

No. 778,833.

PATENTED DEC. 27, 1904.

E. LITTS.
PERMUTATION PADLOCK.
APPLICATION FILED MAR. 3, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

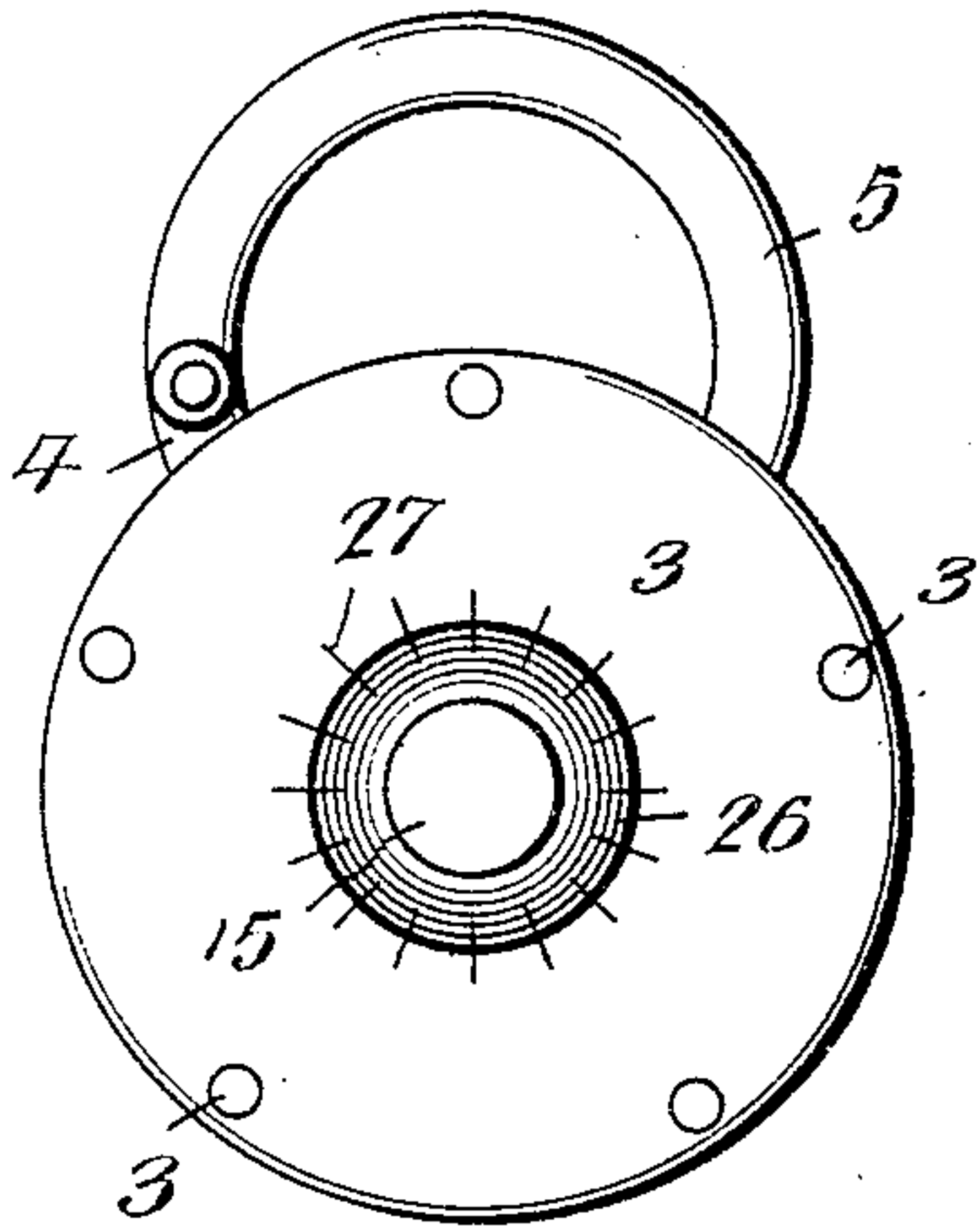


Fig. 2.

