

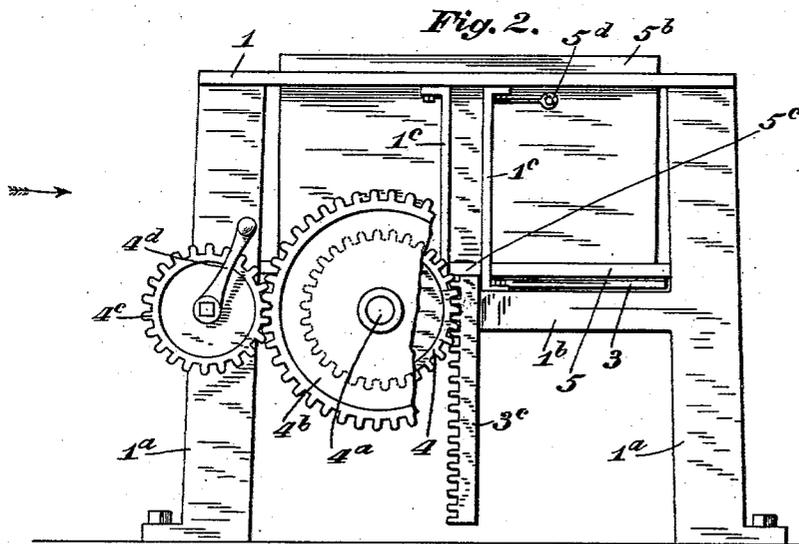
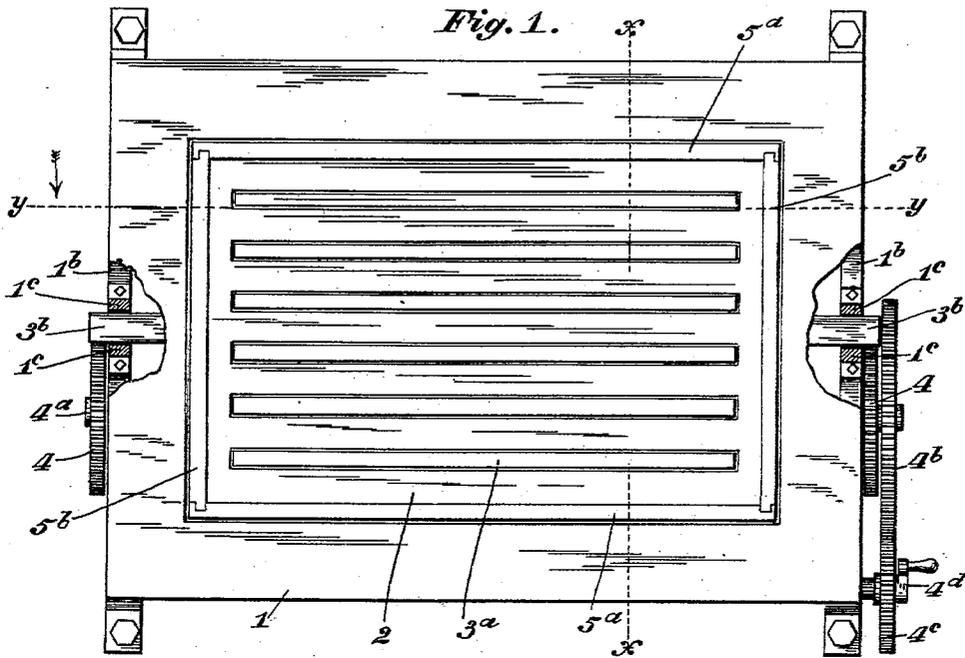
L. J. DUMM.

APPARATUS FOR THE MANUFACTURE OF CONCRETE BRICKS, &c.

APPLICATION FILED NOV. 21, 1903.

NO MODEL.

