

**920,787.**

2 SHEETS—SHEET 1.

Inventor  
John H. Sullivan  
By *A. B. Wilson & Co*  
Attorneys

J. H. SULLIVAN.  
FASTENING DEVICE FOR MOLDS.  
APPLICATION FILED OCT. 7, 1907.

920,787.

Patented May 4, 1909.  
2 SHEETS—SHEET 2.

Fig. 3.

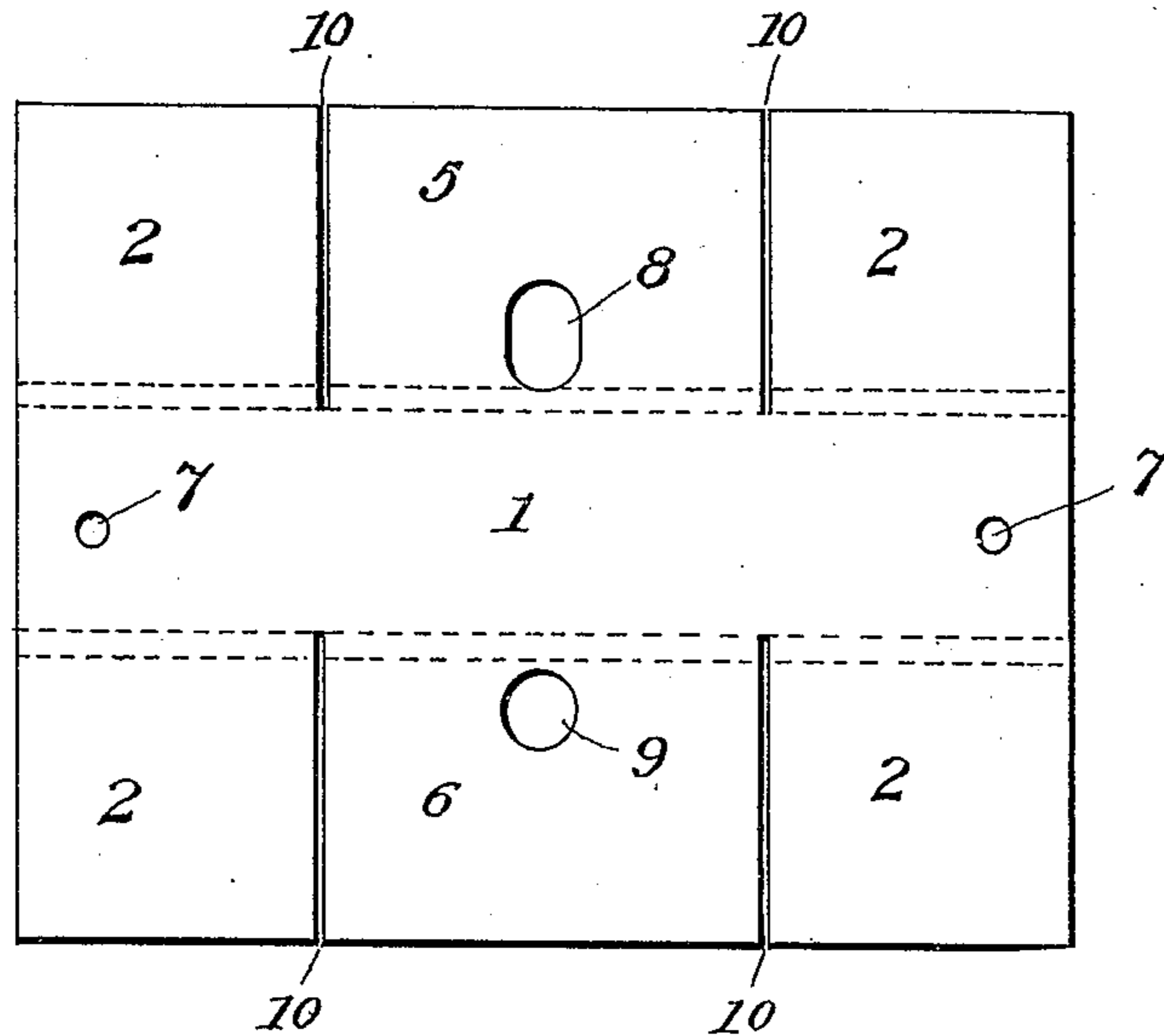


Fig. 4.

