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3 SHEETS—SHEET 1.

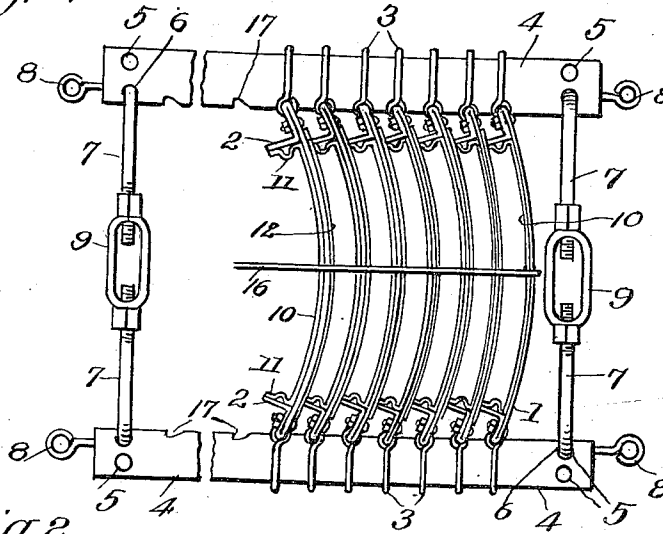


Fig. 2.

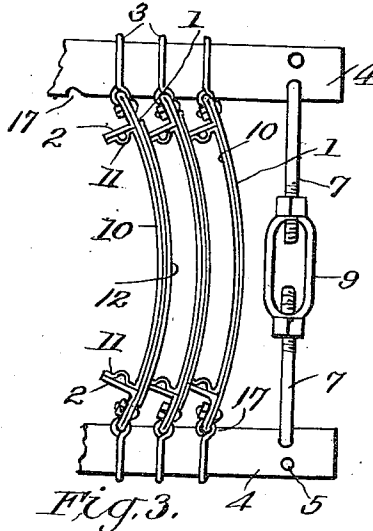
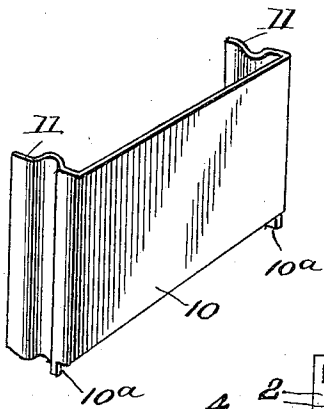


Fig. 3.



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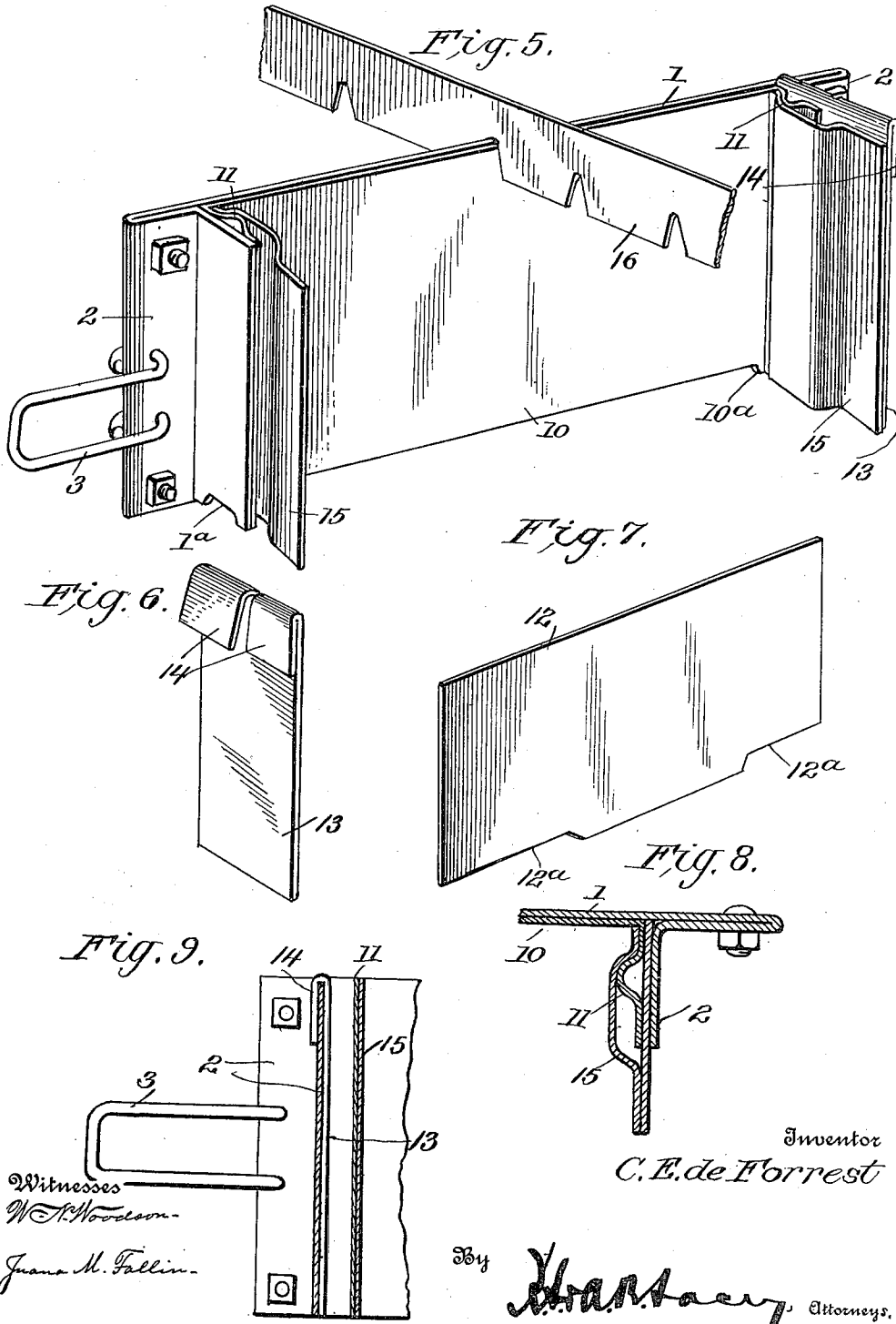
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C. E. DE FORREST.
CONCRETE BLOCK MACHINE.
APPLICATION FILED DEC. 20, 1910.

