

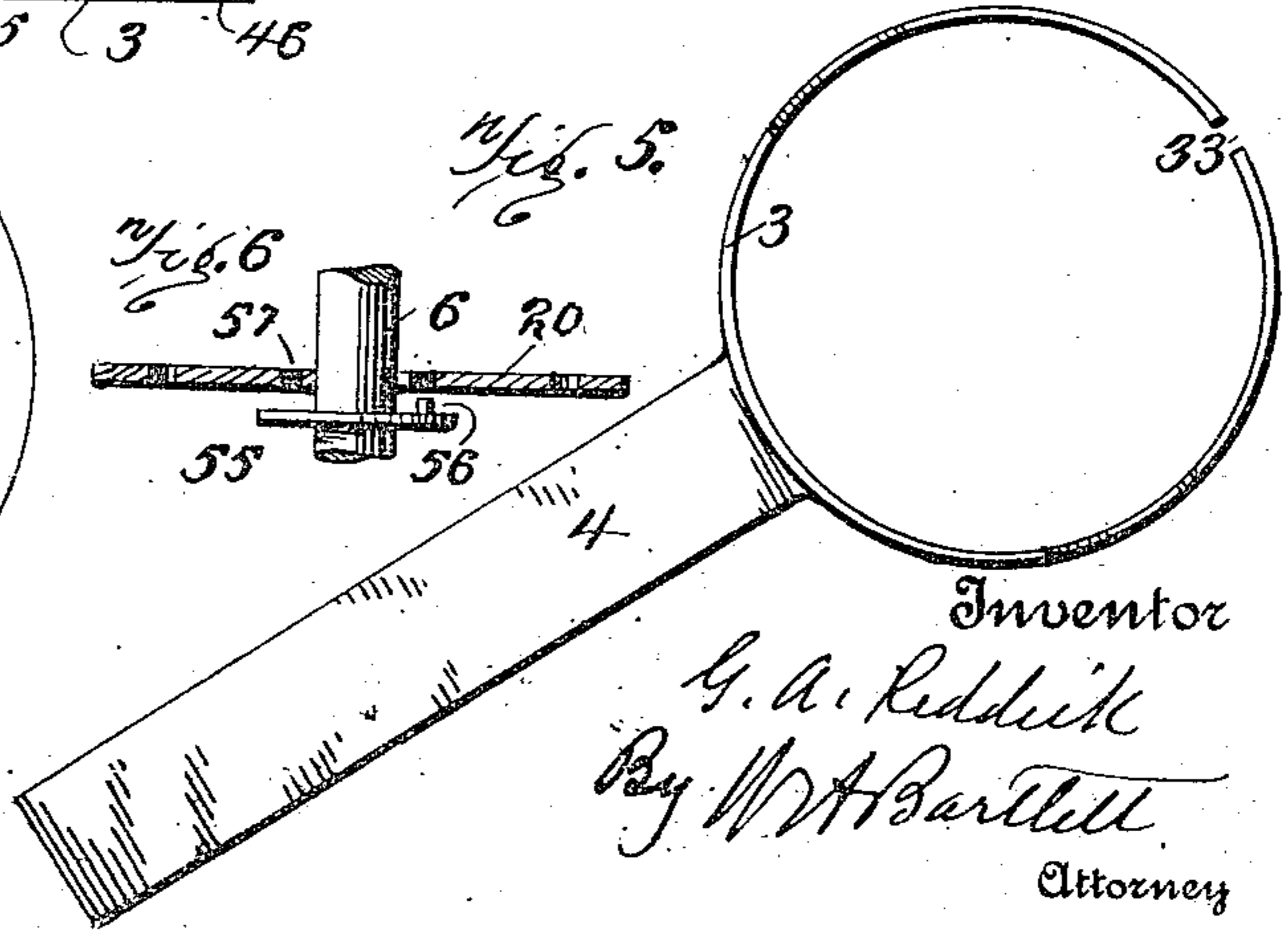
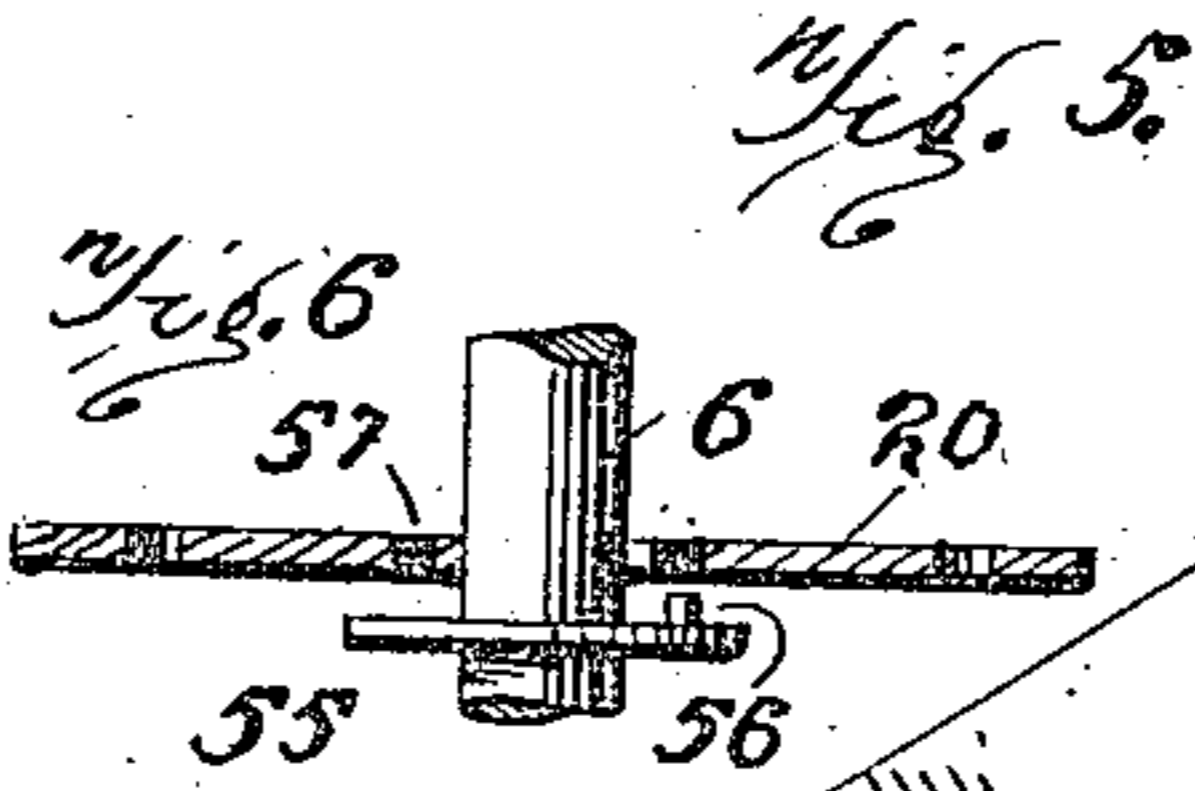