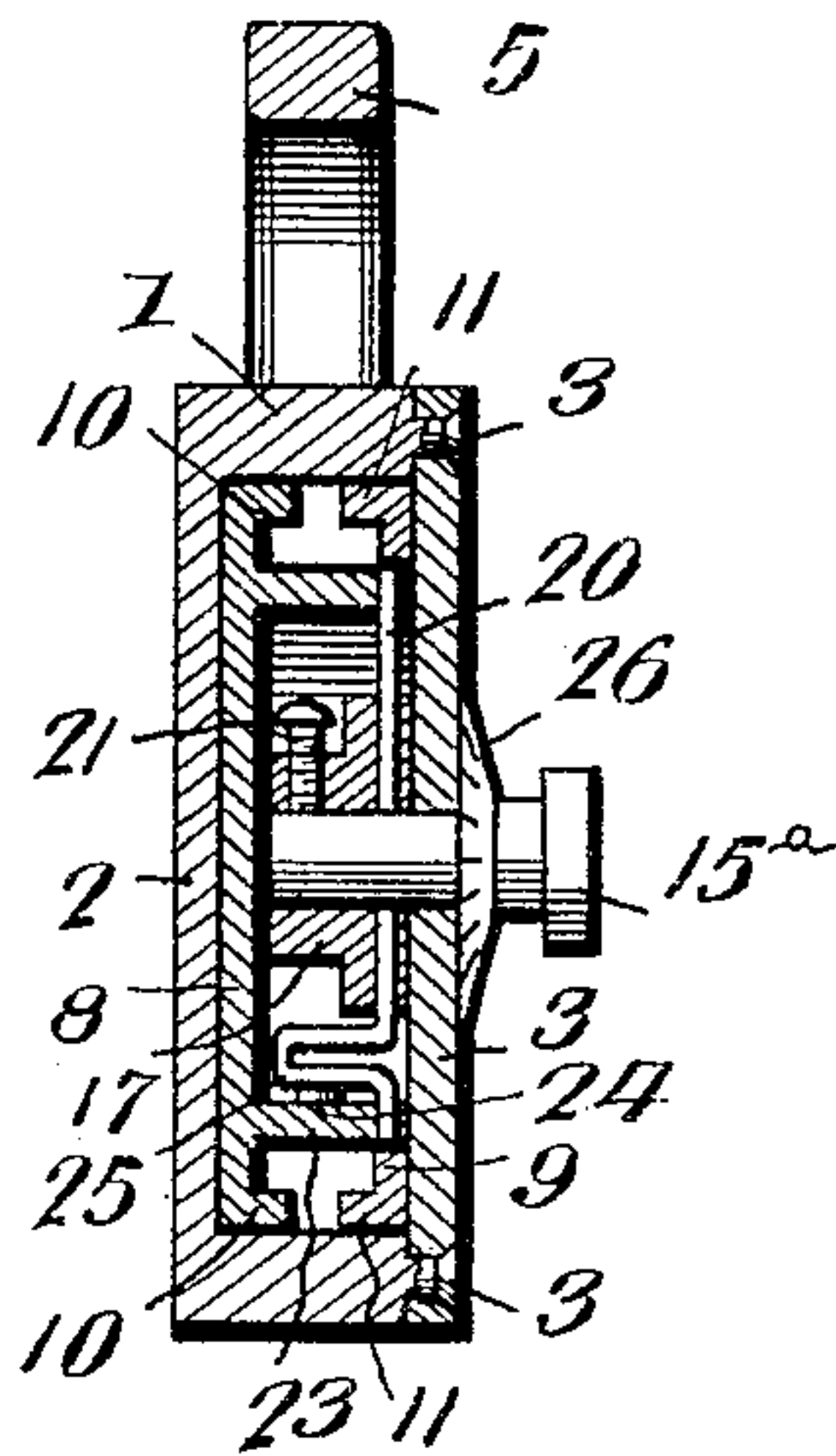


Fig. 3.

