

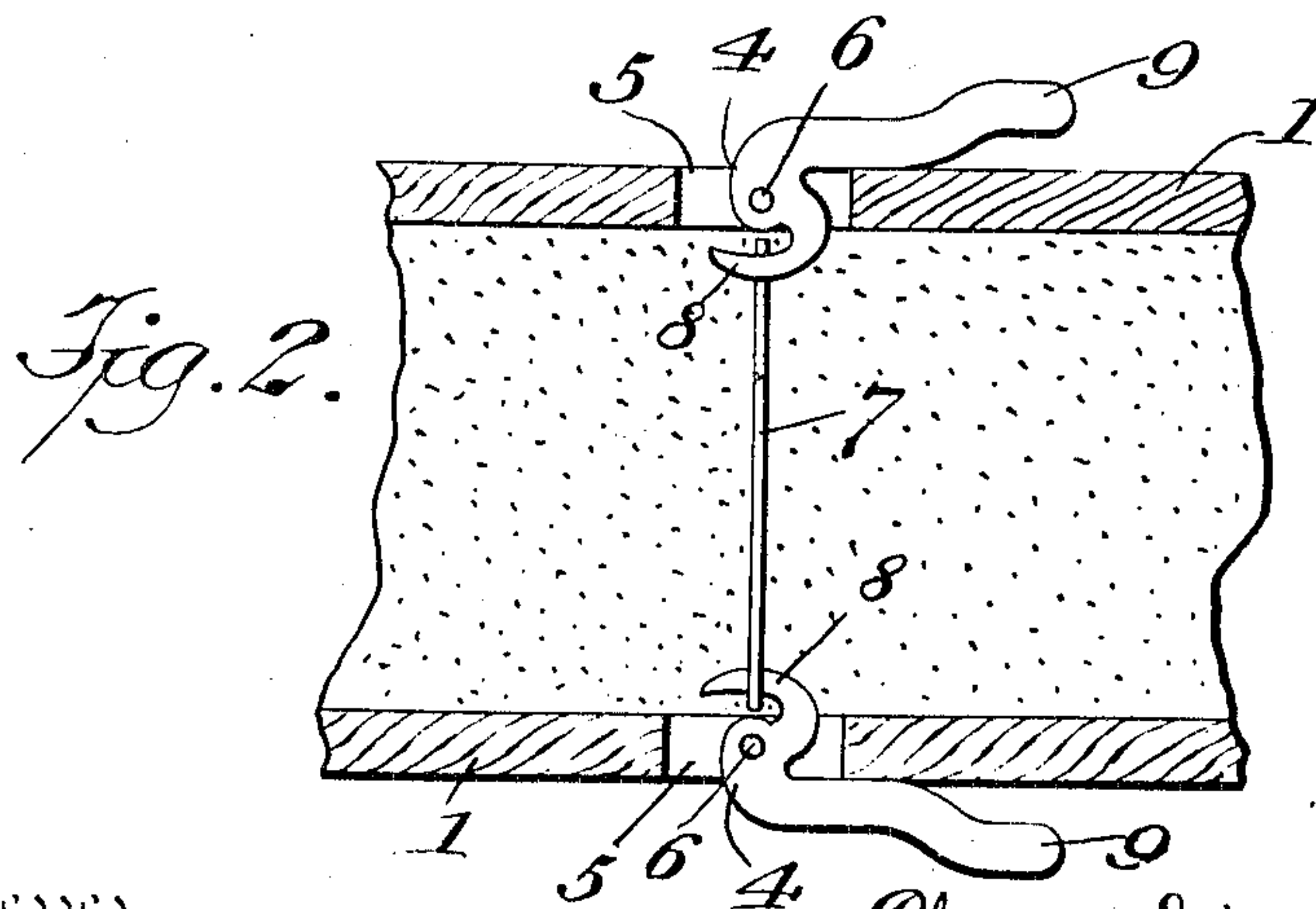
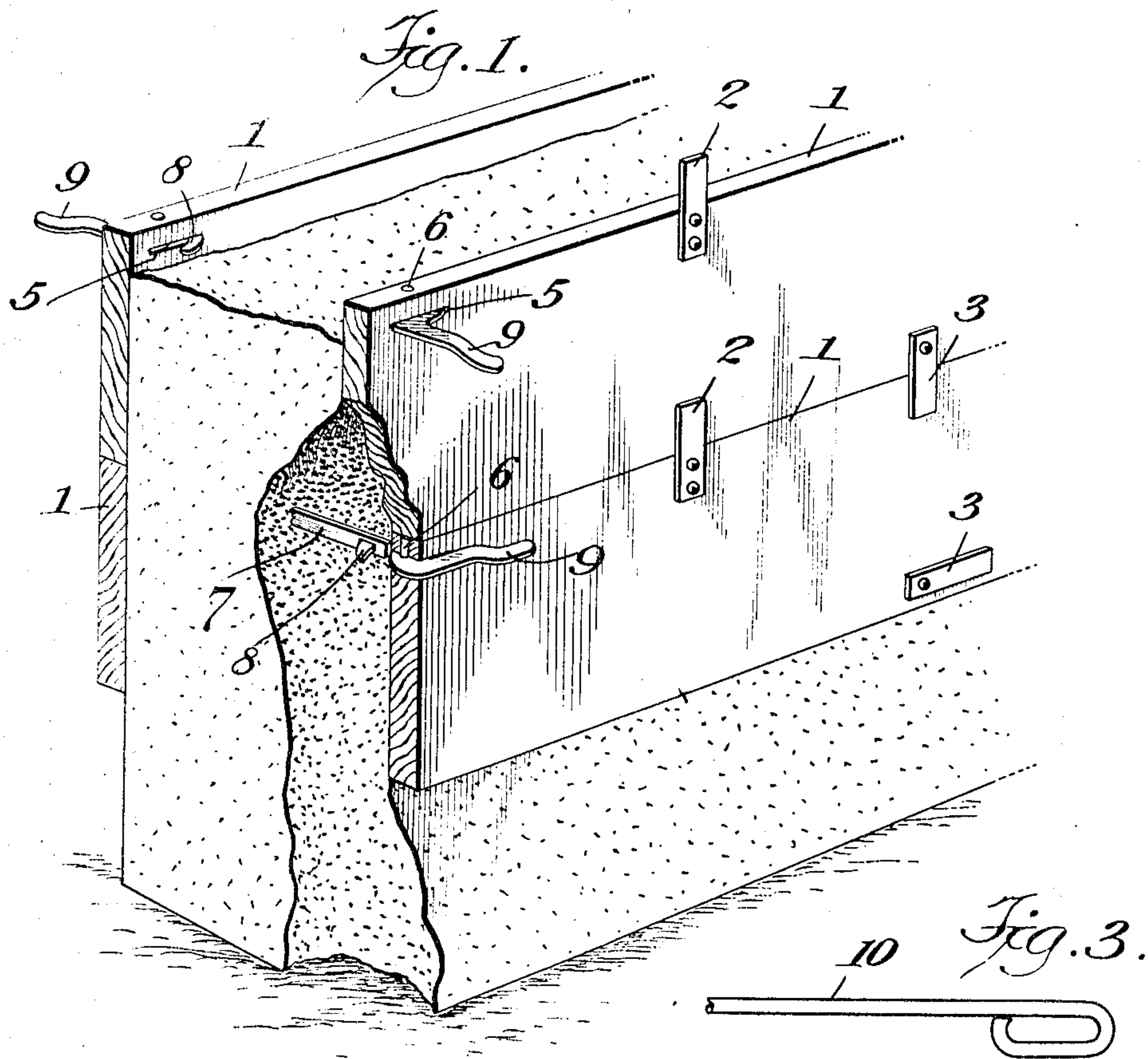
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PATENTED NOV. 19, 1907.

