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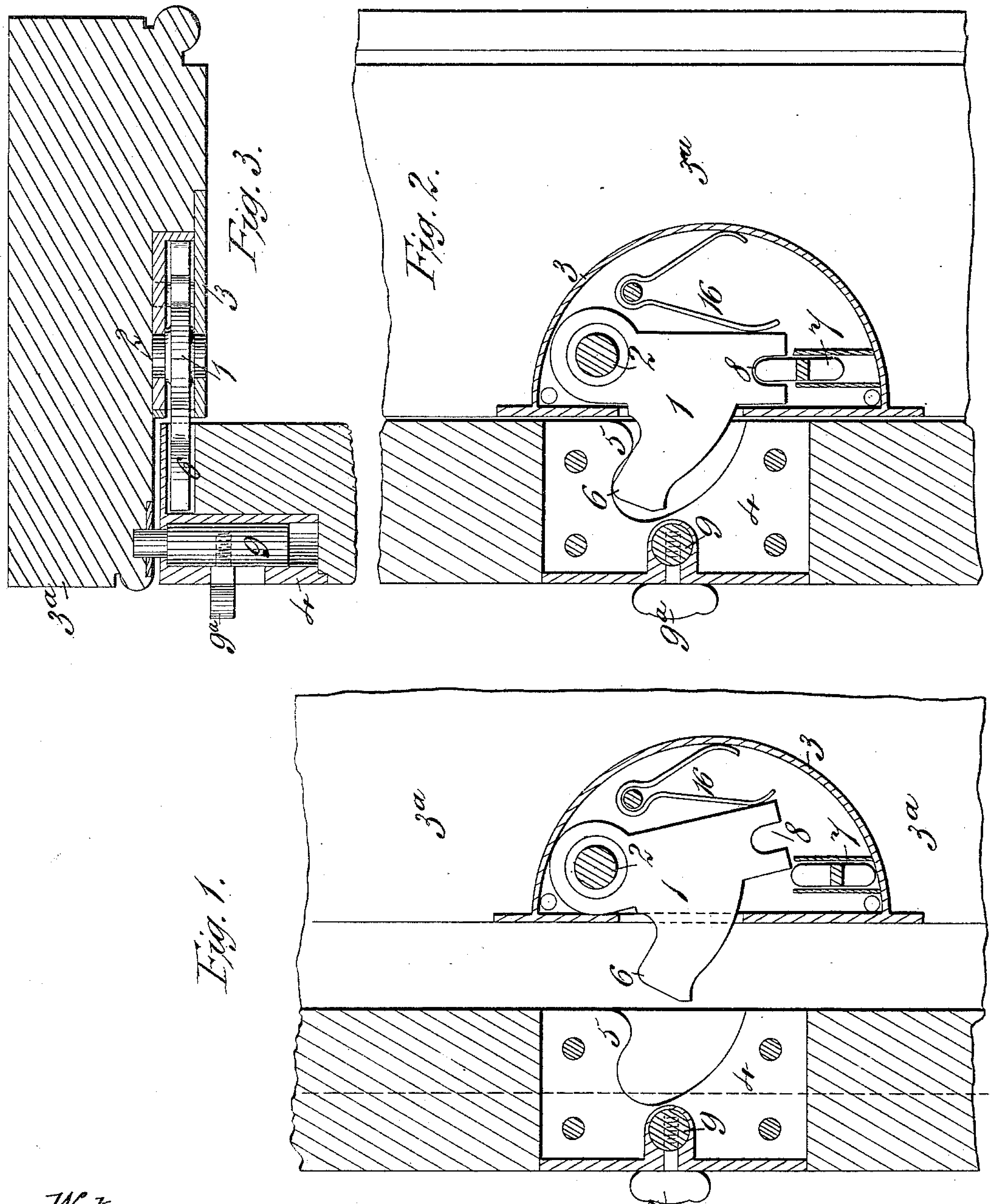

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Fig. 4.

