

No. 778,214.

PATENTED DEC. 27, 1904.

J. C. F. BALZE.
PLATE CLAMP.

APPLICATION FILED AUG. 29, 1902.

2 SHEETS—SHEET 1.

Fig. 1

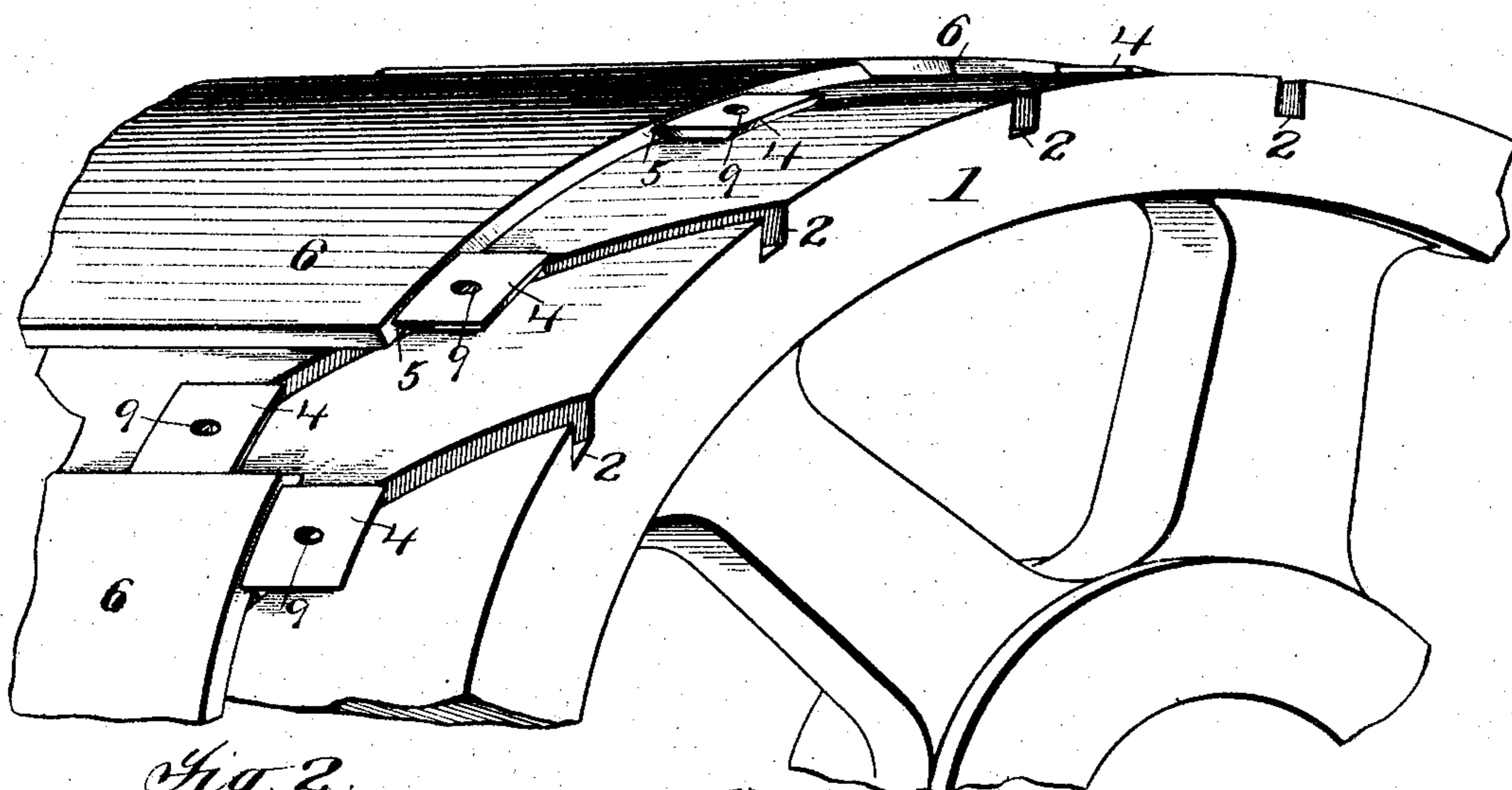
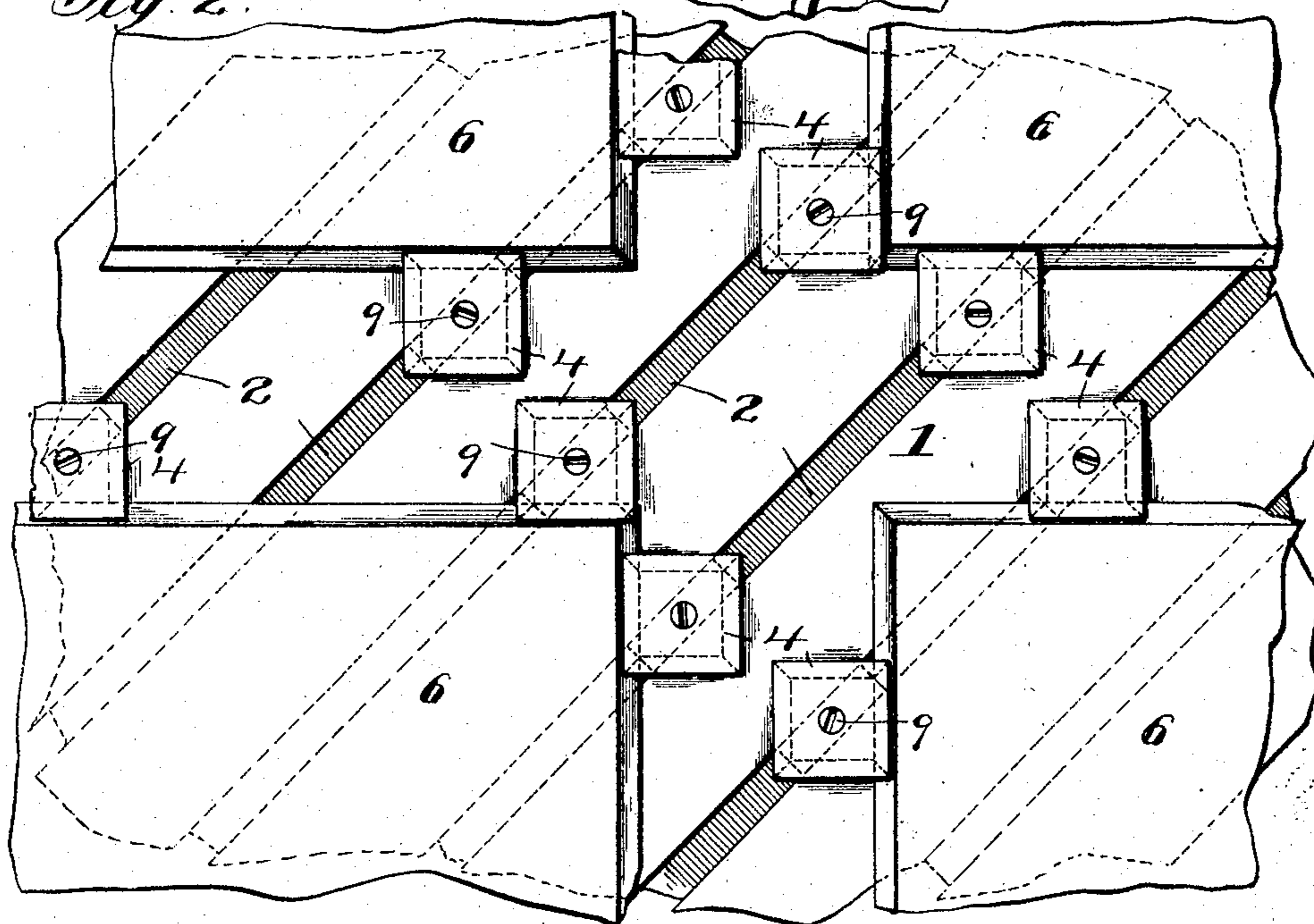


