

Fig. 1

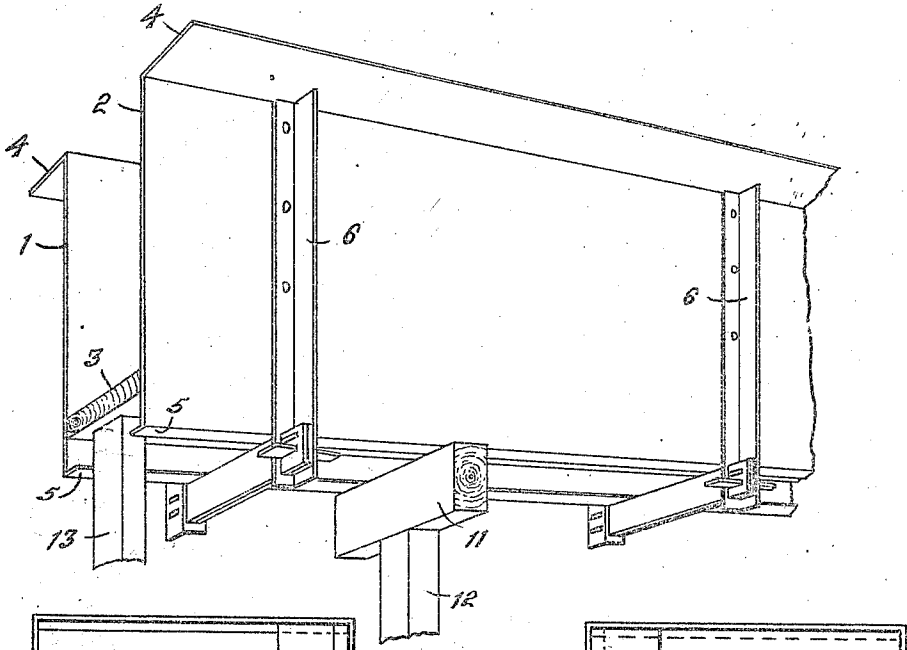
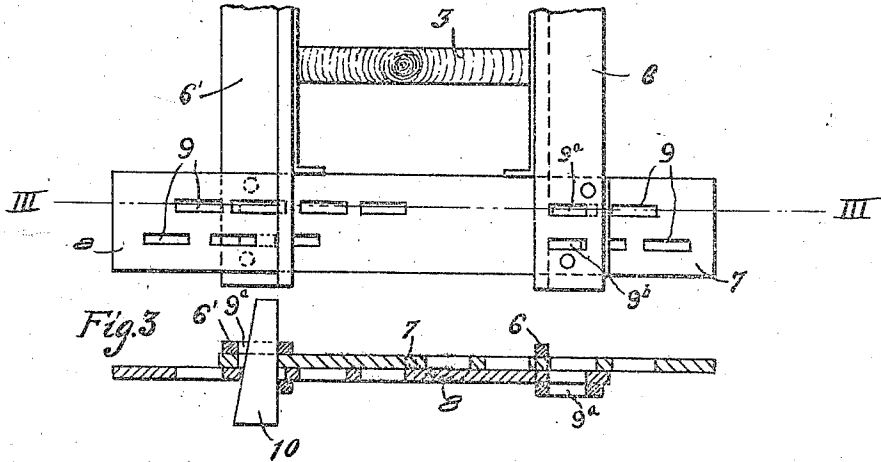
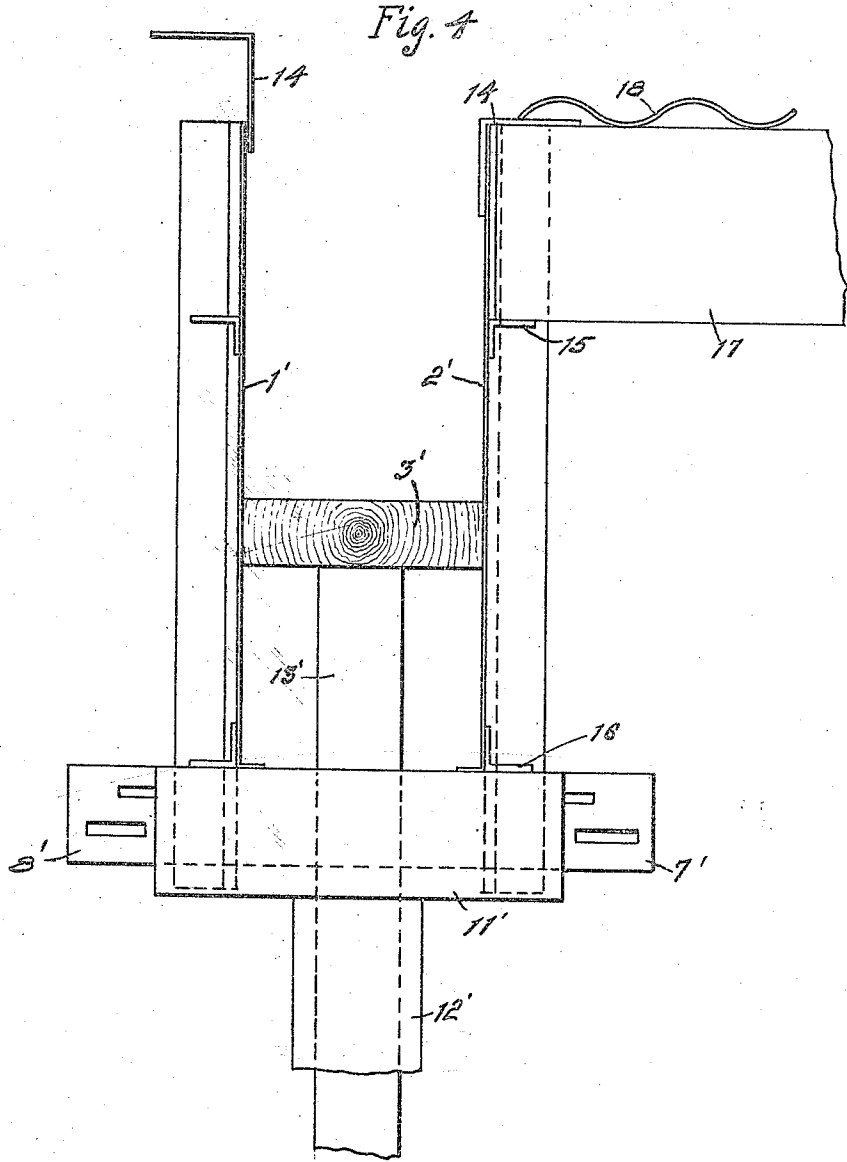