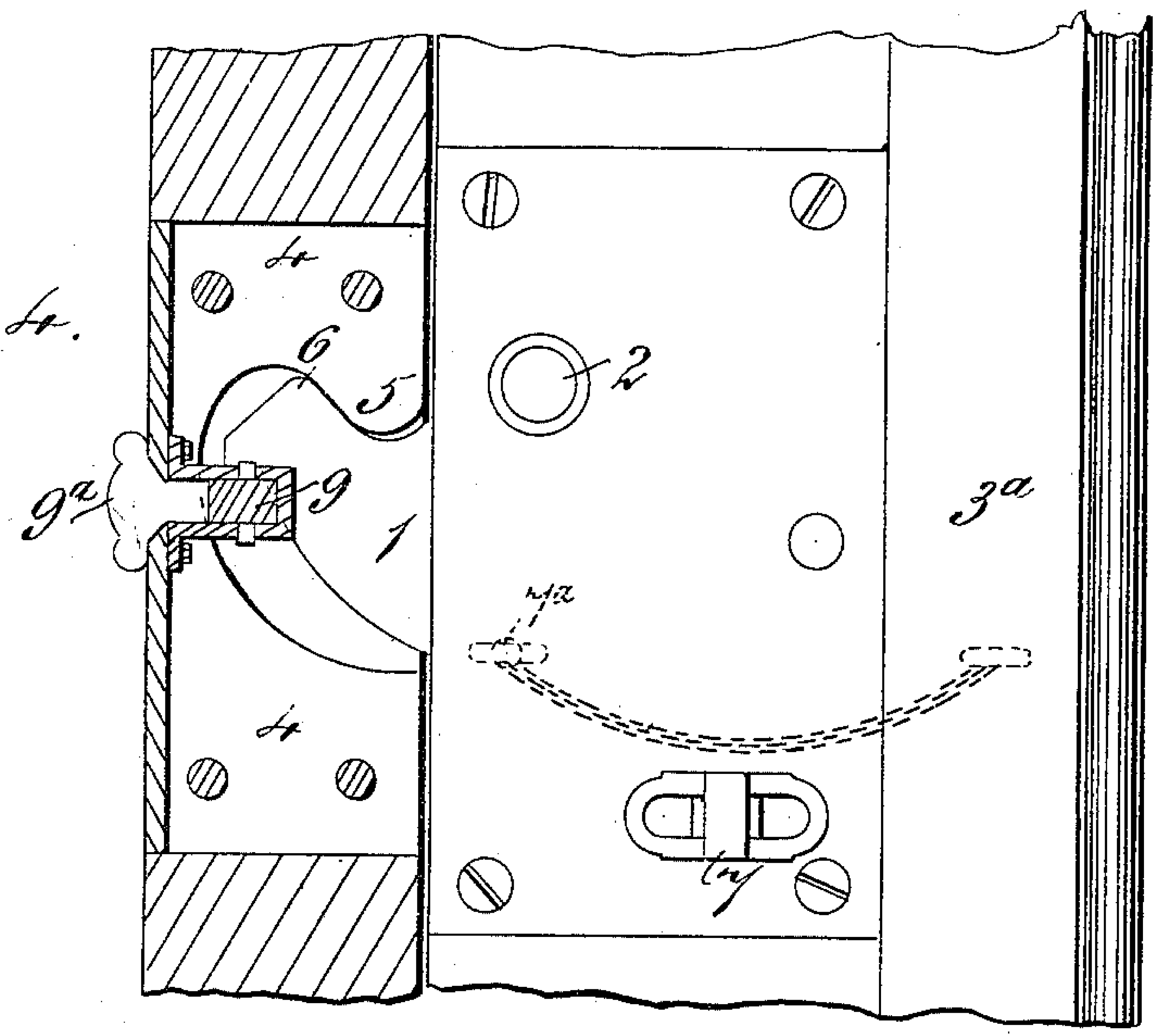

Fig. 5.

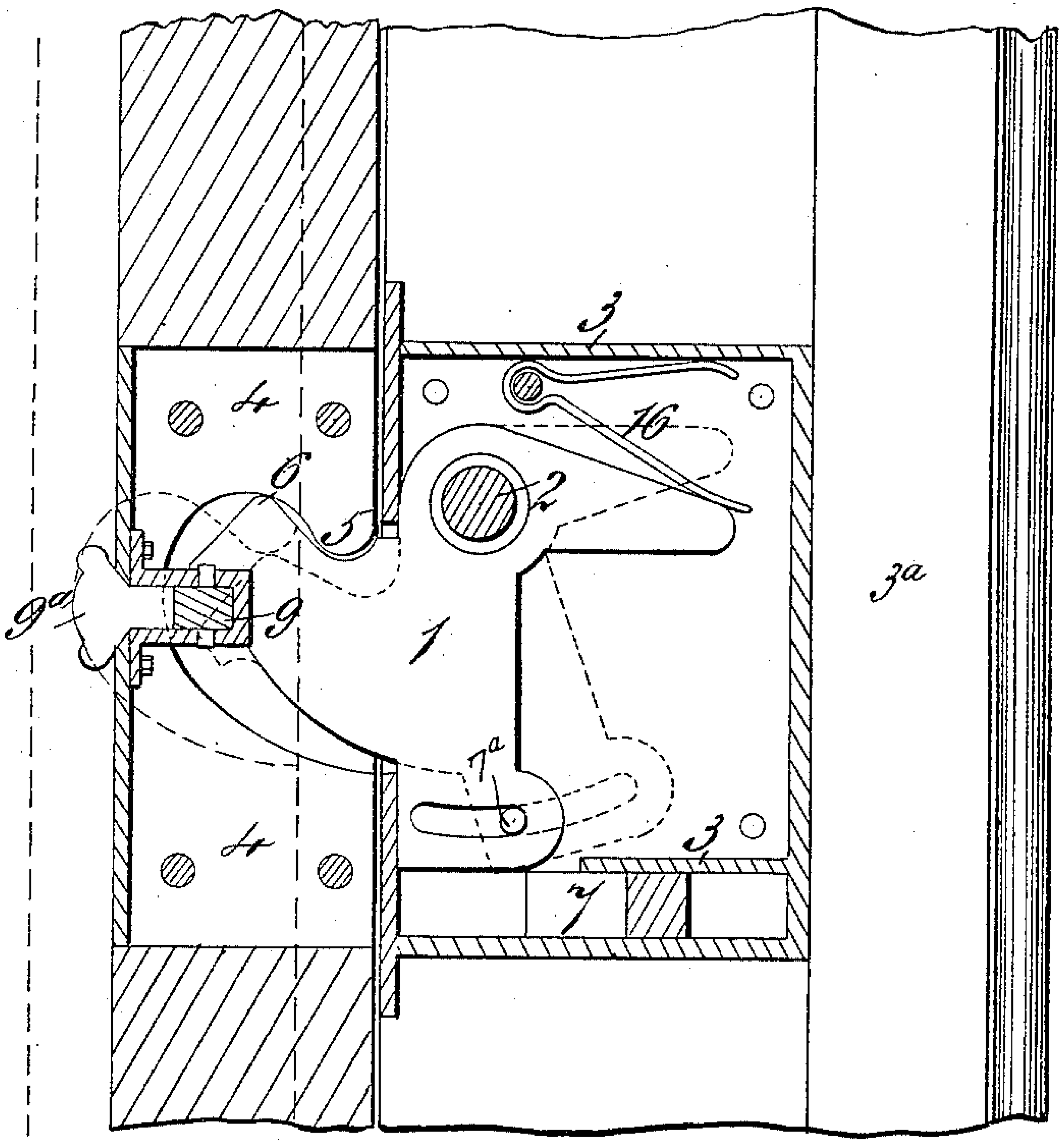

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Fig. 6.