Fig. 2



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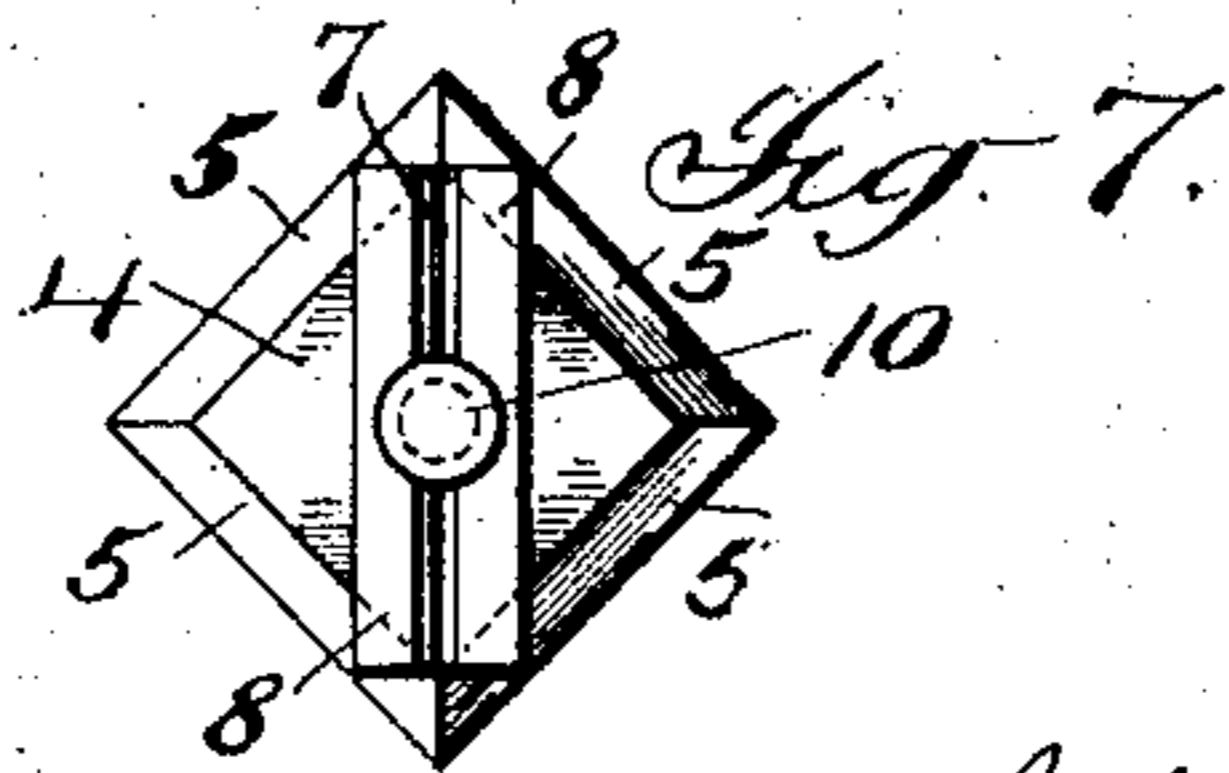
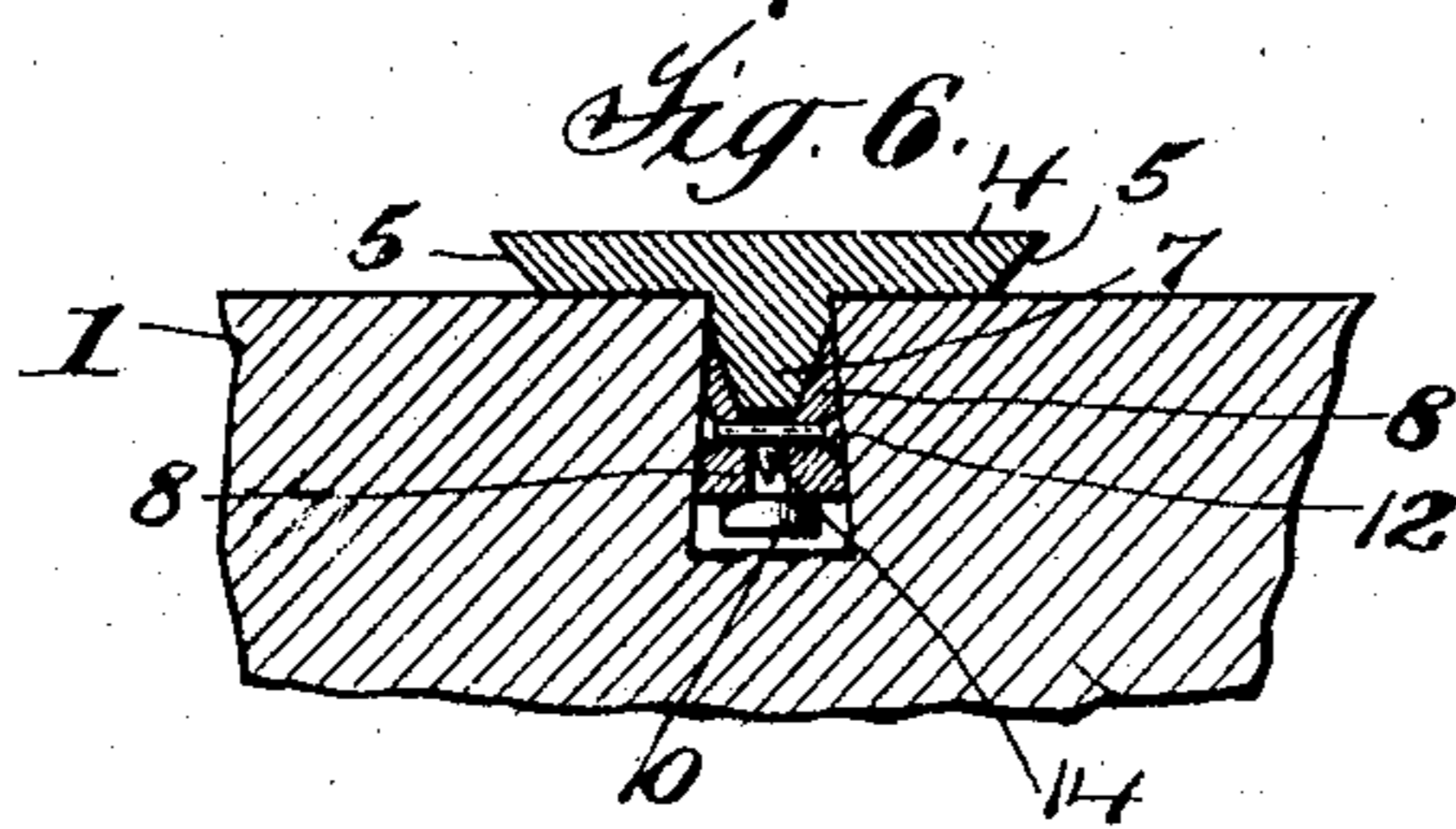
