

No. 632,735.

Patented Sept. 12, 1899.

J. H. MORRIS.  
PERMUTATION LOCK.

(Application filed May 26, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

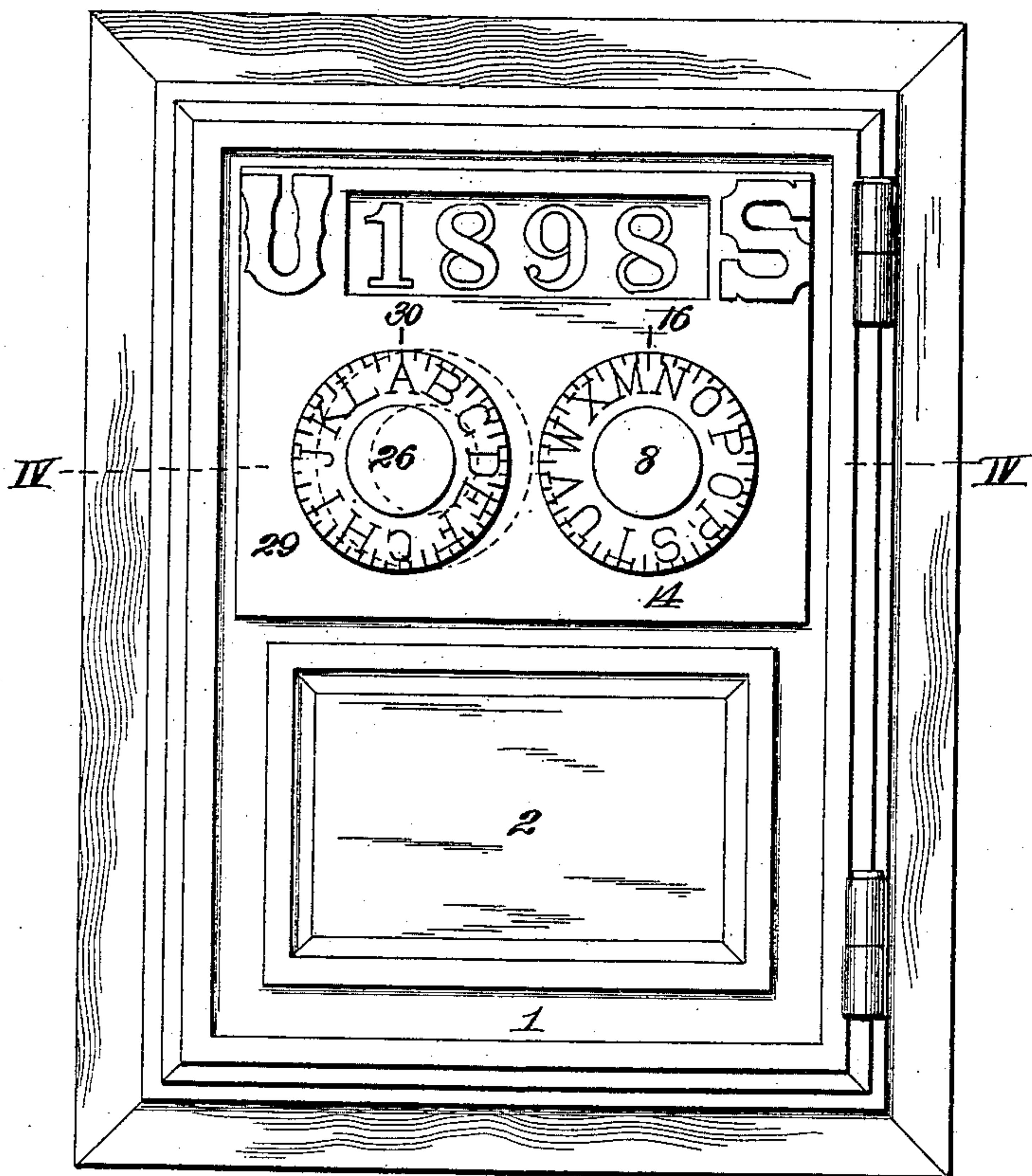


Fig. 4.