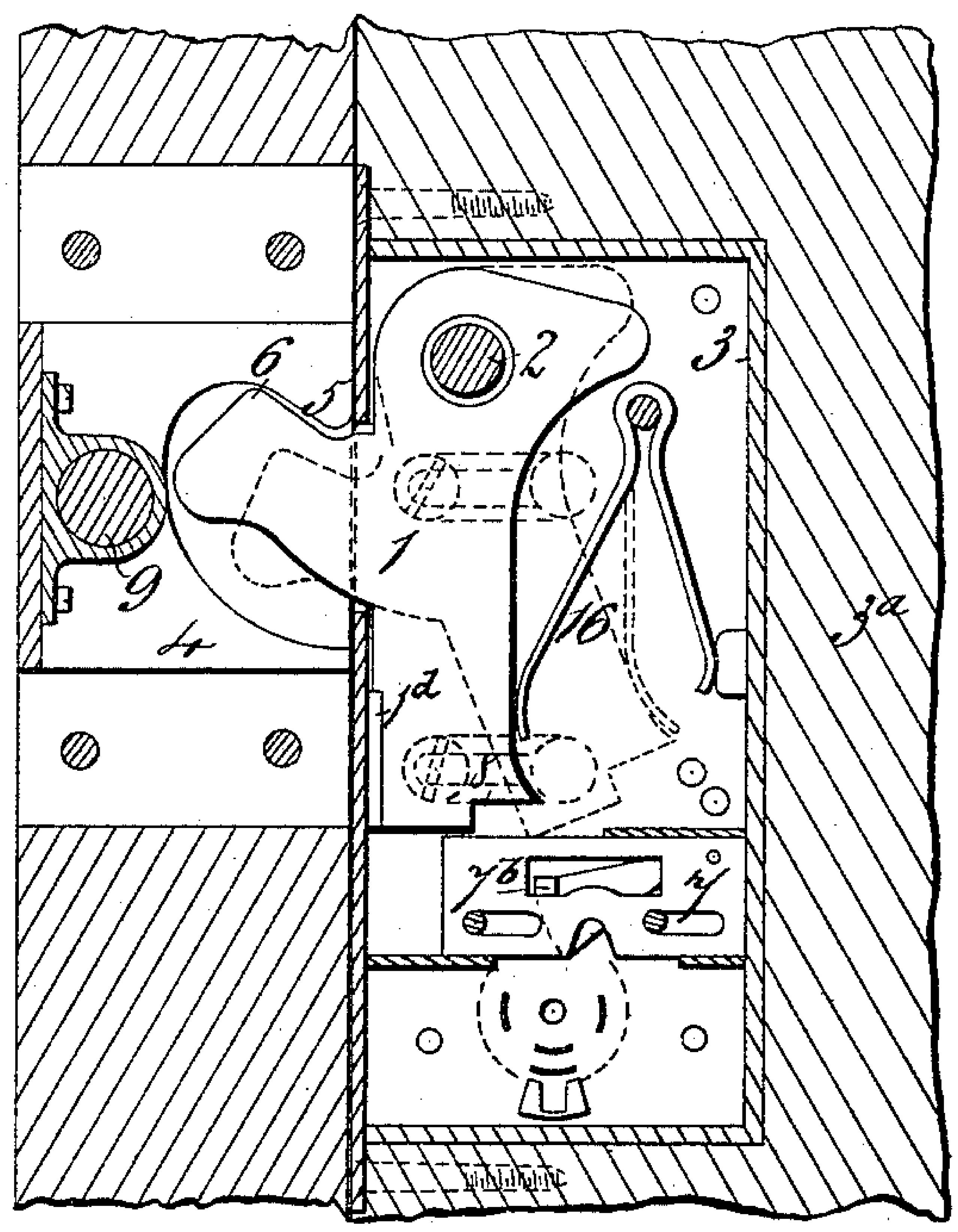

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Fig. 7

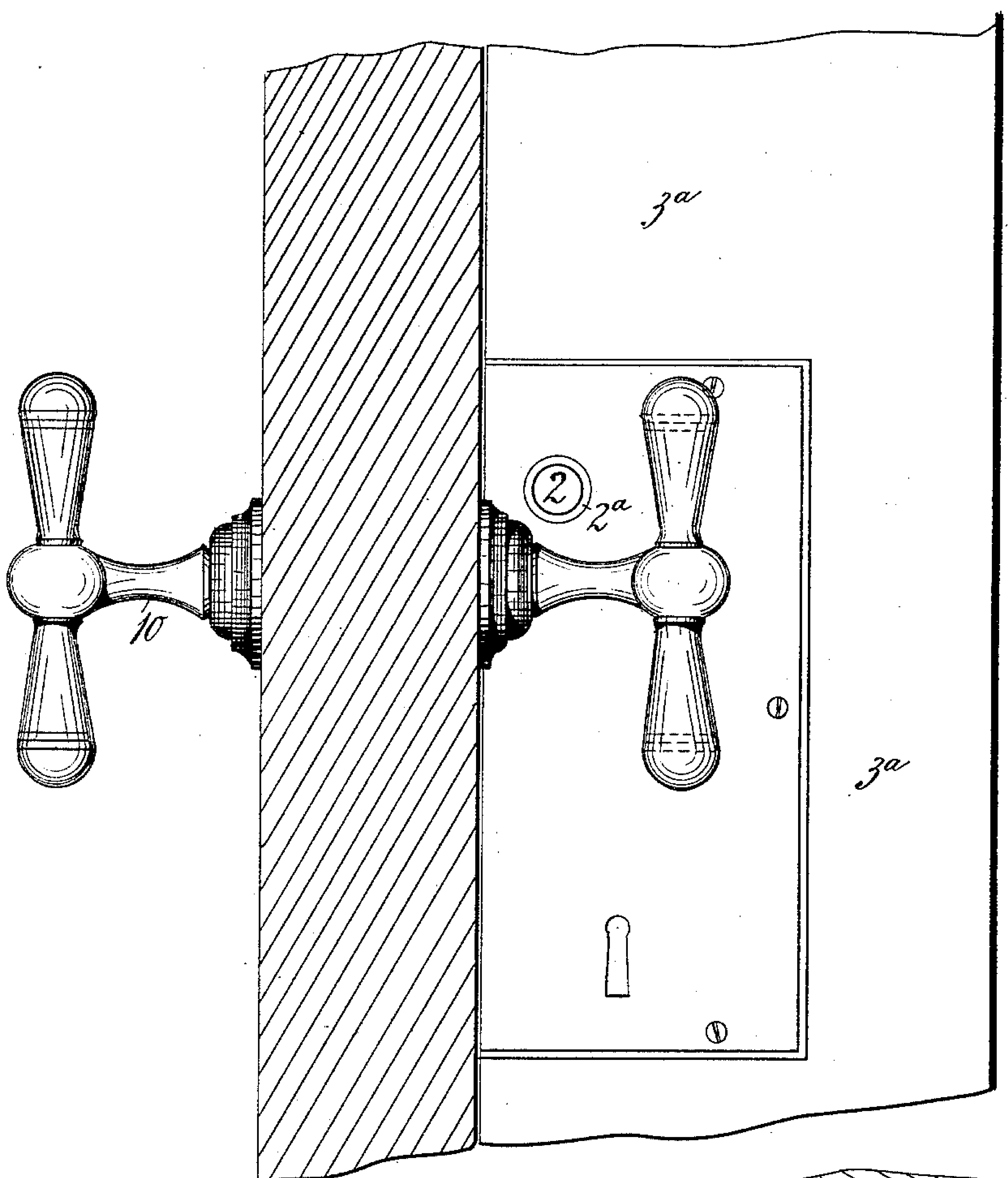

