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PATENTED FEB. 12, 1907.

H. R. FRISBIE.

APPARATUS FOR LOCATING PATTERNS ON PATTERN PLATES.

APPLICATION FILED MAR. 1, 1906.

2 SHEETS—SHEET 1.

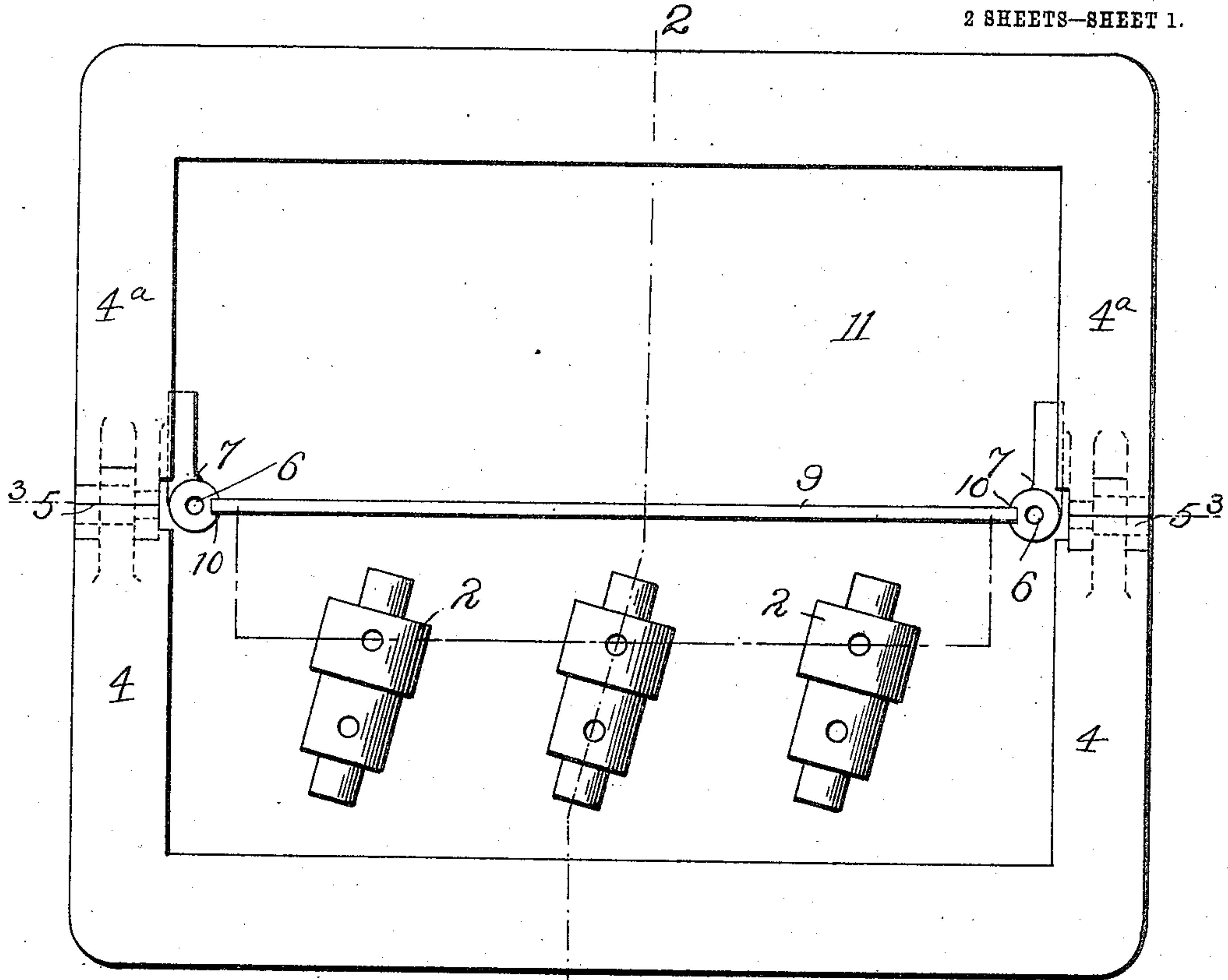


Fig. 1.

