

J. G. ZWICKER.
MOLD FOR CONCRETE FLOORING MEMBERS.
APPLICATION FILED JULY 9, 1910.

1,007,623.

Patented Oct. 31, 1911.

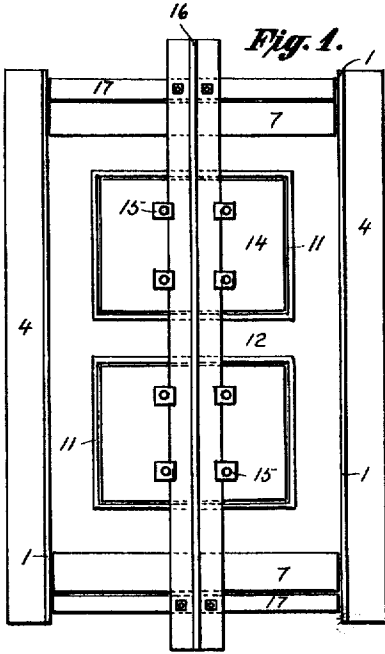


Fig. 1.

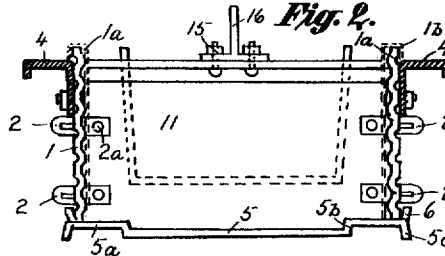


Fig. 2.

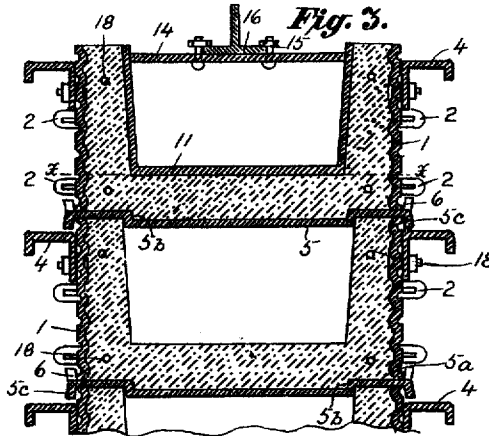


Fig. 3.

Fig. 5.

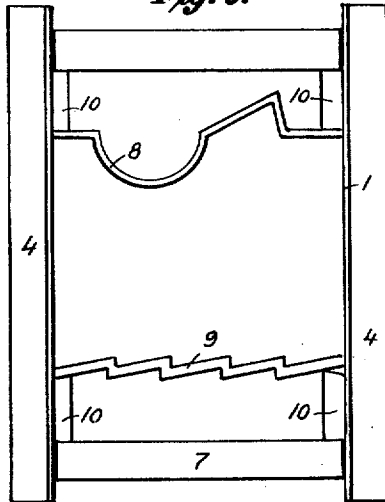


Fig. 4.

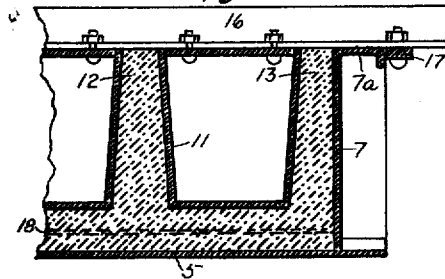
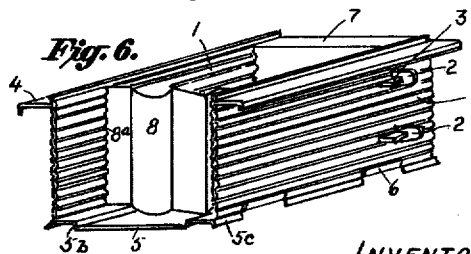


Fig. 6.



WITNESSES

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MOLD FOR CONCRETE FLOORING MEMBERS.