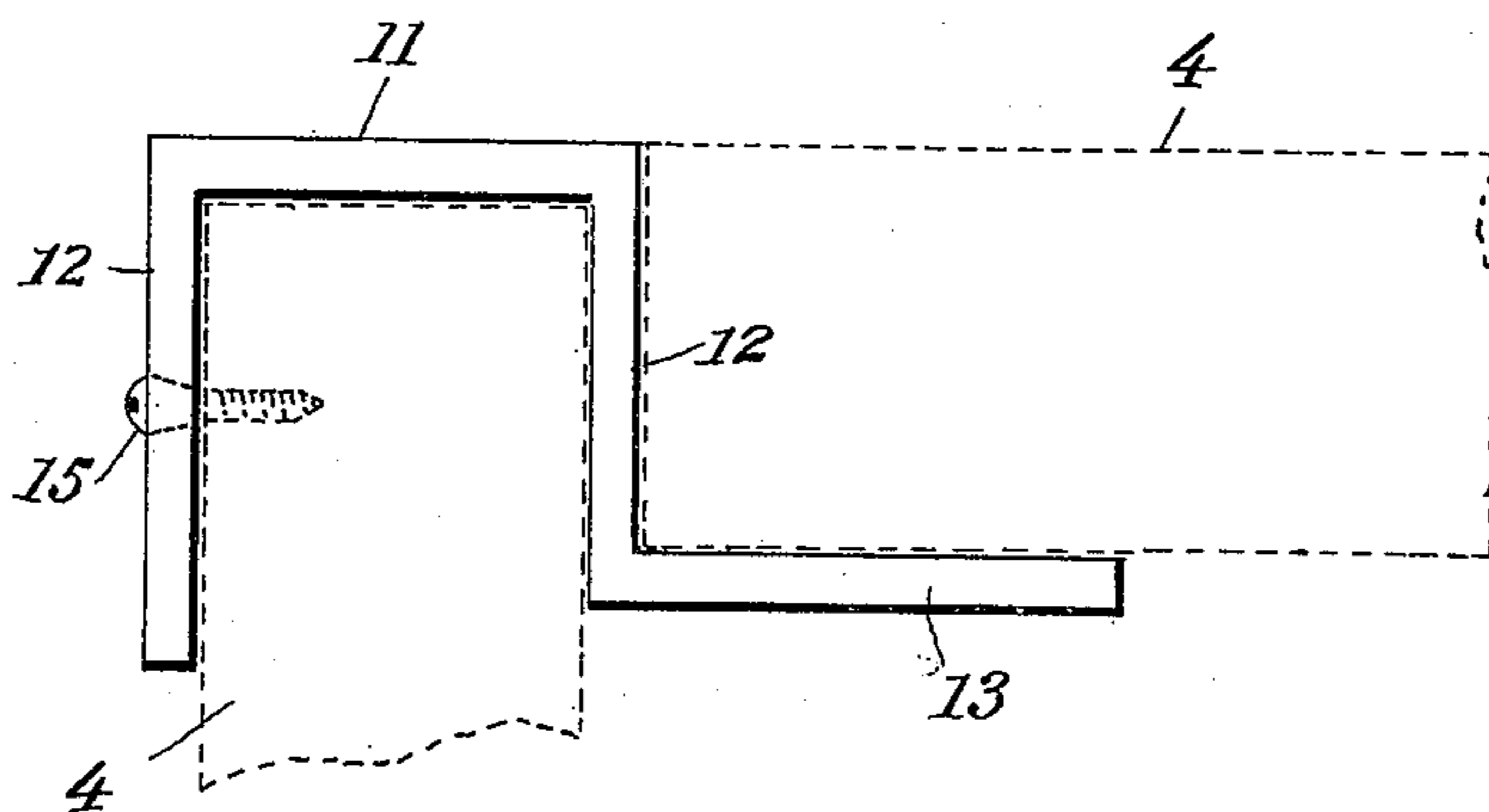
