

No. 702,928.

Patented June 24, 1902.

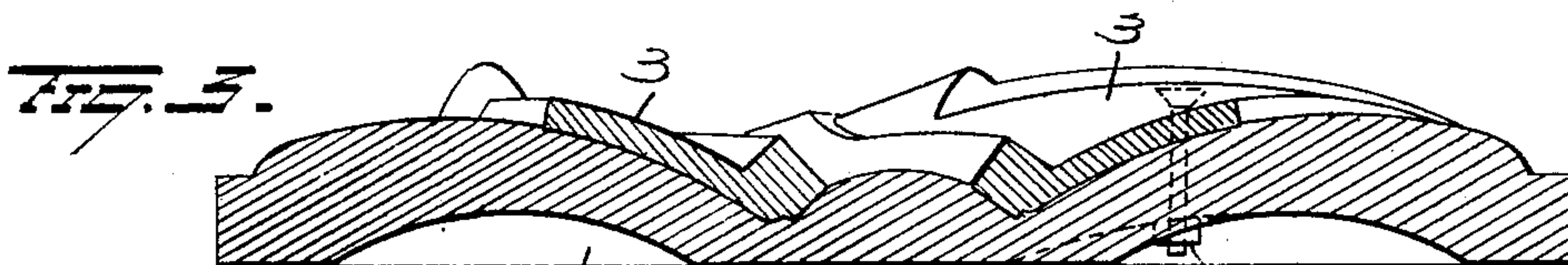
