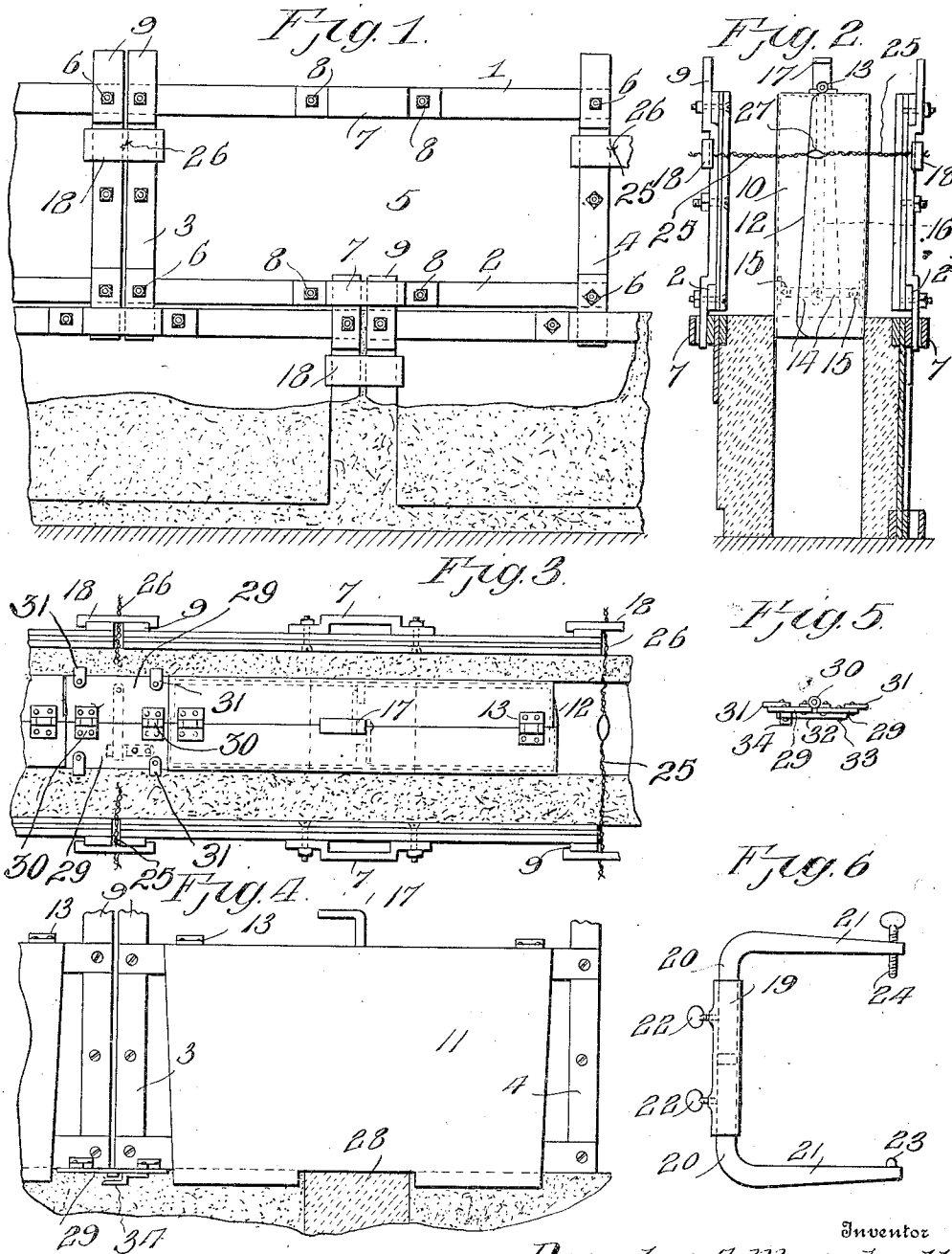


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MOLD FOR CONCRETE WALLS.
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MOLD FOR CONCRETE WALLS.

942,004.

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To all whom it may concern:

Be it known that I, DOUGLAS A. MARSHALL, citizen of the United States, residing at Spokane, in the county of Spokane and State of Washington, have invented new and useful Improvements in Molds for Concrete Walls, of which the following is a specification.

This invention relates to molds for concrete walls.

In the construction of forms of plastic or concrete walls it is desirable to make the same hollow in order to provide an air space or spaces which will afford the necessary ventilation and prevent rapid deterioration of the walls and also to reduce the weight of the walls without materially impairing the strength thereof.

The aim of the present invention is to provide suitable molds or apparatus which will greatly facilitate the formation of walls in the manner above indicated while at the same time permitting the sections of the mold to be readily removed from their positions after the concrete or plastic composition has become sufficiently hardened, the removal of the sections of the mold being effected without any alteration of the mold sections and without necessitating the removal of any bolts, screws or other fastening devices.