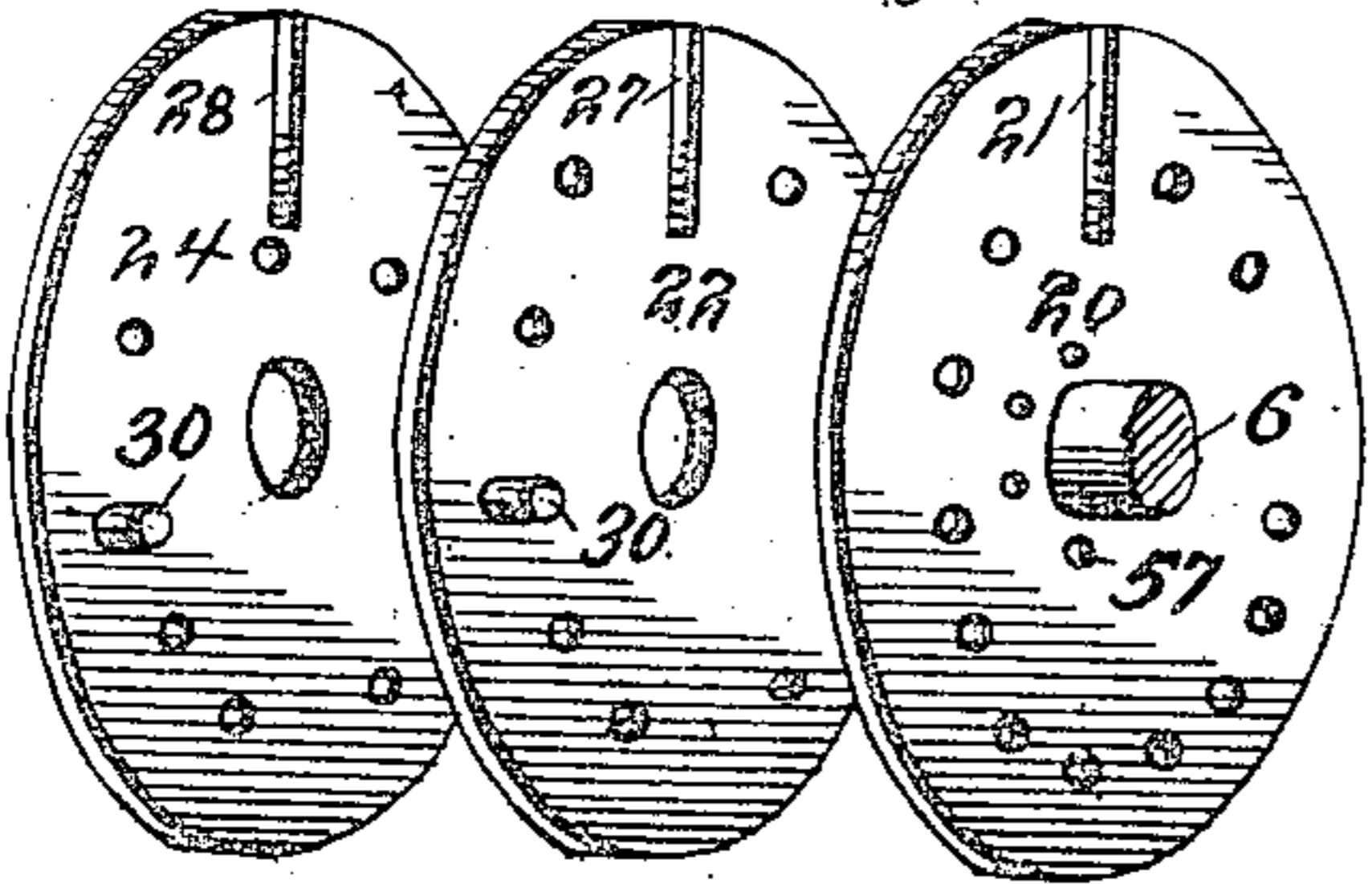
