

May 9, 1933.

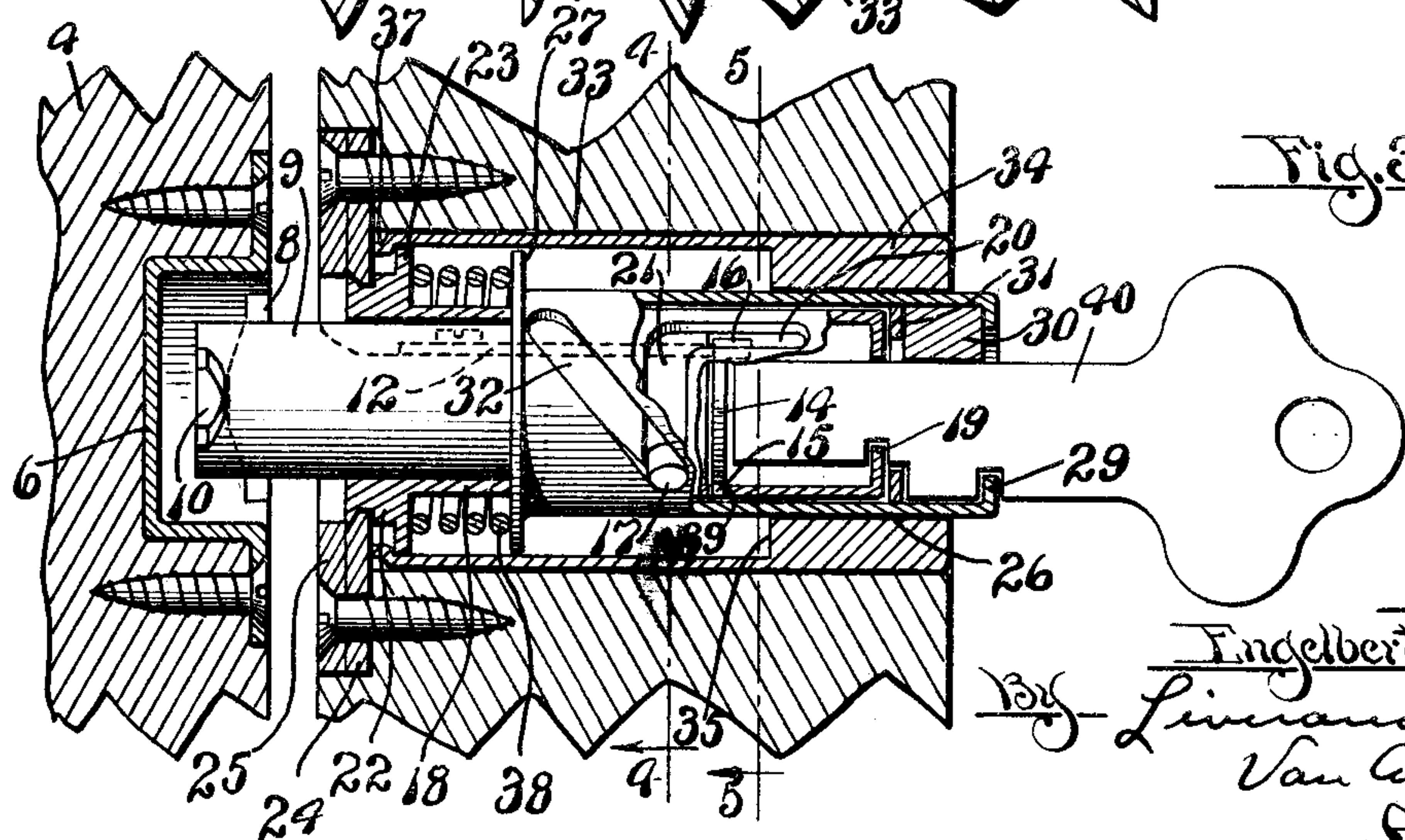
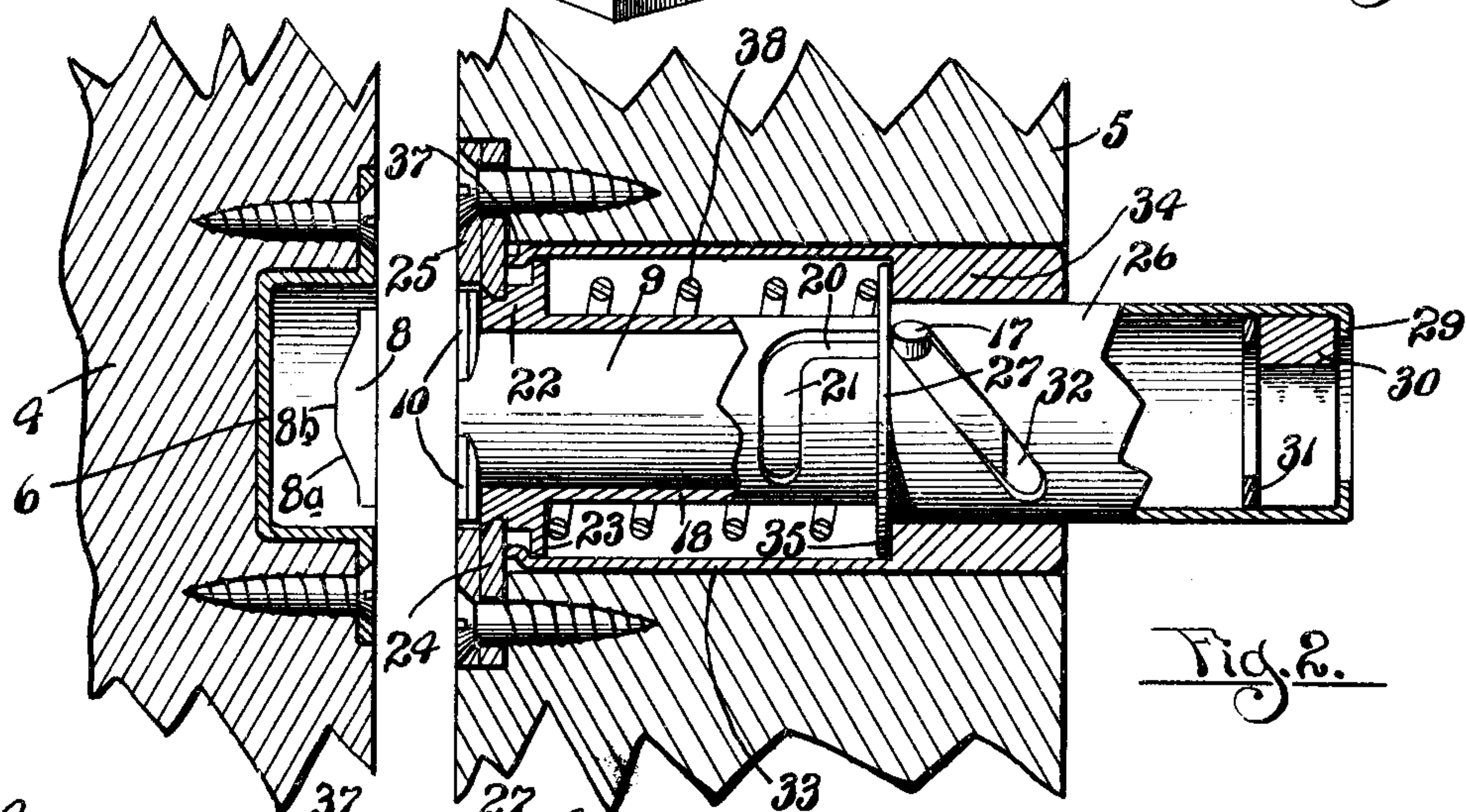