Fig. 8

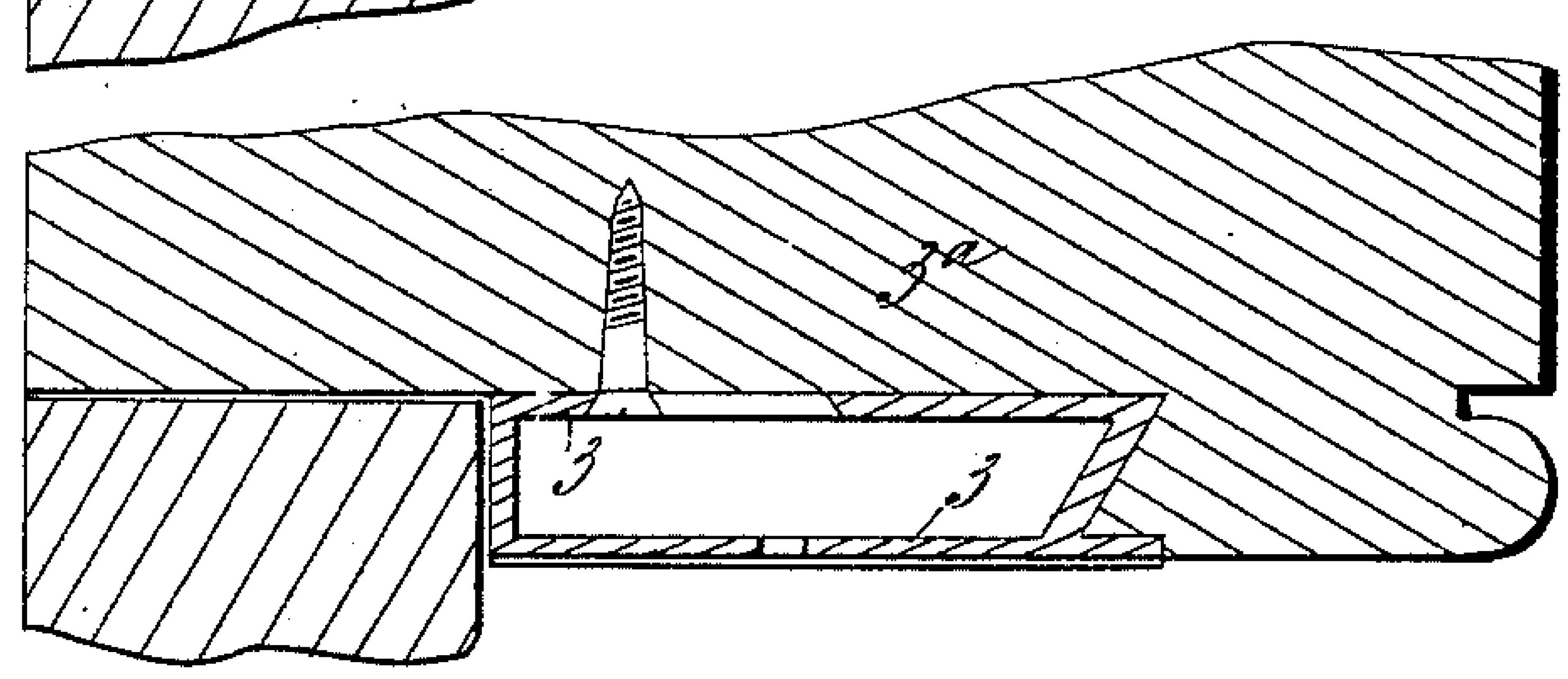

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Fig. 9.