Fig. 2



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BEAM MOLD.

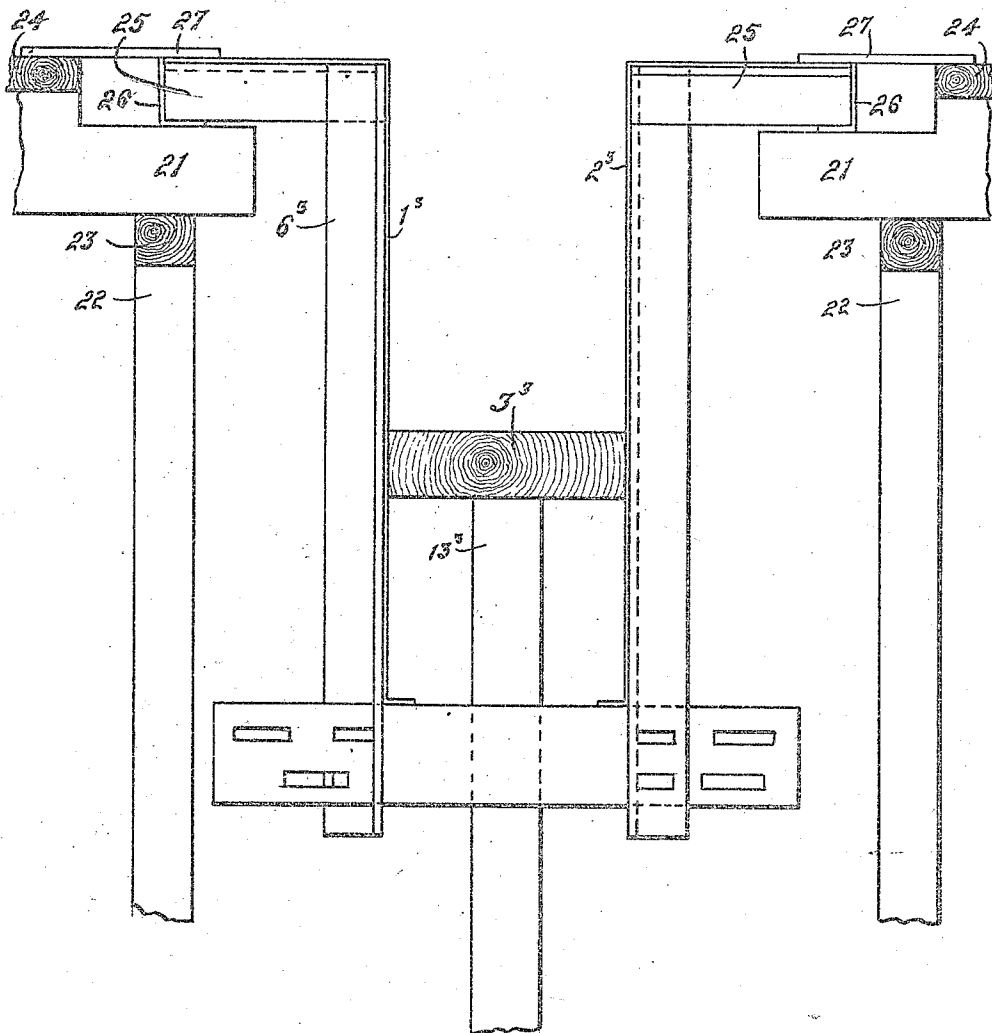
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1,090,588.