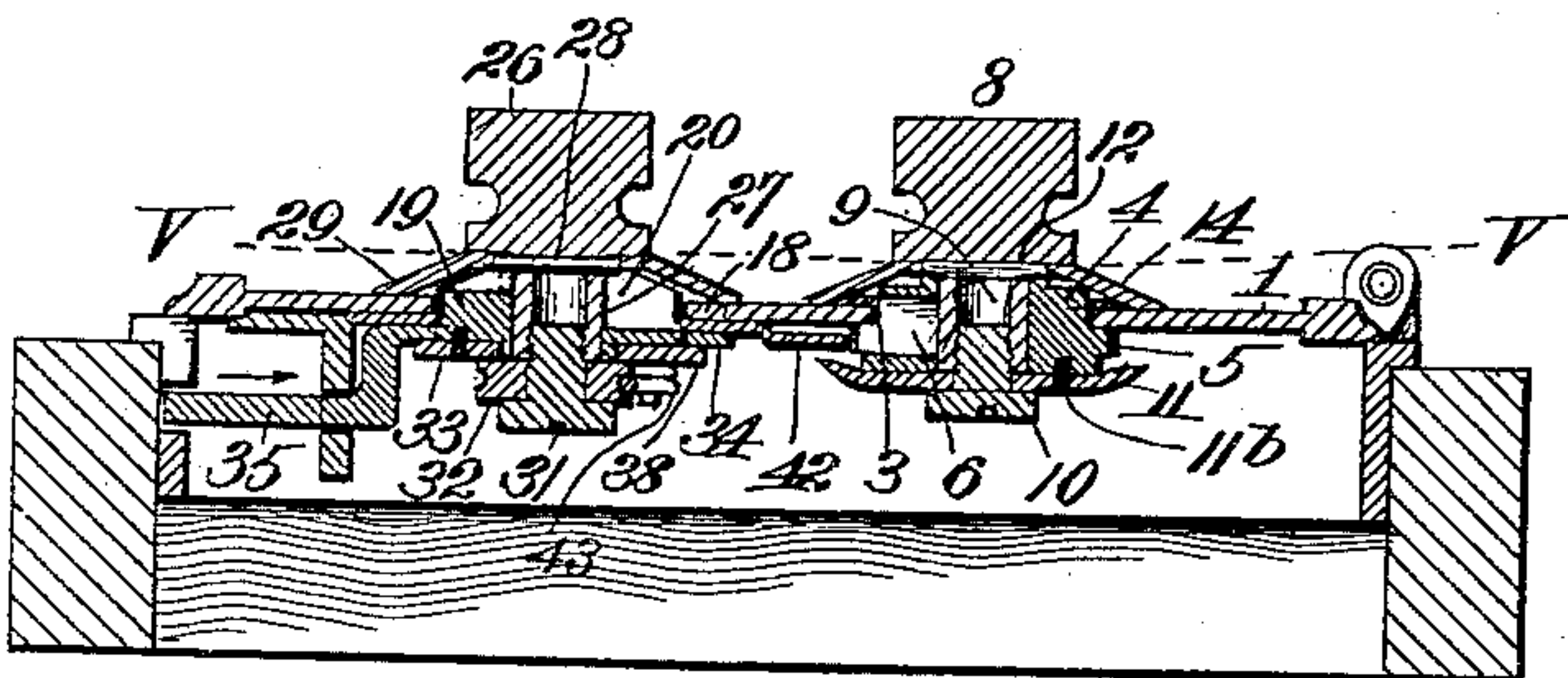
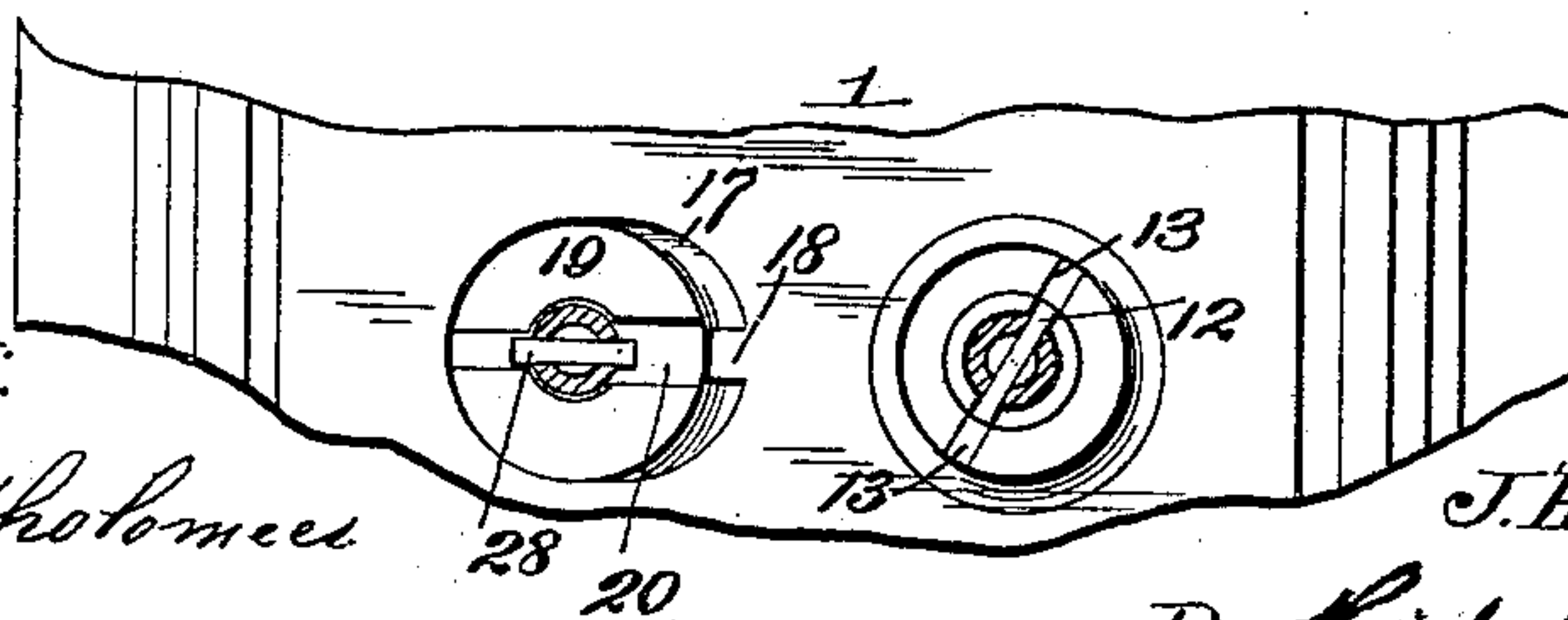