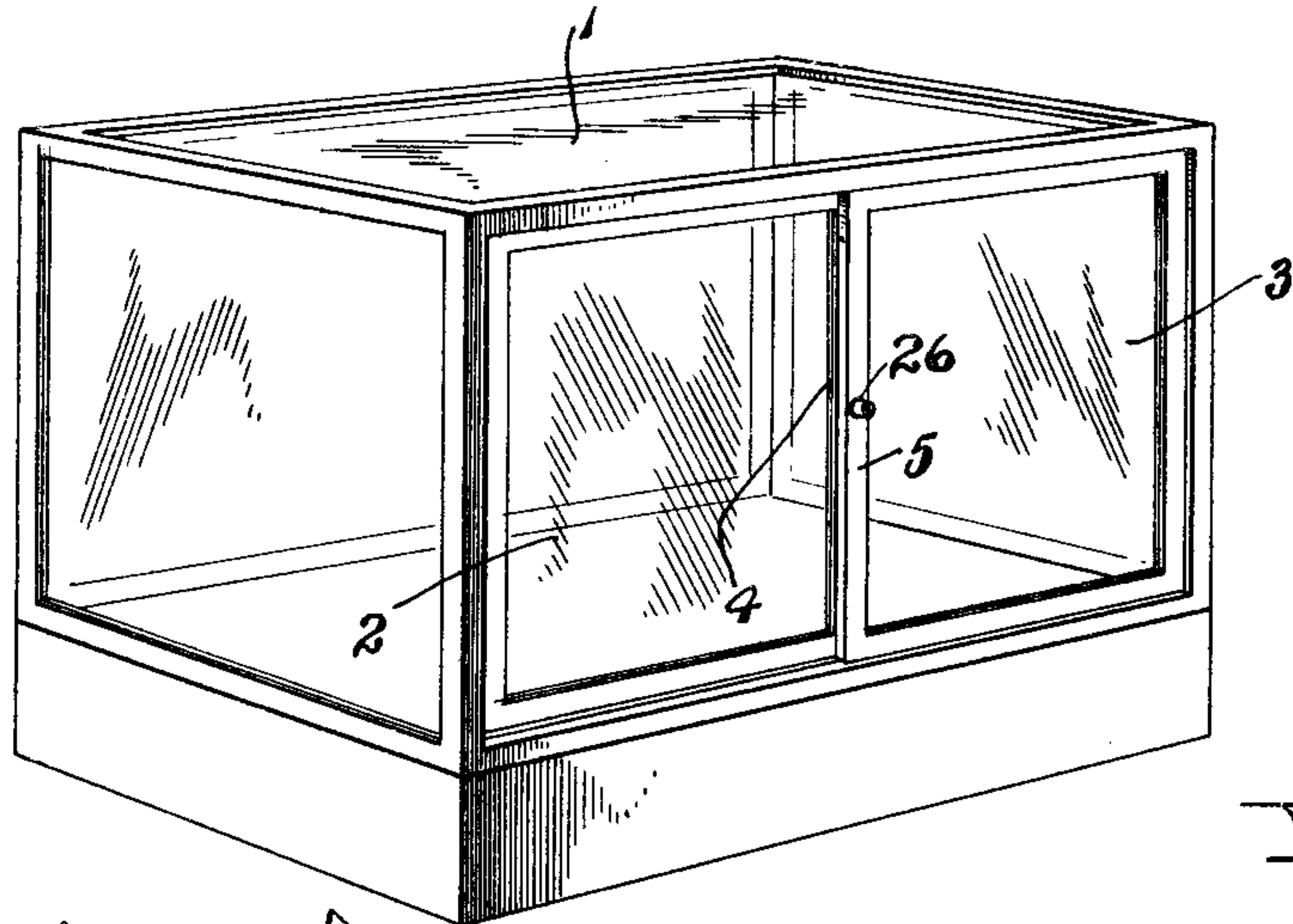
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1,907,625