5 SHEETS—SHEET 1.



Witnesses

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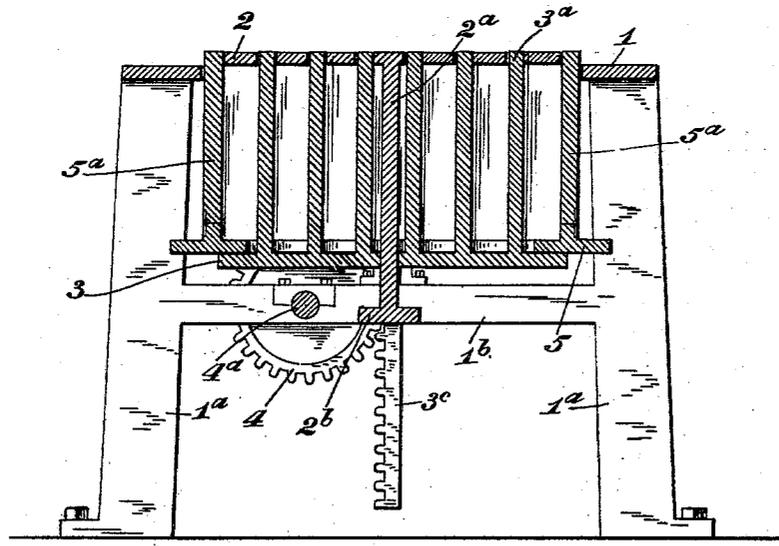
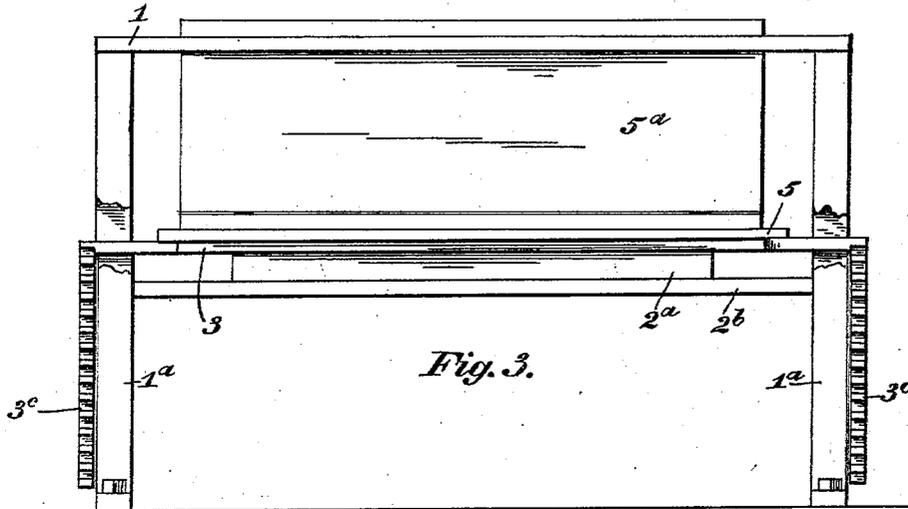
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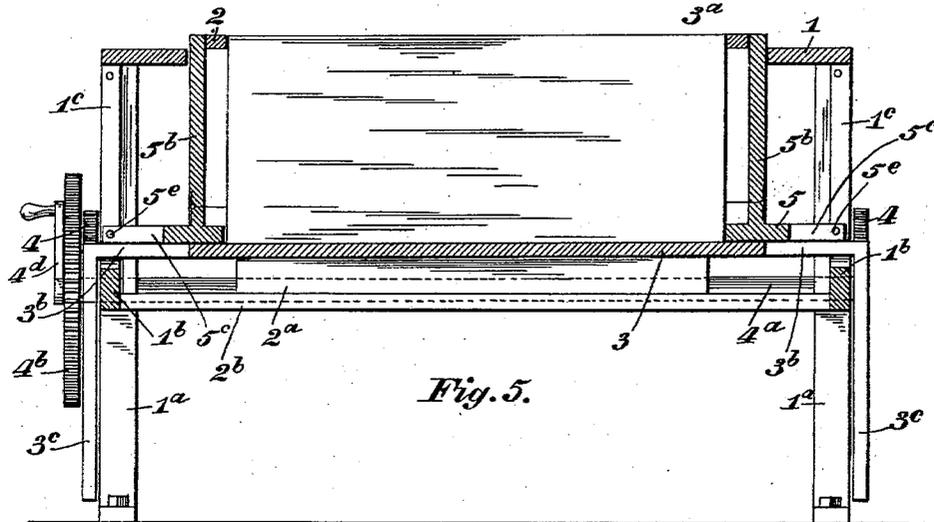


Fig. 5.