Fig. 5.



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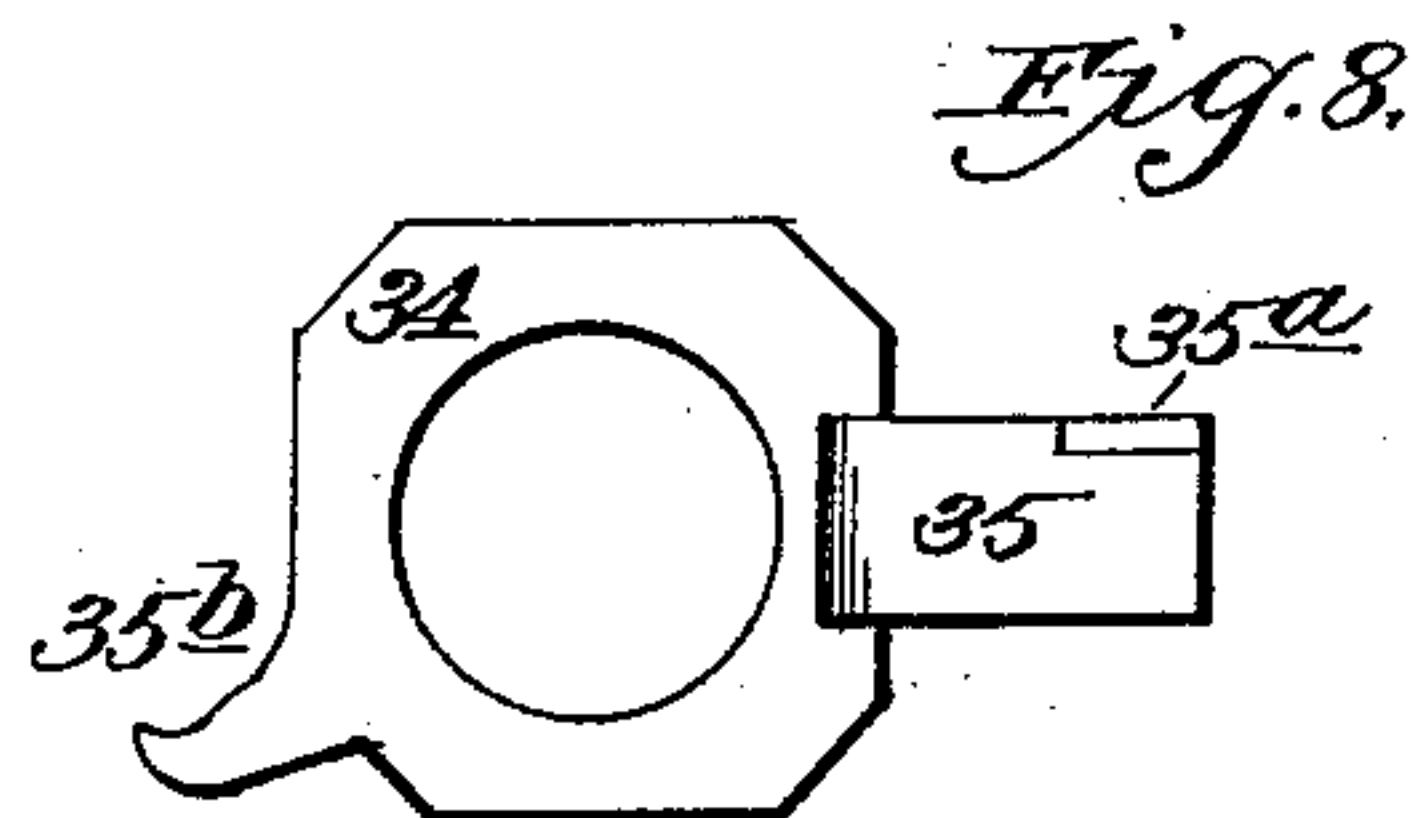