1,007,623.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed July 9, 1910. Serial No. 571,230.

To all whom it may concern:

Be it known that I, JULIUS GOTLOB ZWICKER, citizen of the United States, residing at No. 102 Paseo de la Reforma, city of Mexico, Mexico, have invented certain new and useful Improvements in Molds for Concrete Flooring Members, of which the following is a specification.

My invention relates to molds which may be used for making any known type of concrete flooring members, when suitably modified in accordance with the particular shape and design of the member to be molded, but in the form hereinafter described and illustrated it is particularly adapted for molding the flooring members of improved and special design which form the subject of my U. S. patent-application now pending, entitled "Improvements in concrete floor and roof construction," Ser. No. 571,232, filed July 9, 1910.

The invention aims to produce a mold of simple and inexpensive design, of the knock-down type, light, readily assembled, and readily stripped from the completed piece in such a way that the still impressionable outer surfaces will not be marred in the dismounting of the mold, nor the internal partitions of the member be canted or distorted.

The construction is illustrated in the accompanying drawing, in which:

Figure 1 is a top plan view of the mold filled with cement and closed; Fig. 2, an end view of the mold; Fig. 3, a vertical cross-section through the mold, showing the upper mold filled with concrete in a plastic state, being formed, superimposed on a flooring member fully formed, the material of which is undergoing further hardening within the mold in which it was made, this resting on a third member that has reached a more advanced stage of hardening within its mold; Fig. 4, a vertical, longitudinal section through the mold, with the centering and locking bar shown in longitudinal elevation; Fig. 5, a top plan view of the mold without the cores, showing the arrangement for giving special shapes to the ends of the flooring member and for adjusting the mold to produce members of different lengths of span; and Fig. 6 is a perspective view showing the method of connecting the end walls of the mold with the two side-walls and the connection between adjacent sections of the side-walls.

The side-walls 1 of the mold are prefer-

ably made of corrugated pressed steel, the corrugations being shallow. They are made each in one piece for a standard length of floor member bound at either end by a removable wall locked to the side-walls by ears 2, secured by keys 3. An outwardly projecting ledge 4 runs along the upper edge of each side-wall, enabling the piece to be grasped for handling, while at the same time stiffening the sheet. Side-walls 1 are set upon the bottom plate 5 of the mold, the foot abutting against upwardly projecting short ledges or lugs 6, which determine the width of the flooring-member. The bottom plate has two short outer straight portions 5^a corresponding in width to the thickness of the top and the bottom-walls of the floor member at its open side. Between portions 5^a the middle portion is dished downwardly, forming at its two junctions with the outer parts the shoulders 5^b, which produce in the flooring member the offsets or shoulders by means of which said members interlock.

The outermost edges of the bottom plate are cut back for a short distance by a series of cuts leaving tongues of suitable width, say 2 inches. Of these every alternate one is bent upward forming the row of laterally retaining lugs 6, while those intermediate are bent downward forming the series of lugs 5^c. As the flooring-members are preferably molded in stacks of three or more, when one is completed and the bottom plate of the succeeding one is placed upon it, these lugs 5^c grip the edges of the side-walls, holding the latter in place against spreading when the stress of weight of the succeeding flooring members comes upon it. End-walls 7, preferably of pressed steel, having an outwardly bearing flange 7^a at the upper end, keep the side-walls apart at the proper distance and prevent them from spreading. They are held in place by ears 2 projecting beyond the side-walls secured to the end-wall by rivets 2^a or similar suitable means, locked outside the side-wall by keys 3, and form the ends of the mold frame, but not of the mold proper, excepting in cases where the flooring-member has straight ends at right angles to the sides. As the particular members for which this mold is primarily designed do not have straight ends, the special shapes must be produced by the insertion of auxiliary end-walls of suitable contour 8, 9. These are preferably made of