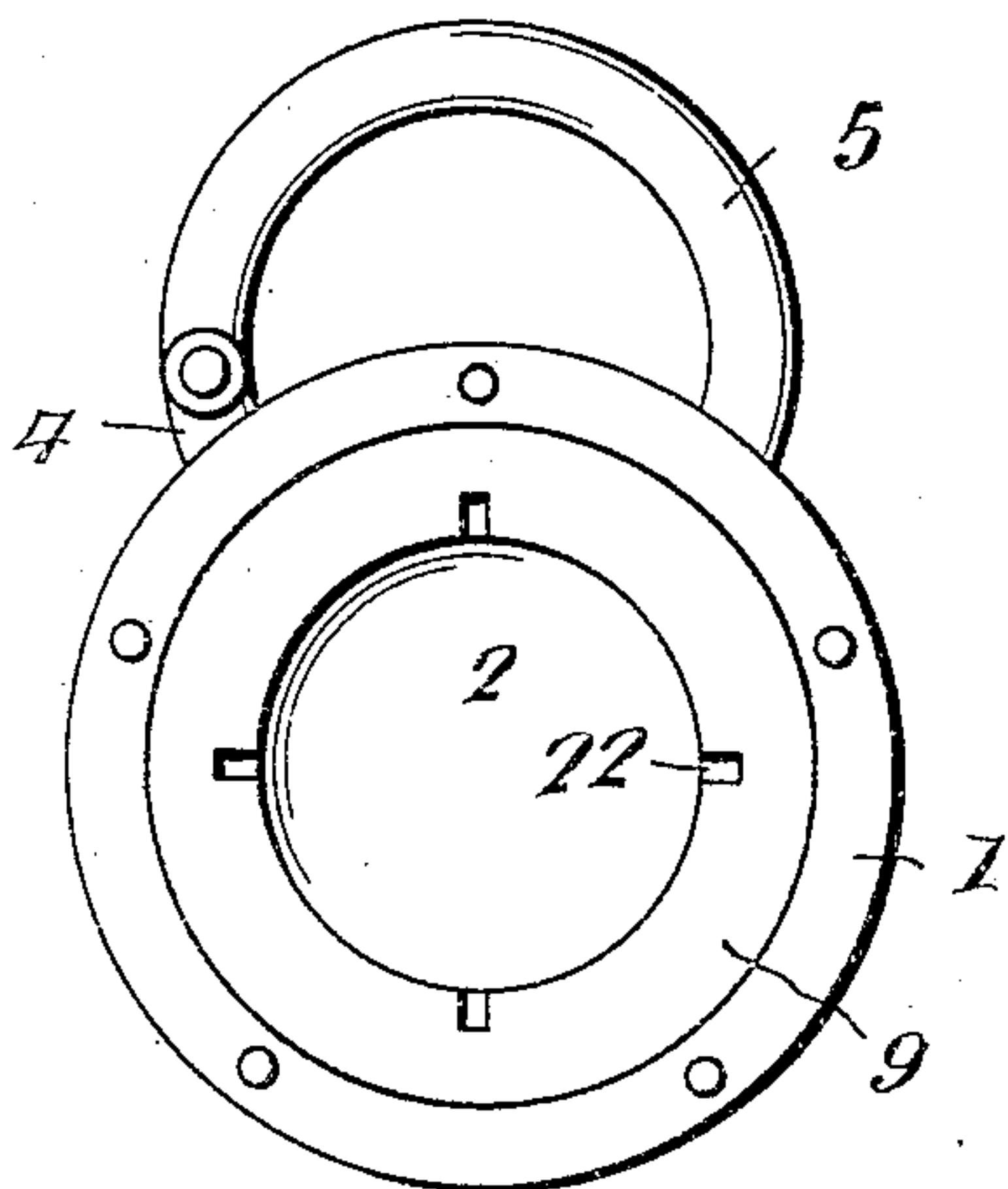
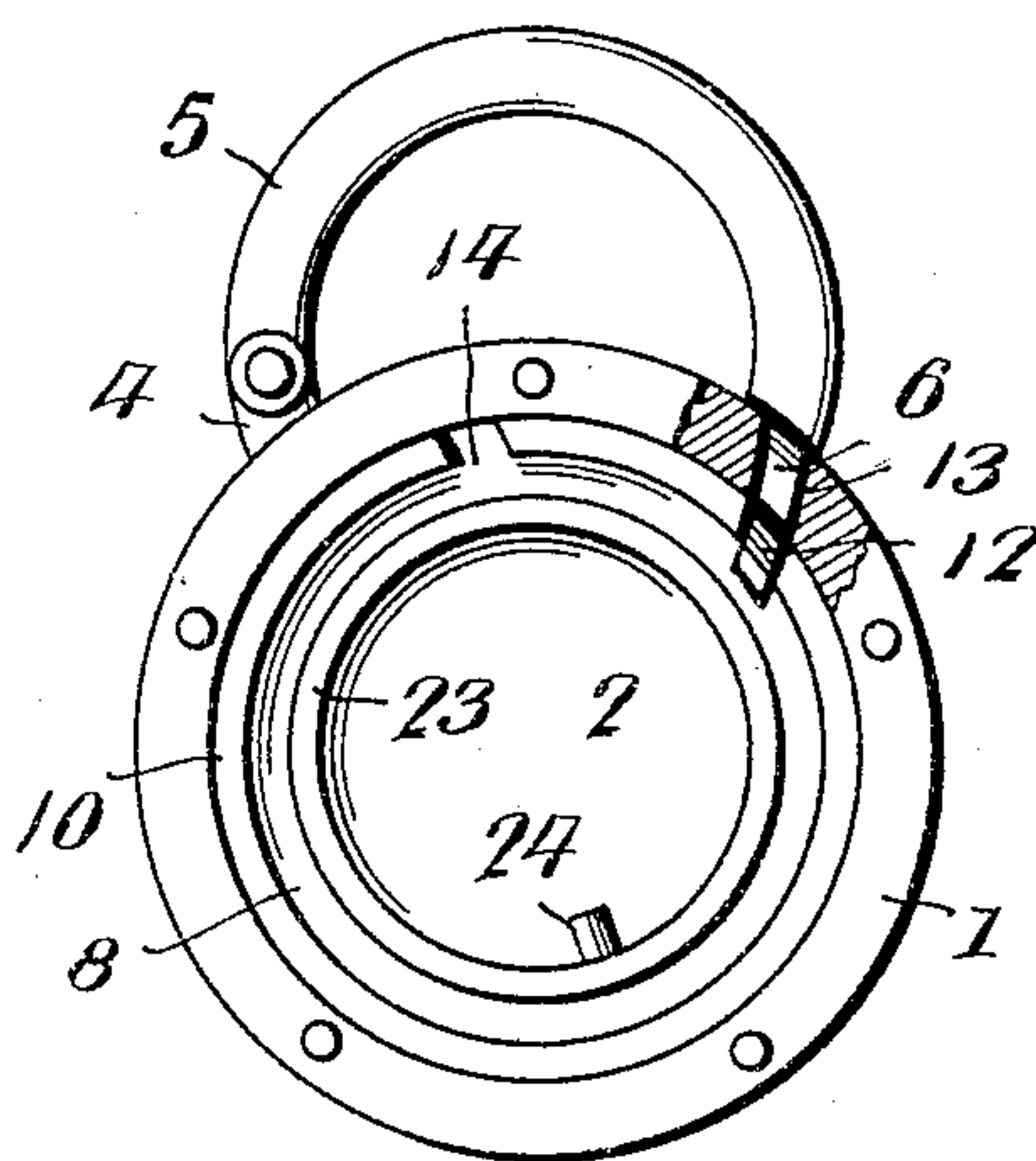