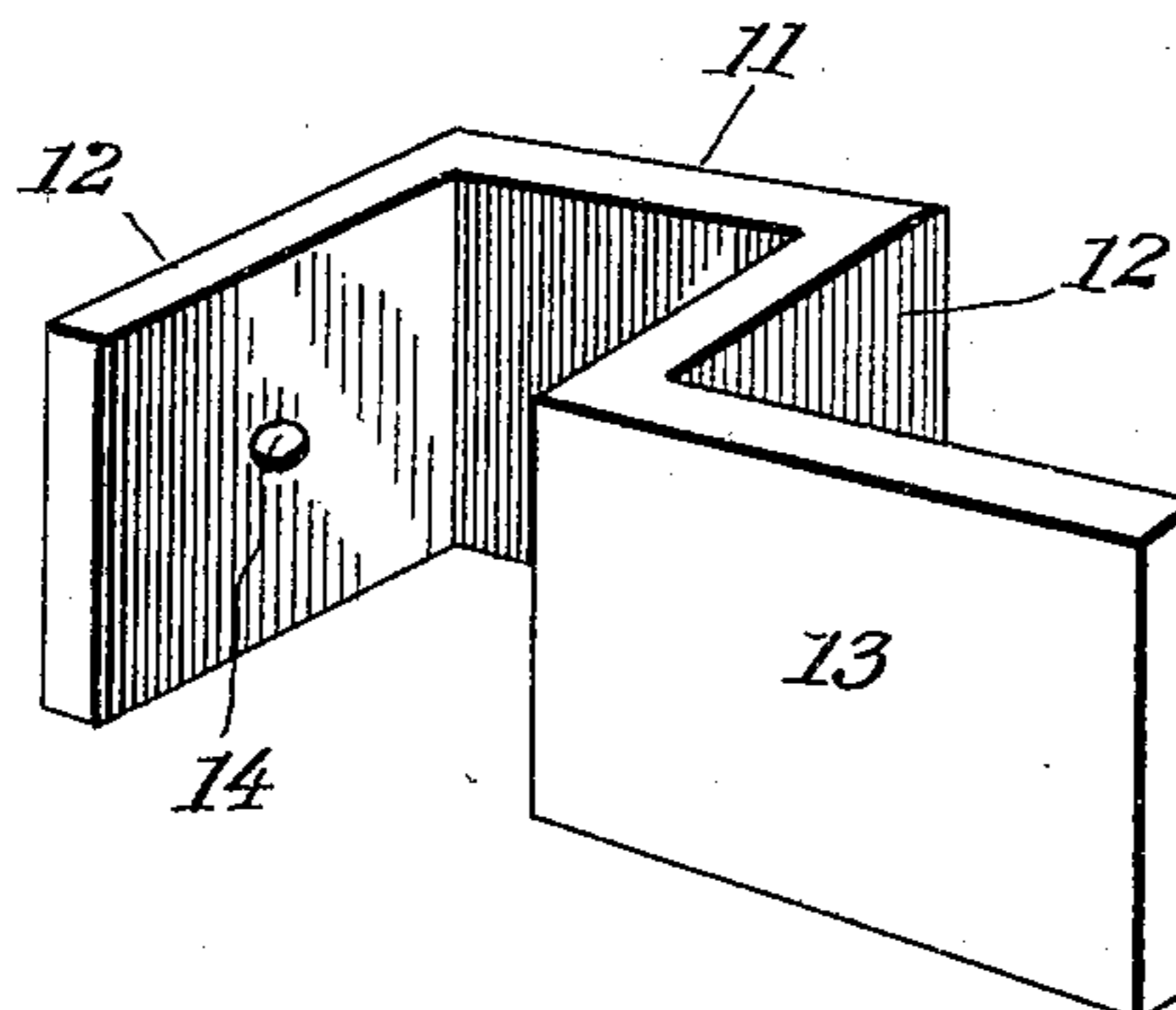