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Patented Jan. 2, 1912.

3 SHEETS-SHEET 2.



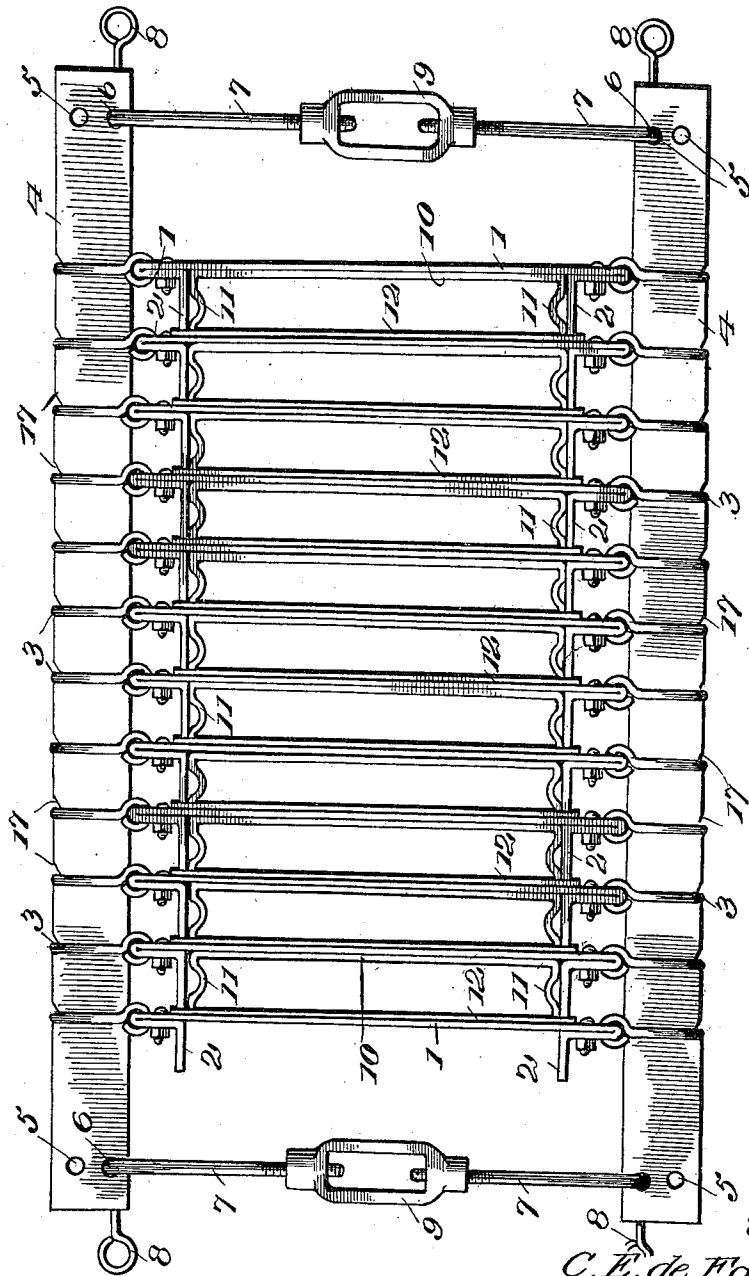
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3 SHEETS—SHEET 3.