SHOWCASE SLIDING DOORLOCK

Filed March 24, 1930

2 Sheets-Sheet 1



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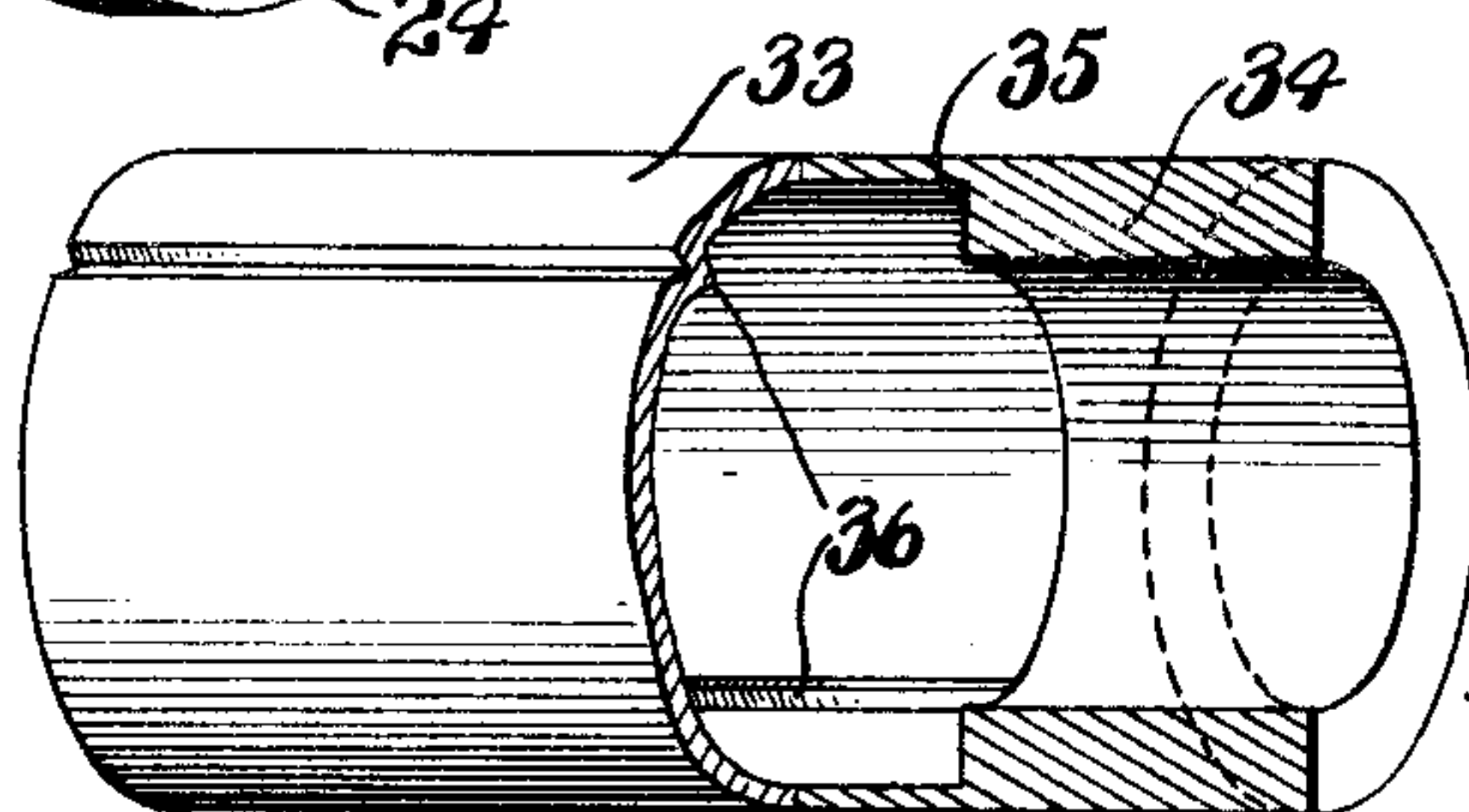
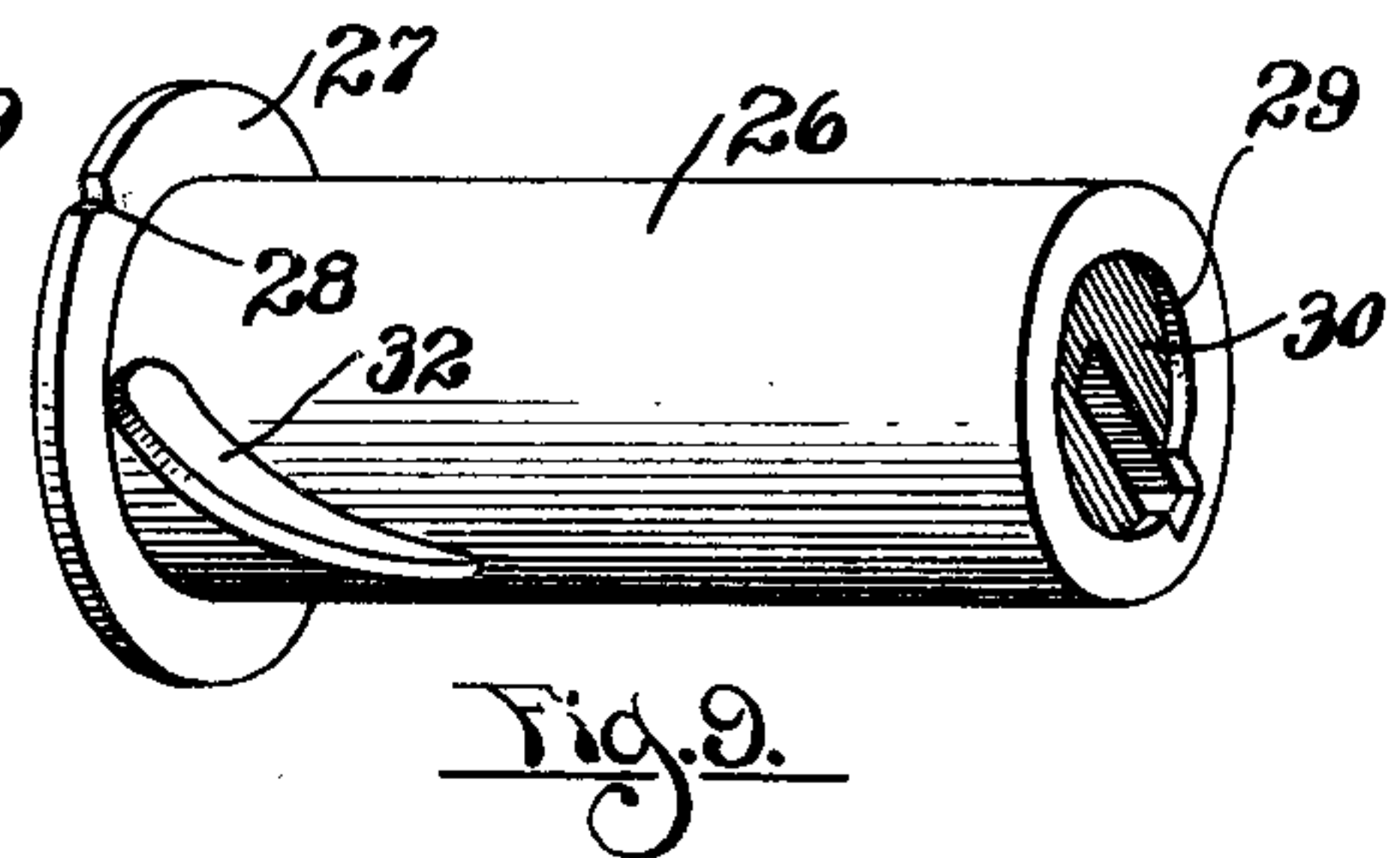
