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PATENTED NOV. 10, 1903.

J. C. BONNEAU.  
STEREOTYPE MATRIX FRAME.

APPLICATION FILED JULY 20, 1903.

NO MODEL.

Fig. 1.

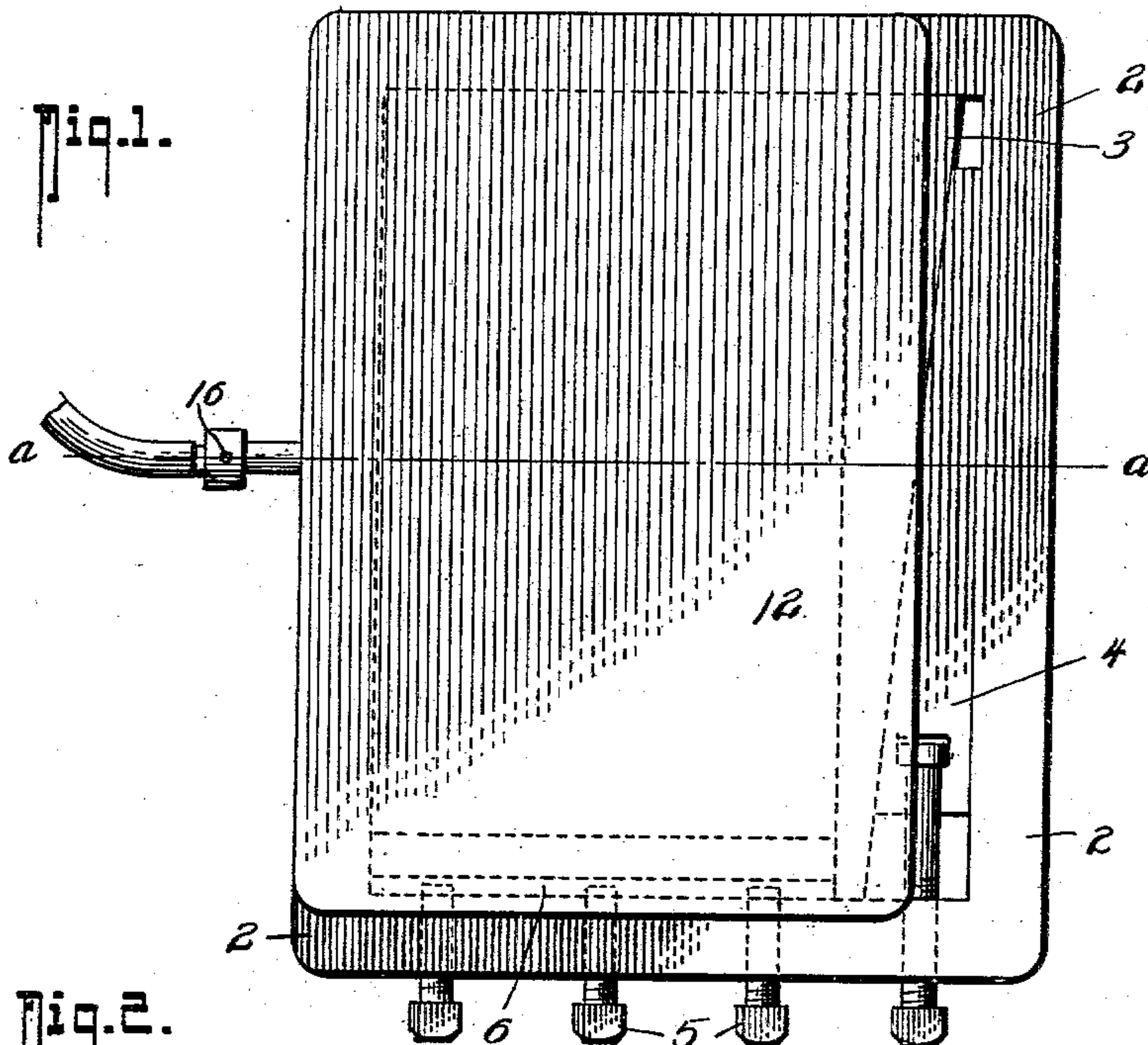


Fig. 2.