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

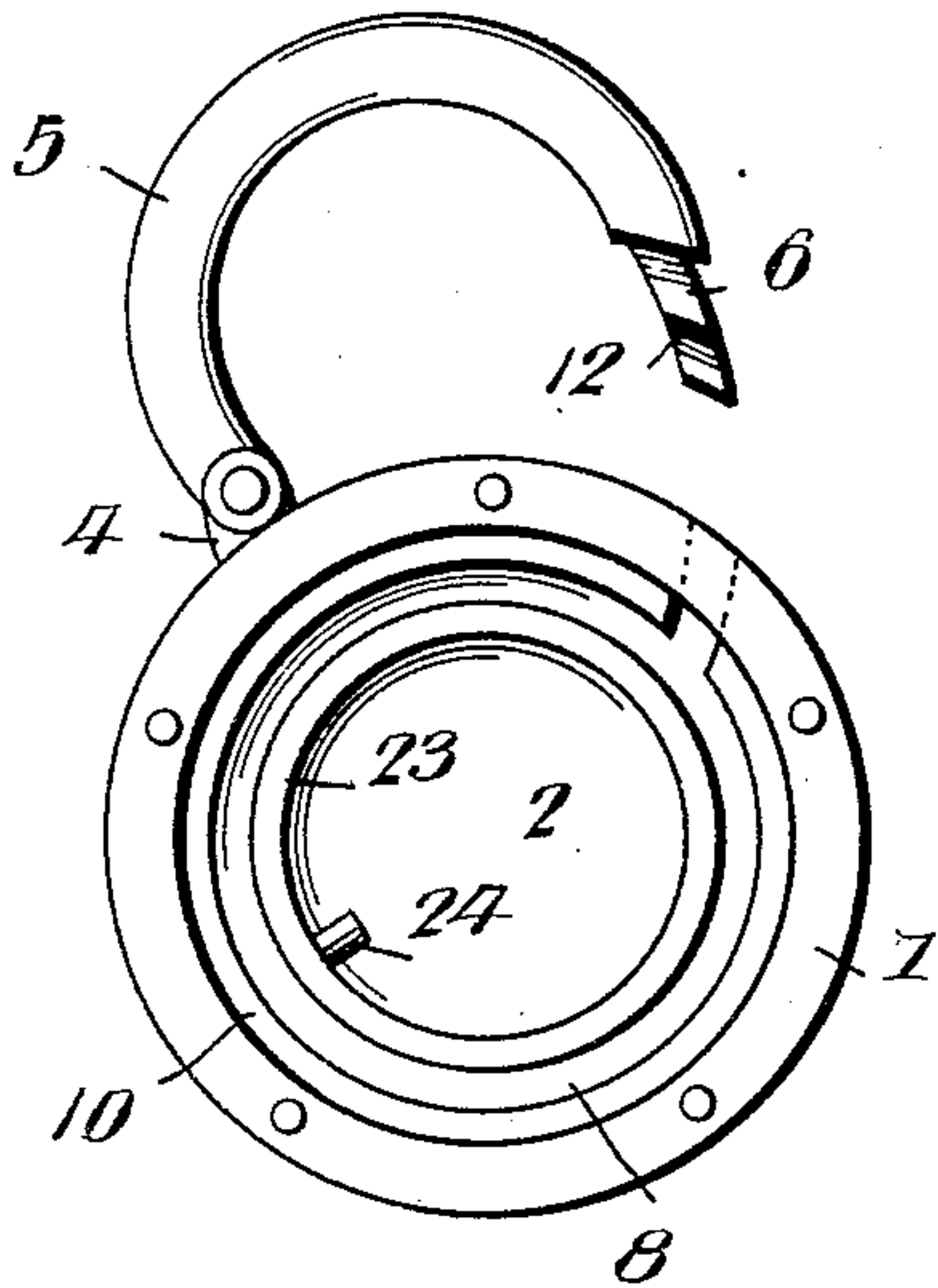


Fig. 6.