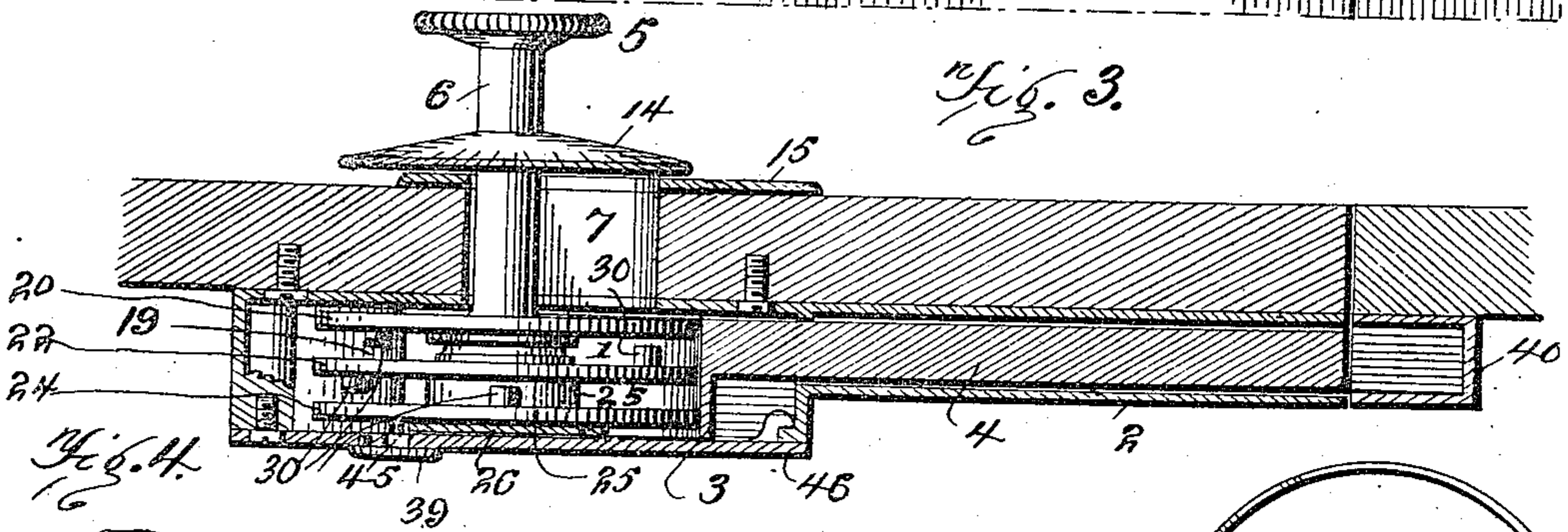
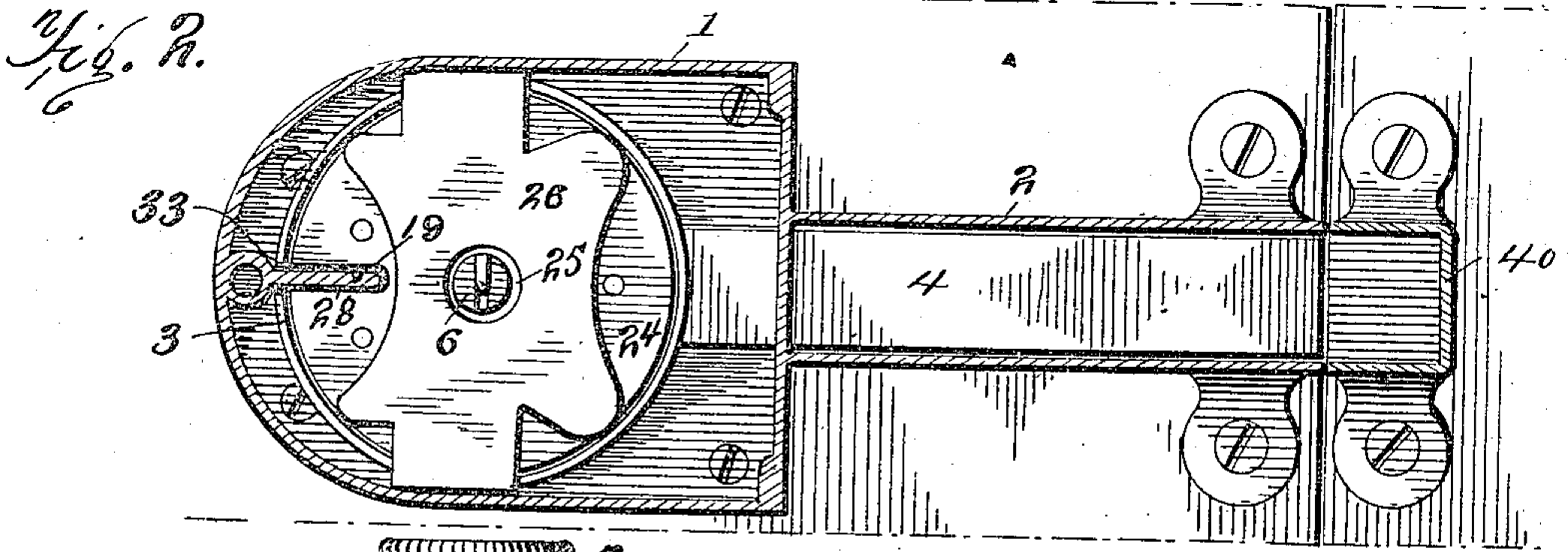