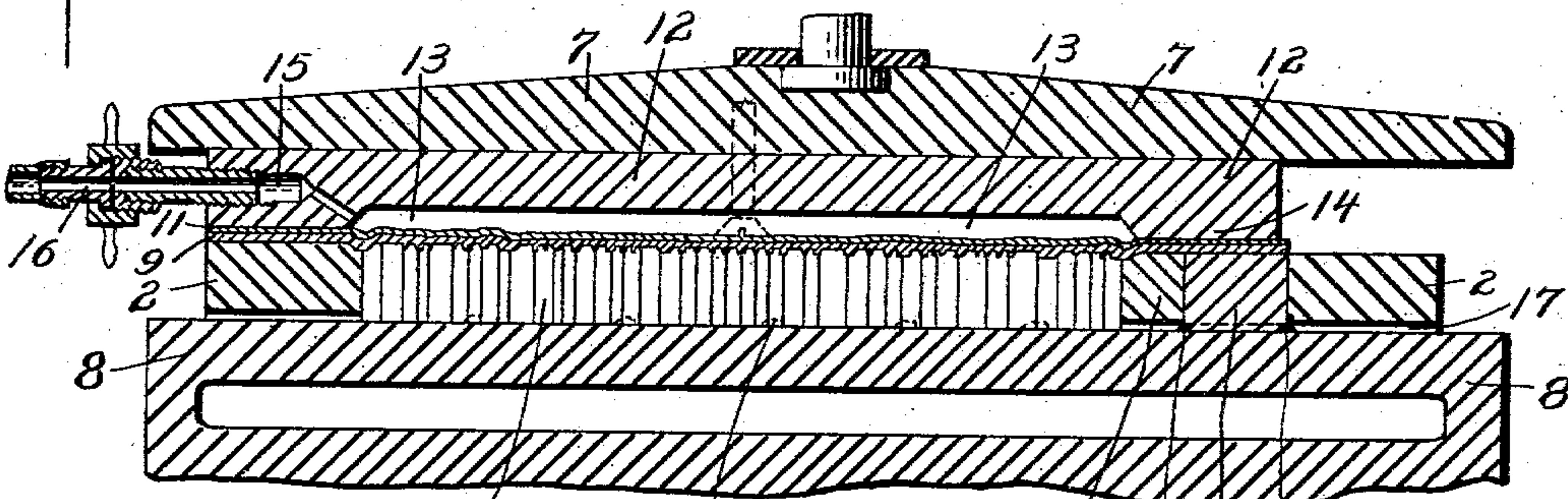
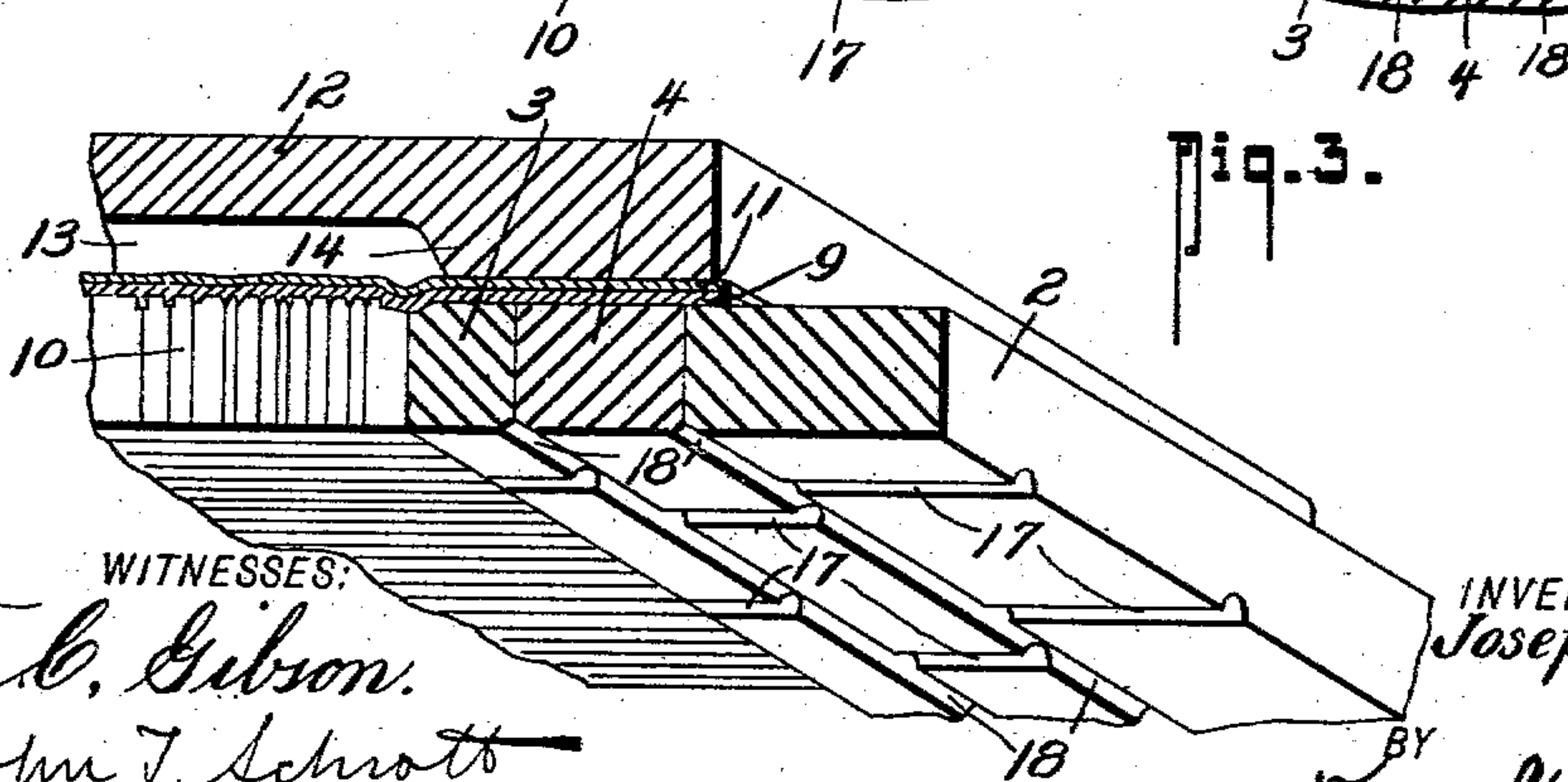