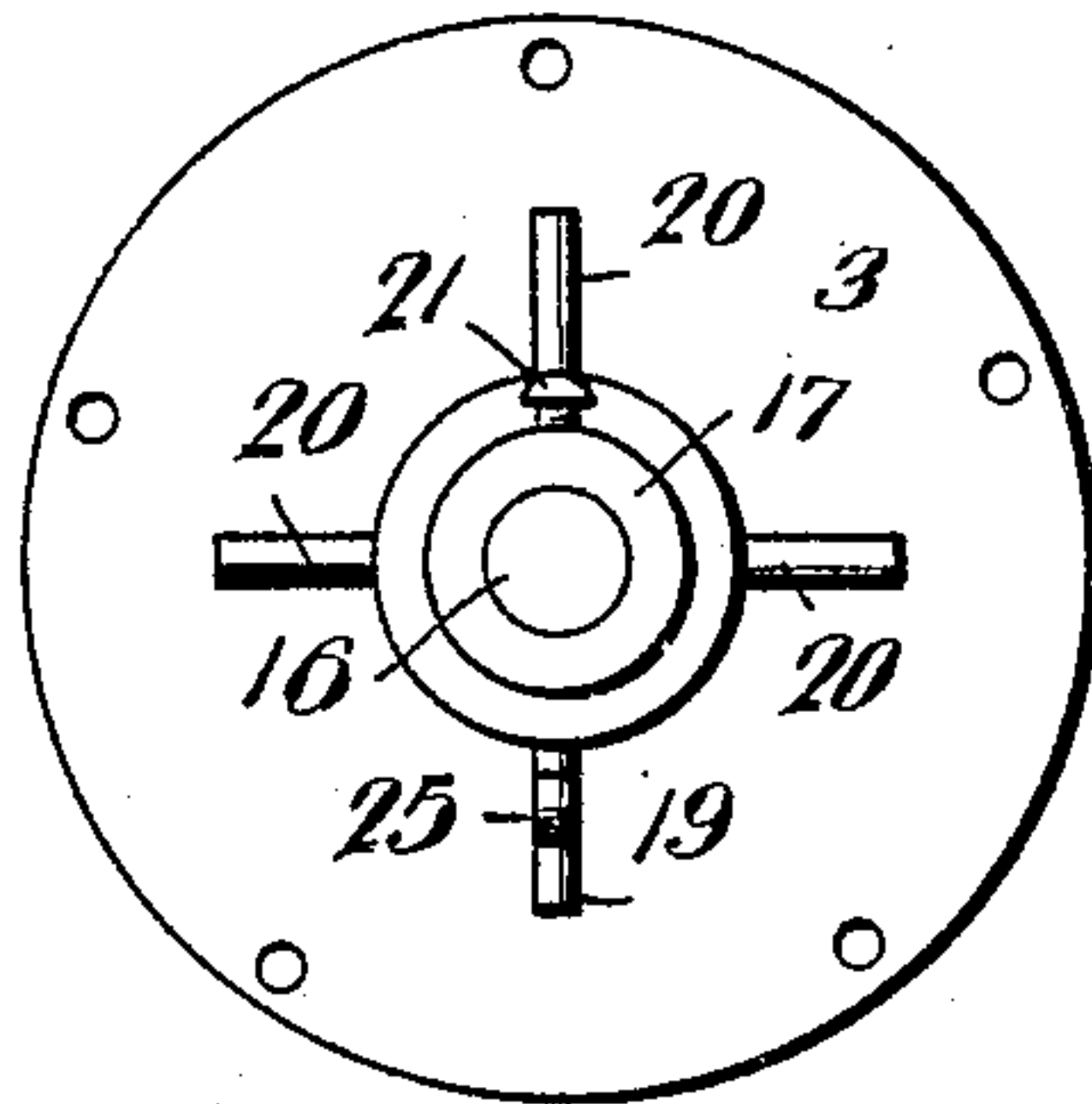


Fig. 7.