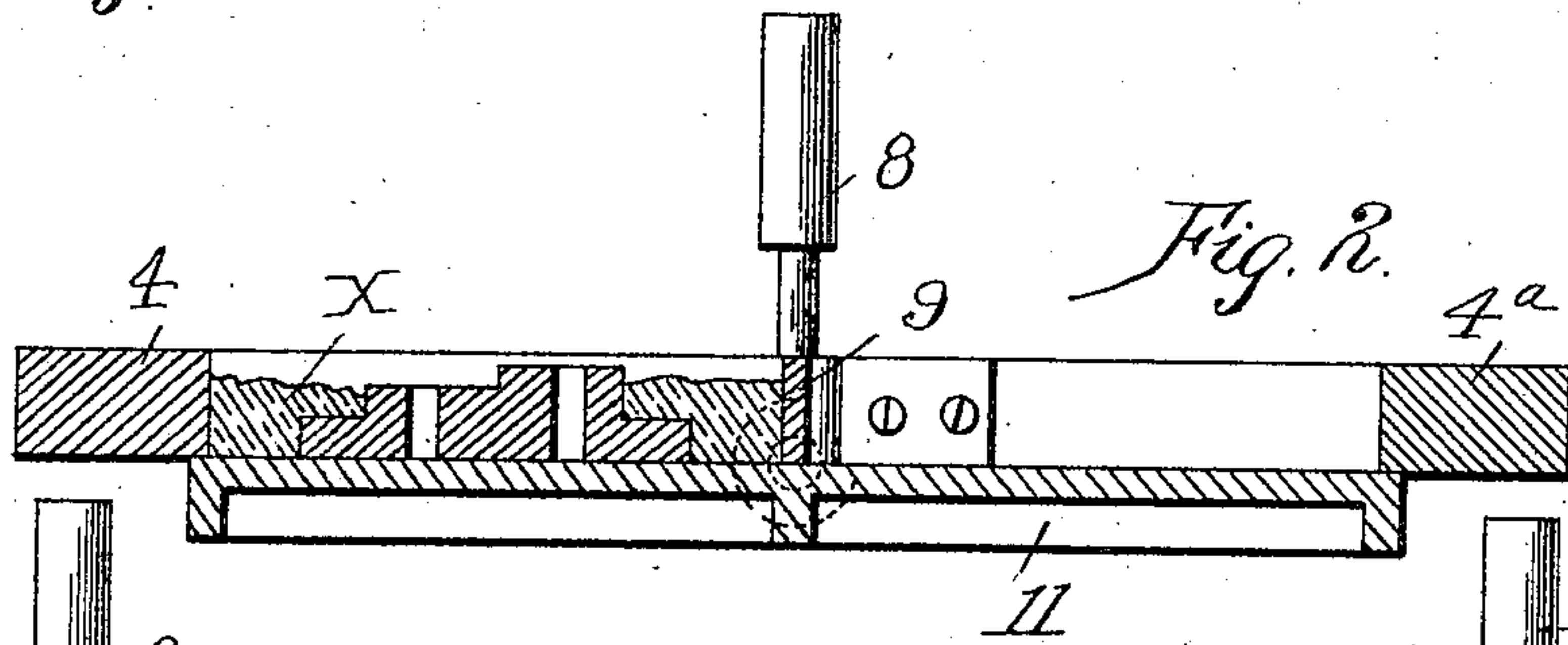


Fig. 2.