Fig. 3.



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## STEREOTYPE-MATRIX FRAME.

SPECIFICATION forming part of Letters Patent No. 743,812, dated November 10, 1903.

Application filed July 20, 1903. Serial No. 166,288. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH C. BONNEAU, a citizen of the Dominion of Canada, residing at the city of Vancouver, in the Province of British Columbia, Canada, have invented a new and useful Improvement in Stereotype-Matrix Frames, of which the following is a specification.

This invention is for an improved frame for the production of a stereotype-matrix; and the object is to facilitate the drying of the matrix-pulp while in contact with the type in the chase and to afford means for the egress of the moisture expressed or evaporated from the pulp while it is in the drying-press.

The customary method of holding the pulp to the type while the matrix is being dried is to apply a thick pad of blanket to the upper side of the wet pulp after it has been beaten into the type in the chase-frame and to squeeze such blanket tightly down on the type between the plates of the drying-press. With this method the moisture expressed and evaporated from the drying matrix is retained by the blanket in contact with the pulp sheet, and the operation of drying is considerably delayed on that account. Further, the considerable and comparatively solid pressure required to insure a good impression with a blanket pad is found to be very destructive to the type, and is all the more so because the type is exposed to the high drying temperature for a much longer time than would be necessary for the mere drying of the matrix if the moisture were not retained by the blanket in contact with the pulp sheet, as first explained. To overcome these defects attempts have been made, but so far without success, to substitute for the layers of blanket a pressure-distributing medium of a less absorbent character. Other inventors have endeavored to obtain a stereotype-matrix by using a specially-made paper of a loose spongy character that may be pressed dry upon the type in the chase-frame to receive the impress. To obtain a fine clear impression, however, it is necessary to use a wet pulp

and have it well brushed and rolled into the type or half-tone; and the object of this invention is to dispense altogether with the blanket and to substitute therefor a dry-fluid pressure, which being applied to the back or upper side of the matrix-pulp prepared in the usual manner will hold the pulp while drying in the press in close contact with the type-matter and will have close access to the surface of the pulp to dry it and even permeate and express the moisture therefrom.

A further improvement is in the means provided on the under side of the chase-frame to facilitate the escape of the moisture evaporated and expressed from the pulp.

The means by which these objects are attained is fully described in the following specification and illustrated in the drawings which accompany it, Figure 1 being a plan of a chase-frame to which this improvement has been applied. Fig. 2 an enlarged cross-section of the same on the line *a a* in Fig. 1, showing the chase-frame in position in the drying-press; and Fig. 3, a perspective view of a portion of the under side of the chase-frame and its wedges, showing the means provided for the escape of the moisture.

In the drawings, 2 indicates the frame of the chase of ordinary construction, as this improvement can be applied to existing frames with little or no difficulty, the fixed and movable wedges being indicated by 3 and 4, respectively, and the end screws and their bearing-plate on the type-matter 10 by 5 and 6, while the upper and under plates of the screw-press are indicated, respectively, by 7 and 8.

12 is a cover-plate, having a recessed space 13 on the side adjacent to the type and corresponding in size to the length and breadth of the type-matter in the chase. The border 14, surrounding this recess 13, is faced to form a joint seating on the frame of the chase and its wedges, in which seating the pulp of the matrix forms a gasket. The cover-plate 12 has a plane upper surface parallel to the border-joint face 14 and is provided with an opening 15, having a pipe connection



16, through which compressed air or other suitable fluid-pressure may be introduced to the recessed space 13.