Fig. 5.



Witnesses  
J. A. Elmore  
C. Clement

Inventor  
John H. Sullivan  
by *A. B. Wilson*  
Attorneys

# UNITED STATES PATENT OFFICE.

JOHN HOWELL SULLIVAN, OF GRAND RAPIDS, MICHIGAN.

## FASTENING DEVICE FOR MOLDS.

No. 920,787.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed October 7, 1907. Serial No. 396,313.

*To all whom it may concern:*

Be it known that I, JOHN HOWELL SULLIVAN, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Fastening Devices for Molds; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

In the erection of concrete building walls, it is customary to employ molds composed of sections or boards arranged in vertical edgewise relation and having their meeting edges temporarily connected by means of fastening members or clips such, for example, as that illustrated in Patent No. 813,253, granted to me February 20, 1906, it being understood that after the concrete has sufficiently set, the lowermost boards or sections of the mold are removed and again employed in further building up the mold.

The clips disclosed in the patent above referred to, while thoroughly efficient for uniting the boards at points between their ends, have been found in practice to be objectionable, to the extent that they are not thoroughly feasible for use in connecting the meeting ends of the boards or sections forming different sides of the mold, and that, in some instances, it has been found necessary, in order to remove the boards in the operation of disconnecting the mold, to split or break the boards at the points of engagement with the fastening clips.

The present invention has for its objects to provide a simple, inexpensive form of fastening member, which may be conveniently employed for connecting the adjoining ends of the mold sections at the angle of the wall, and which further provide, when used at an intermediate point in the mold, for the ready disengagement of the boards or sections of the latter.

A further object of the invention is to provide a simplified form of end clip designed especially for use in connecting the coincident mold sections at the angle of the wall, and which will in practice effectually prevent spreading of the boards, and, at the same time, hold them in proper edgewise alinement.

With these objects in view, the invention consists of certain novel features of construc-

tion, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view showing the improved form of clip applied for connecting the meeting ends of a pair of mold sections at the angle of the wall, the mold sections being indicated by dotted lines; Fig. 2 is a perspective view of the clip; Fig. 3 is a plan view of the sheet metal blank from which the clip is composed; Fig. 4 is a view similar to Fig. 1 showing the application of the corner clip to the mold; and Fig. 5 is a perspective view of the end clip.

Referring to the drawings, and particularly to Figs. 1, 2 and 3, it will be seen that the improved clip, which is composed of sheet metal, and made in one piece, comprises a central longitudinal body portion, 1, having two sets or pairs of spaced side portions or flanges, 2, 2<sup>a</sup> and 2<sup>b</sup>, 2<sup>c</sup> arranged, respectively, at the ends of the body portion, and forming in conjunction therewith U-shaped sockets or seats, 3, adapted to fit edgewise upon one of the mold sections or boards, 4, while projecting from the body 1 at right-angles to each other, and at a central point between the flanges, 2, 2<sup>a</sup> and 2<sup>b</sup>, 2<sup>c</sup> is a pair of flanges, 5 and 6, of which the flange 5 is arranged in the same plane as the flanges 2—2<sup>a</sup>, and the flange 6 in a plane at right angles to said flanges. The body 1 is provided at a point near its ends with small openings or perforations, 7, for the reception of nails or other fastening members for securing it to the boards forming the mold, as circumstances require, and as more fully hereinafter explained, while the flange 5 has formed therein an elongated opening, 8, and the flange, 6, is provided with a circular opening, 9, these openings being designed for the reception of tie-rods (not shown), by means of which the clips at opposite sides of the mold may be connected together.