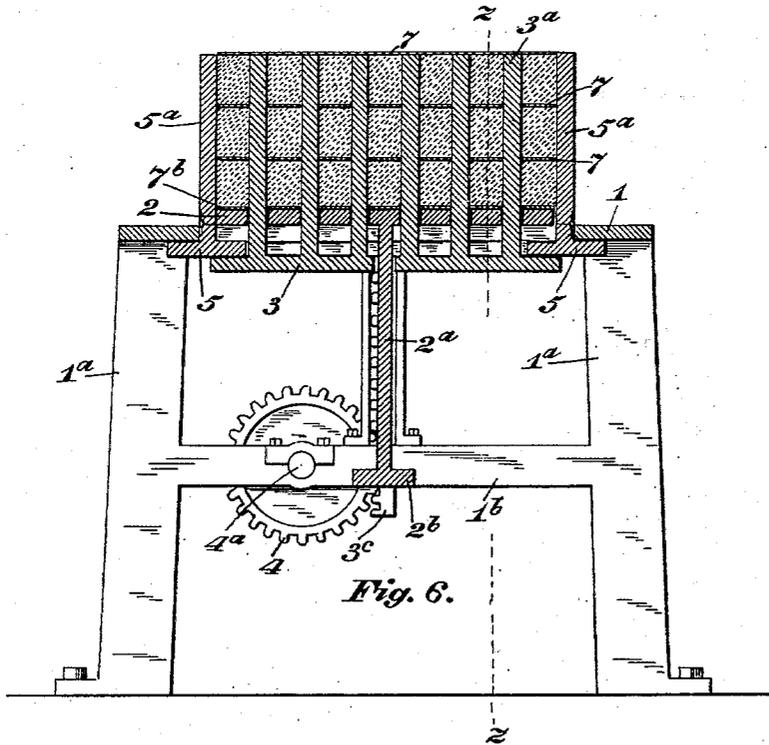


Fig. 6.

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5 SHEETS—SHEET 4

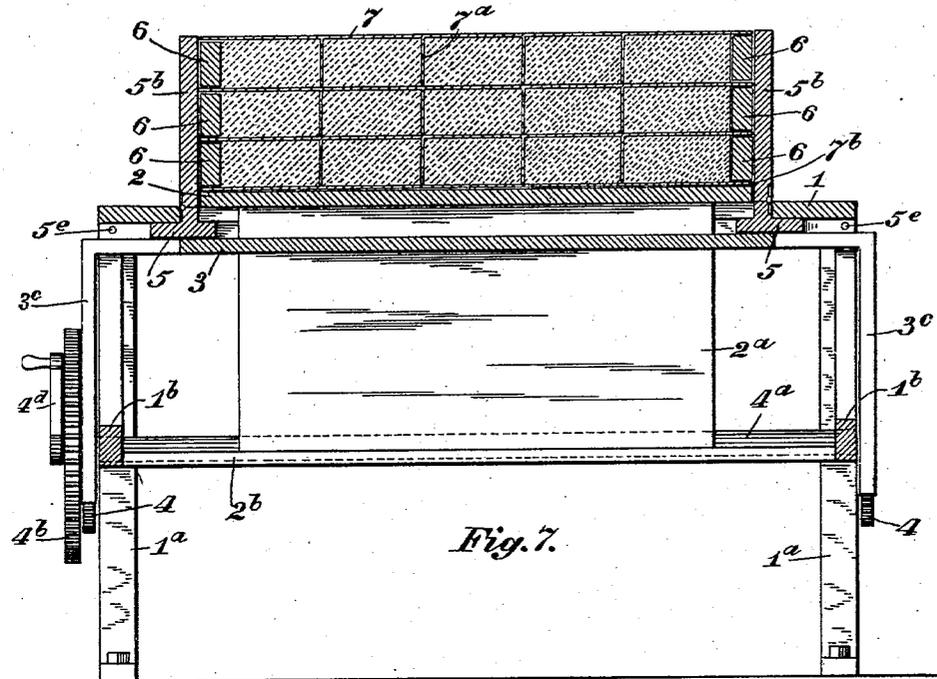


Fig. 7.

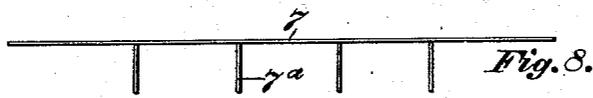


Fig. 8.



Fig. 9.