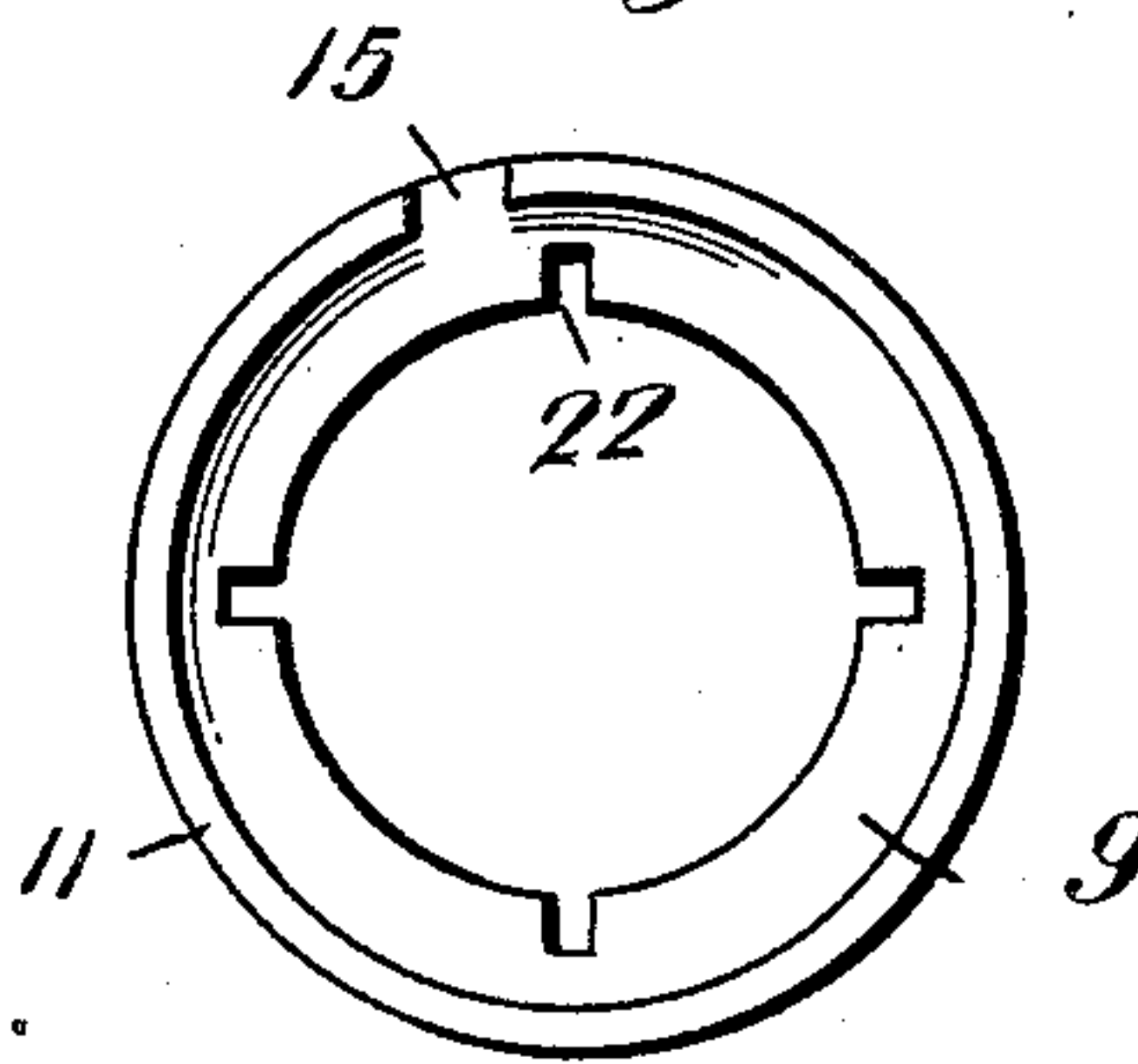


Fig. 8.

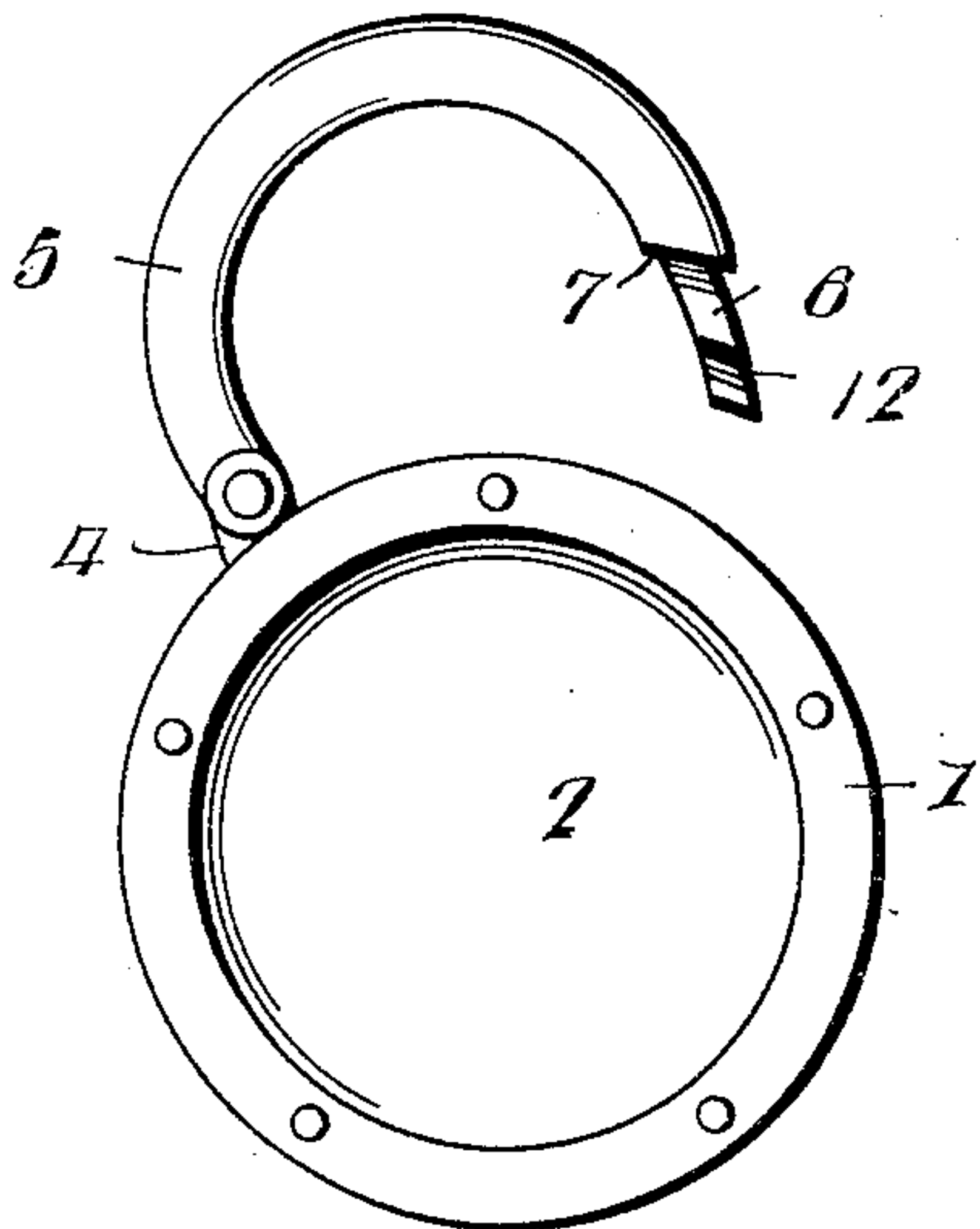
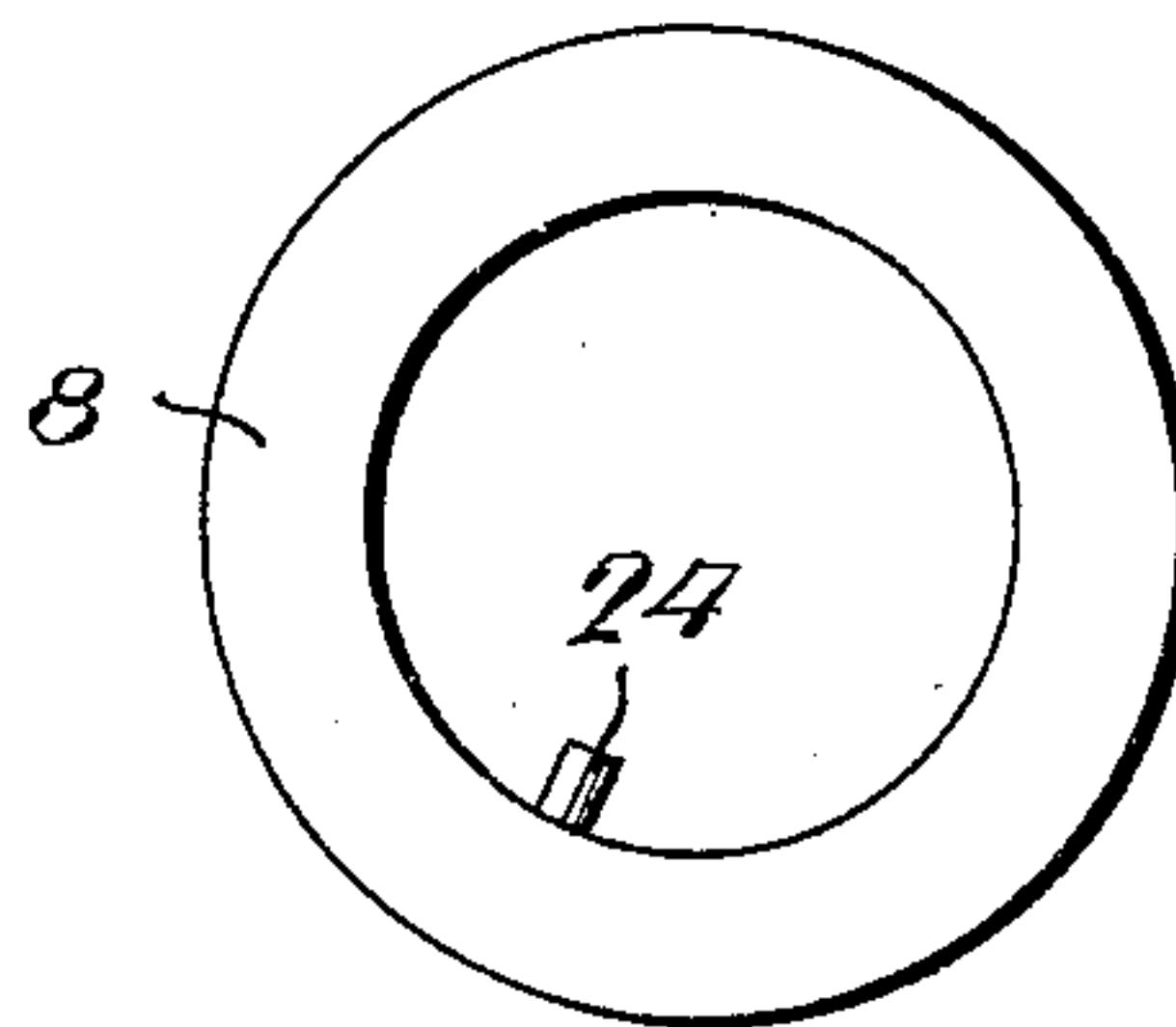