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3 SHEETS—SHEET 3.

Fig. 5.



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BEAM-MOLD.

1,090,583.

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To all whom it may concern:

Be it known that I, WILLIAM MAYO VENABLE, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Beam-Molds, of which the following is a specification.

The invention relates to the forms or molds employed for casting concrete beams. It has for its primary objects; the provision of a mold or form which may be readily and conveniently assembled and disassembled, and which may be employed for casting beams of different dimensions; the provision of a mold or form wherein the sides of the mold may be removed for reuse without removing the bottom of the mold; and in general the provision of an improved and simplified form of mold which can be more easily handled than the molds heretofore employed, and at less expense. Certain embodiments of the invention are illustrated in the accompanying drawings, wherein:—

Figure 1 is a perspective view showing the general arrangement of the parts of the mold when in position for use; Fig. 2 is an end view of the mold of Fig. 1; Fig. 3 is a transverse section on the line III—III of Fig. 2; Fig. 4 is an end elevation showing a modified construction; and Fig. 5 is an end elevation showing still another form of construction.

As indicated in Fig. 1, the form comprises the side plates 1 and 2, and the bottom plate 3. The side plates 1 and 2 are preferably of sheet metal and are provided at their upper edges with the out-turned flanges 4, and at their lower edges with the in-turned flanges 5. In order to give the necessary stiffness to the side plates 1 and 2, the vertical stiffeners 6, 6' preferably angle irons, are riveted to the plates at suitable intervals. The bottom plate 3 is preferably a wood plank, but some material other than wood might be used if desired. The plank 3 may be placed at any desired vertical position depending upon the depth of the concrete beam desired, so that one set of side plates can be used to form beams of widely varying depth. Simi-

larly as to width, as the distance between the side plates 1 and 2 may be varied by using planks of varying width. The plank 3 is maintained in position and a tight joint secured between the side edges of such plank and the side plates 1 and 2 by pulling such side plates toward each other, so that they tightly engage and grip the edges of the plank.

The means whereby the side plates 1 and 2 are clamped against the side edges of the plank 3, and whereby the side plates 1 and 2 are held in parallelism are shown in Figs. 2 and 3. From these views it will be seen that the flanges of the stiffeners 6—6' below the side plates 1 and 2, are slotted, and that these slots receive the clamping bars 7 and 8, the bar 7 being riveted or otherwise rigidly secured at its left hand end to the flange of the stiffener 6', and extending slidably at its other end through the slot in the flange of the stiffener 6, while the bar 8 is riveted at its right hand end to the flange of the stiffener 6, and passes slidably through the slot in the flange of the stiffener 6' at its other end. The bars 7 and 8 are provided with a plurality of horizontal slots 9 arranged in staggered relation, so that if one slot does not come in the proper position with respect to the slot 9^a in the flange of the stiffener, the next slot in the next row will come in such position with respect to the slot 9^a, and the parts are securely locked in position by means of wedges, one of such wedges 10 being shown in position. The driving of the wedges into their proper slots serves to draw the side plates 1 and 2 toward each other gripping the side edges of the plank 3, the degree of pressure upon such side edges being regulated by the distance which the wedges are driven through the slots. It will be seen that the foregoing securing arrangement not only serves to clamp the side plates against the side edges of the bottom plate and so hold such plate securely in position, but the securing bars serve to hold the side plates 1 and 2 in substantial parallelism. The bar 8 being riveted to the stiffener 6 at its right hand end, and being held at its left hand end against vertical movement

by the wedge 10, tends to prevent the plate 2 from tilting, and similarly the bar 7 riveted to the stiffener 6' tends to prevent any tilting by such plate. The side plates 1 and 2 are thus held rigidly in substantial parallelism with their planes at right angles with the bars 7 and 8. The series of end-to-end slots 9 permit an adjustment of the side plates toward and from each other to make beams of different thickness, while the clamping action of these plates upon the edges of the plank 3 permits it to be placed at any desired vertical position, thus giving beams of different depth, the shores 13 which assist in supporting the plank being lengthened or shortened as required, by blocking up from beneath.