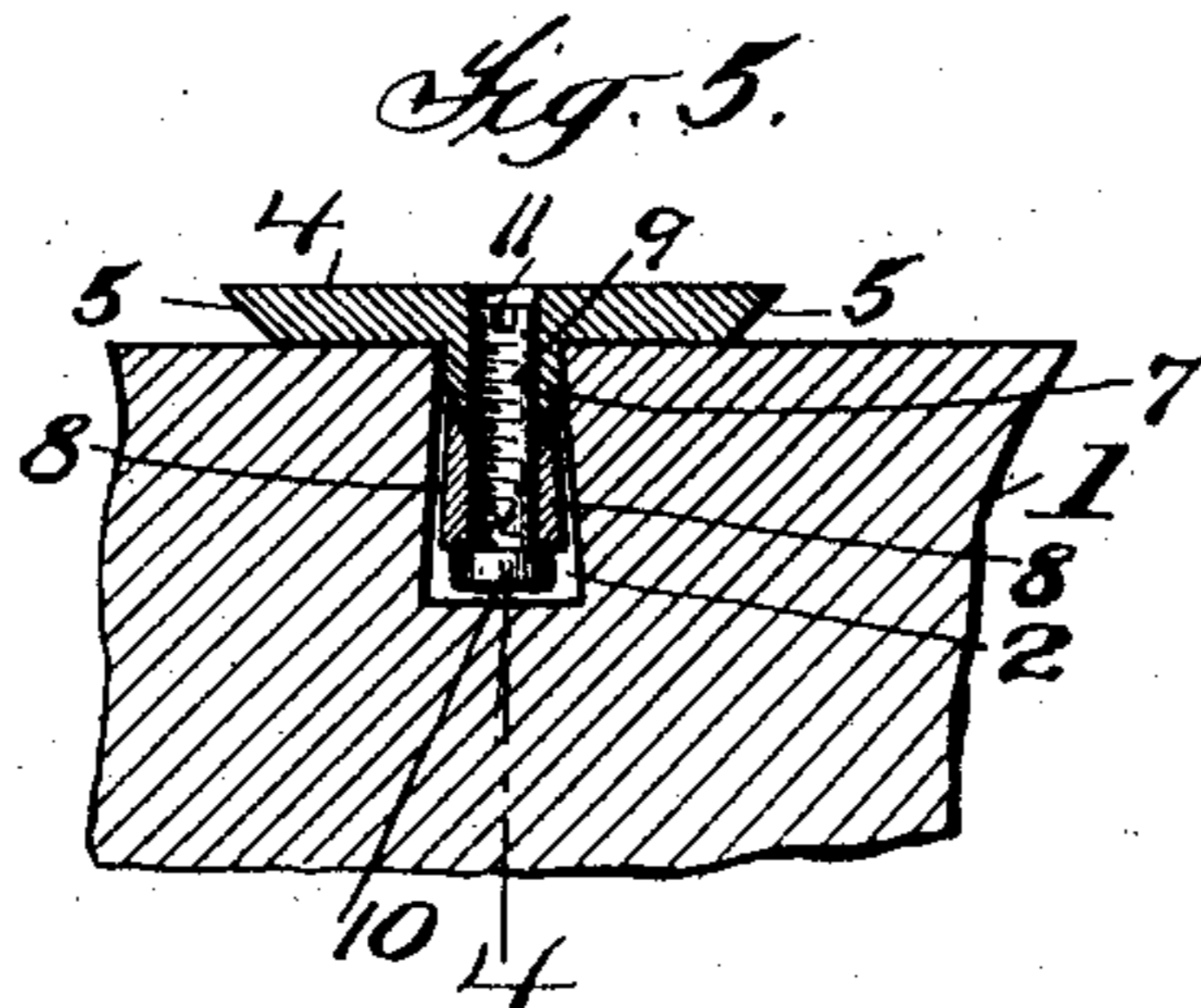
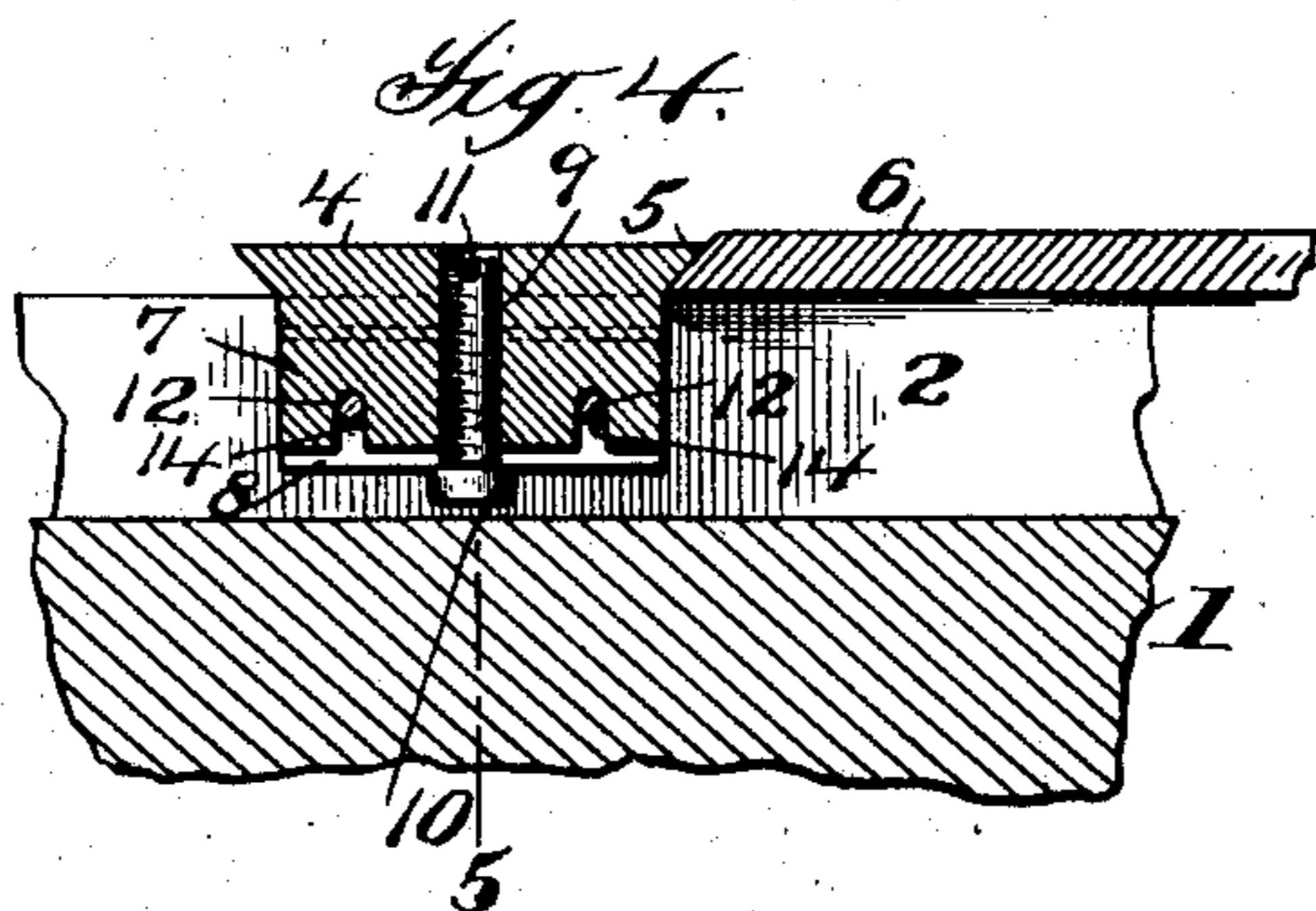