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APPARATUS FOR CONSTRUCTING WALLS OF CONCRETE.

APPLICATION FILED NOV. 17, 1906.



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UNITED STATES PATENT OFFICE

CHARLES DIETRICH, OF LITTLE FERRY, NEW JERSEY.

APPARATUS FOR CONSTRUCTING WALLS OF CONCRETE.

No. 871,327.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed November 17, 1906. Serial No. 343,806.

To all whom it may concern:

Be it known that I, CHARLES DIETRICH, a citizen of the United States, residing in Little Ferry, Bergen county, New Jersey, have invented a new and useful Improvement in Apparatus for Constructing Walls of Concrete, of which the following is a specification.

This invention relates to apparatus for constructing walls of concrete or other plastic material, and it has for its principal object the provision of apparatus by which the construction of walls of concrete or other plastic material may be carried forward rapidly, with a minimum amount of labor, and without injury to the lumber used in forming the molds for the wall.

In attaining the object mentioned I make use of apparatus hereinafter described and illustrated in the accompanying drawings, in which corresponding parts are designated by similar characters of reference in the several views.

In the drawings: Figure 1 is a fragmentary perspective view of a portion of a wall in process of construction with the improved apparatus forming the present invention, a part of the wall being broken away to show the arrangement of the devices within the wall for securing the mold members. Fig. 2 is a fragmentary sectional view through a portion of the wall and the mold members and securing devices. Fig. 3 is a detail view showing a modified form of connecting link for opposite mold members.

In the construction of walls of concrete or other similar plastic materials, a mold or casing must always be prepared to retain the concrete in form during the process of "setting," and in the construction of this mold or casing planks or boards of suitable thickness are ordinarily employed. The boards or planks may be nailed to uprights braced from the outside, or securing devices of similar character may be braced between the sides of the mold or casing to hold the boards or planks in place. The connecting devices employed in this way are of various kinds, and they may either be withdrawn from the wall after the removal of the boards or planks or left in place. Owing to the difficulty of removing such connecting devices and the time required in the removal, it is desirable to make use of connecting devices consisting in the main of an

inexpensive connecting link which may be left in the wall when the boards or planks forming the sides of the casing or mold are removed. It is also desirable that the devices associated with the link to be left in the wall shall be of such construction that they may be quickly brought into engagement with the link or disengaged therefrom. The devices coöperating with the link should also be so designed that their disengagement from the link will not mar the wall in any way and so that after the removal of the mold members the marks left in the wall by the devices for securing the mold members may be easily obliterated.

The objects above mentioned are attained in the apparatus constituting the present invention.

Referring to the drawings by the reference characters, 1—1 are boards or planks used in forming the sides of the mold into which the concrete is introduced. These boards extend horizontally, as usual, and each one is provided near its upper margin with fixed cleats 2 in suitable number. Near the lower margin each of the boards or planks 1 is provided with a number of cleats 3 which may be turned laterally about the single rivet or bolt which forms the fastening device for the cleat.

Near the upper margin of each board I provide a suitable number of hooks 4 of special design, each of which is mounted in a horizontal curve 5 and turns about a vertical pivot 6. These hooks 4 are designed for engagement with eyes formed in the ends of links 7 which extend transversely of the wall and are of a length slightly less than the thickness of the wall. The engaging portion 8 of each hook is slightly tapered, as shown in Fig. 2, and its outer edge is formed on a circular curve having the pivot 6 as a center. The eyes in the ends of the links 7 are of such dimensions that the engaging portions of the hooks fit snugly therein when the hooks are brought into the position shown in Fig. 2. This snug fit of the engaging portions of the hooks in the eyes of the links makes the links and hooks effective in holding the boards of the mold firmly at a fixed distance apart. Each of the hooks 4 is provided with a handle portion 9 by which the hook may be readily turned in order to effect the engagement or disengagement of the hook and link.