Fig. 10.



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CONCRETE-BLOCK MACHINE.

1,013,536.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed December 20, 1910. Serial No. 598,366.

To all whom it may concern:

Be it known that I, CHARLES E. DE FORREST, citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Concrete-Block Machines, of which the following is a specification.

This invention comprehends certain new and useful improvements in molds for making concrete blocks, of that class of mold for producing a plurality of blocks at one and the same operation, and the invention has for its primary object an improved construction of separable mold of this character, the parts of which may be easily manufactured and quickly and readily assembled and disassembled, and extended or contracted to form blocks of different thicknesses.

The invention also has for its object a simple block mold embodying face plates that are capable of being flexed, and novel means for either flexing said plates by an endwise pressure exerted thereon, or of holding said plates absolutely straight, according to whether the blocks formed are to be curved or plane.

The invention also has for its object an improved construction of separable mold capable of easily producing blocks with different end conformations, as well as blocks of different thicknesses, the end forms being readily interchangeable and capable of being easily secured in place. And the invention has for a still further object to generally improve this class of devices and to render them more useful and commercially desirable.

With these and other objects in view, the invention consists essentially in a mold embodying supporting side bars, a plurality of flexible face plates extending transversely of said side bars and engaged thereby at the ends of the plates, and means connecting together the side bars in such a manner that they may be drawn toward each other so as to effect an endwise compression on the plates, flexing the latter as required according to the curvature it is desired the finished product shall have, the connecting means between the side bars also being arranged to spread the bars apart, when it is desired that the face plates shall be extended straight across the mold of which they form a part.

And the invention also consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter describe and claim.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figures 1 and 2 are top plan views of portions of my improved mold; Fig. 3 is a transverse sectional view, illustrating one of the face plates and combined parts in elevation; Fig. 4 is a perspective view of one of the forms; Fig. 5 is a similar view on an enlarged scale, illustrating extension pieces and supports therefor, one of the supports being omitted in order to more clearly show other parts; Fig. 6 is a detail perspective view of one of the end form supports; Fig. 7 is a detail perspective view of an auxiliary face plate employed; Fig. 8 is an enlarged horizontal sectional view; Fig. 9 is a transverse sectional view; Fig. 10 is a plan view illustrating one arrangement of the parts herein specifically referred to.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 designates the face plates of my improved multiple mold, there being any desired number of said plates and being preferably constructed of sheet metal capable of being flexed. Each of the plates 1 is provided with end form supports 2, the same being preferably formed integral with the plates by bending the metal of which the plates are composed, as will be clearly evident from an inspection of the drawings. Preferably the bottom edge of the face plates and end form supports are provided with drainage openings 1^a. The free ends of the supports 2 project at an angle from one face of the plate 1, as shown, whereby, whether said plates be plane or flexed to assume different curvatures, the laterally projecting portions of the end form supports 2 will maintain the same angle or radius relative to the curved plates, whereby the blocks which are formed between the plates will properly line up at their ends when they are arranged in courses one end against another. It is to be noted that the tops of the end form sup-

ports 2 are slightly inclined toward the center of the mold when the parts are assembled, this facilitating the handling of the mold after it has been filled with the concrete.

Links 3 are pivotally connected to the ends of the respective face plates 1, said links being of loop formation and being designed to be slipped over the side bars 4 of the mold, by an endwise movement, as will be evident from an inspection of the drawings. Each side bar 4 is formed at its ends with apertures 5, preferably two in number, arranged in transversely extending pairs close to the longitudinal edges of the bars, and one aperture of each pair, according to the particular position of the side bars, is designed to receive the end 6 of a turnbuckle stub 7 said ends being detachably secured in the apertures, as by cotter pins or keys 8. The corresponding stubs 7 are connected by turnbuckles 9, whereby the stubs may be moved laterally away from each other or nearer together, as required.

It is to be understood that when the parts are assembled, a plurality of the face plates 1 being employed, the end form supports 2 of one plate may abut against the adjoining face of the next plate in the series to form the molding compartments. But I have also provided main form plates 10 that are designed to form one face of a block, said main form plates being adapted to be slipped in between the face plates 1, in the molding operation and being provided at their ends with end forms 11 of angular formation and of predetermined shape, according as it be desired to form beads or grooves at the ends of the block. In connection with the main form plate 10 which is designed to form one face of a block as well as the ends thereof, I use an auxiliary form plate 12 adapted to lie against the next face plate 1 and to contact with the main form plate 10 in forming the completed block, it being understood that the auxiliary form plate 12 lies along one face of the block and the main plate along the other face. Preferably the ends of the main form plate 10 are cut out at the lower corners, as indicated at 10^a, so as to form drainage openings, while the auxiliary plate 12 is correspondingly formed in its lower end with drainage recesses 12^a.