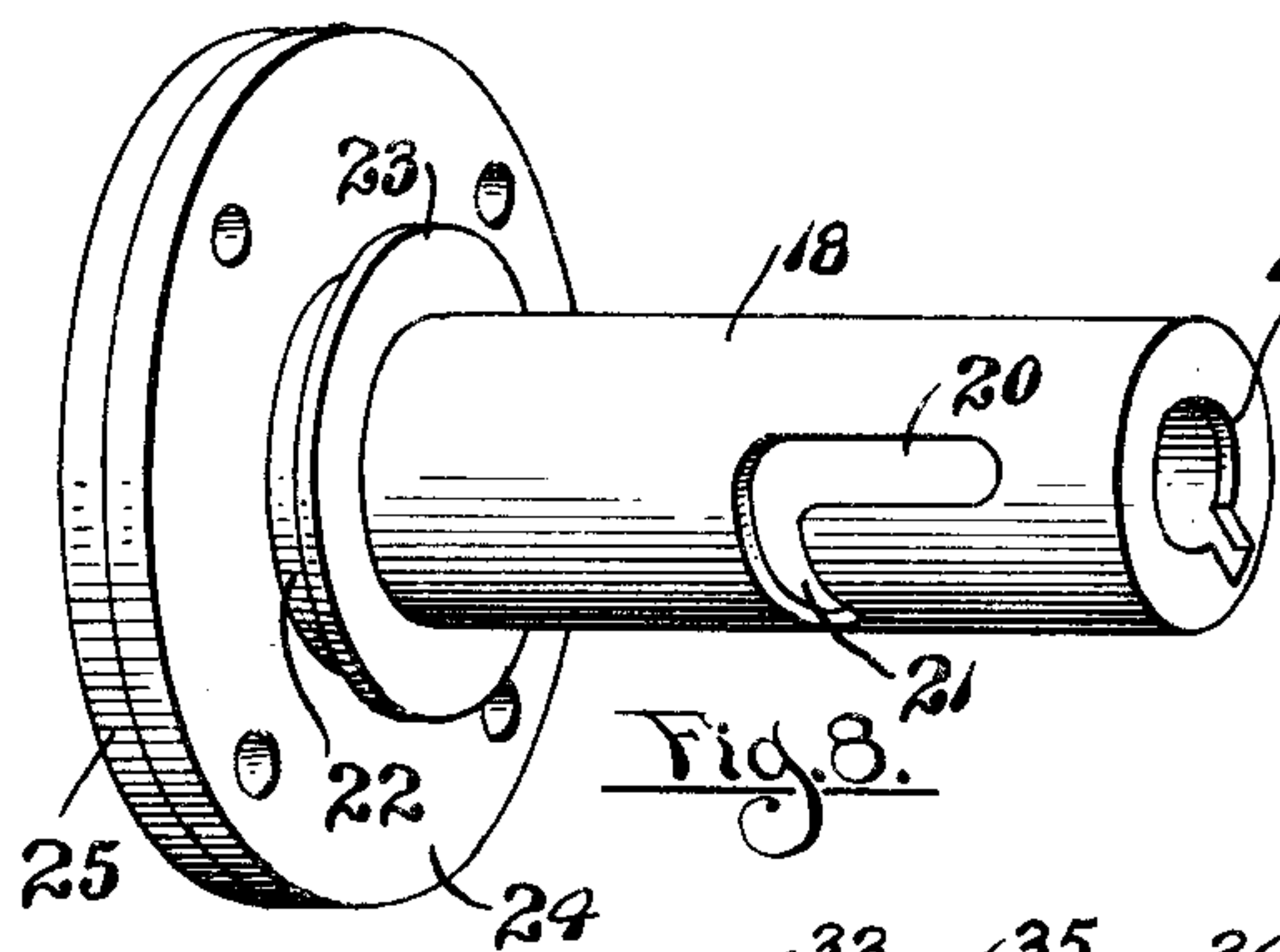
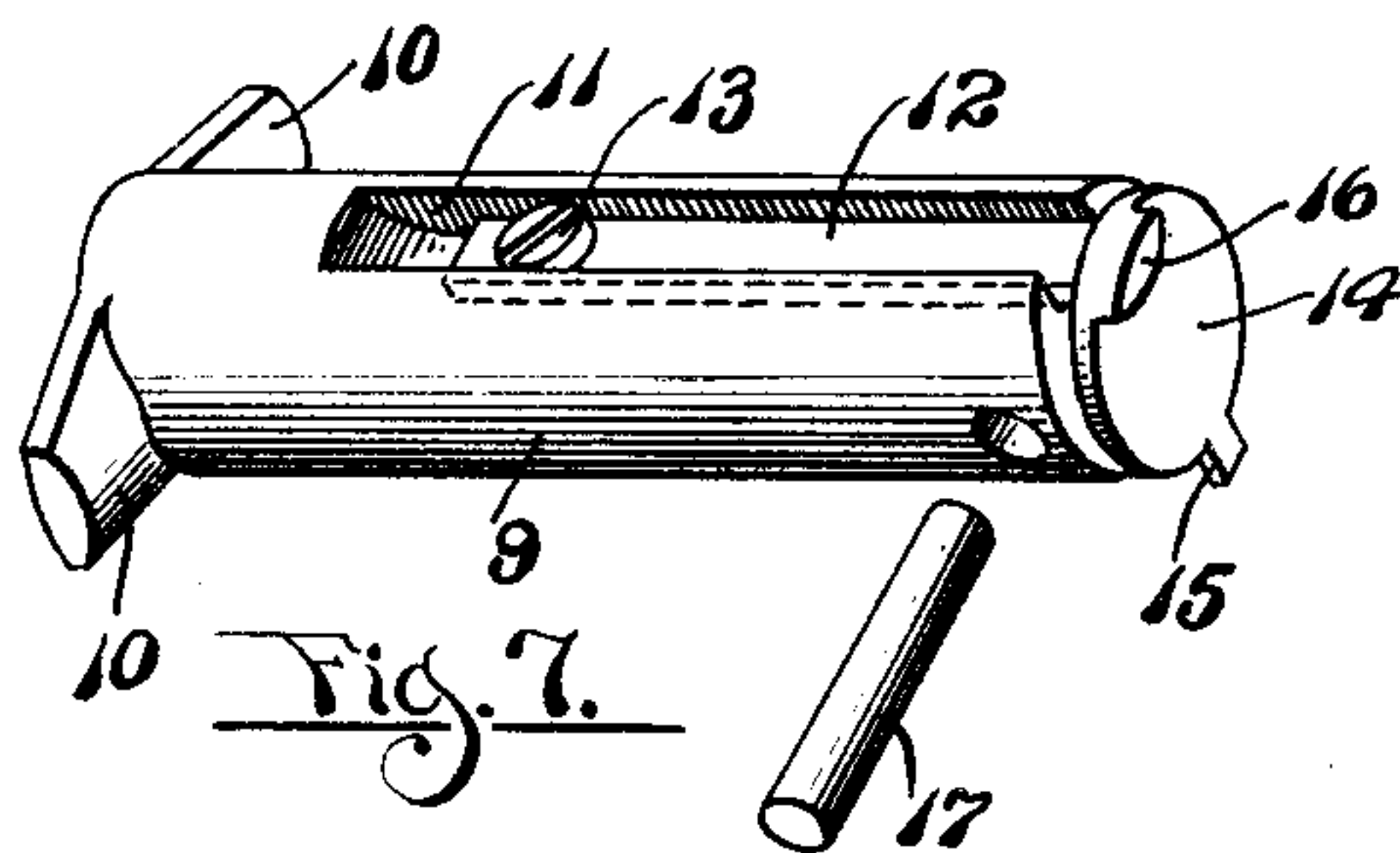
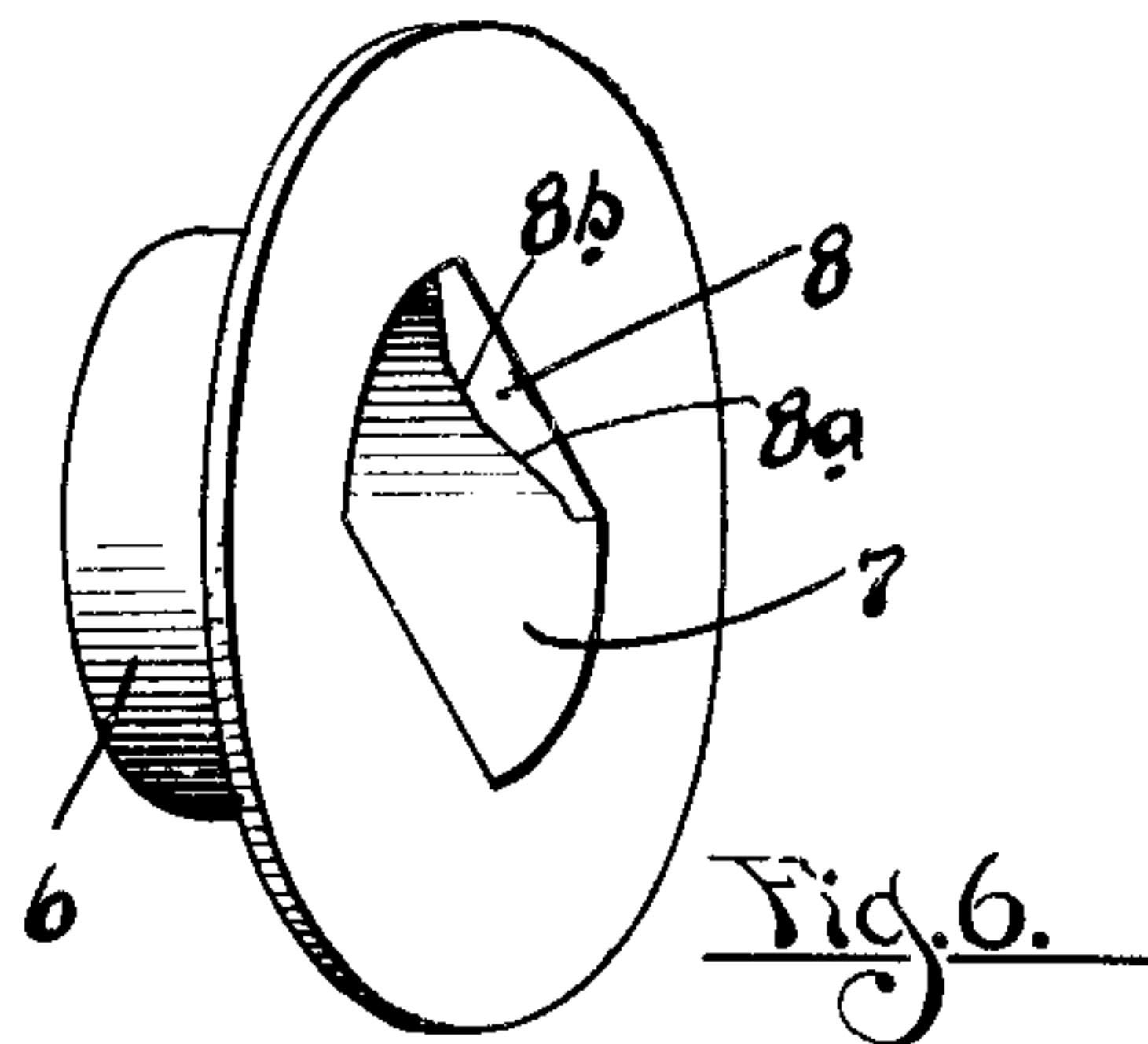