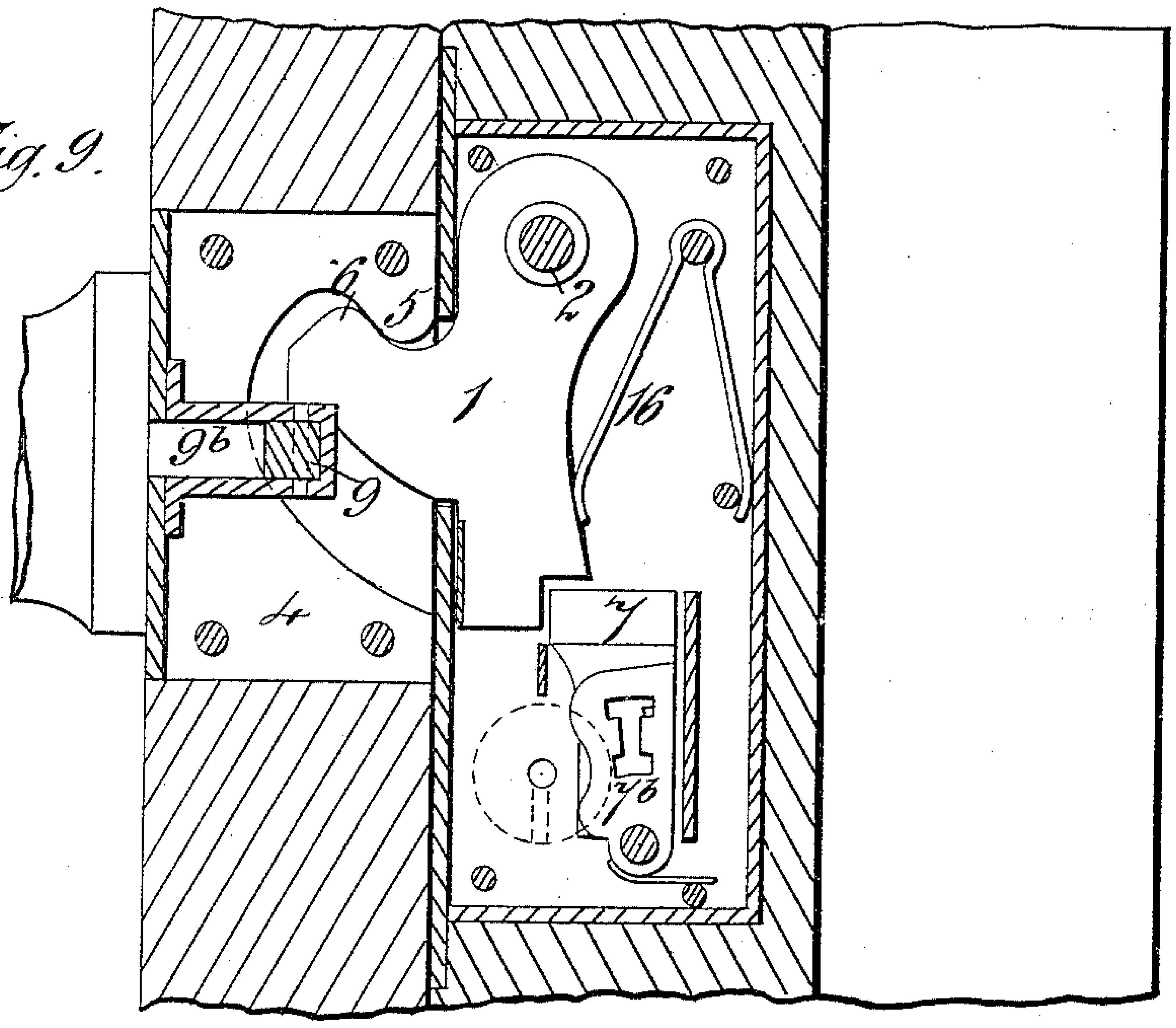
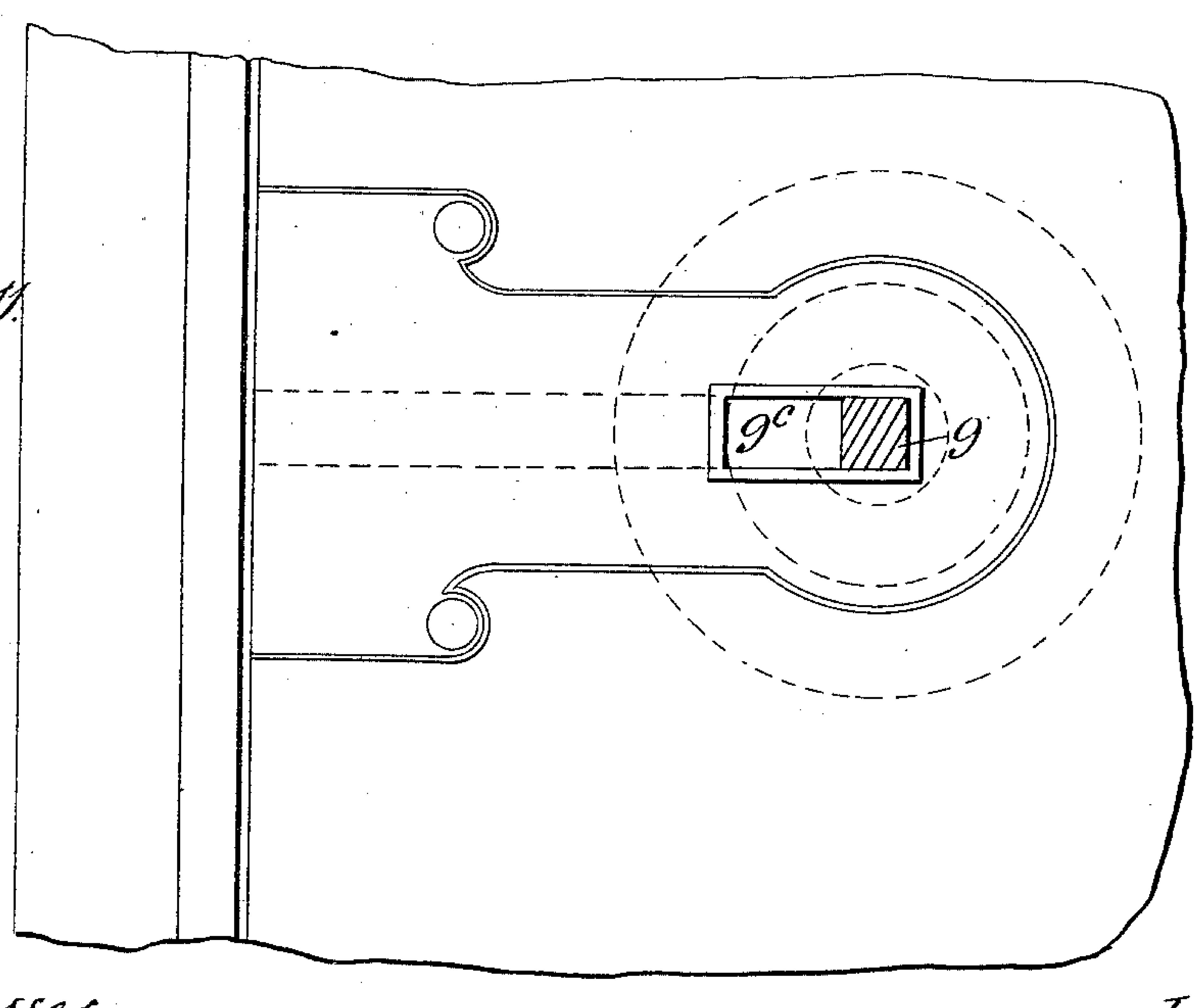


Fig. 11.