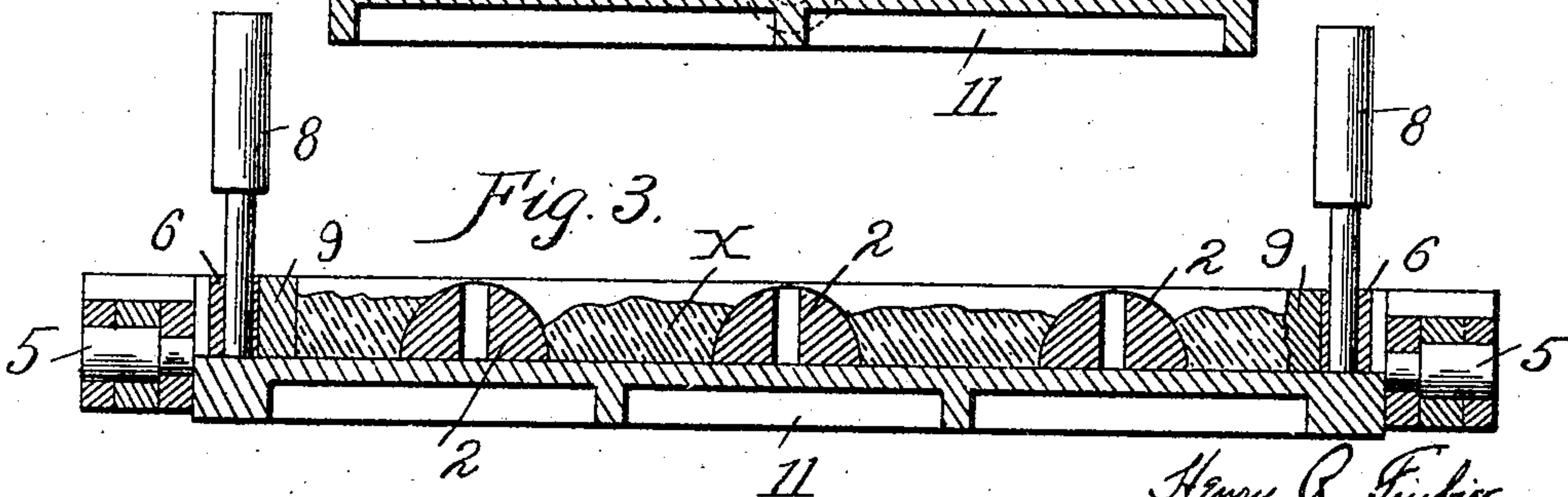


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

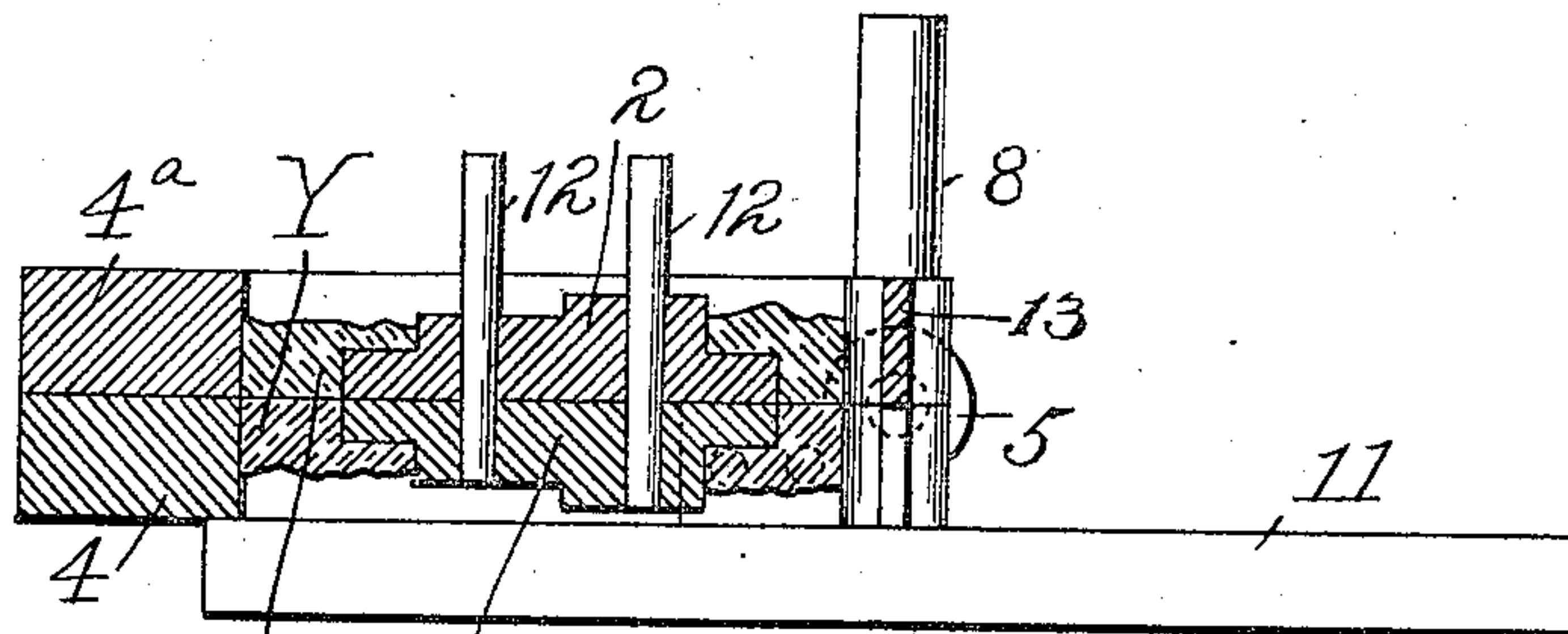


Fig. 5.