correspondingly bent pressed steel, the edges 8^a having a wavy or sinusoidal profile to fit the corrugations in the side-walls. They are entered between the side-walls and pushed to the place required to make the necessary length of member, where they are kept from moving toward the end under the pressure of the concrete by removable distance blocks 10 of apposite length abutting against the fixed end-walls 7 of the frame. In order to make the top and bottom surfaces of the flooring-member perfectly smooth flat sheet metal liners 1^a may be placed on the inside of each side-wall covering the corrugations. These are shown in dotted lines in Fig. 2, having the upper edge bent to hook over the top edge of side-walls with a close fit. In Fig. 5 auxiliary end-wall 8 shows the form used for molding the special floor-member described in the application above referred to, and auxiliary end-wall 9 shows the form which shapes the ends of floor-members adapted to rest upon reinforced concrete beams.

To make the internal partitions connecting the top and bottom walls of the flooring-member, I provide core-pots 11, preferably of pressed steel, the exterior surface of which exactly corresponds to the interior surface of one of the hollow spaces in the flooring-member, having its sides flaring slightly. After the mold has been assembled as above described, and locked by keys 3, concrete in a semi-liquid plastic condition is poured in to the level $x-x$, Fig. 3, corresponding to the thickness of the closed side of the flooring-member. While the concrete mixture is still plastic, the core-pots—there being two in this case—are set upon the concrete. The thickness of the partition is determined by the distance, at which the cores are set apart longitudinally and the thickness of the end-walls of the flooring-member is determined by the distance 13 between the side of the core-pot and the end-wall of the mold. A centering plate 14 is set in the mouth of each core-pot accurately fitting its sides. This plate is secured by bolts and nuts 15 to the two flanges of a T-iron centering bar 16, which carries at each end iron cross-pieces 17 bolted to it, cut to just fit in between the two side-walls and close to end-walls 7. As the bar is bolted to the middle point to each cross-piece, and of each centering plate, it must insure that the core-pots cannot move out of the center laterally, nor diminish or increase the width of the internal partition of the flooring-members by moving longitudinally under the effect of the in-pouring

cement. Having placed the cores, the mold is now filled to the edges with plastic concrete, reinforcing bars 18 being placed in the mass wherever desired. When this has become sufficiently set, the centering bar with its plates and cross-pieces is lifted out, the cores are removed, and a plate 5 is placed on its top, forming the base for another mold to be filled, the intention being to mold three or more members in each stack. After the concrete has become thoroughly set the keys 3 are drawn, the side and end-walls are taken down and the floor-member is lifted off from the bottom-plate of the mold, leaving the parts of the mold ready to be assembled, in order to shape another flooring-member.

Throughout the specification the material used for making the flooring-members has been spoken of as concrete. While this is the substance most commonly used, the same mold will answer just as well for cement, or any clayey or earthy material which when mixed with water while in a comminuted form produces a plastic amorphous mass which becomes hard and tenacious after drying.

Having thus described my invention what I claim as new and desire to have protected by Letters Patent is the following:

1. A mold for plastic flooring members having a bottom plate, retaining lugs carried by the longitudinal edges of said bottom plate, said lugs projecting upwardly and downwardly and arranged in alternate relation, removable side plates supported by said bottom plates, removable end walls connected to said side plates, auxiliary end walls between the first mentioned wall and removable means for temporarily securing said auxiliary end walls longitudinally against outward movement.

2. A mold for plastic flooring members comprising a bottom plate, removable side plates supported thereby, removable end walls for said mold, means for holding said end walls in position, core-pots adjustable in said mold, a centering plate in each of said core-pots, a bar extending transversely of said plates and secured thereto, and a cross piece at each end of said bar adapted to fit between said side plates adjacent said end walls.

In testimony whereof I have affixed my signature in presence of two witnesses.

JULIUS G. ZWICKER.

Witnesses:

EDUARDO ROMERA,
G. A. GUERRA.