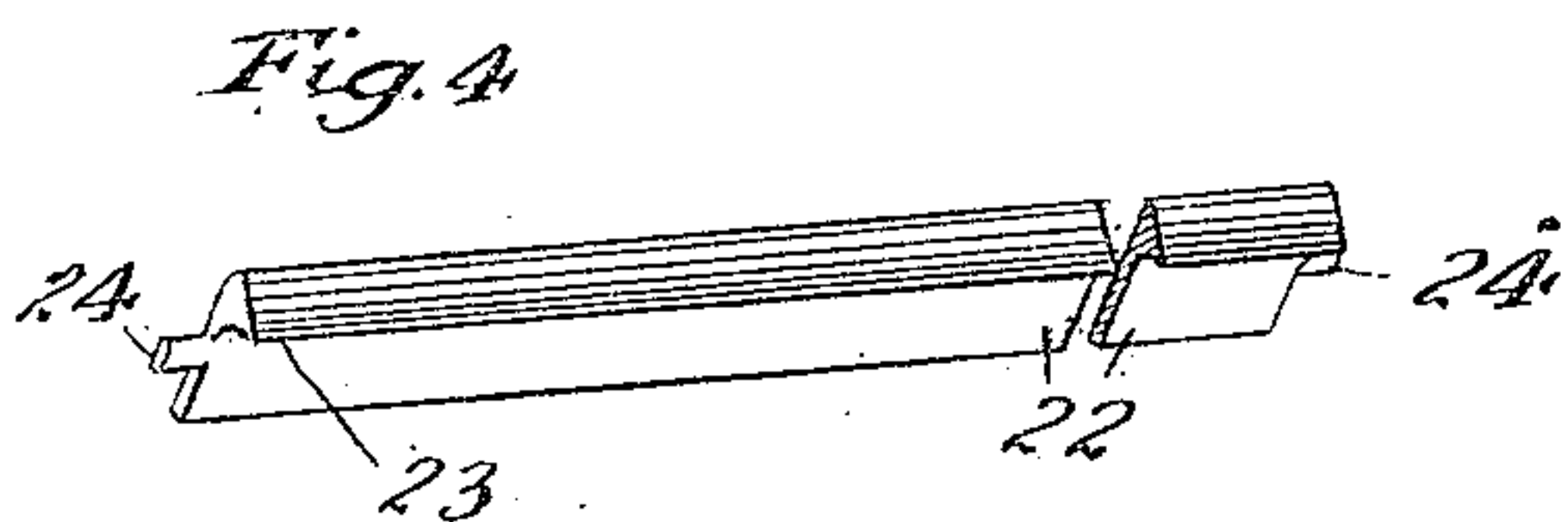
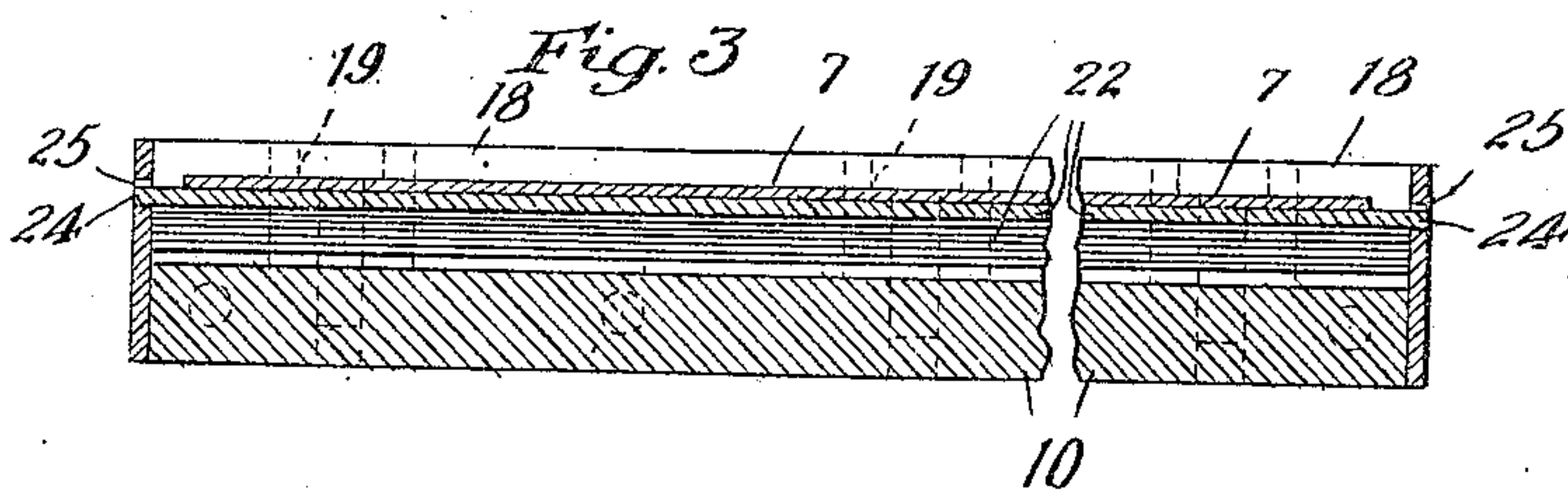