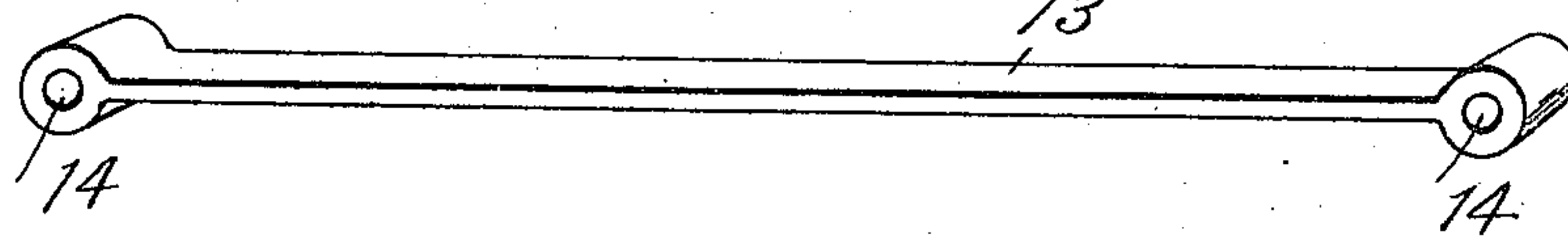


Fig. 6.

