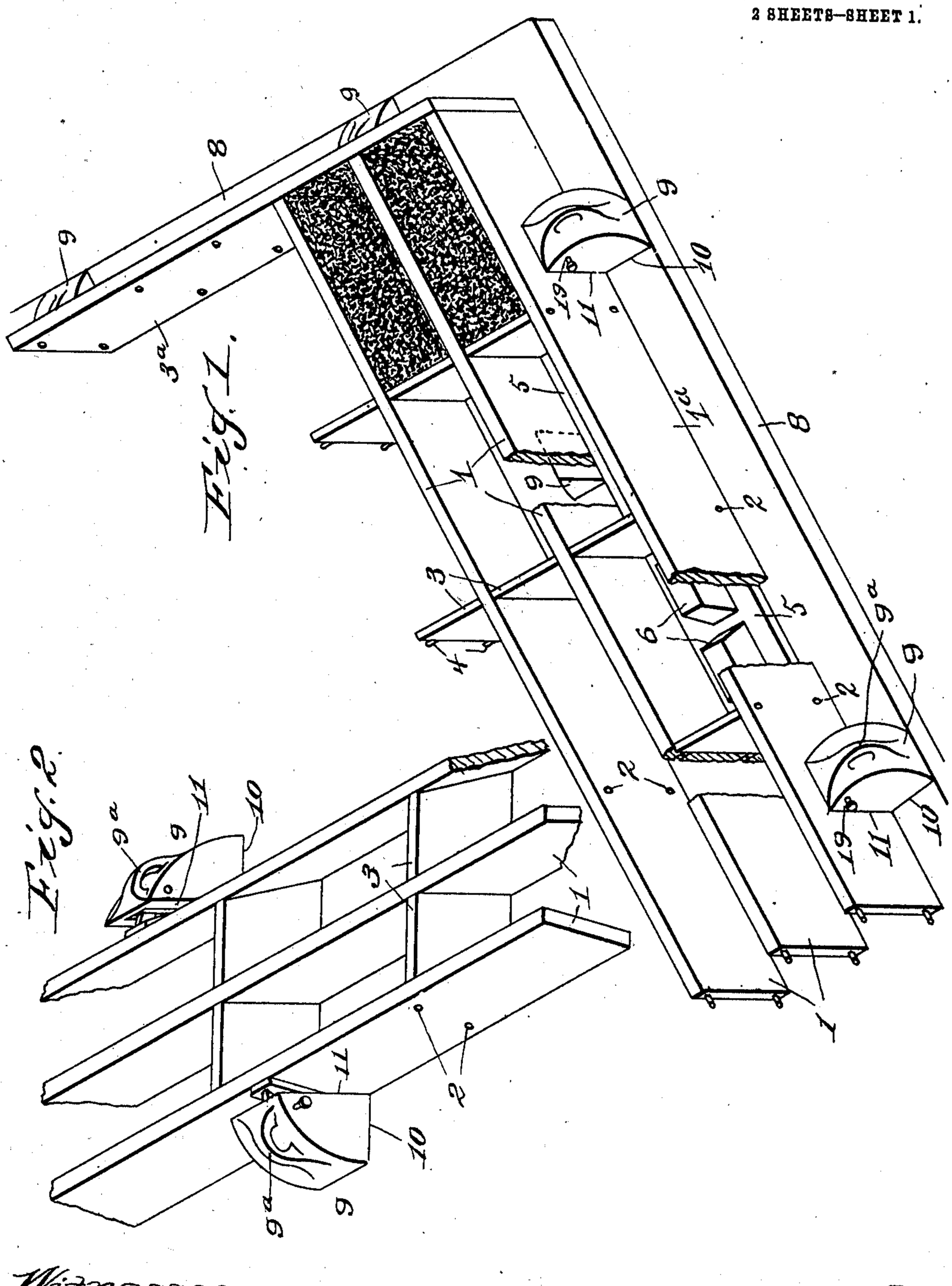

Fig. 1.

Fig. 2.

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Fig. 5.

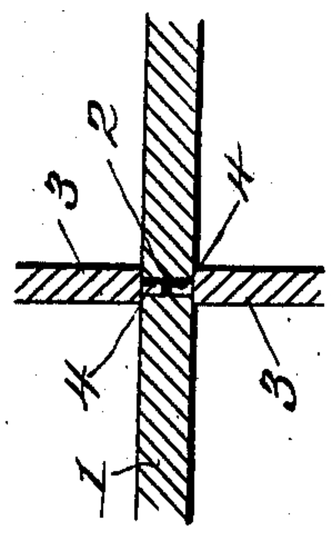


Fig. 3.