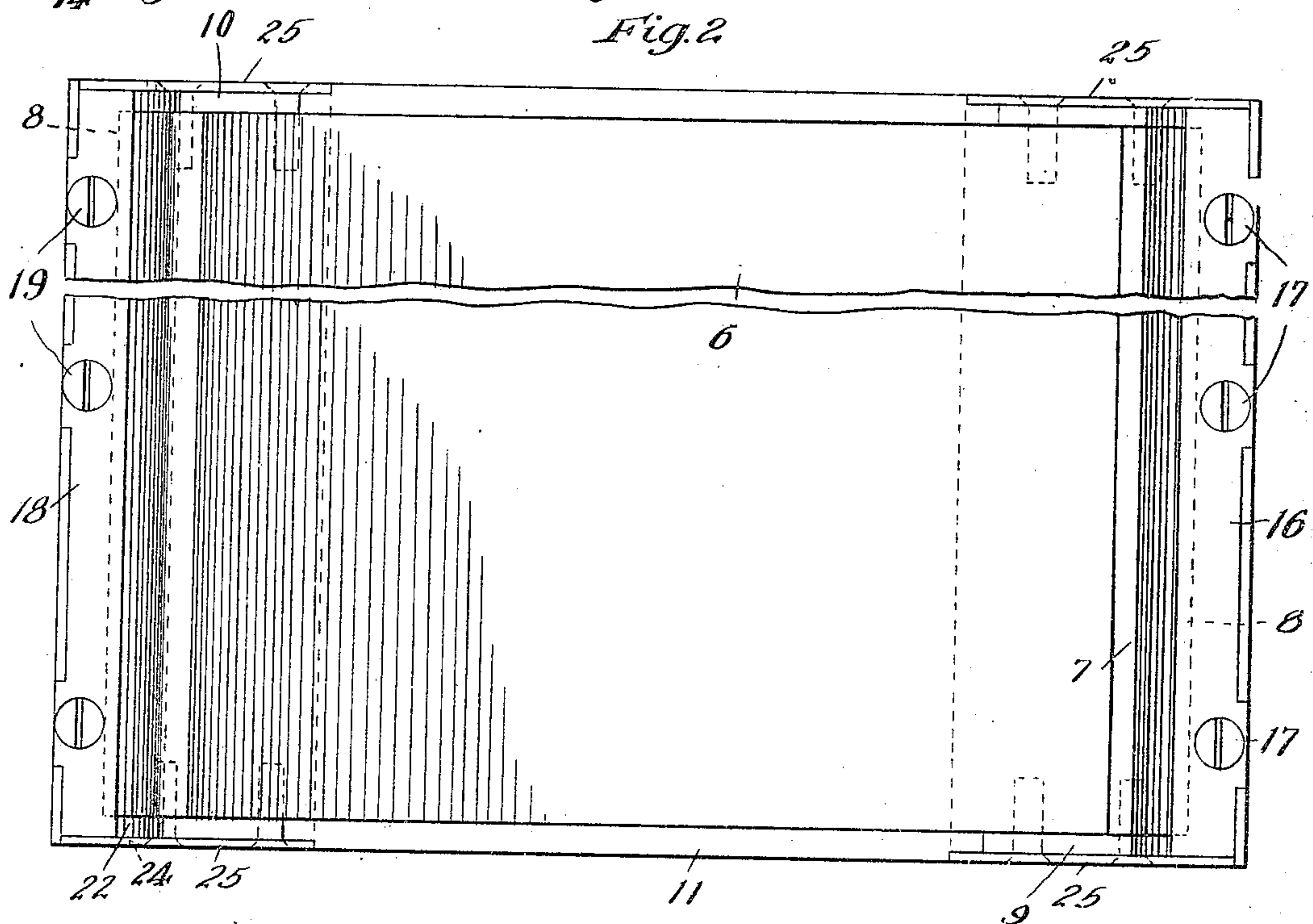
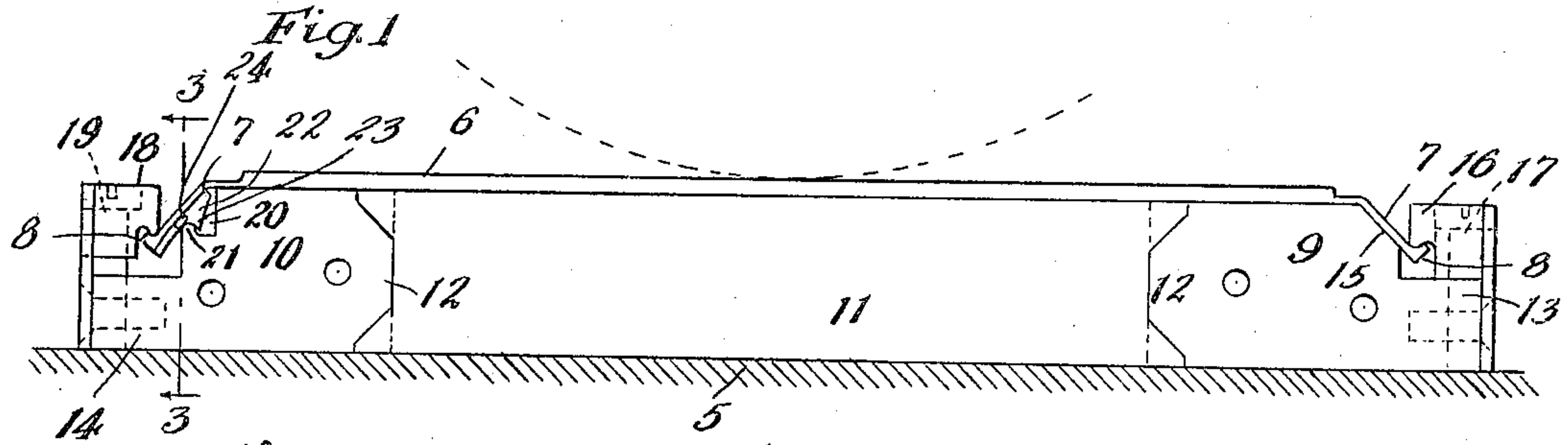