Fig. 9.



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PERMUTATION-PADLOCK.

SPECIFICATION forming part of Letters Patent No. 778,833, dated December 27, 1904.

Application filed March 3, 1904. Serial No. 196,470.

To all whom it may concern:

Be it known that I, EDWIN LITTS, a citizen of the United States, residing at Schenectady, in the county of Schenectady and State of New York, have invented new and useful Improvements in Permutation-Padlocks, of which the following is a specification.

This invention relates to permutation-padlocks, the object of the invention being to provide a padlock involving a combination of tumblers and operating mechanism therefor, which is productive of an exceedingly simple, cheap, and reliable permutation-lock, thus doing away with the necessity of employing a separate detachable key without liability of the loss of such key. The parts of the locking mechanism are so constructed and arranged that the combination may be easily and quickly changed indefinitely.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination, and arrangement of parts, as will be herein fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a front or face view of the permutation-padlock embodying the present invention. Fig. 2 is a diametrical section through the same. Fig. 3 is a face view of the lock with the adjacent face-plate removed. Fig. 4 is a similar view, partly in section, showing the adjacent face-plate, tumbler, and knob with its attachments removed. Fig. 5 is a view similar to Fig. 4, showing the double-flanged tumbler in position to release the hasp. Fig. 6 is an inside view of the face-plate, including the knob-spindle and its attachments. Fig. 7 is an inside face view of the single-flanged tumbler. Fig. 8 is an elevation of the lock-case and hasp with all detachable parts removed. Fig. 9 is an outer face view of the double-flanged tumbler.

Like reference-numerals designate corresponding parts in all figures of the drawings.