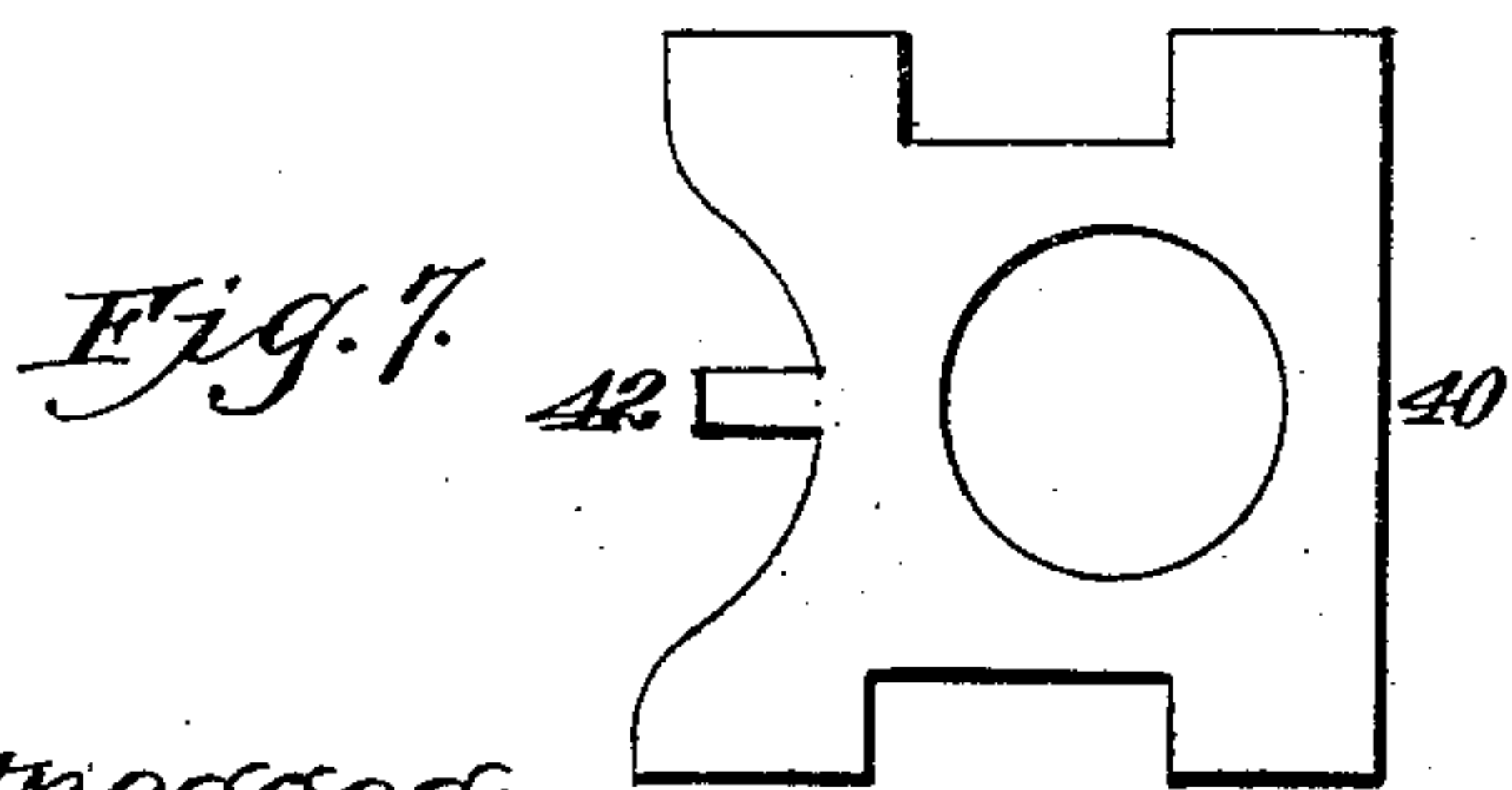
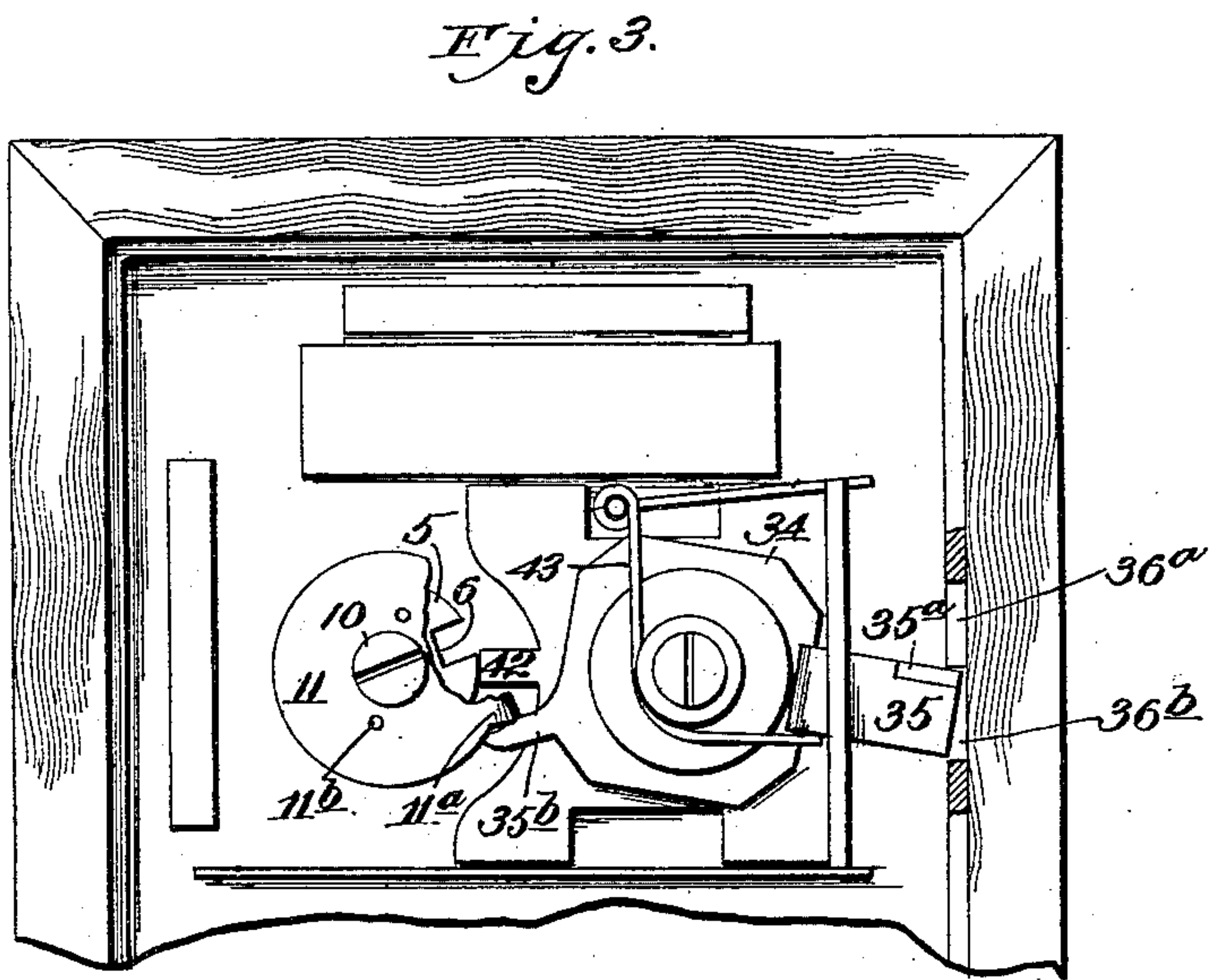