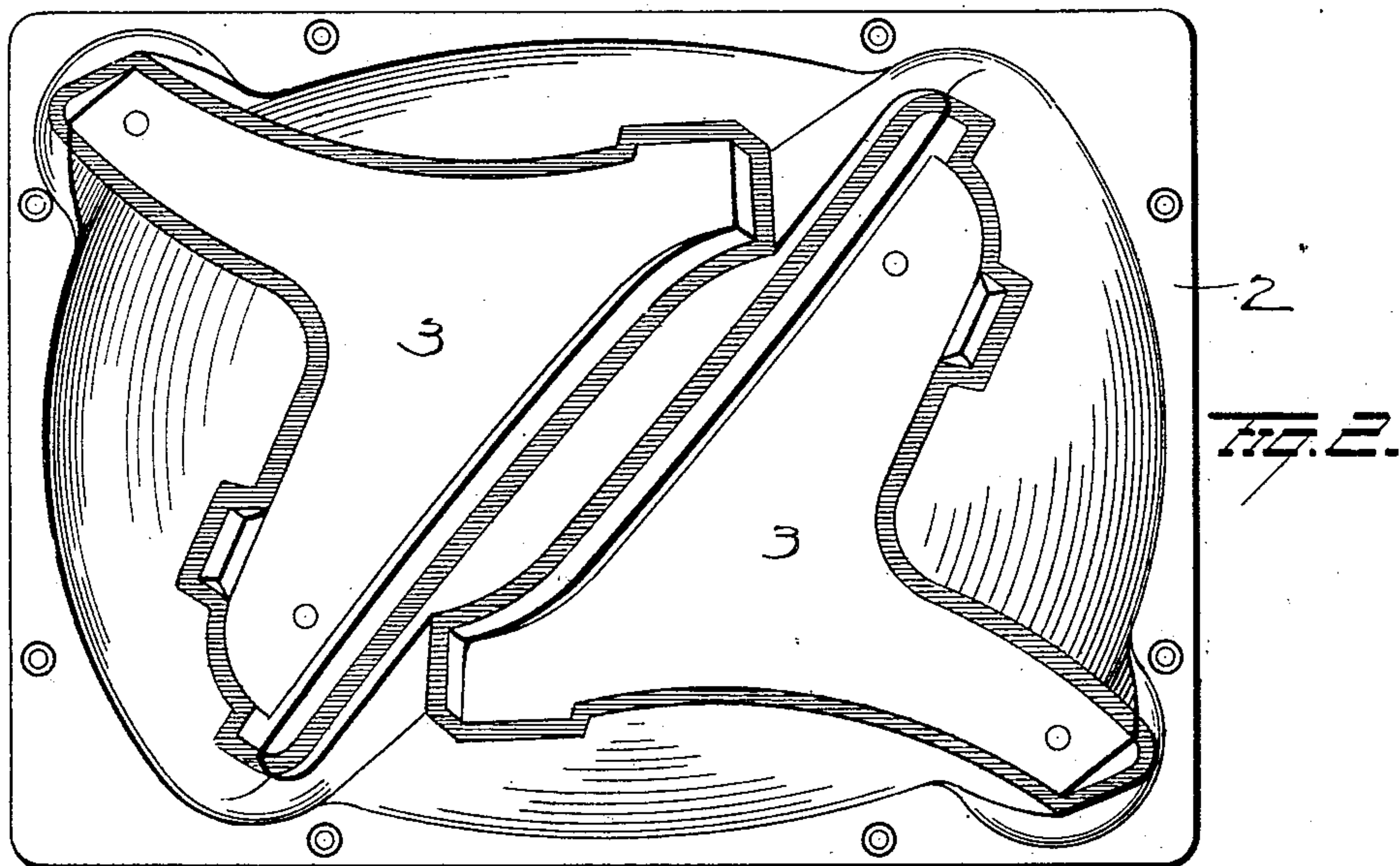
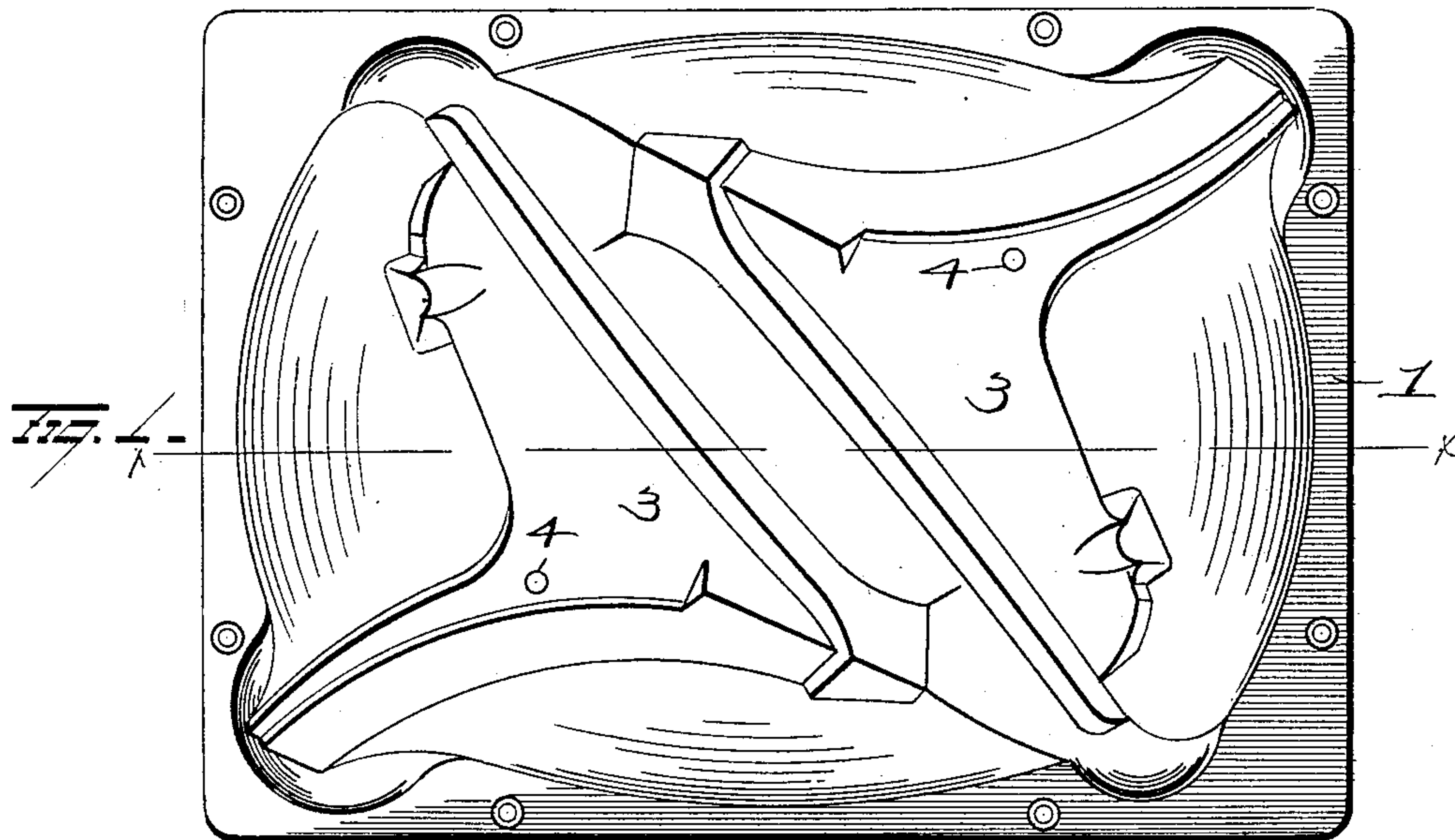
C. R. DAVIS.