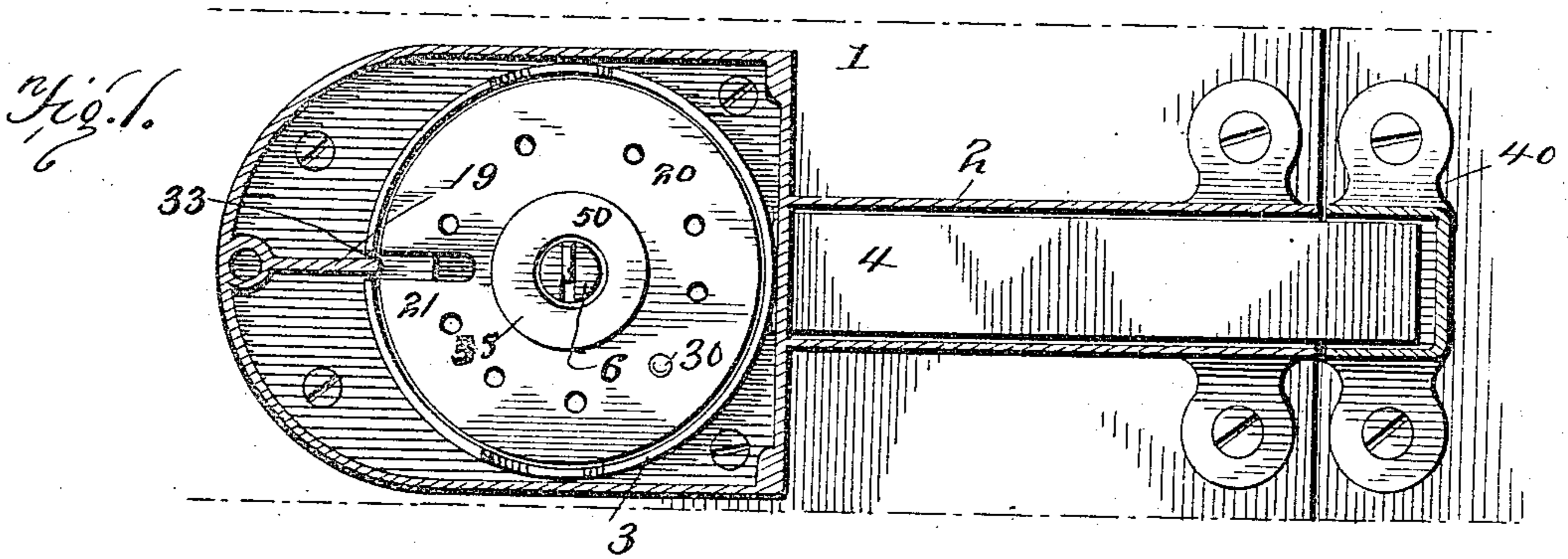
No. 659,627.