The lock-case, which is illustrated without the locking mechanism in Fig. 8, is in the form of a shallow and hollow cylinder, comprising a rim 1, the rear side 2, and what I term a

"face-plate" 3, which is secured to the rim 1 by means of screws, rivets, or other suitable fasteners 3, thus preventing access to the interior of the case. The case is also provided at a suitable point with a lug 4, to which is hinged one end of a curved hasp 5, the opposite end of which is reduced to form a shouldered extremity 6 and also a shoulder 7, which is adapted to meet the outer surface of the rim of the case and hold the shouldered extremity 6 in a position to be operated upon by the tumblers hereinafter described.

Revolubly mounted in the case is what I term a "double-flanged and disk-shaped" tumbler 8, which rests in contact with the back 2 of the case and rides at its periphery in contact with the inner surface of the rim 1.

Arranged opposite the tumbler 8 is another single-flanged tumbler 9, which is also revolubly mounted in the case and abuts against the inner surface of the face-plate 3.

The tumblers 8 and 9 are provided along their outer edges with inwardly-projecting annular flanges 10 and 11, between which is left an annular space for the entrance of the shouldered portion of the hasp. The shouldered portion of the hasp is, however, in the main of greater width than the distance between flanges 10 and 11 and is provided with oppositely-located grooves 12, in which the inner edges of the flanges 10 and 11 work and by means of which the hasp is locked except when the tumblers are adjusted for the purpose of releasing the hasp.

In order to admit of the entrance and removal of the shouldered portion of the hasp, the rim of the casing is provided with an opening 13, and the flanges 10 and 11 are each provided at a single point with notches 14 and 15 just large enough to admit the shouldered extremity of the latch when they are brought to register with the opening 13 in the rim of the case.

In order to provide for adjusting the tumbler-disks, resort is had to a knob 15^a, the shank or spindle 16 of which passes through and is journaled in an opening of the face-plate 3, as shown in Fig. 2. Mounted on the spindle 16 within the lock-case is a hub 17, from

which project radially-disposed pins or spokes 19 and 20, and said hub is adjustable upon and around the spindle 16 by means of a set-screw 21, by means of which the combination can be changed, as will hereinafter appear.

The tumbler 9 is provided with notches 22 to receive the extremities of the pins or spokes 19 and 20, so that said tumbler is caused to rotate with the knob and its spindle, thus providing for turning the tumbler 9 until the notch thereof is brought into position to receive the hasp. The oppositely-located tumbler 8 is provided with a deep flange 23, which extends far enough to find a bearing against the tumbler 9, thus properly positioning the tumblers and giving them the proper bearing against each other, whereby they are adapted to mutually support each other within the case. Extending inwardly from the inner flange 23 of the tumbler 8 is a shoulder 24, which for convenience is shown in the form of a pin, and one of the spokes, as 19, is offset intermediate its ends or provided with a shoulder 25, which is adapted to come into contact with the shoulder 24 upon turning the knob 15, and thereby correspondingly turn the tumbler 8 until the notch thereof is brought into position to receive and release the hasp.

In operating the lock the knob 15 is turned in one direction until one of the tumbler-disks is brought into position to receive and release the hasp. The knob is then turned in the opposite direction, so as to set the other tumbler for a like purpose. Thereupon the shouldered extremity of the hasp may be either inserted or removed, as it is no longer locked by the engagement between the flanges 10 and 11 of the tumblers and the grooves 12 of the hasp.

To provide for properly adjusting or setting the tumblers, the knob 15^a or spindle 16 is provided with a graduated disk 26, which rotates with the spindle upon the outer surface of the face-plate and is adapted to register with other graduations 27 on the face-plate. While the drawings show but two tumbler-disks, it will be understood that a greater number of tumbler-disks may be employed, the essential feature being that each of the tumbler-disks have an inwardly-projecting flange to interlock with the hasp and provided with notches to receive the same. By means of the set-screw 21 the hub 17, with its spokes, may be adjusted around the spindle so as to change the relation of the offset or shoulder 25 to the graduations on the disk 26, and

in this way the combination may be changed indefinitely.

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

1. A permutation-lock, comprising a case having an opening therein, a pivoted hasp having its extremity movable through said opening, and formed with opposite grooves, tumblers rotatable within the case, and having inner flanges working in said grooves, said flanges having notches to admit said hasp extremity therebetween, and means for separately adjusting the tumblers to bring the notches into registry with each other, one of said tumblers having a wider flange supporting the two tumblers the proper distance apart and against the inner sides of the face-plates of the case.

2. A permutation-lock, comprising a case having an opening therein, a pivoted hasp having its extremity movable through said opening, and formed with opposite grooves, tumblers rotatable within the case, and having inner flanges working in said grooves, said flanges having notches to admit said hasp extremity therebetween, and one of said tumblers having a wider flange supporting the two tumblers against the inner sides of the case, this flange having an inner shoulder, and an operating-spindle provided with devices in permanent engagement with one of the tumblers, and having a member adapted to be carried against said shoulder.

3. A permutation-lock, comprising a case having an opening therein, a pivoted hasp having its extremity movable through said opening, and formed with opposite grooves, tumblers rotatable within the case, and having inner flanges working in said grooves, said flanges having notches to admit said hasp extremity therebetween, and one of said tumblers having inner radial notches, and the other a wider flange supporting the two tumblers against the inner sides of the case, this flange having an inner shoulder, and an operating-spindle carrying a hub having radial arms extending into said radial notches, one of the arms being offset for engagement with said shoulder.

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

EDWIN LITTS.

Witnesses:

WILLIAM POWERS,
EDWARD E. KINGSMANN.