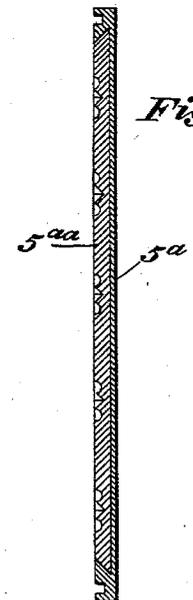


Fig. 12.

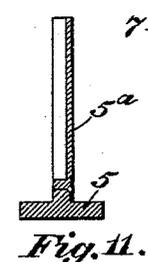


Fig. 11.

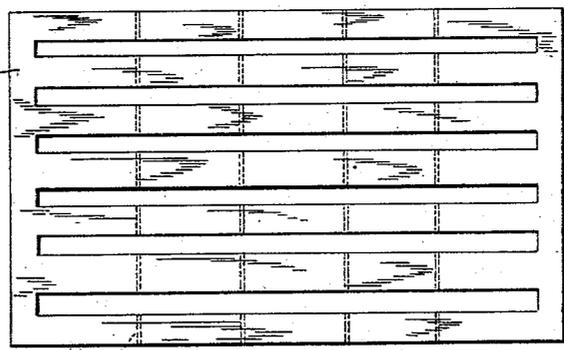


Fig. 10.

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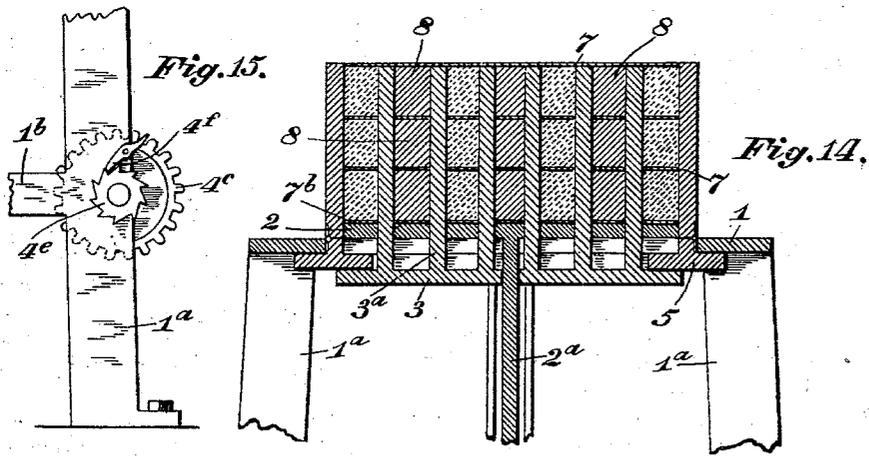
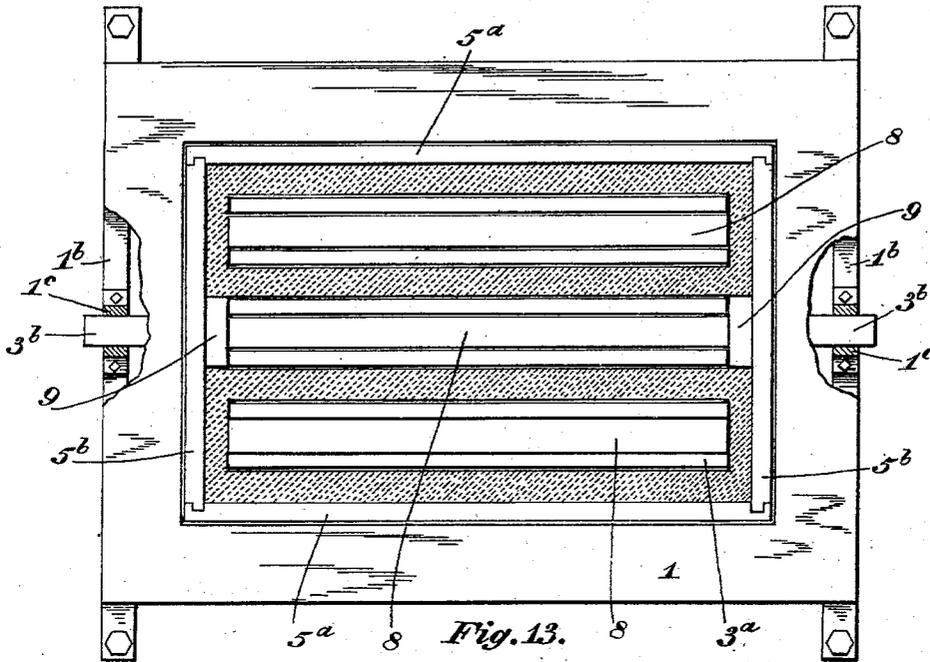
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5 SHEETS—SHEET 5.