Patented Oct. 9, 1900.

G. A. REDDICK.
PERMUTATION LOCK.

(Application filed Mar. 5, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GEORGE A. REDDICK, OF NASHVILLE, TENNESSEE.

PERMUTATION-LOCK.

SPECIFICATION forming part of Letters Patent No. 659,627, dated October 9, 1900.

Application filed March 5, 1900. Serial No. 7,306. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. REDDICK, a citizen of the United States, residing at Nashville, in the county of Davidson and State of Tennessee, have invented certain new and useful Improvements in Permutation-Locks, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to permutation or disk-controlled locks.

The object of the invention is to produce a lock in which the permutation disks or tumblers are supported in a retaining-chamber 15 which slides with the bolt and in which the disks are held against rotation or other movement, except a sliding movement, whenever the bolt is not fully shot to locked position. By such construction a very simple permutation-lock may be made, and much annoyance, 20 due to displacement of disks by turning the handle when the lock is open, may be avoided.

Figure 1 is a plan or partial section of the lock with cover or casing-top removed and showing bolt in locked position; Fig. 2, a similar 25 plan with bolt open and disks and holder in position; Fig. 3, a central longitudinal section of the lock in open position. Parts of the door and jamb are indicated in Figs. 1, 2, 30 and 3. Fig. 4 is a perspective of three permutation tumblers or disks. Fig. 5 is a plan of the disk ring and bolt.

The numeral 1 indicates the lock-casing. This is of any usual construction for either 35 a mortise, rim, or extension lock. The casing may be cast from metal or otherwise constructed and may be integral with or separate from a bolt-housing 2.

Within the chamber 1 there is a disk chamber or ring 3, which chamber or ring is attached to the bolt 4, said bolt extending in the housing 2. The ring 3 is open or slotted at 33. The slotted ring 3 incloses the disks of the permutation device and forms a housing 45 therefor.