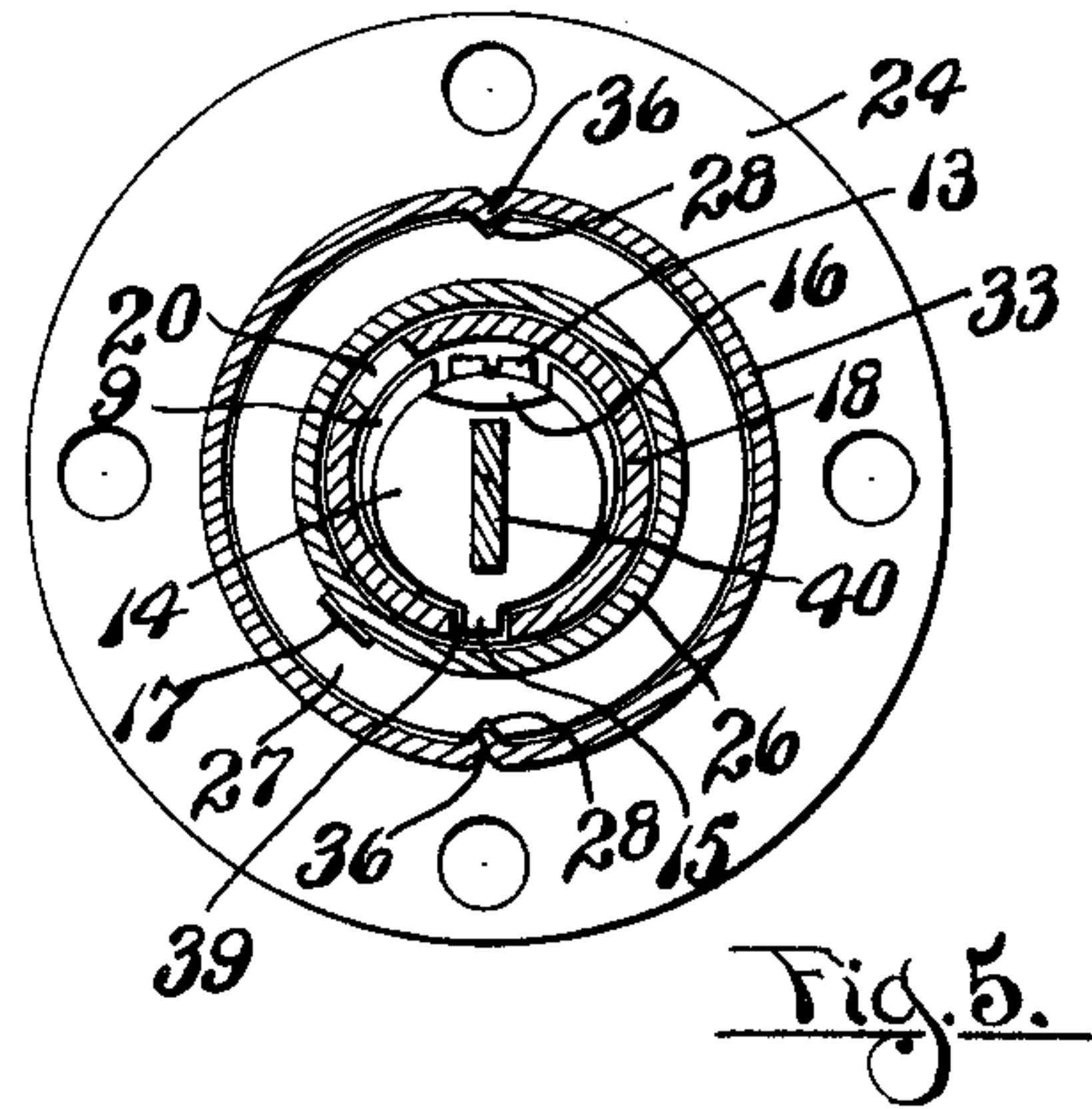
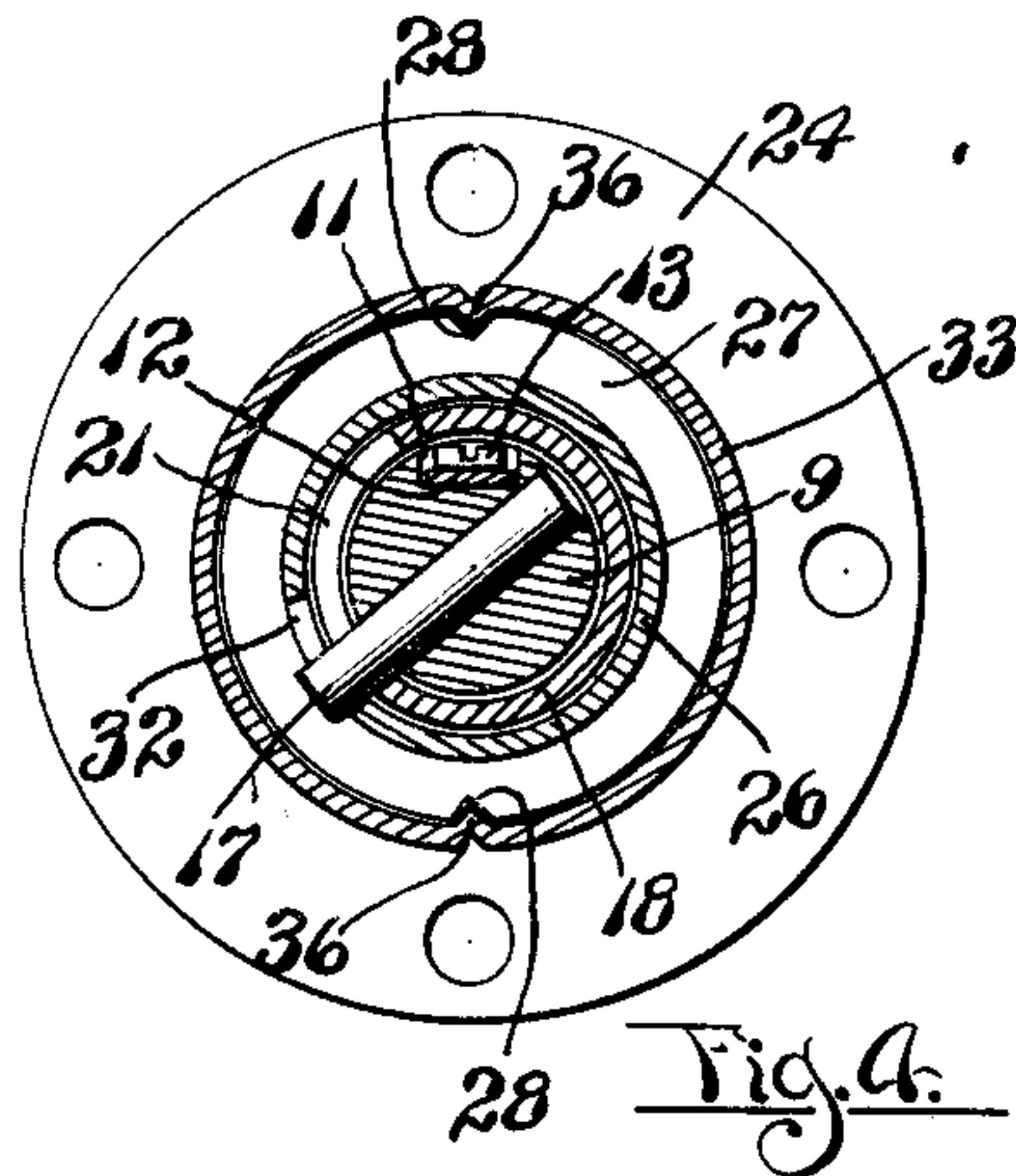