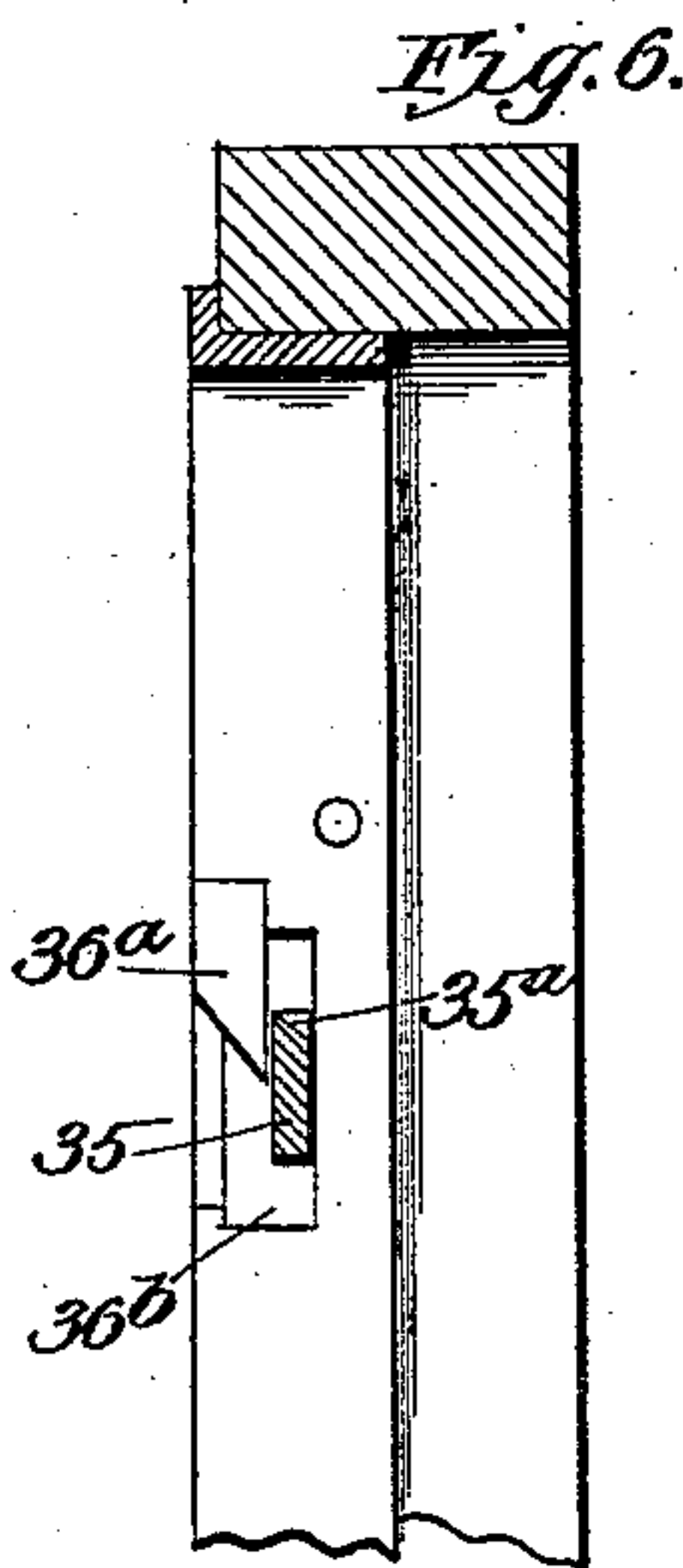
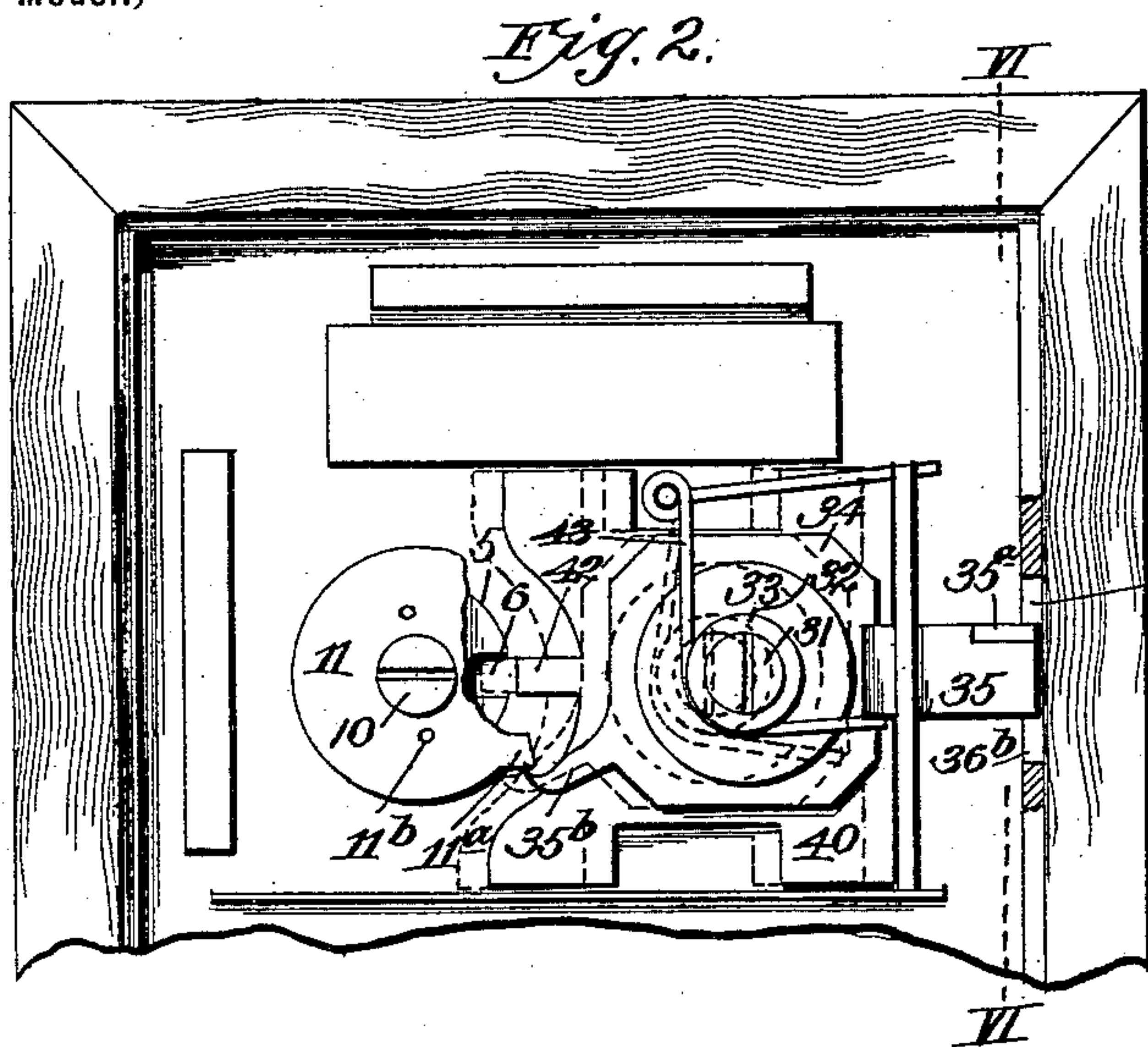
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(Application filed May 26, 1899.)