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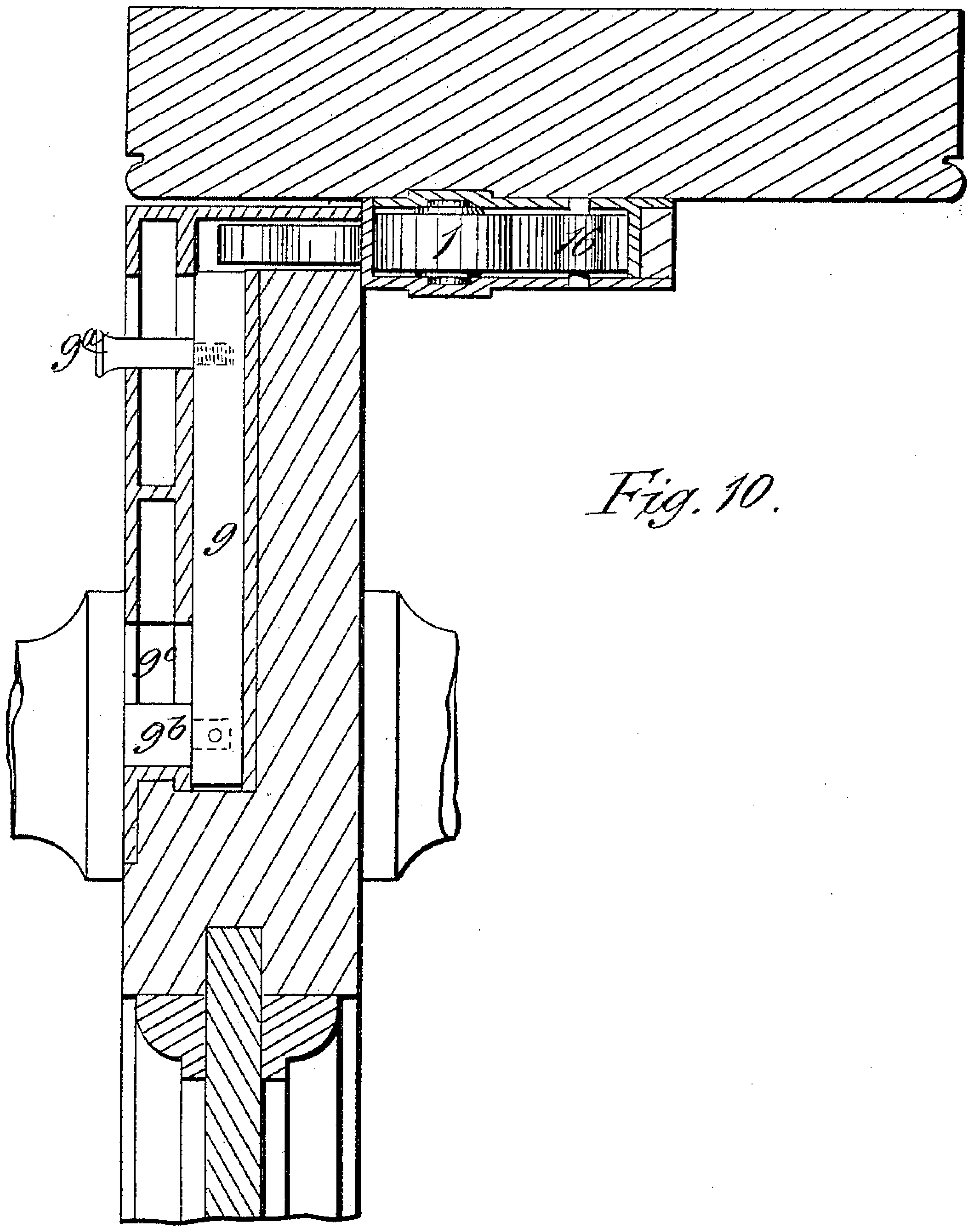

Fig. 10.

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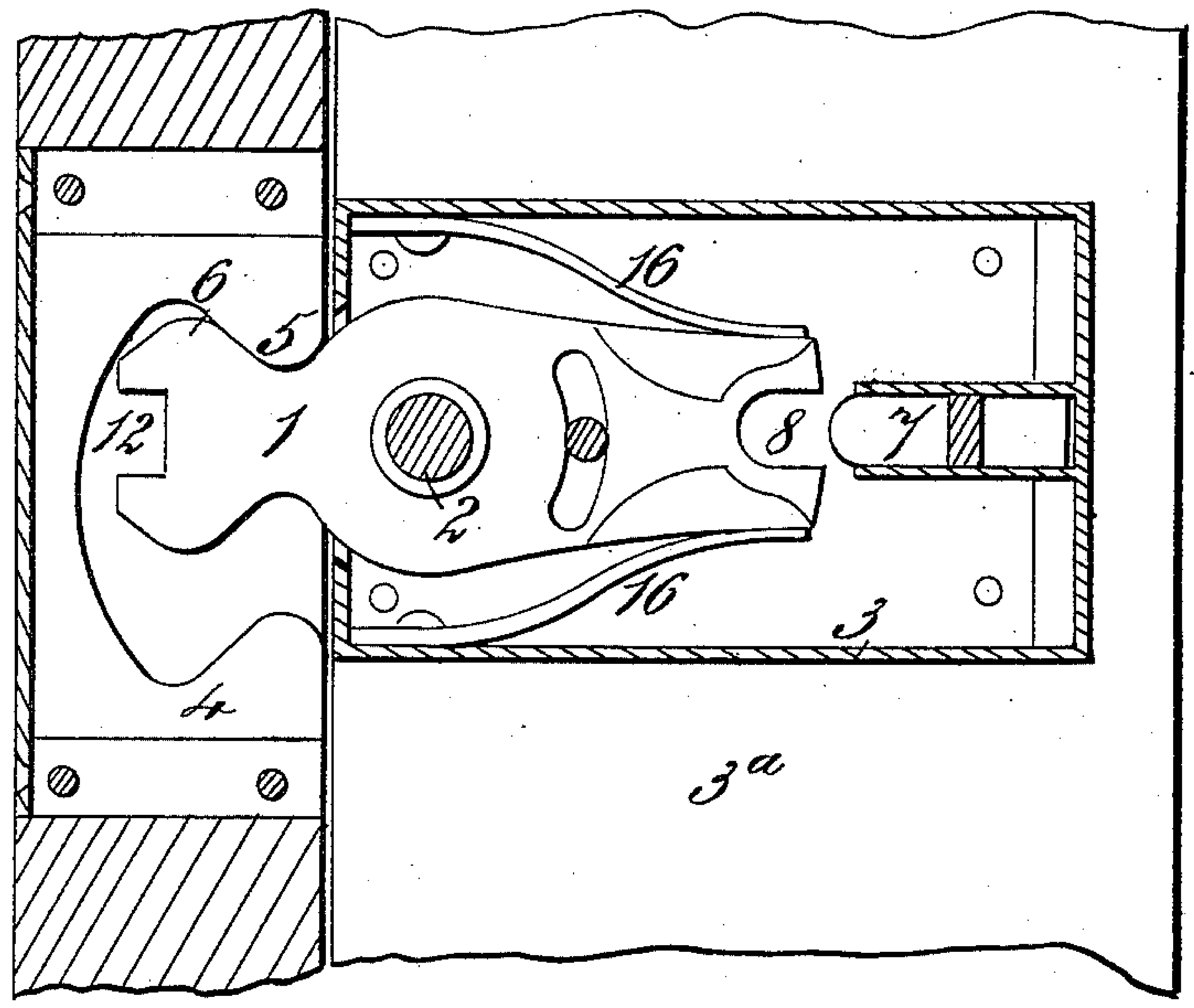

Fig. 12.