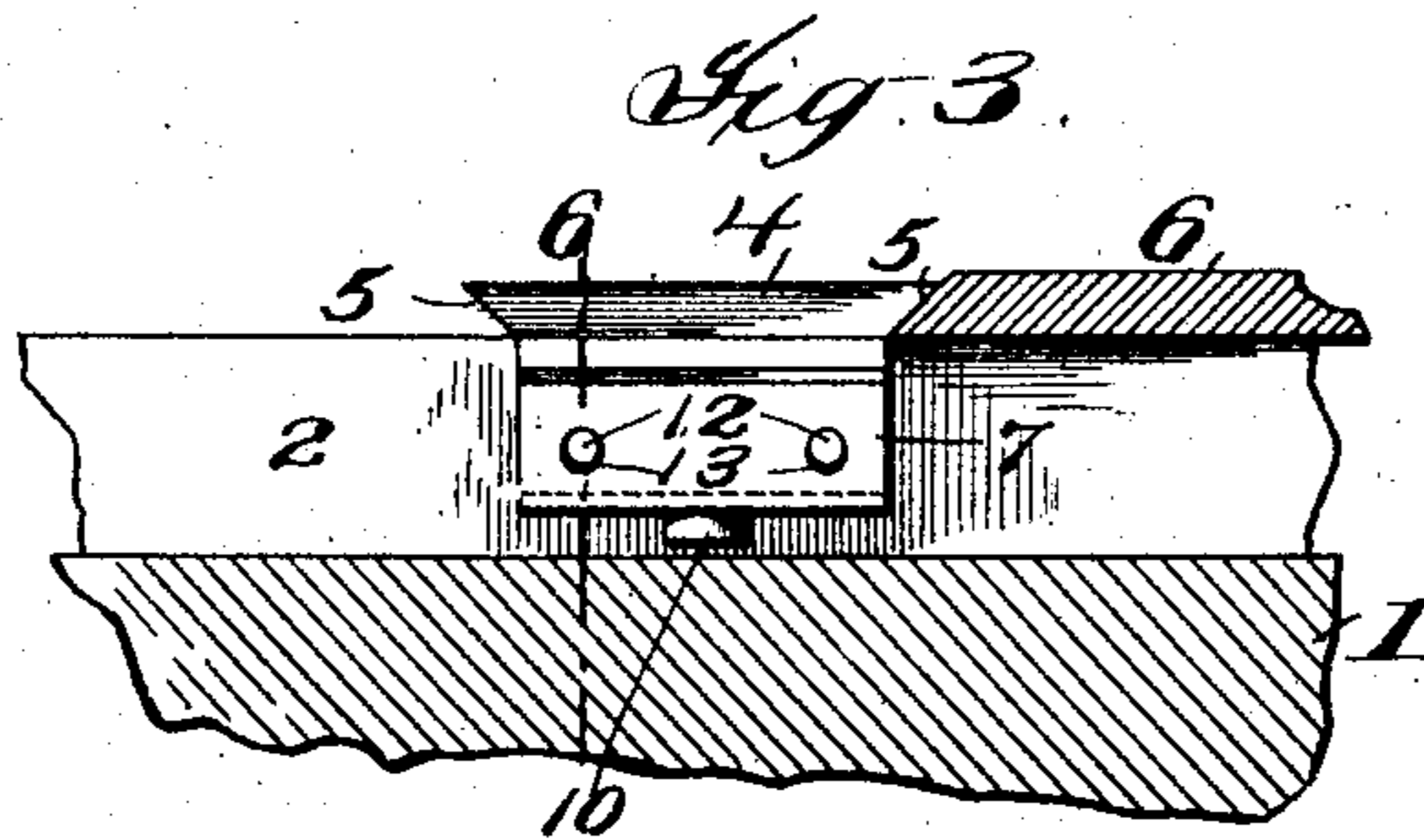
Philip Sanger Rice & Kennedy