(No Model.)

2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

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## PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 632,735, dated September 12, 1899.

Application filed May 26, 1899. Serial No. 718,346. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. MORRIS, a citizen of the United States, residing at Fremont, in the county of Dodge and State of Nebraska, have invented a new and useful Improvement in Permutation-Locks, of which the following is a specification.

My invention relates to permutation-locks, and is designed particularly as an improvement in the permutation-lock on which Patent No. 601,975 was issued to me April 5, 1898, the object in the present case being to provide a lock of the same type which is automatically locked each time the door upon which it is mounted is closed.

To this end the invention consists in certain novel and peculiar features of construction and organization of parts, as hereinafter described and claimed, and in order that the invention may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 is a front view of a post-office lock-box provided with a permutation-lock embodying my invention. Fig. 2 is an inner face view showing the lock unlocked. Fig. 3 is a view showing the position of the bolt and associated mechanism as the door is closed. Fig. 4 is a section taken on the line IV IV of Fig. 1. Fig. 5 is a section on the line V V of Fig. 4 with the dial omitted. Fig. 6 is a vertical section taken on the line VI VI of Fig. 2. Fig. 7 is a detail face view of the sliding plate, which is mounted on the bolt-carrying member of the lock. Fig. 8 is a similar view of the oscillatory bolt and tripping-plate.

As the lock forming the subject of the present application is substantially a duplicate of the patented structure, the parts common to both are correspondingly numbered, but not elaborately described, reference being herewith made to said patent for a full understanding of the construction and operation of the lock in all its features, except those added for causing it to automatically lock when the door is closed.

Referring to the drawings, 1 designates the door, 2 the transparent window thereof, and 3 the circular opening of the door. 4 designates the hub of the lock member journaled in said opening, and 5 its circular head, hav-

ing the hole or recess 6. 8 designates the knob of said member, provided with a tubular stem 9, fitting into the hub 4, and 10 the clamping-screw uniting the hub with the knob.

11 designates a washer clamped to the bolt upon the hub 5 and stem 9 and provided with a lug 11<sup>a</sup> at a suitable point, said washer being reliably secured to the hub to prevent slippage by the pin 11<sup>b</sup>, projecting from the hub. The lug 11<sup>a</sup> above referred to is a feature not disclosed in the aforesaid patent, and its object will be hereinafter explained.

12 designates a pin or pins projecting outward from the stem 9 and engaging a groove 13 in the end of the hub to more reliably interlock the hub and knob together, and 14 designates the dial, in the form of a conical ring, provided with characters upon its face, any one of which is adapted to register with the indicating-mark 16 upon the face of the door.