The pulp sheet 9, having been laid upon the type-matter 10, secured in the chase-frame 2, and beaten or rolled in the customary manner, the cover-plate 12 is laid on it, so that the recess-space 13 is over the type-matter and the chase and its cover are placed between the plates 7 and 8 of the heated drying-press. The upper plate 7 is then screwed down with a pressure sufficient merely to form an effectual air-tight joint of the border-seat 14 on the matrix-pulp 9 and chase-frame 2. Hot dry compressed air is then admitted to the recess-space 13 through the pipe connection 16 and exerts a uniform elastic pressure over the whole surface of the matrix-pulp, holding it in close contact with the type-matter 10 in the chase and expressing the moisture from the pulp. Excess of moisture escapes through the type to the underside, and means for its egress is provided by the grooves 17 across the under face of the frame 2 and its fixed and movable wedges 3 and 4, (see Fig. 3,) while to guard against the possibility of these grooves being blinded by the end movement of the movable wedge 4 throwing the grooves out of alinement its lower edges and those of its contiguous wedge member 3 and side frame 2 are chamfered or rounded, as at 18. To prevent the compressed air forcing its way through the pulp at the larger depression or spaces of the type-matter, a thin sheet 11, of rubber cloth, is provided to extend over the entire surface of the pulp sheet and form an elastic-pressure-distributing medium. Although a rubber cloth is specified as the material for this sheet 11, a material of a slightly-permeable character may be preferable, as a trifling leakage of air through it will facilitate the discharge of the moisture expressed from the pulp. In some cases it may not even be necessary to use any sheet 11 at all, but the hot air be allowed to have direct access to the back of the matrix-pulp 9.

It is obvious that where the system is regularly installed the cover-plate 12 may be attached by screws to the top plate 7 of the press to be removable only when a change of size is desired, or in larger establishments, where it is possible to retain a press for a specific size of frame, the recess and its pipe connection may be in the top plate of the press itself.

The source of the fluid-pressure and the means for heating such is immaterial to this application. In small establishments a hand-pump will satisfy the requirements, while in the larger ones a power-pump discharging into a reservoir from which distributing-pipes will convey the air to the several presses, and the compressed air may be

heated by either steam or gas, whichever is used for heating the press.

The advantages of the system will be apparent to practical stereotypers, as the many objections to the use of a blanket pad in the process of producing a matrix are fully realized in the trade, and when the blanket can be dispensed with and its place supplied with an elastic-pressure-transmitting medium that not only does not hinder the act of drying, but aids it, the time required to "cook" a matrix is considerably shortened. The removal of the "solid" pressure of the compressed blanket-pad from the type and the shorter time of exposure to the heat of drying results in a very considerable saving in the life of the type. It must be remembered that these advantages are attained with the retention of a wet-pulp matrix, which is still unapproached in clearness and precision of detail by any of the dry methods which have so far been advanced and which there is no requirement for when the wet pulp can be expeditiously produced.

Having now particularly described my invention and the manner of its application, I declare that what I claim as new, and desire to be protected in by Letters Patent, is—

1. In a device for producing a stereotype-matrix, from a wet pulp sheet; the combination with the heated drying-press, of a type-holding frame including movable and fixed wedges, said frame and wedges having grooves across the underside thereof, and said movable wedge and the adjacent edges of the fixed wedge and side member of the frame, being beveled, a cover-plate having a cut-away portion forming a space over the type-matter in the frame and a border seating on the pulp of the matrix-sheet, and means for conveying a dry fluid under pressure into the recess, for the purposes described.

2. In a device of the class described; the combination with a heated press, of a frame holding the type-matter to be stereotyped, of a thin flexible sheet over the pulp sheet of the matrix, a recessed cover seated air-tight on such flexible and pulp sheets, and means for admitting a dry fluid under pressure to the recess of the cover whereby the pulp sheet may be held to the type and the moisture expressed.

3. In a device of the class described; the combination with a heated drying-press and a chase-frame of type on which is a matrix-sheet, of a matrix cover-plate removably secured to the upper plate of the press and having a cut-away portion forming a space corresponding to the type-matter in the chase and a border around such space adapted to form an air-tight joint on the matrix-sheet, means for conveying a dry fluid under pressure to the recess-space, and means for the



escape of the moisture expressed from the pulp.

5 4. In a device of the class described; the combination with a type-holding frame and a heated press, a plate seating air-tight on a matrix pulp sheet on the type and having a recess-space over and next to the type-matter, means for admitting a dry fluid under pressure to the recess, and means for the

egress of the expressed moisture from the matrix-sheet.

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

JOSEPH C. BONNEAU.

In presence of—

ROWLAND BUTTAIN,  
ELLICE WEBBER.