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOHN C. F. BALZE, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, OF
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PLATE-CLAMP.

SPECIFICATION forming part of Letters Patent No. 778,214, dated December 27, 1904.

Application filed August 29, 1902. Serial No. 121,495.

To all whom it may concern:

Be it known that I, JOHN C. F. BALZE, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Plate-Clamps, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

10 This invention relates to certain improvements in clamping devices, and more particularly to that class of clamping devices which are used for securing electrotypes or stereotype plates to the beds on which they are supported during the printing operation, the clamping device provided by the present invention being one which is adapted for securing such electrotypes or stereotype plates not only to the flat bed of a bed and cylinder press, but
20 also to cylindrical beds or form-cylinders.

The invention has for its object to produce a simple and cheap clamp which can be readily and quickly adjusted in position and the parts of which are not liable to become loose during
25 the printing operation.

With this and other objects in view the invention consists in certain constructions and in certain parts, improvements, and combinations, as will be hereinafter fully described, and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, Figure 1 is a perspective view of a cylindrical bed or form-cylinder having a series of plates secured in position thereon by a clamp embodying the present invention. Fig. 2 is a plan view of a flat bed having a series of plates secured in position by such a clamp. Fig. 3 is a detail sectional elevation, on an enlarged scale, taken through the supporting-bed, (which may be the cylinder of Fig. 1 or the flat bed of Fig. 2,) illustrating the clamp in position upon the supporting-bed and in engagement with an electrotypes or stereotype plate. Fig. 4 is a sectional elevation of the same, taken on the line 4 of Fig. 5. Fig. 5 is a section taken on the line 5 of Fig. 4. Fig. 6 is a section taken on the line 6 of Fig. 3, and Fig. 7 is a bottom plan view of the clamp.

Referring to the drawings, 1 indicates a plate-supporting bed, which may be cylindrical, as shown in Fig. 1, or a flat bed, as in bed and cylinder presses. The bed 1 is provided with recesses for the clamps, which recesses may be of any desired form, but will preferably consist of grooves 2, arranged diagonally across the bed. While the walls of these grooves may be vertical, if desired, they are preferably undercut, as best shown in Figs. 5 and 6. By constructing the recesses in the form of grooves, as shown, it is possible to adjust the clamps readily along the recesses from one position to another without removing them from the grooves when the plates are changed, which removal might be necessary were the recesses simply holes in the bed.

The plate-clamp of the present invention includes a retaining-plate 4, which is arranged to engage the edge of a stereotype or electrotypes plate. Preferably the edges of the retaining-plate are beveled, as at 5, so as to take over the similarly-beveled edges of the electrotypes or stereotype plate 6. The retaining-plate 4 is provided with a wedge-shaped depending part or member 7, adapted to enter the recess 2, and on opposite sides thereof with a pair of laterally-movable wedge-shaped locking members 8, adapted to be moved along said depending part or spreading member 7 and when so moved to be spread apart by such spreading member 7 into locking engagement with opposite walls of the recess 2, as best shown in Fig. 6. The locking-plate 4 is also provided with means for supporting and carrying said laterally-movable locking members 8 and also for moving them along the wedge-shaped spreading member 7, consisting of an endwise-movable screw-threaded member 9, passing through an opening in the spreading member 7 and provided at its lower end with a head 10, on which the locking members 8 rest, so that as said screw-threaded member 9 is turned in one direction, so as to move endwise from the bottom of the recess 2, its head 10, engaging the under sides of the locking members 8, will move said members upwardly along the spreading member 7, which will then spread them apart and into

locking engagement with opposite walls of the recess 2 or into the position shown in Fig. 6. The upper end of the threaded member 9 is preferably nicked, as at 11, for the reception
 5 of a screw-driver, so that it may be turned to move the locking members 8 upwardly, as just described, or in the opposite direction to release such locking members from engagement with the walls of the recess, as shown in
 10 Fig. 5.