With the above and other objects in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter particularly described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a broken side elevation of the apparatus, showing a portion of a wall and the relation of the outer sections of the mold to each other and to the wall. Fig. 2 is a vertical cross section through the same also illustrating the construction of the core. Fig. 3 is a plan view of the same. Fig. 4 is a side elevation similar to Fig. 1 with the adjacent outer mold sections removed to show the inner core. Fig. 5 is an edge elevation of the collapsible shelf or support. Fig. 6 is a plan view of the gage clamp.

The outer mold of the wall is made up of a plurality of sections each comprising a rectangular frame embodying the parallel sides 1 and 2 and the end bars 3 and 4 connecting the same and bolted together at the corners of the frame. Fastened securely to

the frame bars is a face plate 5 which is held rigidly against the frame by the same bolts 6 which secure the corners of the frame together.

About centrally, the side bars 1 and 2 of each frame are provided with keepers 7 in the form of sockets secured to their respective bars by bolts 8 which also pass by preference through the face plate 5, the said keepers being adapted to receive projecting tongues 9 formed by extending the end bars 3 and 4 beyond or outside of the bars 1 and 2, as clearly shown in Fig. 1.

Any number of outer mold sections or panels may be set up and connected in the manner illustrated in Fig. 1 in which it will be observed that the mold sections are staggered or overlapped so that the tongues 9 of adjoining sections will enter the keepers 7 of the superimposed and underlying sections adjacent thereto. Outer mold sides of any desired area may thus be built up to suit the requirements.

The inner core is composed of oppositely arranged box-like sections 10 and 11 each comprising an imperforate outer side 11 and inwardly projecting flanges extending entirely around the same and arranged to overlap each other at the top, bottom and ends of the core, as shown at 12. When the two sections are thus brought together, they form in effect a hollow box and they are connected together at one side, preferably the top by a hinge joint at 13 while the opposite or lower portions are connected by means of toggle arms 14 pivotally attached at their outer ends to the core sections, as shown at 15 and pivotally connected at their inner ends to an operating rod 16 which extends up through the top of the core where it is provided with a handle 17. By pulling upward on the handle 17, the toggle arms 15 are thrown out of alinement with each other thereby causing the core to collapse so that it may be withdrawn from the hollow space formed thereby in the wall as indicated in Fig. 2. When the handle 17 is pushed downward, the toggle arms 14 move into longitudinal alinement with each other, in which position they hold the core in its fully expanded condition; furthermore, in such position of the toggle arms aided by gravity there is no tendency of the toggle arms to break joint and allow the core to collapse accidentally, suitable means being

employed to prevent the toggle joint from breaking downward.

The outer mold sections are mutually braced and held in the same common plane by means of clips 18 projecting horizontally across the end bars 3 and 4 and secured to one of said bars while overlapping the other bar. Opposite outer mold sections are held at the proper distance apart and prevented from spreading outward by means of gage clamps one of which is shown in Fig. 6 where it is seen to comprise a tubular body 19 in which are adjustably received the shanks 20 of oppositely disposed arms 21, the shanks 20 being held when adjusted, by means of set screws 22. One of the arms 21 carries a bearing point 23 while the bearing point on the opposite arm is in the form of a screw 24 whereby such point may be accurately adjusted in addition to the adjustment effected by the set-screw 22. The outside mold sections are further braced and connected by means of ties 25 passing through and fastened in perforations 26 in the clips 18, each tie preferably consisting of two wires, the end portions of which are secured to the clips 18 in any suitable manner, after which the wires are twisted together from the center outward as indicated at 27 in Figs. 2 and 3.

To remove the outside mold sections after the wall has hardened, it is only necessary to sever the ties 25, allowing the same to remain embedded in the concrete. This releases the mold sections which may then be readily detached. At intervals the wall comprises cross partitions or bonds 28 and in order to form these partitions or bonds, I provide a collapsible shelf or support shown in Figs. 3, 4 and 5 wherein it is seen to comprise a pair of plate members 29 hinged together at 30 and provided with outward-projections or shoulders 31 which

enter the concrete and hold the shelf or support in position. To prevent the shelf from breaking downward when the weight is imposed therein, a latch bar 32 is pivoted to one of the sections 29 at a point 33 while its opposite end is adapted to be swung into and out of engagement with a keeper 34 on the other section of the shelf, the said latch acting as a supporting brace for the shelf sections. The bond or partition 28 is built upward from and rests upon the shelf above described and when said partition has become hardened and thoroughly anchored to the opposite portions of the wall, said shelf is removed by releasing the latch bar and breaking the shelf downward on its hinge joint.

The completed wall thus comprises vertically extending partitions or bonds which are staggered in relation to each other and connect the opposite sides of the wall and provide for a free and thorough circulation of air between the side walls.

Having thus described the invention what is claimed as new, is:—

Molding apparatus for hollow concrete walls embodying outer mold sections, a collapsible core, a collapsible partition shelf comprising jointed plate members having projections or shoulders to engage the inner faces of the opposite sides of the wall, a keeper on one of said plate sections, and a latch bar on the other plate section adapted to be engaged by said keeper and to project across the joint between the plate sections, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

DOUGLAS A. MARSHALL.

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