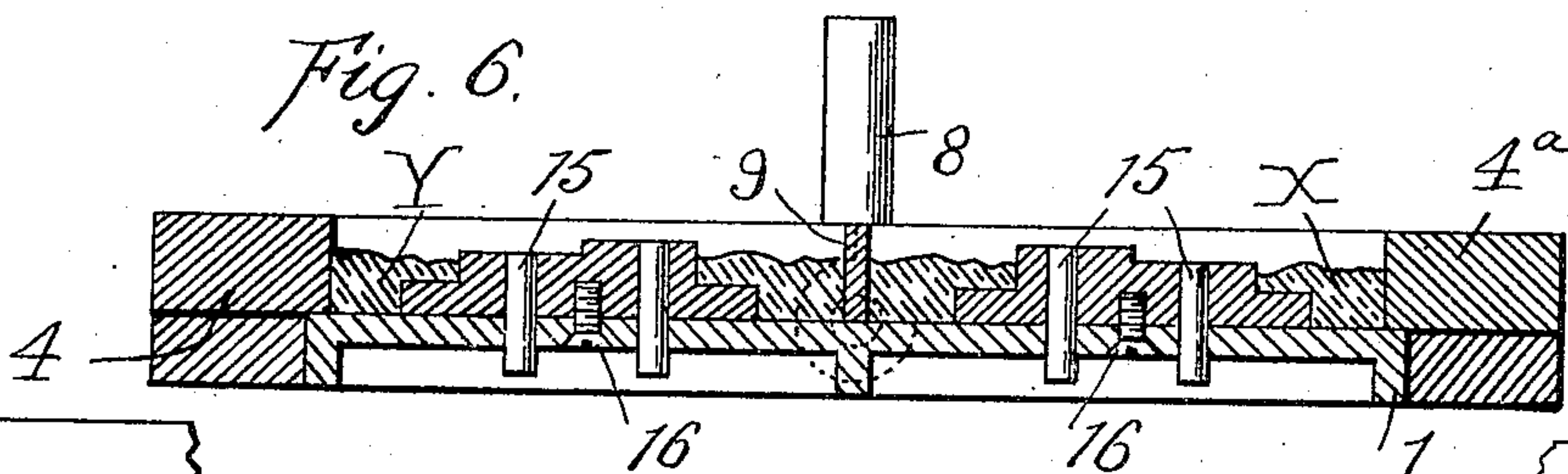
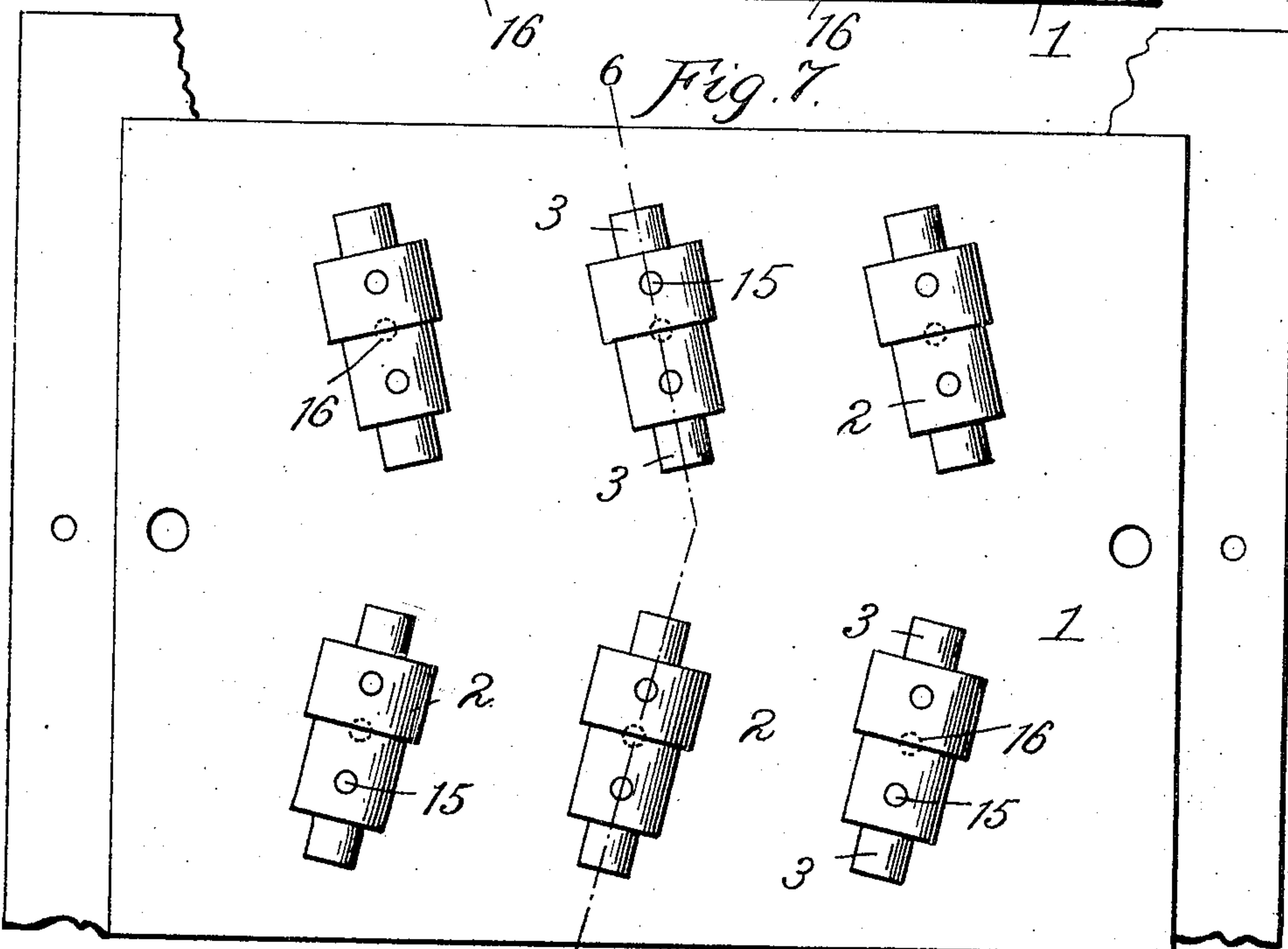


Fig. 7.



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APPARATUS FOR LOCATING PATTERNS ON PATTERN-PLATES.

No. 844,117.

Specification of Letters Patent.

Patented Feb. 12, 1907.

Application filed March 1, 1906. Serial No. 303,729.

To all whom it may concern:

Be it known that I, HENRY R. FRISBIE, a citizen of the United States, resident of Belleville, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Apparatus for Locating Patterns on Pattern-Plates, of which the following is a specification.