M. A. DROITCOUR.
FLEXIBLE PRINTING PLATE.
APPLICATION FILED DEC. 23, 1908.

960,219.

Patented May 31, 1910.



Witnesses:

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UNITED STATES PATENT OFFICE.

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FLEXIBLE PRINTING-PLATE.

960,219.

Specification of Letters Patent.

Patented May 31, 1910.

Application filed December 23, 1908. Serial No. 468,938.

To all whom it may concern:

Be it known that I, MICHAEL A. DROITCOUR, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Fastenings for Flexible Printing-Plates, of which the following is a specification.

This invention relates to the means employed for securing flexible printing plates to type beds or cylinders, and is intended to accomplish the same result and a simplification of the devices for the same purpose shown in another application bearing even date herewith.

The nature of the invention and details of the construction thereof are fully set forth below and illustrated in the accompanying drawing in which latter—

Figure 1 is a side elevation of the invention with the side plates of the end blocks omitted; Fig. 2 is a plan. Fig. 3 is a section on the line 3—3 of Fig. 1, and Fig. 4 a perspective of the rocking tightening plate.

In said drawing 5 represents the type bed or the type cylinder upon which my invention is used, and 6 is the flexible printing plate, having reduced margins 7 at its ends. These margins preferably have turned up lips 8 running lengthwise of the margins whereby the margins may be gripped and securely held. The reduced margins 7 are beyond and below the printing surface, and are preferably formed by thinning the material of which the plate is made; and this can be done by cutting or channeling the plate transversely, so as to remove part of the upper surface thereof and form the reduced margins 7 and the lips 8 simultaneously. The reduced margins 7 are preferably bent downward before the plate is placed upon the bed or cylinder, and by reason of the thinness of the margins when the plates are tightened the margins 7 yield or bend without causing any buckling of the printing surface and the latter can be stretched very tightly; while the clamping devices are brought entirely below the line of impression. I propose to make the printing plates of celluloid or similar composition, and the plate margins and lips may be all of the same material; and it is particularly important when the flexible margins are of the same material as the plate that they should be capable of being bent down

below the impression line without buckling the printing surface of the plate. The plate is supported upon the bed or cylinder by blocks 9, 10 and 11. Of these, the end ones 9 and 10 have along their inward sides a swell or enlargement 12, the top and bottom of which are inclined in opposite directions, and which engage correspondingly formed surfaces on the center block 11. The form of these enlargements is such as to insure the bringing of the center and end blocks to the same horizontal plane when they are pressed together. The outer edges of the end blocks are cutaway at the top, leaving projecting tongues 13 and 14. In the case of the block 9, a sloping surface 15 is provided for the margin 7 of the printing plate, and a vertically moving clamp 16 having a hook shaped under surface engages the overhanging lower edge of the margin by means of its lip 8, and securely holds the forward end of the plate. The clamp is depressed into action by screws 17 entering threaded openings in the tongue 13. The rear block 10 is somewhat differently formed, although it has a tongue 14 similar to the tongue 13 and a clamp 18 similar to clamp 16 and screws 19 entering the tongue.