17 designates the elongated opening of the door, and 18 a tongue projecting inward thereof. The hub 19 of the member companion to that just described is journaled in the opening 17 and provided with a recess 20, adapted to have telescopic action on the tongue 18. The knob 26 is provided with a tubular stem 27 and is interlocked with the stem 19 by means of the pin or pins 28, and 29 designates the dial member, provided with suitable characters on its face and clamped between the hub 19 and the knob 26, any of its characters being adapted to register with the indicating-mark 30 upon the face of the door.

31 designates the clamping-screw for securing the hub member and the knob together, and 32 the washer interposed between the screw and the stem and overlapping the latter and the reduced portion of the hub, so as to hold upon the latter the washer 33, which washer in turn overlaps the oscillatory plate 34, mounted on the hub 19, from which the bolt 35 and the tripping-arm 35<sup>b</sup> project, the upper edge of the bolt at its outer end being beveled, as shown at 35<sup>a</sup>. The corresponding plate of the aforesaid patented structure is not provided with said tripping-arm nor is its bolt extension beveled. Interposed between the plate 34 and the door and also journaled upon hub 19 is the slide-plate 40, provided with a tongue 42, extending radially toward the hub 5 and



adapted when the recess 6 of the latter is properly disposed to enter said recess as the knob 26 is pressed toward the knob 8, this action, as will be readily understood, causing the bolt 35 to be withdrawn from the recess 36<sup>b</sup> of the lock-box, the overlapping arm 36<sup>a</sup> of the lock-box making it impossible to open the door unless the bolt is moved in the direction indicated by the arrow, Fig. 4.

Assuming that the door is unlocked when "A" on the dial 29 registers with the door-mark 30 and door-mark 16 registers with the mark centrally between "M" and "N" of dial 14 it will be seen that the recess 6 registers with the tongue 42 of the sliding plate, that the recess 20 registers with the tongue 18 of the door, and that to open the latter it is necessary to press the knob 26 toward the knob 8. As the door is closed it will be seen by reference particularly to Fig. 6 that the bolt 35 is held by the pressure of the spring 43 in such position that its beveled surface 35<sup>a</sup> must and does strike the beveled surface of the arm 36<sup>a</sup> of the door-casing and consequently be forced downward into the lower end of the opening 36<sup>b</sup>, the tension of the spring 43 serving to re-elevate it as soon as it clears the lower end of said arm 36<sup>a</sup>. In its new position it is overlapped by said arm and can only be withdrawn from the recess 36<sup>b</sup> by a direct reciprocatory movement, as hereinbefore explained. Under the oscillatory movement of said plate caused by its engagement with the beveled surface of the arm 36<sup>a</sup> the trip-arm 35<sup>b</sup>, moved upward from the position shown in Fig. 3 to the position shown in Fig. 2 and by engagement with the lug 11<sup>a</sup> of washer 11, threw the notch 6 of hub 5 out of register with the tongue 42 of the sliding plate, the rotation of said hub 5 of course being imparted to the dial 14 so as to automatically lock the door by throwing off the combination. To make it more difficult for a person to find the combination, the dial 29 is also turned; but this must be manually performed.

From the above description it will be ap-

parent that I have produced a permutation-lock which is automatically-locking and which embodies the desirable features of simplicity, durability, and cheapness of construction.

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

1. A permutation-lock mounted in a door, comprising a reciprocatory hub, a sliding plate mounted thereon and provided with a tongue, an oscillatory bolt mounted upon the reciprocatory hub, the door-casing provided with a recess to receive said bolt, and a beveled arm to deflect the bolt therein, a spring to elevate said bolt within said recess and behind said arm, a rotatable hub journaled in the door and provided with a radial recess or notch to register with the tongue of said sliding plate, and means actuated by the movement of the bolt imparted by said beveled arm to rotate said hub and throw its recess or notch out of register with said tongue, substantially as described.

2. A permutation-lock mounted in a door, comprising a reciprocatory hub, a sliding plate mounted thereon and provided with a tongue, an oscillatory bolt mounted upon the reciprocatory hub and provided with a trip-arm, the door-casing provided with a recess to receive said bolt, a beveled arm to deflect the bolt therein, and a spring to elevate said bolt within said recess and behind said arm, a rotatable hub journaled in the door and provided with a radial recess or notch to register with the tongue of said sliding plate, and a washer secured to said rotatable hub and provided with an arm intercepting the path of movement of the trip-arm when the bolt is oscillated by said beveled arm, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

JOHN H. MORRIS.

Witnesses:

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C. C. McNISH.