METHOD OF MAKING PATTERN PLATES.

(Application filed July 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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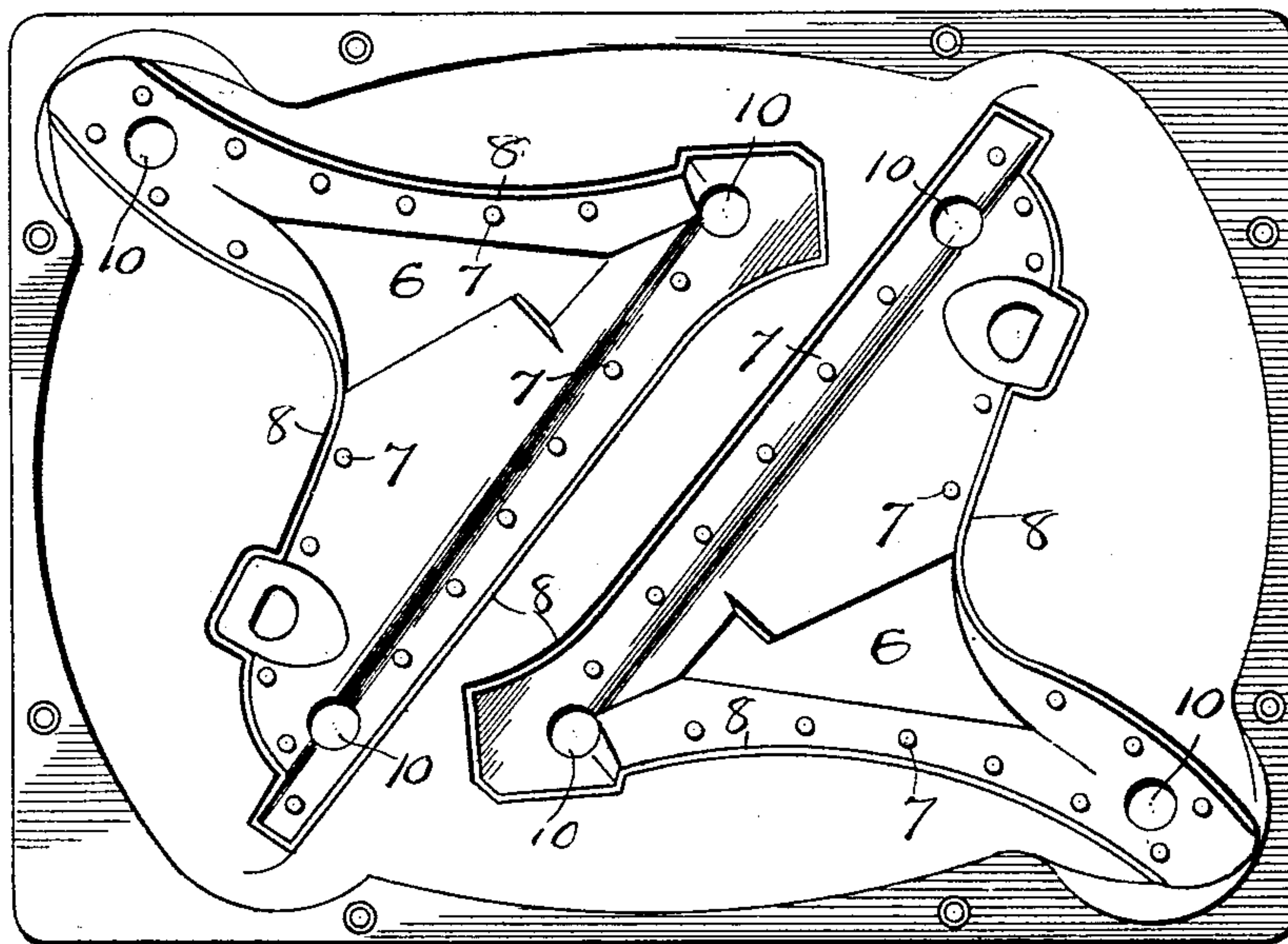
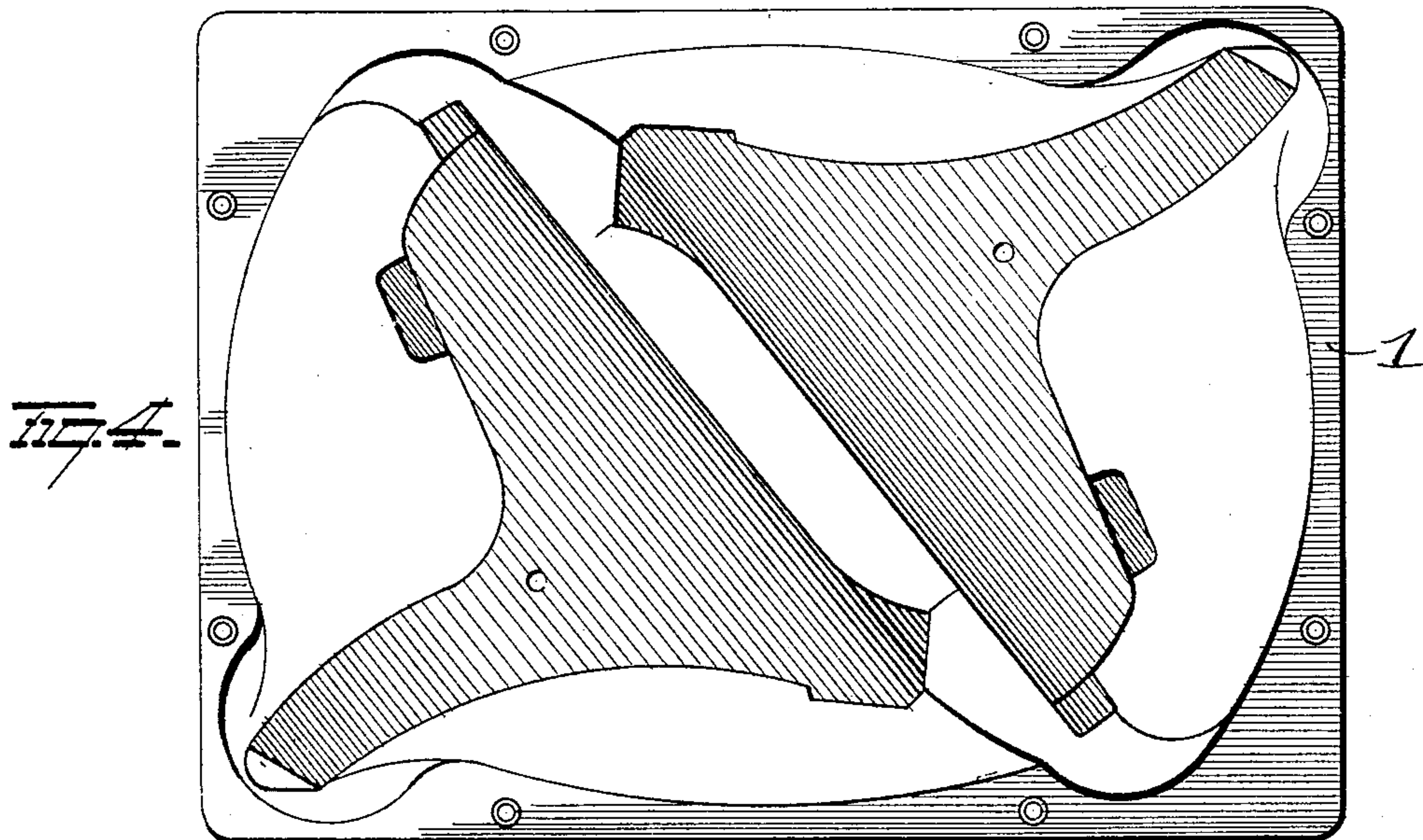
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METHOD OF MAKING PATTERN PLATES.