Instead of the sloping surface 15, block 10 has a vertical recess 20 extending from side to side of the block and a raised shoulder 21 in the bottom of the recess at the rear thereof. The margin 7 at the rear of the plate extends over the recess 20 in a downward direction to its engagement with the clamp 18 as plainly indicated and is supported over said recess by a movable plate 22, the shape of which clearly appears in Fig. 4. It has a lip 23 on its under surface, which is adapted to set down on the shoulder 21 of the block, so that the plate may freely rock on the same in accordance with the extent of the depression of margin 7 by the clamp 18. The rocking of plate 22 caused by the clamp tends to swing the upper edge of the plate against the margin of the printing plate and thus to cause tension upon the plate. The plate 22 can rock freely and independently of the clamp except as it is held by the pressure of the plate thereupon when the clamp is tightened. The plate 22 is of spring metal, and hence, can be strained by the clamp and thereby enabled not only to hold the plate tightly but also to maintain such tension on it as will prevent any bulging or

gathering at the rear end of the plate under the "ironing" operations of the impression cylinder.

It will be understood that during impressions the cylinder rolling on the printing surface tends to iron the plate toward the rear end of the form, and this is apt to produce a slight buckle in the printing surface; but by reason of the spring or resiliency of the plate 22 this tendency of the printing surface to buckle is obviated and it is kept under tension and flat in advance of the cylinder during the entire impression, thus preventing any slur at the end of impression. The plate 22 is so formed that the printing plate 6 will not be lifted off of the blocks when the clamp 19 is tensioned; in other words this spring plate 22 being so fulcrumed that it cannot lift the printing plate above the impression line.

The plate is preferably provided with ears 24 at each end, which can be entered in openings formed in the side plates 25 as seen at Fig. 3, secured to the end blocks as shown and thus be prevented from losing its position in the blocks. The blocks 9 as well as blocks 10 are preferably provided with side plates 25.

I claim:—

1. A flexible integral printing plate having transverse channels in its upper side beyond the printing surface forming thin integral margins with projecting lips on their upper sides and at their outer edges for engagement with the clamping devices, said margins being preliminarily bent down to facilitate engagement of the lips with the clamps.

2. In combination, a support, a printing surface thereon comprising a flexible printing plate, means securing one end of said printing plate to the support, a clamp securing the other end of said printing plate, and a freely rocking plate interposed between the latter clamp and the adjacent edge of the support, said freely rocking plate engaging the under surface of the printing plate and holding it under tension.

3. In combination, a flexible printing plate having a printing surface and margins at its ends beyond the printing surface for engagement with clamping devices; with a support for said printing plate, clamps at the ends of said support engaging the ends of said plate, and a freely rocking plate interposed between the clamp at one end of the support and the adjacent edge of the support, and adapted to hold the printing plate under tension.

4. In combination, a support, a printing surface thereon comprising a flexible printing plate having a printing surface and a clamp engaging margin, a clamp adjacent

the end of the support engaging said margin of the printing plate and a freely rocking plate interposed between the clamp and support and engaging the under surface of said margin and adapted to keep the printing plate under constant tension.

5. In combination, a flexible printing plate having reduced integral margins at its ends, a support for said printing plate, and adjustable clamps at opposite ends of said support engaging said flexible margins to secure the printing plate; with a freely rocking tensioning plate intermediate one clamp and the adjacent end of the support and engaging the under surface of the adjacent flexible margin of the printing plate, and adapted to maintain the printing plate under tension.

6. In combination a flexible printing-plate having reduced flexible margins beyond the printing surface, provided with clamp engaging lips, a support for said plate, adjustable clamps at the opposite end of said support engaging the lips of the flexible margins to secure the printing plate, and a rocking spring-plate at one end of the support engaging the under surface of the adjacent flexible margin of the printing plate, and adapted to tension the latter.

7. In combination a support having a sloping surface at one end and a shoulder at its other end, a rocking plate resting on said shoulder, and plate clamps secured to the end of the support adjacent said surface; with a flexible printing-plate having its opposite ends respectively bent down over the sloping surface and over the rocking-plate, and engaged by the clamps.

8. In combination a printing surface support having a sloping surface at one end and a shoulder at its other end, a rocking-plate resting on said shoulder and movable clamps secured to the ends of the support; with a flexible printing plate having reduced integral margins on its ends bent down over the sloping surface and over the rocking-plate and engaged by the clamps, substantially as described.

9. In combination with the supporting blocks, of printing plate clamps 16 and 18, both having overhanging hook edges, said clamps being secured each to one of the blocks, a rocking plate adjacent the clamp 18 and underlying the edge of the printing plate, a support for said rocking plate, and a printing plate having end margins with turned up lips engaging the hook edges of the clamps.

MICHAEL A. DROITCOUR.

Witnesses:

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