The side plates 1 and 2 may be supported from beneath by means of transverse members 11 and supporting shores 12 as indicated in Fig. 1, or may be supported from the floor beams as illustrated in Fig. 5 and hereinafter described. The bottom plate 3 is preferably supported from other shores 13. The support for the side plates and that for the bottom plate are thus made independent, and as a result one portion of the apparatus may be taken down without the necessity of taking down the other portion. In practice the concrete beams require the support of the bottom plates for a comparatively long period, while the side plates 1 and 2 may be removed with safety only a short period after the concrete has set. These side plates 1 and 2 may therefore be reused while the bottom plate 3 is still in position. Inasmuch as the side plates can be reused rapidly, the quantity of side plates required for any given piece of work is reduced to a minimum, the only parts required in large quantities being the supporting planks 3, which are relatively very much cheaper than the metal portions of the apparatus. The independent supporting of the side plates and bottom plates thus becomes an important factor in reducing the cost of equipment. In those cases in which it is not necessary or desirable that the side plates be taken down before the bottom plates, the bottom plates may be supported from the side plates in any approved manner, and the independent shores 13 dispensed with.

A modified construction is illustrated in Fig. 4. In this construction the free angle member 14 takes the place of the flange 4 in the construction of Fig. 1, and the additional angles 15 and 16 are employed, such angles being riveted to the side plates. The angles 15 serve to support the floor beams 17, and the angles 16 serve to give additional stiffness to the lower edges of the side plates 1' and 2'. The plank 3' and the clamping bars 7' and 8' correspond to the parts 3, 7 and 8 in the apparatus shown in

Figs. 1, 2 and 3. The side plates are supported from beneath by the shores 12' carrying the cross members 11', and these side plates in turn support the floor beams 17. The corrugated sheet metal form member 18 overlapping the angle 14 may be employed to receive the concrete forming the floor above the beam. By making the angle 14 independent of the side plate, it is possible to adjust such angle to various vertical positions as indicated at the left in Fig. 4, so that the floor and ceiling lines on the two sides of the concrete beam may be made different if so desired.

Still another form of construction is illustrated in Fig. 5, such construction differing from that of Figs. 1, 2 and 3 primarily in that the side plates 1^a and 2^a are supported from the floor beams 21 instead of being supported by means of the blocks 11 and shores 12 as indicated in Fig. 1. The beams 21 are in turn supported by the shores 22 and transverse members 23, and carry upon their upper surfaces the flooring 24. When this construction of Fig. 5 is used, the members 21, 22 and 23 are first positioned, and the floor molds then hung in position upon the beams 21, while in a construction such as that shown in Figs. 1 and 4, the molds are first positioned and the floor beams 17 are then placed in position and supported from the molds. The ends of the stiffeners 6^a are welded to the angles 25 which fit into rabbets cut in the ends of the beams 21, such stiffeners being riveted to the side plates 1^a and 2^a. The extreme ends of the angles 25 are secured to angles 26 in order to provide a bearing upon the ends of the beams 21. The space between the angles 26 and the flooring 24 is bridged either by extensions of the plates 2^a or by means of the lap plates 27. The bottom plank 3^a is supported from beneath by means of the shores 13^a, and the lower ends of the side plates clamped together by securing means corresponding to those shown in Figs. 1, 2 and 3.

Having thus described my invention and illustrated its use what I claim as new and desire to secure by Letters Patent is the following:—

In combination in a beam mold, side plates adjustable toward and from each other to form beams of different width, means for holding the side plates to the positions to which they are adjusted, a bottom closure member fitting between the side plates with its side edges in frictional engagement with the inner faces of the side plates and vertically adjustable between the side plates to form beams of varying depth, vertical supports for the bottom closure member, and supports for the side plates upon which the side plates are releasably supported, the supports for the bottom

member lying between the side plates and permitting the vertical downward movement of the side plates without substantial lateral movement thereof, leaving the bottom closure member and its supports in operative position.

In testimony whereof I have hereunto

signed my name in the presence of the two subscribed witnesses.

WM. MAYO VENABLE.

Witnesses:

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