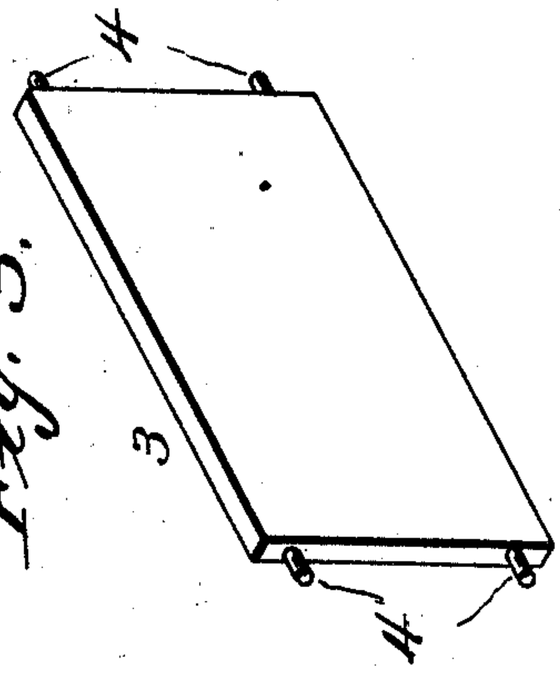


Fig. 6.

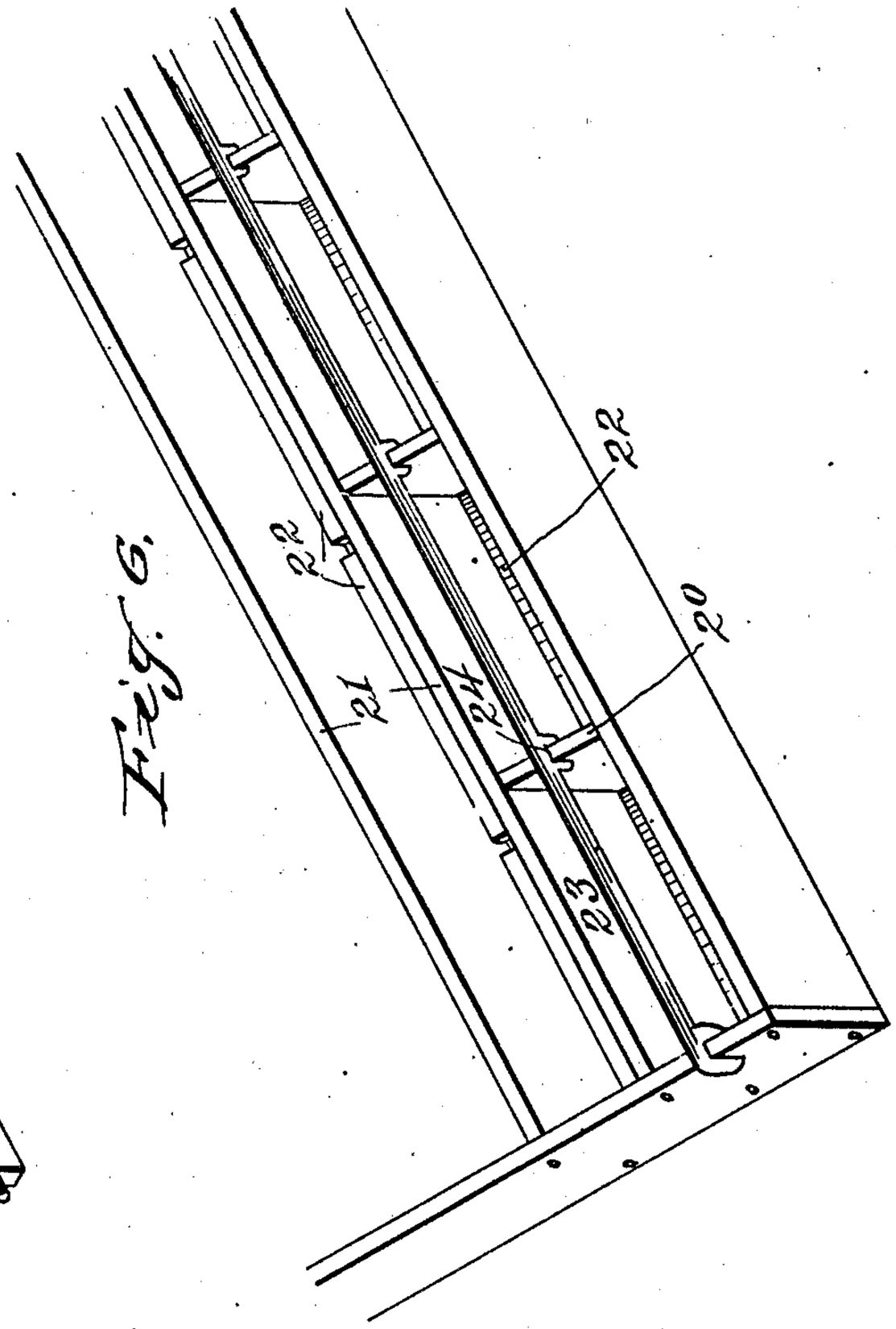
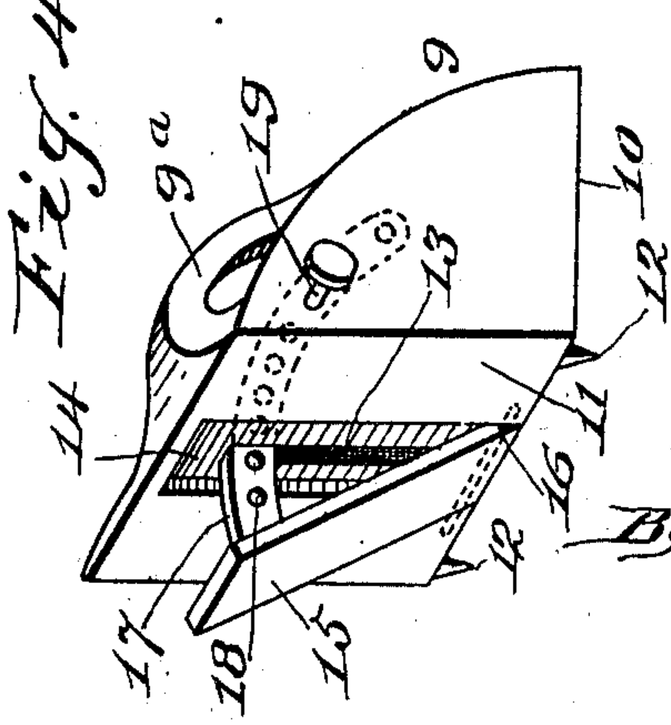