The knob or handle 5 has a spindle 6, which extends through a slot 7 in the casing. The spindle 6 has one of the disks, as 20, attached to the inner end thereof by a screw or other 50 device, so that said disk will turn with the spindle. The disk 20 is within the chamber

or ring 3, and by sliding the handle 5 and spindle 6 in the direction of the length of the slot 7 the disk will move with the spindle, and by its engagement with the ring 3 will 55 cause the bolt 4 to slide in the same direction and to the same distance as spindle 6. Disk 20 is slotted in radial direction, as shown at 21. The disk must be turned to such position that the slot 21 will move over the fixed 60 pillar or stop 19 in the casing before the bolt can slide to open position. The slot-disk 20, moving the ring 3 with it, will of course move bolt 4, which is attached to the ring. Any additional number of disks may be used 65 for the purpose of making any desirable combination. Three disks are shown, the disks 22 and 24 being held on a hub 25, which is supported by a spider or bar 26. The spider or bar 26 extends across the ring 3, its ends 70 resting in notches in said ring, so that the disks are supported from the bar instead of bearing directly against ring 3. All the disks are to be of such size as to turn easily in the ring or chamber 3. Disks 22 and 24 are slotted at 27 and 28. Each disk is provided with 75 an operating pin or screw 30, and these pins may be screws which engage in threaded holes in the disks, and the change of position of one or more of these pins or screws changes 80 the combination of the lock, as usual in locks of this general character. The spindle 6 carries a dial 14, which turns with the spindle, and by its position relative to an index-plate 85 indicates the necessary rotations of the spindle to work the combination in usual manner. When disks 20, 22, and 24 are turned 90 so that the slots or notches are in line with each other and in line with the notch 33 in the ring or chamber 3, said ring 3 may be slid bodily within the casing, carrying the disks along in either direction as far as the pillar 19 by its entrance into the notches will permit, and when said ring and disks are 95 moved along so as to have the notches 21, 27, and 28 embrace said pillar 19 the disks cannot be rotated, being held against rotation by such pillar. When the bolt 4 is shot to locked position in keeper 40, the disks may be turned 100 by turning the spindle. As soon as any one of the disks is turned far enough so that its notch cannot slide along to embrace the pil-

lar 19 the bolt is locked and the combination must be worked to bring the notches again in line, so that the bolt may be opened.

To permit of opening the lock should the combination be lost, it is advisable to have a small hole 45 in the rear facing 46 of the lock, said hole having a swinging cover 39. A small key or tool can be entered through this opening, and by working or turning the spindle in one direction and the other until this tool or key can enter the slots 21 27 28 the disks may be brought to such position that the bolt may be slid. This of course requires either that the door be open or that there be collusion from both sides of the door, but is a provision against accidents.

The spindle 6 may be adapted for use with doors of differing thickness by an extensible or telescopic piece, as is common. In fact, the lock may be adapted for most uses to which locks with sliding bolts are applied, the advantages over most permutation-locks being in the simplicity of construction and the non-liability of disarrangement while the bolt is withdrawn.

The spindle 6 is held to disk 20 by wedge or key 50, which enters a slot in the spindle, or by other convenient mechanism. Spindle 6 has a ring 55 attached, and on this ring a pin 56 projects backward in position to enter one of the holes 57 in the disk 20. By loosening the key 50 the spindle 6 can be turned part way around, thus entering pin 56 into a new hole 57, and so changing the combination. Thus an additional way of changing the combination is provided.

The ring 3, rigidly connected to the bolt 4, serves as a housing for the permutation-disks, and, in connection with the bar or spider 26, incloses said disks, although the disk nearest

the knob is not supported by the spider, but by the knob-spindle.

What I claim is—

1. In a permutation-lock, the bolt, a slotted ring connected to the bolt and forming a housing for the disks of the permutation device, a casing for the bolt and for the slotted ring, a fixed pillar within the casing in line of movement of the slot in the slotted ring, a spindle connected to slotted disks within the slotted ring, as described, and a cross-bar connected to the slotted ring and supporting one of the disks remote from the spindle.

2. In a permutation-lock, the bolt, a slotted ring permanently connected thereto, a spider connected to said ring by resting in notches in the edge thereof, permutation-disks within the ring, one of the same being supported by the spider, a spindle connected to the disk at the side opposite the spider, and a pillar in the casing in the path of movement of the ring and disks and at the opposite side of the ring from the bolt, all combined substantially as described.

3. In a permutation-lock; the bolt and the slotted ring attached thereto, a bar or spider extending across the slotted ring and a slotted disk having its hub supported thereby, the spindle extending into the ring at the side opposite the spider and having a slotted disk connected thereto, and a pillar in the casing which may be embraced by the slots of the disks of the sliding bolt and ring, all combined substantially as described.

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

GEORGE A. REDDICK.

Witnesses:

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