Fig. 10.

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UNITED STATES PATENT OFFICE

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SHOWCASE SLIDING DOORLOCK

Application filed March 24, 1930. Serial No. 438,271.

This invention relates to a cabinet or show-case sliding door lock.

Show-cases and cabinets are in a great many instances equipped with doors which slide past each other to open the show-cases or cabinets for access to the interiors. Usually two doors are mounted at a side of the case or cabinet, one slidable in a vertical plane outside of the other and when the case or cabinet is entirely closed by the doors, vertical wood frame members of the two doors overlap each other. It is on these two overlapping frame members of the doors that the lock of my invention is to be mounted.

It is a primary object and purpose of the present invention to provide a lock with reference to cabinet or show-case doors which may be automatically pushed to a locking position and at the same time draw the overlapping parts of the doors toward each other so as to snugly close any space between them and thereby eliminate, to a large degree, entrance of dust into the case through a crack or opening between the doors. A further object of the invention is to provide a construction of lock in which a locking bolt is normally retracted by spring means when the bolt is free to be acted upon by the spring, thereby projecting a portion of the lock outside of the outer sliding door which may be manually engaged and pushed inward, operating to move the locking bolt into engagement with the keeper on the inner door and also when the locking bolt is in proper position, turn the same about its longitudinal axis to engage with the keeper and draw the doors toward each other. The release of the locking bolt from the keeper is effected by a key, the turning of which disengages and frees the locking bolt so that it may be acted upon by the spring means mentioned and be first turned to its original position about its longitudinal axis and then withdrawn from the keeper.

An understanding of the invention for the attainment of the ends stated may be had from the following description taken in connection with the accompanying drawings, in which,

Fig. 1 is a perspective view of a show-case,

the doors of which are equipped with the lock of my invention.

Fig. 2 is a fragmentary vertical section through the overlapping parts of the door, the section being taken lengthwise of the lock and showing the same at its inoperative position.

Fig. 3 is a view similar to that shown in Fig. 2 illustrating the locking bolt engaged with the keeper and the doors drawn toward each other.

Figs. 4 and 5 are transverse vertical sections through the lock substantially on the planes of lines 4—4 and 5—5 of Fig. 3.

Fig. 6 is an enlarged perspective view of the keeper.

Fig. 7 is a similar view of the locking bolt.

Fig. 8 is a perspective view of the housing in which the locking bolt is immediately mounted.

Fig. 9 is a perspective view of a sheet metal housing into which the housing shown in Fig. 8 partly extends, and

Fig. 10 is a perspective and partial longitudinal section of the exterior housing of the lock.

Like reference characters refer to like parts in the different figures of the drawings.

The show-case, indicated at 1, may be of any conventional construction having an opening at one side which is closed by two doors 2 and 3, the former sliding in a vertical plane inside of the plane of sliding movement of the latter. Such doors when the case is entirely closed have vertical frame members 4 and 5 overlapping as shown. The lock of my invention is mounted on the member 5 and releasably engages with a keeper on the member 4.

The keeper 6 is of cup shape with an outwardly extending annular flange through which screws may be passed to secure the keeper in place, a recess being made in the side of the part 4 to receive the keeper as shown in Figs. 2 and 3. The keeper has an opening 7 of substantially rectangular outline and at each side thereof, within the keeper, cams 8 may be secured each of which has two inclined surfaces 8a and a vertical

surface 8b between the inclined surfaces, the purpose of which will hereafter appear.

The lock, which is mounted on the part 5 of the outer door, includes a cylindrical locking bolt 9 at one end of which is a head including two oppositely disposed lateral arms 10. The bolt in its upper side has a longitudinal groove 11 formed therein which extends to the inner end of the bolt in which a leaf spring bar 12 is located, being secured to the bolt by a screw 13 at one end. At the other end it is permanently connected to a disk 14 which lies against the inner end of the bolt 9. The disk is somewhat less in diameter than the bolt 9 and at its lower side has a downwardly extending lug 15 and at its upper side a horizontally extending lug 16 which has a curved cam under surface. A pin or rod 17 is adapted to pass through the bolt near its inner end and have one end thereof extend beyond the side of the bolt.

The bolt is located in a cylindrical housing 18 of metal the inner end of which is formed with an inturned annular flange 19, whereby the inner end of the housing 18 is provided with a key-hole opening as shown in Fig. 8. Between its ends the housing 18 has a longitudinal slot 20 cut therein which, at one end, has a connecting branch slot 21 passing partly around the housing member 18. The outer end portion of the member 18 is thickened and enlarged making a ring 22 from which an annular flange 23 extends. Face plates 24 and 25 against each other are located at the outer end of the member 18 and the plate 24 is permanently secured thereto, while the plate 25 is secured to plate 24 and is formed with suitable recesses to receive the arms 10 on the bolt 9 as shown in Fig. 2. When the bolt 9 is located within member 18 the projecting end of the rod 17 extends through the side of the housing 18 in either the slot 20 or 21.