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UNITED STATES PATENT OFFICE.

LEE J. DUMM, OF COLUMBUS, OHIO.

APPARATUS FOR THE MANUFACTURE OF CONCRETE BRICKS, &c.

SPECIFICATION forming part of Letters Patent No. 753,249, dated March 1, 1904.

Application filed November 21, 1903. Serial No. 182,102. (No model.)

To all whom it may concern:

Be it known that I, LEE J. DUMM, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Apparatus for the Manufacture of Concrete Brick or Blocks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide an improved apparatus for the rapid multiplication of brick or blocks of cement or artificial stone.

The invention consists in the construction and combination of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a top plan view, parts being broken out. Fig. 2 is an elevation of the right-hand end as shown in Fig. 1, a portion broken out. Fig. 3 is an elevation of the left-hand side of the apparatus looking in the direction of the arrow, Fig. 2, small portions broken out and the operating-gearing omitted. Fig. 4 is a transverse vertical section on the plane *xx*, Fig. 1, looking to the left. Fig. 5 is a longitudinal vertical section on the plane *yy* looking in the direction indicated by the arrow, Fig. 1. Fig. 6 is a sectional view the same as Fig. 4, except that it shows the mold-forming partitions elevated and filled with brick. Fig. 7 is a section on the plane *zz* looking to the left. Figs. 8, 9, and 10 are side, end, and plan views of a slotted plate containing knives or dividers which are used to divide the cement or concrete into sections constituting brick or blocks. Figs. 11 and 12 are horizontal and vertical sections of the sides of the mold-box, showing how ornamental designs can be molded in the brick or blocks. Figs. 13 and 14 are a plan and a section, respectively, illustrating how the apparatus can be used for the manufacture of large stones or blocks. Fig. 15 is a detail illustrating an ordinary ratchet and pawl for locking the operating-gearing as the mold-box is elevated.

Like characters of reference in the several views designate corresponding parts. 50

The frame in which the operating parts are supported comprises a top or table 1, with a large rectangular opening in its center, legs 1^a and cross-ties or girders 1^b connecting the legs at the opposite ends of the frame. Located fixedly and slightly above the plane of the top or the table is a grid 2, that is supported in said position by means of a vertical web 2^a, the base 2^b of which is supported longitudinally of the frame between the girders 1^b. Sliding vertically on the web 2^a is a plate 3, rising from which is a series of parallel partitions 3^a, fitting and projecting into and capable of movement through the interstices of the grid 2. The plate 3 has at each end a horizontal projection 3^b extending beyond the extremities of the projections 3^a is a rack 3^c. These racks are engaged by spur-gears 4, fixed on a shaft 4^a, journaled on the girders 1^b, said shaft also having a larger gear 4^b engaged by a pinion 4^c, mounted in one of the legs of the table and having a crank 4^d, by which it can be turned. The shaft of the pinion 4^c is provided with a ratchet 4^e, engaged by a pawl 4^f (see Fig. 15) to lock the gearing, and therefore the plate 3, bearing the partitions 3^a, at the position to which they are raised from time to time. 75

Supported movably on and separably vertically with respect to the plate 3 is a rectangular frame 5, having hinged thereto side pieces 5^a and end pieces 5^b, constituting a surrounding box inclosing the grid and the partitions. The side and end pieces can be fitted together by tongue-and-groove connection, as indicated in Fig. 1. When these side and end pieces rest on the plate 3, their upper edges lie flush with the upper edges of the partitions 3^a; but in practice when the plate 3 is lifted the said side and end pieces are also lifted. The sides 5^a form the outer wall of the mold at the sides of the structure when brick or stone are molded, and the end pieces 5^b form the end of the stone when they are molded. When brick are molded, the blocks 85 90 95

6 are inserted between the ends of the partitions 3^a and the end pieces 5^b of the box, as seen in Fig. 7. The frame 5 at its ends has projections 5^c, and these projections, as well as those 5 designated 3^b, are guided by upright portions 1^c, secured between the girders and the under side of the table 1. When the frame 5 has been raised and it is desired to lower the partitions 3^a independently of the sides 5^a and ends 5^b, a pin 5^d is passed through a hole 5^e and corresponding holes in the upper portions of the guides 1^c to hold the frame carrying the sides and ends in elevated position.