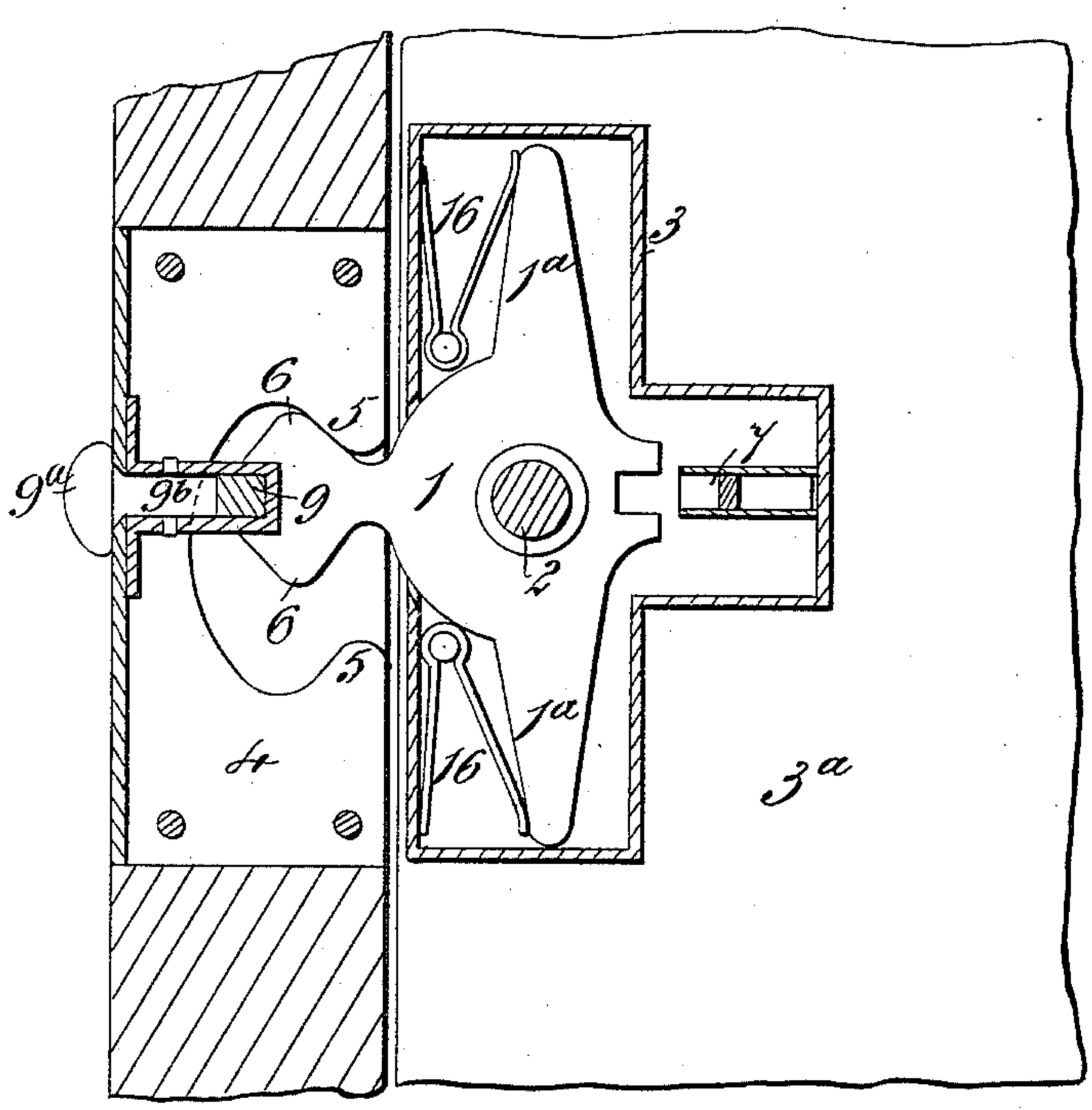

Fig. 13.

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UNITED STATES PATENT OFFICE.

EDWARD WRIGHT, OF SOUTHEND, ENGLAND.

LATCH.

SPECIFICATION forming part of Letters Patent No. 445,108, dated January 20, 1891.

Application filed June 18, 1889. Serial No. 314,747. (No model.)

To all whom it may concern:

Be it known that I, EDWARD WRIGHT, architect, a subject of the Queen of Great Britain and Ireland, residing at Southend, in the county of Essex, England, have invented Improvements in Latches, of which the following is a specification.

This invention relates to a construction and arrangement of locks adapted for fastening doors.

The invention consists in certain novel features of construction and in combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

For the purpose of locking the bolt when shot any suitable arrangement may be used. The bolt can be formed with an opening or recess into which a correspondingly-formed locking-bolt may be inserted through a suitably-arranged aperture in the lock-frame, or a sliding locking-bolt and a tumbler arranged to be operated by a key may be used. In some cases both of these locking arrangements may be provided.

Locks can be constructed in various forms according to my invention, and will not only obviate the risk of injury to the person or clothing that obtains, owing to projection of bolts of locks of ordinary kinds, but, furthermore, will afford a safeguard against picking, as when a door having such a lock is closed the lock will not be accessible, for example, from within a room into which such door opens.