In the formation of the fastening member, a sheet metal blank, such as illustrated in Fig. 3, is serrated transversely at the points, 10, to provide the several portions or flanges 2, 5 and 6, which, in completing the fastening member, are bent relative to the body portion, 1, and to one another in the manner heretofore explained, and as illustrated in Fig. 2.

When the clip is employed for connecting

the meeting ends of contiguous boards at the angle of the mold as illustrated in Fig. 1, the U-shaped sockets, 3, are seated over the end of one of the side boards, 4, while the other board, 4', which forms the bottom of the mold, is arranged at right angles to the board, 4, with a flange, 6, of the clip bearing on the outer or under face of said board, it being evident that under this arrangement the boards will be properly maintained in molding position and may be conveniently disconnected after the material of the wall has set.

The legs or flanges, 2<sup>b</sup>, and 2<sup>c</sup>, are designed to hold the side board, 4, in upright position and the flange, 6, reinforces the bottom board.

A tie rod, 10, shown in dotted lines, is designed to pass through the aperture, 8, in the flange, 5, and connect the clip with another on the opposite side of the mold or with another board as desired.

On reference to Figs. 4 and 5, it will be seen that the clip which is formed in one piece from the length of sheet metal, suitably bent into shape, comprises a body portion, 11, having spaced side portions or flanges, 12, disposed at right-angles thereto, and a bearing portion or flange, 13, formed at the free end of one of the flanges, 12, and arranged to project in a plane at right-angles to the latter, and in a plane parallel with the body 11. The difference between this form and that shown in Fig. 2 resides in the fact that in the form shown in Fig. 2, the flange, 6, is disposed in the same plane as the body 1 and at the inner ends of the flanges, 2, 2<sup>a</sup> and 2<sup>b</sup>, 2<sup>c</sup> while in the devices now being described, the flange, 13, is arranged at the outer or free end of the flange, 12, as heretofore mentioned. Formed in one of the flanges, 12, is an opening, 14, for the reception of a nail, or other fastening member, 15.

In the use of the device, the socket portion formed by the body 11, and flanges, 12, is seated over the end of one of the mold sections, 4, while the other mold section, 4, is arranged at right-angles with the flange, 13, bearing against the inner face thereof, as illustrated in Fig. 4, the fastening member being held in place, if desired, by means of the nail, 15, which may be applied as shown.

Having thus fully described my invention,

what I claim as new and desire to secure by Letters-Patent, is:

1. A fastening member for molds, comprising a body portion having spaced pairs of parallel flanges extending from its sides near its opposite ends in the same direction and at right angles to said body portion, and a bearing flange projecting in a plane at right angles to that of said pairs of flanges and in the same plane as said body portion.

2. A fastening member for molds, comprising a body portion having spaced pairs of parallel flanges extending from its sides near its opposite ends in the same direction and at right angles to said body portion, and a bearing flange projecting from the body portion between said pairs of flanges in a plane at right angles to that of said pairs of flanges and in the same plane as said body portion.

3. A fastening member for molds, comprising a body portion having spaced pairs of parallel flanges extending from its sides near its opposite ends in the same direction and at right angles to said body portion, a bearing flange projecting in a plane at right angles to that of said pairs of flanges and in the same plane as said body portion, and another flange extending in a plane at right angles to said body portion in the opposite direction to said pairs of flanges.

4. A fastening member for molds, comprising a body portion having spaced pairs of parallel flanges extending from its sides near its opposite ends in the same direction and at right angles to said body portion, a bearing flange projecting in a plane at right angles to that of said pairs of flanges and in the same plane as said body portion, and another flange projecting from said body portion in a plane at right angles thereto and in a direction opposite to that of said pairs of flanges and between said pairs of flanges on the side opposite said bearing flange.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN HOWELL SULLIVAN.

Witnesses:

FRED C. TEMPLE,

GEORGE W. THOMPSON.