This invention relates to improvement of apparatus for preparing pattern-plates for use in molding. The present customarily used methods of preparing such plates are slow and inaccurate, resulting in great expense in preparation of the plate and imperfection in the resulting castings.

The object of my invention is to enable the rapid preparation of a pattern-plate having the patterns arranged and fixed thereon with great accuracy, so that the separate parts of the mold formed thereby will be exactly coincident and the resulting castings therefrom free from imperfections, such as "shut-overs," the term applied when two halves of a casting do not coincide at their edges.

My improvements relate more particularly to apparatus for the preparation of pattern-plates for use in molds wherein each half of the mold bears the imprints of the two counterparts or halves of the same patterns or sets of patterns and wherein the same pattern-plate is used for printing both halves of the mold; and my invention comprises means for rapidly and accurately assembling the patterns upon the pattern-plate whereby a large number of such patterns may be quickly applied and fastened in such position as to bring them in the exact desired relation to each other, so that the castings resulting from the use of molds formed by such pattern-plates will be free from imperfections.

In the accompanying drawings, Figure 1 illustrates in plan view my pattern-assembling frame with patterns placed in one-half of the same. Fig. 2 is a sectional view of the same, the plane of section being indicated by the dotted line 2 2, Fig. 1, on a supporting plate or table and illustrating the method of fixing the patterns in position by means of some suitable plastic hardening material, such as plaster-of-paris. Fig. 3 is a sectional view of the same parts, the plane of section being on the broken line 3 3, Fig. 1. Fig. 4 is a sectional view in the same plane as Fig. 2, but showing the assembling-frame folded and the counterpart patterns in position. Fig. 5 is a perspective view of the supplement-

tal dam used with the folded assembling-frame. Fig. 6 is a sectional view of the assembling-frame and pattern-plate, showing the method of transferring patterns from the former to the latter, the plane of section through the pattern-plate being indicated by the dotted line 6 6, Fig. 7. Fig. 7 is a plan view of the pattern-plate with the patterns assembled thereon.

The problem solved by this invention is the proper arranging upon the pattern or master plate 1, (shown in Figs. 6 and 7,) of a series of patterns 2 in proper relation to each other, so that when the two parts of a print by said pattern are brought together the prints will be in exact coincidence and no shut-overs occur. The patterns shown have core-prints 3; but this is merely by way of illustration; also, the figure illustrates but three whole patterns or six half-patterns, whereas it is often customary, and especially so with this invention, to place many times this number of patterns on a single pattern-plate.

It will be convenient to describe the method of operating the apparatus during the course of the description of the apparatus.

Referring now to Figs. 1 to 5, 4 4^a is an assembling-frame, preferably of rectangular shape and made either of wood or metal, the two halves 4 4^a being hinged together at 5, so that one half may be folded upon the other, as illustrated in Fig. 4. Upon each end of the frame are provided jig-holes 6, which may, as here shown, be formed in lugs or projections 7 on or fastened to one of the half-frames 4 4^a in such position as to bring the jig-holes exactly midway of the sides of the frame, and in these holes may be placed steady-pins 8 for fastening the frame to the pattern or master plate while the patterns are being fixed on the latter. A dam 9 extends from end to end of the frame midway of its sides and is preferably removably attached thereto by entering grooves 10 upon the inner faces of the lugs 7.

A series of half-patterns are first assembled in one of the half-frames 4 4^a, as shown in Fig. 1, by placing the frame in extended position upon a suitable table 11 and arranging the desired half-patterns in one of the half-frames in desired relation to each other. The dam 9 being in position, some suitable cement, such as plaster-of-paris, is flowed in round the patterns, as shown in Figs. 2 and 3 at X, and when the cement sets the half-patterns are rigidly held in one of the half-

frames. The frame is then reversed, the flat side of the patterns and plaster-of-paris carried thereby thoroughly oiled, and the half-frames folded together, as shown in Fig. 4.