In the accompanying drawings, Figure 1 shows a construction of lock according to this invention, the cover of the lock being removed to show the internal parts and the catch being shown in section. The bolt is shown in the attitude it would occupy when depressed by the catch in the act of closing the door. Fig. 2 shows the door shut and the pivoted lock-bolt secured by a locking-bolt. Fig. 3 is a horizontal section of the same construction of lock, showing the door further secured by a flush-bolt. Under these conditions the door is secured both inside and out. Fig. 4 is a partial sectional view showing a modified construction of lock, the bolt being shot. Fig. 5 is a full sectional view of the same in the same position, dotted lines showing the bolt swung back. Fig. 6 is a view of a different form of this invention, the lock-case and part of the lock being in section. Fig. 7 is an elevation of the same, the door being shown in section. Fig. 8 is a horizontal section taken through the lower portion of the lock-case of Figs. 6 and 7. Fig. 9 is a view similar to Fig. 6, illustrating a somewhat-modified construction. Fig. 10 is a horizontal section of the construction of Fig. 9, showing the lock-case and catch and adjacent parts of the door and casing. Fig. 11 is an elevation of part of the door and casing with an extension of the flush-bolt in section. Fig. 12 is a view similar to Fig. 2 of a lock with a right and left hand bolt which can be locked by flush locking-bolts from either side of the door. Fig. 13 is a sectional view showing a modified construction of the right and left hand bolt of Fig. 12.

1 is a lock-bolt mounted on a pin or pivot 2 within a case 3, which is let in flush with the face of the door frame or casing 3^a. The catch 4 is let into the edge of the door and is situated at such a height that when the door is closed its cam-like edge 5 strikes against the edge 6 of the lock-bolt, depressing it so that it rides under and then rises up inside the catch, as shown in Fig. 2. This action is aided by the spring 16, or the lock-bolt may be so hung that its own weight serves the same purpose as the spring 16.

7 is a flush locking-bolt within the lock-case. It can be raised by the finger to take into the notch 8 in the lock-bolt and thus to lock that bolt. 9 is another flush-bolt in the face of the door. When shot, it engages with a hole in the door frame or casing 3^a.

No handle is shown on the door; but it is evident that any form of handle can be used, as the handle is or may be merely a fixture and need not be adjacent to the lock. On the inside a handle is not necessarily required.

Figs. 4 and 5 are two views of a lock according to this invention, in which the pivoted lock-bolt can be itself locked both from the outside and from the inside of the door by means of locking-bolts, one arranged in the lock-case and one in the door or catch. That in the lock-case consists, in the example shown, of a horizontal locking-bolt 7, which can be shot under the lock-bolt, and the locking-bolt in the door or catch is a flush-bolt 9,

which can be shot under a notch in the nose of the lock-bolt by a finger-piece 9^a, or the locking-bolt 7 may be replaced by locking-pin 7^a, connected to a chain and passed through the side of the lock-case, Fig. 4. In Fig. 4 one of two steel bushes is shown in the lock-case for the pivots of the lock-bolt.

The lock shown in Figs. 6, 7, and 8 is very similar to that shown in Figs. 1, 2, and 3, with the addition of means whereby the locking-bolt 7 is adapted to be operated by means of a key. The bolt 7 is provided with a spring and a tumbler 7^b; but any known form of lock mechanism suitable for the purpose may be used.

In the arrangement of Figs. 9, 10, and 11 the lock is fixed on the door-casing instead of being let in flush with the surface thereof, as in Figs. 6, 7, and 8, and the locking-bolt 7 is arranged vertically and is provided with a spring and tumbler 7^b, so that it may be operated by a key. The flush locking-bolt 9 is connected to the door-handle by an extension 9^b, that is arranged to slide in a slot 9^c, Fig. 11, formed in the door and adjacent part of the catch-plate, so that by moving the door-handle horizontally the flush locking-bolt may be caused to engage with or to release the lock-bolt 1 as desired. The flush locking-bolt may in some cases be independent of the door-handle and be provided with a finger-piece 9^a, Fig. 10, by which it may be directly operated by hand.

This lock can be applied to a door whichever side it be hung. In this case the spring 16 is duplicated. The locking-bolt 7 for locking the lock-bolt 1 may be a flush-bolt to be operated directly by hand or indirectly by means of a key. The lock-bolt 1 is also shown recessed at 12 for the reception of a flush locking-bolt carried by the catch.

In the modified construction of right and left handed lock shown in Fig. 13 the lock-bolt 1 is shown provided with two extensions 1^a, against which the springs 16 act. Flush locking-bolts 7 and 9 are provided for locking the lock-bolt 1 from either side of the door, as before.

In all the arrangements hereinfore specifically described and illustrated it will be observed that the bolt is pivoted so that it has a circular motion; but it is obvious that the same results may be secured by the substitution of an equivalent. For instance, in the arrangement shown in Figs. 1, 2, and 3 the bolt 1 may be allowed to slide vertically and be pressed upward by a spring, so that the action of the inclined surfaces in opening and shutting the door tends to depress the bolt in a vertical line. Such modifications are within the principle of my present invention; but I have not considered it necessary to describe and illustrate such modifications in detail.

What I claim is—

1. The combination of a lock-case 3, adapted to be applied to a door-frame, a lock-bolt 1, pivoted in said case and formed with double-inclined edges, a spring arranged to normally maintain the lock-bolt projected, a catch 4, adapted to be mounted on a door and having a cam-shaped edge 5, and a locking-bolt 7, arranged to move in said lock-case and engage with said bolt 1, substantially as herein described, for the purpose set forth.

2. A lock consisting in the combination of a case, a swinging lock-bolt pivoted therein and having its locking end held yieldingly projecting therefrom, the outer edge of said bolt being vertically beveled or inclined and provided with a locking inclined edge forming an angle with said outer edge, and the catch having the cam-shaped recess arranged to engage the outer edge of the bolt and depress the same, so that the locking edge swings up into said recess, and means to lock said bolt, substantially as described.

3. A lock having a bolt pivoted to swing in a vertical plane and formed with two inclined surfaces arranged at an angle to each other, a spring yieldingly projecting said bolt, a catch arranged to act against one or the other of said inclined surfaces when the door is opened or closed, a locking-bolt arranged in the lock-case to hold said lock-bolt projected, and a supplementary locking-bolt carried by the door and capable of securing said lock-bolt projected, substantially as described.

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

EDWARD WRIGHT.

Witnesses:

F. J. BROUGHAM,

W. CROSS,

Both of 46 *Lincoln's Inn Fields, London.*