In order to form blocks of different widths, greater than that of which the main form plates 10 with their end forms 11 are capable of producing, I have provided extension end form supports 13 formed with hooked ends 14 by which they are designed for detachable engagement with the main end form supports 2, and have also provided extension end forms 15 adapted to lap into the end forms 11, as clearly illustrated in Fig. 5. It is to be understood that these extension end forms 15 may be of any

desired conformation according to the particular formation of the end of the block to be produced thereby.

In order to hold the face plates 1 and form plates 10 and 12 in proper position, particularly while the mold is being fed with the concrete, I have provided a notched clip bar 16 which is designed to be inserted in the lower end of the hopper, the notched edge of said bar engaging the parts 1, 10 and 12 so as to hold them properly assembled.

In describing the proper operation of my improved multiple mold, it is to be particularly noted that the side bars 4 are formed in one edge with ratchet shaped sockets 17 (while one edge alone is thus formed in the present embodiment of the invention, it is to be understood that both edges of the bars may be correspondingly formed). And it is also to be noted that I stated at the outset of the specification that one of the objects of my invention was to provide a mold wherein the face plates might be flexed or curved by endwise compression, or held under tension so as to be maintained absolutely straight. When it is desired, then, to form curved blocks, the notched edges of the side bars 4 are disposed inwardly or facing each other, the beveled sides of the notches all inclining in the same direction, and the links of the face plates 1 are slipped over the ends of the side bars so that the face plates will assume the proper relative distances one from the other according to the thickness of the blocks, the main form plates and the auxiliary form plates being inserted, as well as the main or auxiliary end forms and end form supports, as required. The turnbuckles 9 are then turned so as to draw the two side bars 4 toward each other, this endwise compression imposed upon the face plates 1 serving to flex the latter so as to obtain the desired curvature, it being particularly noted that the beveled or inclined sides of the sockets 17 readily permit this flexing movement. If, on the other hand, it be desired to form plane blocks, the side bars 4 are preferably reversed so that the notches or sockets will face outermost, and the links 3 are then engaged in the sockets so as to securely maintain the plates in rigid spaced relation to each other, and the turnbuckles 9 are turned in the opposite direction to expand the frame laterally and hold the face plates 1 absolutely straight (see Fig. 10). Obviously, the ends of the turnbuckle stubs are engaged in different apertures 5 at the ends of the side bars 4 when the side bars are reversed edge for edge.

From the foregoing description in connection with the accompanying drawings, it will be seen that I have provided a very simple, durable and efficient construction of

multiple mold, the parts of which may be very quickly and easily assembled and adjusted according to the size and end formation of the blocks which it is desired to produce, the side bars 4 and their correlated arrangement with the compression and expanding devices and the flexible face plates, rendering it easy to produce an endwise compression on the plates when curved blocks are formed, or to exert an endwise tension or pull upon the plates when straight or plane blocks are desired.

Having thus described my invention, what is claimed as new is:

1. A mold of the character described, comprising face plates, means for holding said face plates in spaced relation to each other, and means for exerting an endwise compression on said plates whereby to flex the same, said plates being pliable, as specified.

2. A mold embodying side bars, plates engaging the side bars and held in spaced relation to each other, and means connecting said side bars together and arranged to draw the same inwardly to effect an endwise compression on said plates to flex the latter, said plates being pliable, as specified.

3. A mold embodying side bars, face plates extending from one side bar to the other and having their ends engaging the side bars, turnbuckle stubs connected to the respective side bars, and turnbuckles connecting said stubs together, the face plates being pliable, as specified.

4. A mold embodying side bars formed in one edge with ratchet shaped notches, plates having their ends engaged in said notches and extending from one bar to the other, the plates being held in spaced relation to each other and being pliable, and means for drawing said side bars toward each other to flex the plates by endwise compression on the latter.

5. A mold embodying side bars, links adapted to be slipped over said side bars, face plates pivotally connected at their ends to said links, the face plates being pliable, and means connected to said side bars for drawing the same toward each other so as to press endwise upon the face plates.

6. A mold embodying side bars, face plates engaging said side bars and arranged in spaced relation to each other, means connecting the face plates to the side bars for an endwise pull of the latter upon the form, and means for spreading said side bars apart, for the purpose specified.

7. A mold embodying side bars, face plates connected to said side bars, means for holding the face plates under tension between said bars, and end form supports connected to the face plates and adapted to abut against the adjacent face plates.

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

CHARLES E. DE FORREST. [L. s.]

Witnesses:

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W. L. ROGERS.