In making use of the apparatus described, boards to form the first course of the mold

are set up at the proper distance apart and secured at their lower edges in any suitable manner, and at the upper margin they are secured by bringing the hooks near their upper edges into engagement with the eyes of links of suitable length, as shown in Fig. 2. The second course of boards is then set in place upon the first course, their lower margins being held against outward displacement by the lugs 2 fixed on the outer surface of the first course of boards near their upper edges. To prevent inward displacement of the second course of boards the pivoted lugs 3 are turned into position to engage the boards of the first course. By proceeding in this manner as many courses of boards may be set in place as may be desired. Ordinarily, however, the boards will be set in place by single courses, and after the placing of each course an additional quantity of concrete may be introduced. When the concrete in the mold nears the top of the mold members already in place, as shown in Fig. 1, another course of boards will be set in place. After the boards at the base of the wall have been in position long enough to permit the concrete to set firmly, those boards may be removed and used again in extending the mold upward. To disengage the course of boards the hooks are turned into the position shown at the top of Fig. 1, thus disengaging the hooks 4 from the links 7. The pivoted lugs 3 engaging the upper margins of the boards to be removed are swung into horizontal position, as shown on the lowermost board in Fig. 1. The boards to be removed are then quite free and can be removed laterally away from the wall without difficulty. After the removal of a course of boards the wall is left perfectly smooth and unmarked except for the small openings left by the withdrawal of the engaging portions of the hooks. These small openings may easily be filled by the application of a little cement and when thoroughly dry will show no trace of the openings.

As shown in Figs. 1 and 2 the links 7 are formed of sheet metal with the eyes punched therein. This form of link, while eminently satisfactory, is only a typical form. A link 10 of wire is shown in Fig. 3 which will serve the same function as the sheet metal links 7.

From the foregoing description and the accompanying drawings it will be seen that the devices employed for securing the mold members are of a character to permit the securing and removal of the mold members with the utmost facility, and the condition of the wall as left when the mold members are removed is of most satisfactory character, requiring

only the application of a very little cement in the small holes left by the hooks 4 to complete the finish of the wall. These holes need not even be filled, as the strain on the mold members during the construction of the wall is not very great and the hooks may be made of such dimensions that the holes left when they are disengaged will be unnoticeable except on close inspection. Owing to the formation of the engaging portions of the hooks on circular curves about the axes of the hooks as centers, the outward movement of the hooks is not opposed by the concrete of the wall and no injury to the wall results from the movement of the hooks. As the hooks and cleats are the only members required in addition to the links to secure the mold members in place, there is no danger of delay in securing the mold members on account of the loss or misplacement of any of the securing devices, the cleats and hooks all being firmly secured to the boards forming the sides of the mold or casing for the wall.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. The combination, in apparatus of the character specified, of oppositely-arranged mold members, hooks pivoted on said mold members and adapted to swing in a plane perpendicular to said mold members, and a link adapted to be engaged by said hooks to hold the mold members in position.

2. In apparatus of the character specified, the combination with oppositely-arranged mold members of hooks pivotally mounted on said mold members to swing in a plane perpendicular to said mold members, said hooks each having the engaging portion of the hook extending inwardly between the mold members and having the handle portion extending outwardly beyond the mold members, and a link adapted to be engaged by said hooks and held between said mold members.

3. In apparatus of the character specified, the combination with oppositely-arranged mold members of pivoted hooks carried by said mold members and arranged to swing in a plane perpendicular to said mold members, said hooks having their engaging portions formed on circular arcs with the hook pivots as centers, and a link adapted to be engaged by said hooks.

In testimony whereof, I have signed my name in the presence of two witnesses.

CHARLES DIETRICH.

Witnesses:

WM. BRADFORD,
BAXTER MORTON.