7 designates a removable grid of a form 15 and configuration corresponding to the interior of the box formed by the sides and ends, the bars thereof being of the same width as the molding-spaces between the partitions, and the under sides of the bars are furnished 20 with knives or dividers 7^a, that are shoved down into the material to divide it into bricks or blocks. The first or lowermost of the plates, which is designated 7^b, however, has and needs no knives and merely serves as a 25 device upon which the brick or blocks when molded can be removed collectively. The purpose of these plates, therefore, is not only to subdivide the material into brick form, but also to afford a frame by means of which a 30 horizontal layer or course of the molded bricks can be collectively removed.

In operation in the manufacture of brick the partitions 3^a and sides 5^a and 5^b are elevated a distance equal to the width of the brick. The 35 first plate 7^b is then put in and then the end blocks 6. The molding-spaces thus formed are filled with the material of which the brick are to be formed and the upper surface smoothed off flush with the upper edges of the partitions 40 and the sides and ends. The removable grid or plate 7, with knives 7^a, is then pressed down into the material, thus subdividing the contents of the several spaces between the partitions and sides into brick of the proper 45 length. This operation is then repeated on top of the plate 7 as often as desired or as often as practicable with the apparatus provided. After the upper or last course has been formed the frame 5, carrying the sides and ends, is secured and the frame 3, with the partitions 3^a, 50 lowered, after which the plates 7 and 7^b can be removed one at a time. The sides 5^a and ends 5^b of course can be turned down on on their hinges. In the molding of large 55 blocks or stone, as indicated in Figs. 13 and 14, it is only needed to fill the spaces between, say, a pair of the partitions 3^a with a block 8 and substitute for the block 6 the short blocks 9 at the places indicated, when a mold 60 for molding hollow stones or blocks is provided.

As shown in Figs. 11 and 12, the side pieces 5^a can be provided with a removable die 5^{aa},

dovetailed into the side, said die containing intaglio or cameo ornamental designs adapted 65 to impart their form to the sides of the molded stone or brick.

The forms and relative proportions of the parts shown can be varied.

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

1. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 75 movable through the grid to form molds and a removable grid provided with knives to subdivide the material in the molds.

2. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 80 movable through the grid to form molds and a movable grid provided with knives at one side to subdivide the material in the molds and to support material for additional brick or blocks at the other side.

3. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 85 movable through the grid to form molds and a frame carrying laterally-movable side pieces 90 movable vertically with the partitions.

4. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 95 movable through the grid to form molds, and a frame carrying laterally-movable side and end pieces movable with the partitions.

5. In an apparatus for the manufacture of brick or block, the combination of a relatively stationary grid, a series of partitions 100 movable through said grid and side pieces movable with said partitions to form molds, the partitions being movable independently of the side pieces.

6. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a plate carrying a series of partitions adapted to fit and move 105 through the interstices of said grid, mechanism for operating said plate, a frame carrying side pieces supported by said plate, the said 110 frame being movable independently of the partitions.

7. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 115 movable through said grid, side pieces movable with said partitions and cooperating therewith to form molds, removable end blocks also cooperating with said partitions to form 120 molds.

8. In an apparatus for the manufacture of brick or blocks, the combination of a relatively stationary grid, a series of partitions 125 movable through said grid, side pieces movable with said partitions and cooperating

5 therewith to form molds, removable end blocks
also cooperating with said partitions to form
molds, and a removable grid adapted to fit be-
tween the partitions and form the bottom of an
additional mold.

9. In an apparatus for the manufacture of
brick or blocks, the combination of a rela-
tively stationary grid, a series of partitions
movable through said grid, side and end pieces
10 movable with said partitions and cooperating

therewith to form molds and a removable
block adapted to fill the space between two of
said partitions to form in conjunction with
the partitions a core.

In testimony whereof I affix my signature in 15
presence of two witnesses.

LEE J. DUMM.

Witnesses:

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S. W. LATHAM.