5 The several counterparts of the half-patterns fastened in the half-frame 4 are now fastened to such half-patterns by means of dowels 12, extending through dowel-holes in the patterns. A supplementary dam 13 is now fastened in the frame to prevent the escape of plaster about to be applied. This dam may have the shape shown in Fig. 5, being a bar or plate of wood or metal provided with jig-holes 14 in its expanded ends which correspond with the holes 6 in the lugs 7 and enable the fastening of the dam by the placing of the steady-pins 8 in position as shown in Fig. 4. Plaster-of-paris or other suitable cement is now poured into the half pattern-frame 4^a, as shown in Fig. 4 at Y, which when it sets will rigidly hold the counterpart half-patterns in the half-frame 4^a in exact relation to those in the half-frame 4. The supplemental dam 13 is now removed, the assembling-frame opened out and placed upon the pattern-plate 1, as shown in Fig. 6, with the flat side down. The several patterns are now fastened to the pattern-plate, preferably by dowels 15 and screws 16, the cement broken away, and the frame 4 4^a removed, leaving the pattern-plate complete, as shown in Fig. 7.

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

1. Apparatus for locating patterns on a pattern or master plate, comprising in combination a two-part frame having its parts movably fastened together by means adapting them to be placed parallel or in the same plane at will, and removable means for fastening counterpart patterns in the respective parts, in fixed relation to each other.

2. Apparatus for locating patterns on a pattern or master plate, comprising in combination a two-part frame having its parts hinged together and adapted to be placed parallel or opened up to occupy the same plane, and removable means for fastening a half-pattern in one part and a counterpart pattern in the other part in fixed relation to the first.

3. Apparatus for locating patterns on a pattern or master plate, comprising in combination a two-part frame having its parts hinged together and adapted to be placed parallel or opened up to occupy the same plane, a setting cement for fastening a half-pattern in one part and a counterpart pattern in the other part in fixed relation to the first.

4. Apparatus of the character described, comprising a two-part frame having its parts adapted to respectively receive and hold the counterparts of patterns and movably connected together by means adapting them to be placed parallel to each other or to be opened out and applied to the pattern or master plate, and dam-pieces supported in the two parts, substantially as and for the purpose set forth.

5. Apparatus of the character described, comprising a two-part frame having its parts adapted to respectively receive and hold the counterparts of patterns and movably connected together by means adapting them to be placed parallel to each other or to be opened out and applied to the pattern or master plate, a dam-piece supported upon one of said parts, and a removable dam-piece for the other part, substantially as and for the purpose set forth.

6. Apparatus of the character described, comprising a two-part frame having its parts adapted to respectively receive and hold the counterparts of patterns and movably connected together by means adapting them to be placed parallel to each other or to be opened out and applied to the pattern or master plate, removable means for fastening counterpart patterns in the respective parts in fixed relation to each other and means for positioning and rigidly holding the frame on the pattern or master plate.

7. Apparatus for placing patterns on a pattern or master plate comprising in combination a frame made in two parts hinged together, the two parts adapted to respectively receive and hold the counterparts of patterns, setting cement for fastening counterpart patterns in the respective frame parts, the frame having positioning and holding apertures for pins corresponding to like apertures for the pattern or master plate.

8. Apparatus of the character described, comprising a two-part frame having its parts adapted to respectively receive and hold the counterparts of patterns and movably connected together by means adapting them to be placed parallel to each other or to be opened out and applied to the pattern or master plate, a dam-piece supported upon one of said parts, and a removable dam-piece for the other part, having dowel-apertures corresponding to like apertures in the frame, substantially as and for the purpose set forth.

9. Apparatus of the character described, having a part for the reception of a set of half-patterns and holding cement therefor, a part hinged to the first part to be folded thereon and receive the counterparts of said half-patterns and holding cement therefor, and means for positioning and holding the said frame when open in like position on any pattern or master plate.

10. Apparatus of the character described, having a part for the reception of a set of half-patterns and holding cement therefor, a part hinged to the first part to be folded thereon and receive the counterparts of said

half-patterns and holding cement therefor, a removable dam, and means for positioning and holding said dam to such second part when the parts are folded together, and for
5 holding the said frame when open in like position on any pattern or master plate.

11. Apparatus of the character described having a part for the reception of the half-patterns and holding cement therefor, a part
10 hinged to the first part to be folded thereon and receive the counterparts of such half-patterns and holding cement therefor, pivot-

pins arranged between the said parts and parallel to the meeting edges of the same, and pivot lugs or bearings upon the said
15 parts engaged by said pins whereby the parts are maintained in fixed and predetermined relation to each other whether in closed or open condition.

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