(Application filed July 16, 1901.)

(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

CALVIN R. DAVIS, OF SOUTH BEND, INDIANA, ASSIGNOR TO THE SOUTH BEND IRON WORKS, OF SOUTH BEND, INDIANA.

METHOD OF MAKING PATTERN-PLATES.

SPECIFICATION forming part of Letters Patent No. 702,928, dated June 24, 1902.

Application filed July 16, 1901. Serial No. 68,511. (No model.)

To all whom it may concern:

Be it known that I, CALVIN R. DAVIS, a resident of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Methods of Making Pattern-Plates; and I do hereby 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.

My invention relates to an improvement in methods of making pattern-plates, the object of the invention being to provide an improved plate of this character to which the pattern is removably secured and can be readily replaced when worn.

A further object is to provide an improved method of making pattern-plates which will insure their perfect fit without numerous expensive and laborious trials, as heretofore.

With these objects in view the invention consists in certain novel steps in the method of making pattern-plates, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figures 1 and 2 are views of the two plates with the patterns secured thereto. Fig. 3 is a view in section on the line $x x$ of Fig. 1, and Figs. 4 and 5 are views of the plates before the attachment of the pattern.

1 2 represent the two pattern-plates, and 3 the patterns secured therein. In making these plates a plaster cast is taken of both sides of the pattern, thus leaving the cast when together the complete imprint of the pattern. The casts are fitted snugly together and shaped to the required thickness and width and gotten ready for use as patterns to cast the plates from. The plaster cast having the smoothest impression is then used as a pattern to cast metal plate 1 from, and in the depression therein the pattern 3 is secured by a bolt or screw 4, screwed through the back of the plate. The plaster cast from which plate 2 is to be cast is first cut out, or, in other words, the recess formed therein by the pattern is enlarged, the recess being cut entirely through the plate, as shown at 6 in Fig. 5, headed pins 7 secured all around the edge of the impression, and the walls thereof grooved

or recessed, as shown at 8, to form a key for the Babbitt metal 9, as will now be explained. The pattern 3 being secured on plate 1 by the bolt 4, plate 2 is then placed on plate 1, the pattern being accommodated in the enlarged recessed portion thereof. Babbitt metal is then poured through holes 10 in plate 2 and flows all around the pattern, forming keys in the groove 8, and around the headed pins 7 and securely locking the pattern therein. The bolt 4 is then unscrewed from plate 1 and plate 2 removed, with the pattern secured therein. Another pattern is then secured to plate 1, and the plates are in condition to mold the molds for use. While it is possible that this plate 2 might be cast directly from the plaster cast without altering the latter, still it has been found that owing to the uneven side of the pattern which is fitted therein it would cost too much time and labor to fit such uneven surface therein, and a good true fit would be almost impossible, as one plate is necessarily thinner and more uneven than the other. The two plates will not shrink alike when being cast in metal, so that the plates could not be fitted together face to face with the patterns therein, as one of the impressions taken from the pattern would not come square with the pattern in the opposite plate, and to avoid these difficulties I secure the pattern in plate 2 in the manner above described, which positively assures a perfect fit.

Heretofore in the manufacture of pattern-plates it has been the practice to split the pattern in half—that is, cast one-half of the pattern onto each plate solid, pattern and plate being integral and in one piece—and when the sharp outlines of the pattern were destroyed by use it was necessary to throw away the plate while the latter was but little worn, consequently throwing away a great amount of valuable labor. It is also well known that by making the plates and patterns integral the top and bottom plates necessarily shrink uneven. Thus the two halves of the pattern do not joint up perfectly, and the consequence is that the castings made from the molds from such patterns and plates are uneven or warped. With my improved method all these objec-

tions are overcome, as the plates are perfectly fitted before the patterns are secured thereto, and should the patterns become worn they can be readily replaced. The Babbitt metal can be easily removed from plate 2 by driving out the pins 7 from the back, the Babbitt metal following the pins, and the patterns can be removed by melting the soft metal or by other methods, so as to permit a securing of a new pattern to the plate, while the pattern from plate 1 can be removed by simply unscrewing bolt 4.

In the accompanying drawings I have shown the pattern as a plowshare and have shown two patterns to a plate; but this method may be employed with other patterns, and only one or more than two patterns may be secured to the plates, according to the size and shape thereof.

Various slight changes might be resorted to in the general form and arrangement of the several parts described and in the various steps of the method without departing from the spirit and scope of my invention, and hence I would have it understood that I do not wish to limit myself to the precise details set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

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

1. The method of making pattern-plates consisting in casting two plates having on their faces the contour of respective sides of a pattern, mounting the pattern on one of said plates, placing the other plate upon the one having the pattern so as to align the latter on the face of the top plate, then secur-

ing the pattern to the top plate, then separating the plates and then securing another pattern to the first-mentioned plate.

2. The method of making pattern-plates consisting in casting two plates having in their meeting faces the contour of the respective sides of a pattern, the contour in one of said plates being made larger than the pattern, mounting a pattern on one of said plates, placing the second plate on the first so as to receive the pattern on the latter, then pouring molten metal into the said second plate and securing the pattern thereby to said second plate, separating said plates and securing another pattern to the first-mentioned plate.

3. The method of making pattern-plates, consisting in first casting from plaster casts plates having depressions in their opposing faces which together conform to the contour of a complete pattern, enlarging and grooving the wall of the depression in one of said casts prior to casting the plate therefrom, securing headed pins in said depressed portion of the plate, mounting a pattern on the other plate, then placing said plates together, pouring Babbitt metal through the upper plate and causing it to flow around the pattern into the groove and around the pins to securely lock the pattern thereto, then separating the plates and securing another pattern to the lower plate.

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

CALVIN R. DAVIS.

Witnesses:

JNO. W. HARBON,
THOMAS A. FREEMAN.