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILMOT LAKE, OF WASHINGTON, DISTRICT OF COLUMBIA.

KNOCKDOWN APPARATUS FOR FORMING ARTIFICIAL-STONE BLOCKS.

970,727. Specification of Letters Patent. **Patented Sept. 20, 1910.**

Application filed April 22, 1909. Serial No. 491,557.

To all whom it may concern:

Be it known that I, WILMOT LAKE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Knockdown Apparatus for Forming Artificial-Stone Blocks, of which the following is a specification.

This invention relates to the manufacture of artificial stone, and pertains especially to an apparatus for forming concrete or other artificial stone material into building blocks.

The object of the invention is to provide novel and peculiar apparatus adapted to be assembled progressively with the deposit therein of the material of which the stone is composed, and knocked down for separation.

A further object of the invention is to provide novel and peculiar apparatus constructed and arranged to be assembled progressively according to the number of artificial stone blocks desired to be formed by said apparatus, and adapted to be knocked down for delivering the blocks.

A still further object of the invention is to provide novel and peculiar apparatus constructed and arranged to be assembled step by step in continuous progression simultaneously with the deposit of the stone material for forming any number of artificial stone building blocks, and adapted to be knocked down for separation.

It is well known that in the manufacture of concrete blocks or artificial stone blocks, various molds, presses, formers and the like are employed to compress or mold concrete or similar substance into building blocks. Artificial stone blocks have also been formed by filling the stone material into a fixed frame surrounding a series of partitions; and it is common to employ devices and apparatus similar in appearance to mine for laying concrete pavements, curbs, and gutters; but my invention or apparatus, its construction, the manner of operating it, and its results differ essentially from the devices or apparatus hereinbefore referred to, especially in that my apparatus is constructed and arranged to be assembled in progression consistent and simultaneously with the filling in of the material to form the blocks.

The purpose of my invention is to provide an apparatus whereby a continuous progression of separate and independent artificial stone blocks are formed in compartments of the apparatus, a plurality of such compartments being built out from one end and one side of the apparatus in continuous progression.

In the accompanying drawings forming part of this application: Figure 1 is a perspective view showing the application of the invention one end and one side thereof showing means for continuing the apparatus in length and width. Fig. 2 is a similar view partly broken away. Fig. 3 is a detail perspective view of one of the cross-plates. Fig. 4 is a perspective view of one of the stop-blocks. Fig. 5 is a detail sectional view taken through one of the pin and eye points. Fig. 6 is a perspective view of a modification partly broken away.

The same reference numerals denote the same parts throughout the several views of the drawings.

In carrying out my invention it will be observed that I do not employ a supplemental frame in which or by which my formers are held or supported, but that the apparatus is composed entirely of the formers, nor do I, in my preferred apparatus employ braces, clamps or ties for holding the forms together.