The locking members 8 are loosely connected together and with the retaining-plate 4 and held in position for engagement by the head 10 of the threaded member 9 by pins 12 passing through openings 13 in the locking mem-
 15 bers 8 and also through vertical slots 14 at the lower end of the spreading member 7, these pins being of such length as to provide for the necessary amount of lateral movement of
 20 the locking members, so that they may engage the walls of the recess, but headed at their outer ends, so as to prevent the detachment of the locking members from the retain-
 25 ing-plate or their disengagement from the head 10 of the threaded member 9.

The outer faces of the locking members are inclined, as shown, so as to conform to the undercutting of the walls of the recesses, and are also flat, so as to present a broad bearing-
 30 surface to the walls of the recess.

It will be observed, as before indicated, that the plate-clamps may be introduced into the recesses or grooves 2 at any point in the length thereof, so that it is not necessary to intro-
 35 duce the clamps at the ends of the recesses or grooves or to slide them to the ends thereof in order to remove them.

What is claimed is—

1. The combination with a supporting-bed
 40 provided with a recess, of a retaining-plate provided with two laterally-movable locking members for engaging opposite walls of the recess, a spreading device for moving the
 45 locking members laterally, and means for moving the locking members along said spreading device, substantially as described.

2. The combination with a supporting-bed provided with a recess, of a retaining-plate provided with two laterally-movable locking
 50 members for engaging opposite walls of the recess, a spreading device for moving the locking members laterally and means for moving the locking members along said spreading device comprising a screw-threaded member
 55 carried by the plate and connected with the locking members, substantially as described.

3. The combination with a supporting-bed provided with a recess, of a retaining-plate provided with two laterally-movable locking
 60 members for engaging opposite walls of the recess, a spreading device for moving the locking members laterally and means for moving the locking members along said spreading device comprising an endwise-movable member
 65 screw-threaded to the plate and connected with

the locking members, substantially as described.

4. The combination with a supporting-bed provided with a recess, of a retaining-plate provided with two laterally-movable wedge-
 70 shaped locking members for engaging opposite walls of the recess, and a wedge-shaped spreading device between them for so moving the locking members, substantially as de-
 75 scribed.

5. The combination with a supporting-bed provided with a recess, of a retaining-plate provided with two laterally-movable wedge-
 shaped locking members for engaging oppo-
 80 site walls of the recess, a wedge-shaped spreading device between them for so moving the locking members, and means for moving said locking members along said spreading mem-
 85 ber, substantially as described.

6. The combination with a supporting-bed
 85 provided with a recess, of a retaining-plate provided with two laterally-movable wedge-shaped locking members for engaging opposite walls of the recess, a wedge-shaped spread-
 90 ing device between them for so moving the locking members, and means for moving said locking members along said spreading member comprising a screw-threaded member car-
 95 ried by the plate and connected with the locking members, substantially as described.

7. The combination with a supporting-bed provided with a recess, of a retaining-plate provided with two laterally-movable wedge-
 shaped locking members for engaging opposite
 100 walls of the recess, a wedge-shaped spreading device between them for so moving the locking members, and means for moving said locking members along said spreading member comprising an endwise-movable member
 105 screw-threaded to the plate and connected with the locking members, substantially as described.

8. A plate-clamp comprising a retaining-plate provided with two laterally-movable
 110 locking members and a spreading device for moving them laterally, and means for moving the locking members along the spreading device comprising a screw-threaded member carried by the plate and connected with the
 115 locking members, substantially as described.

9. A plate-clamp comprising a retaining-plate provided with two laterally-movable
 wedge-shaped locking members and a wedge-
 shaped spreading device for moving them lat-
 120 erally, substantially as described.

10. A plate-clamp comprising a retaining-plate provided with two laterally-movable
 wedge-shaped locking members and a wedge-
 shaped spreading device for moving them lat-
 125 erally, and means for moving the locking members along the spreading device comprising a screw-threaded member carried by the plate and connected with the locking mem-
 130 bers, substantially as described.

11. A plate-clamp comprising a retaining- 130

plate provided with a spreading member 7, and two laterally-movable locking members 8 loosely connected together, substantially as described.

5 12. A plate-clamp comprising a retaining-plate provided with a spreading member 7, two laterally-movable locking members 8 loosely connected together, and threaded member 9 carried by the plate and connected with the locking members, substantially as described.

10 13. A plate-clamp comprising a retaining-plate provided with a spreading member 7,

two laterally-movable locking members 8 loosely connected together by pins 12, and 15 threaded member 9 carried by the plate and connected with the locking members, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing 20 witnesses.

JOHN C. F. BALZE.

Witnesses:

F. W. H. CRANE,
L. ROEHM.