The inner end of the housing 18 is inserted into one end of a second cylindrical housing 26 of sheet metal which is formed at one end with an outwardly extending annular flange 27 in which, at diametrically opposed points, notches 28 are made for a purpose which will hereafter be described. The opposite end of the housing 26 has an inturned flange or lip 29, as shown, against which, inside the housing 26, a plug 30 is revolvably located having a key slot cut therethrough; while in front of the plug 30 one or more metal rings 31 may be located. The housing 26 in a side thereof has a diagonally located slot 32 cut therein one end of which comes closely adjacent to the flange 27.

The outer enclosing housing of the lock comprises a cylinder 33 which at one end is considerably thickened as indicated at 34, providing an interior annular shoulder 35 as shown. The thinner portion of the housing is formed with two diametrically opposed longi-

tudinal guide ribs 36 pressed inwardly. The housing 33 is passed at one end over the flange 23 described and is pressed inwardly between said flange and the plate 24, thereby making a secure and permanent connection of the outer housing with said plate 24.

In assembling the construction, the plate 24 having first been secured to the end of the member 18 and the plate 25 secured to the plate 24, the bolt 9 is inserted into its housing 18. A coiled compression spring 38 is then located over the housing member 18 for the bolt and the next housing member 26, having first been supplied with the plug 30 and one or more of the rings 31, is slid partly over the housing 18 or until the ends of slots 20 and 32 come into conjunction whereupon the pin 17 is passed through said slots and through the bolt 9. The outer housing 33 for the entire lock is then slid over the member 26 until the end thereof engages against the inner side of the plate 24 and is connected in place by pressing in the end of the housing member 33 between the flange 23 and said plate 24. When the outer housing 33 is passed over the housing member 26 and the flange 27 thereof its guide ribs 36 are received in the notches 28 of flange 27.

As thus assembled the spring 38 tends to move the member 26 to the position shown in Fig. 2, bringing flange 27 against the shoulder 35. On pushing the member 26 inwardly, the pin 17 traverses the slot 20 and the bolt 9 moves longitudinally from the position shown in Fig. 2, and the arms 10 thereof pass through the opening 7 of the keeper. Continued inward movement of the member 26 thereafter causes the pin 17 to traverse the slot 21, due to the engagement of the sides of the slot 32 with said pin, and the bolt is rotated about its longitudinal axis so as to bring the arms 10 against the inclined sides 8a of cams 8 of the keeper until the same ride upon the flat surfaces 8b, thereby drawing the doors of the show-case toward each other. The bolt is held from retracting by the lug 15 on the disk 14 entering an opening 39 in the lower side of the member 18 (see Fig. 3) when the bolt has been turned about its longitudinal axis to the position shown in Fig. 3.

To release the bolt a key, such as indicated at 40, is inserted into the member 26, through block 30 and ring 31, coming underneath the lug 16 of disk 14. Then on turning the key about the longitudinal axis of the lock, the same being permitted by the revolving of the block 30, see Fig. 6, the lower edge thereof rides against the cam underside of lug 16 lifting the disk and disconnecting the lug 15 from the opening at 39, whereupon the parts are released and under the influence of the spring 38 are moved to the position shown in Fig. 2. It is of course to be understood that the cams on the keeper indicated at 8

can be used so far as equivalents are concerned on the arms 10 so long as a cam action is produced which will draw the doors of the show-case toward each other on operating the
 5 lock by pushing inwardly on the same.

This construction of lock and utilization thereon on show-cases or cabinets having doors sliding by each other is very practical and serviceable. The invention has proved
 10 particularly satisfactory. The claims appended hereto define the invention which is to be considered comprehensive of all forms of structure coming within the scope of said claims.

15 I claim:

1. In a latching mechanism, the combination of a tubular supporting member, said member having an axial slot and a circumferential slot joined together, a bolt slidably
 20 and revolubly mounted in said supporting member, a projection on said bolt extending into said slots, spring means to hold the bolt in one position, and means slidable on said supporting member to move the projection
 25 along said slots against the action of said spring means whereby said bolt is moved axially and rotatably.

2. In a locking arrangement having a keeper adapted to be engaged by a bolt moving
 30 thereinto and then rotating, the combination of a housing having a slot extending both in a circumferential and an axial direction, a bolt slidably and revolubly mounted in said housing, a projection on said bolt extending
 35 into said slot and means acting diagonally on the projection to move the bolt in a path determined by the slots.

3. In combination, supporting means, a bolt slidably and revolubly supported thereby,
 40 means attached to said bolt, means for pushing the bolt in one direction, means for revolving the same, said last mentioned means comprising a housing slidably mounted adjacent said supporting means whereby it may slide
 45 in parallelism to said bolt but not rotate, said housing having a diagonal slot therein to receive the said attached means for the purpose described.

4. In combination, supporting means, a bolt
 50 slidably and revolubly supported thereby, a projection extending outwardly from said bolt, stationary means for guiding the projection axially for a distance and then circumferentially, and means for exerting pressure
 55 or force on said projection in a circumferential and axial direction.

5. In combination, a stationary housing, a second housing slidably mounted upon said
 60 stationary housing, a locking bolt slidably and rotatably mounted inside of said stationary housing, said stationary housing having an L-shaped slot therethrough, said second mentioned housing having a diagonal slot there-
 65 through, a projection extending outwardly from said locking bolt through the said slots

whereby movement of the outer housing causes the bolt to move axially and also circumferentially, and locking means on the bolt, said stationary housing having a slot
 70 therein adapted to receive said locking means for the purpose set forth.

6. In a locking device or appliance having a keeper adapted to be engaged by a bolt moving thereinto and then rotated, the combination of a housing having a slot extending both
 75 in a circumferential and an axial direction, a bolt slidably and revolubly mounted in said housing, a projection on said bolt extending outwardly through said slot, a second housing slidably mounted upon the first mentioned
 80 housing and having a diagonal slot therein adapted to receive the projection on the bolt, spring means for moving the second mentioned housing in one direction, and locking
 85 means between the bolt and the first mentioned housing whereby the locking bolt is held in one of its extreme positions.

In testimony whereof I affix my signature.

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