The apparatus consists of a series of boards or plates 1, having a series of pin-holes 2, arranged in pairs at predetermined points throughout the length of the boards or plates, and a series of cross-plates or boards 3, having at each end projecting pins 4 to engage the holes 2 in assembling the parts, but not extending through the holes. One of said boards 1^a, forms the outer side or starting side board, and one of said plates 3^a, forms the outer end or starting end plate of the apparatus. The boards 1 and 1^a are of sufficient thickness to permit the pins of the plate 3 to be inserted therein from each side of said boards so that each of said holes accommodates two pins. A series of base boards 5 are provided one for each compartment, and these boards have cores 6 thereon for making the block 7, hollow or partly so. The whole apparatus is set upon a suitable floor 8.

In order to support or hold the boards in upright position, as they are set up one after the other in continuous rotation, I provide stop-blocks 9 having a handle 9^a. These blocks are of special construction so that they may be used for holding the boards perpendicular, or for holding one or more of

said boards in inclined position, and to accomplish both functions the block 9 (only one of them will be described in detail) has faces 10 and 11 at right-angles to each other. The face 10 forms the base or seat of the block, and has pointed prongs or spurs 12, adapted to enter the floor 8 in seating the blocks, and the face 11 forms a temporary bearing for the boards. A slot 13 extends into the body of the block from the face 11, and a recess 14 is formed in the face 11, and extends from the slot 13 to the base-face 10. A plate 15 is pivoted at 16 in the lower end of the recess; and has a curved arm 17 working in the slot 13. Said arm is provided with holes 18 engaged by a pin 19 for holding the plate 15 in such position as desired. In using the blocks for perpendicular boards, the plate sets into the recess flush with the face 11, but when it is desired to tilt or use the boards in slanting or inclined position for the purpose of beveling one side of the stone, the plate is swung outwardly on its pivot and held to the angle desired in the stone by the pins 19 and the arm 1(. In this manner any desired angle or bevel may be obtained in one side of the stone. It is obvious that the ends of the cross-plates may be beveled to conform with the position of the boards in forming the bevel sides.

In operating the apparatus the starting side and end are set up, and the stop-blocks fixed temporarily against them, and as many core-plates and cross-plates as may be desired are set against the starting board with the pins on one end of the cross-plates engaging the holes of said board, another lengthwise board is set against the positioned cross-plates so that the pins on the other end of said cross-plates engage the holes of this last mentioned board, and other of said stop-blocks are temporarily fixed against this board, thus forming one line of compartments. Continuous application of said parts and progressive setting up of the same as above described will form any number of compartments desired, and hence produce an equal number of artificial stones in succession. It will be understood that the stop-blocks, except those against the outer boards, are removed or changed from one board to the next as the compartments are formed, and prior to the filling of the compartments, so that only one set of stop-blocks are employed.

According to this invention, the apparatus is not confined or limited to a surrounding or other frame, as there is no frame employed, and therefore the boards comprising the apparatus may be multiplied and lengthened in operating the apparatus and thereby make it continuous and unlimited in length and width.

Referring to the modification shown in Fig. 6, the cross-plates 20 are without pins and are held in position by the longitudinal boards 21, and the core plates 22 between which the bottom of the plates 20 are held, said boards 21 having no pin holes, and are tied and clamped with the cross-plates and core-plates by a tie rod 23, having notches 24 fitting the top edge of the cross-plates. It will be observed that there is no compression of the parts of the apparatus, they being held one by the other in the same position as placed before the concrete is filled in, hence there is no pressing of the concrete, and it is simply allowed to stand, as it is poured into the compartment until set and dry, whereupon the apparatus is knocked down by separating the boards and plates, and removing them, which operation separates the blocks. It will be seen that any number of compartments or forms may be used according to the number of boards and plates; that one or more rows of stone may be formed as desired; that certain of the rows may have beveled sides as desired; that a portion or certain of the rows of the apparatus may be knocked down without disturbing the remaining rows; and that the boards, blocks, and plates may be used over and over again, in a most expeditious and inexpensive manner.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a frameless apparatus adapted to be knocked down and set up in continuous operation for forming artificial stone, the combination, with independent longitudinal boards, and independent cross-plates between the boards, of transferable stop-blocks for temporarily holding certain of the boards, a plate pivoted at one end in one face of the block, a curved arm projecting from the plate and working in the block, and a suitable pin extending through the block and through the arm for holding the plate in position.

2. In a stop device for the purpose described, the combination, with a transportable weight having anchoring prongs, of a swinging plate pivoted at one end to the weight, a curved arm projecting from the other end of the plate and working in the weight, and a pin engaging the arm for holding the plate at various angles to the weight.

In witness whereof I hereunto set my hand in the presence of two witnesses.

WILMOT LAKE.

Witnesses:
J. Ross Colhoun,
Wm. E. Valk, Jr.