

C. R. SMITH & C. L. SPENCER.  
COMBINATION LOCK.

APPLICATION FILED JUNE 16, 1909.

987,265.

Patented Mar. 21, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

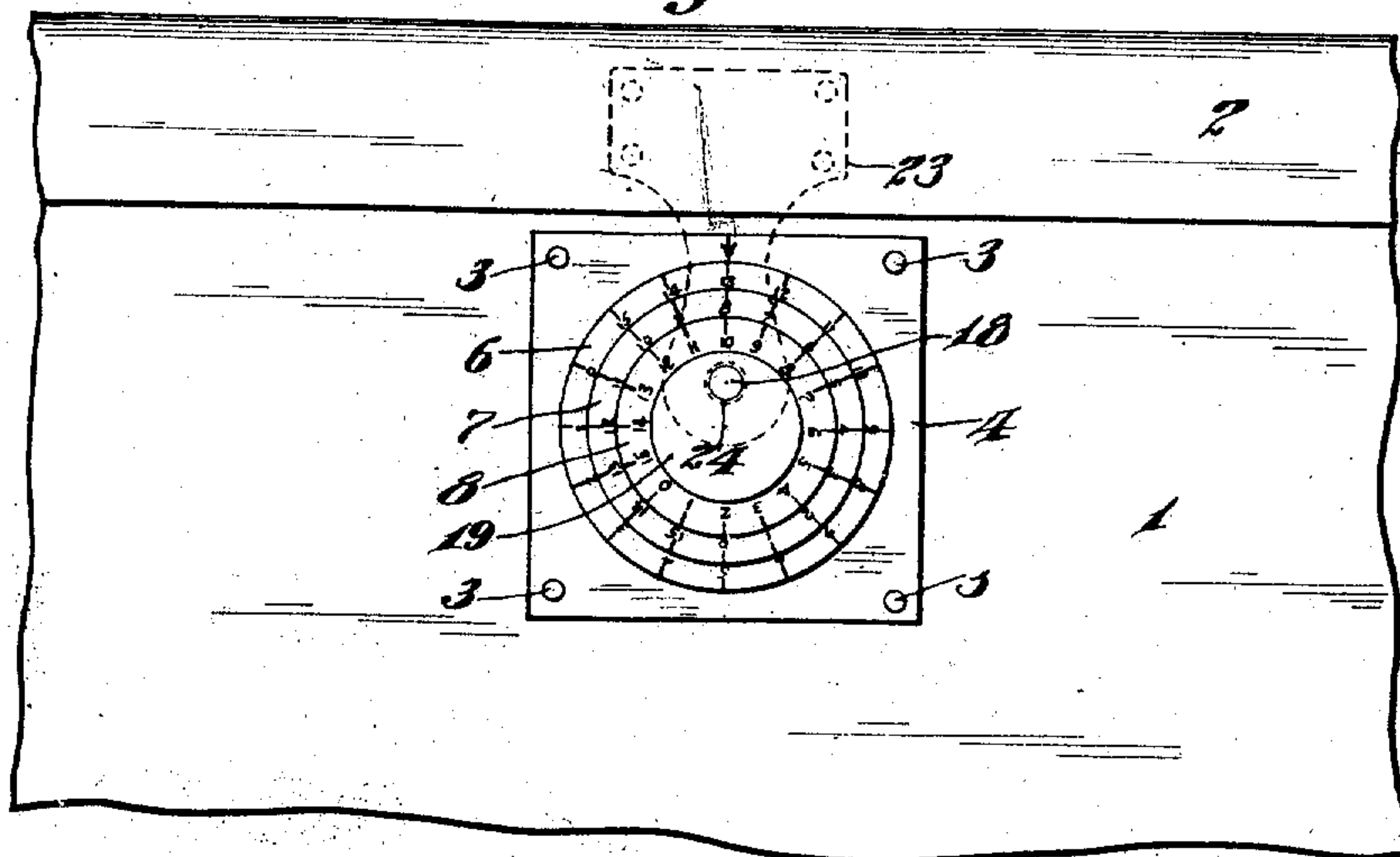
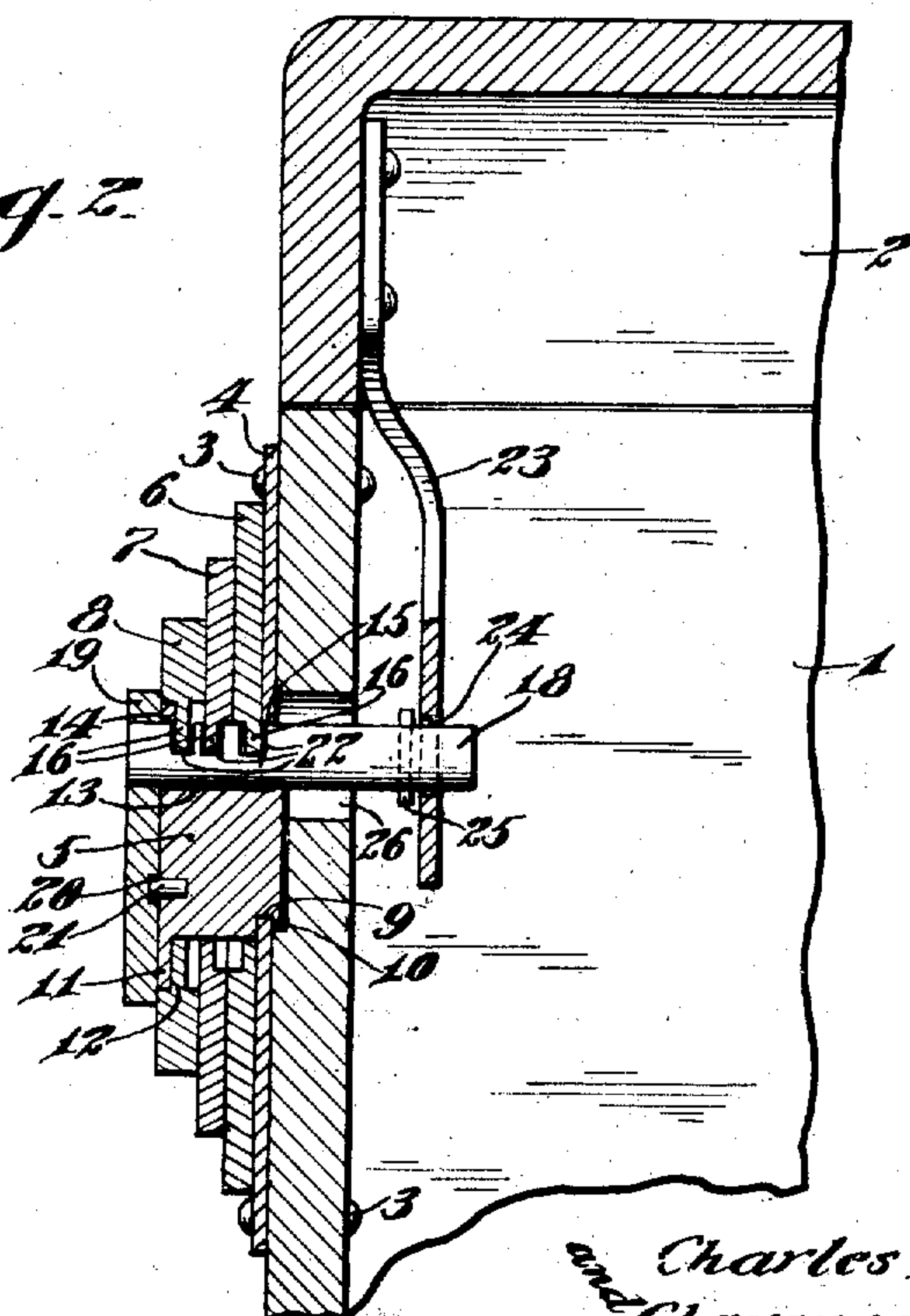


Fig. 2.



Witnesses  
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3 SHEETS—SHEET 2.

Fig. 3

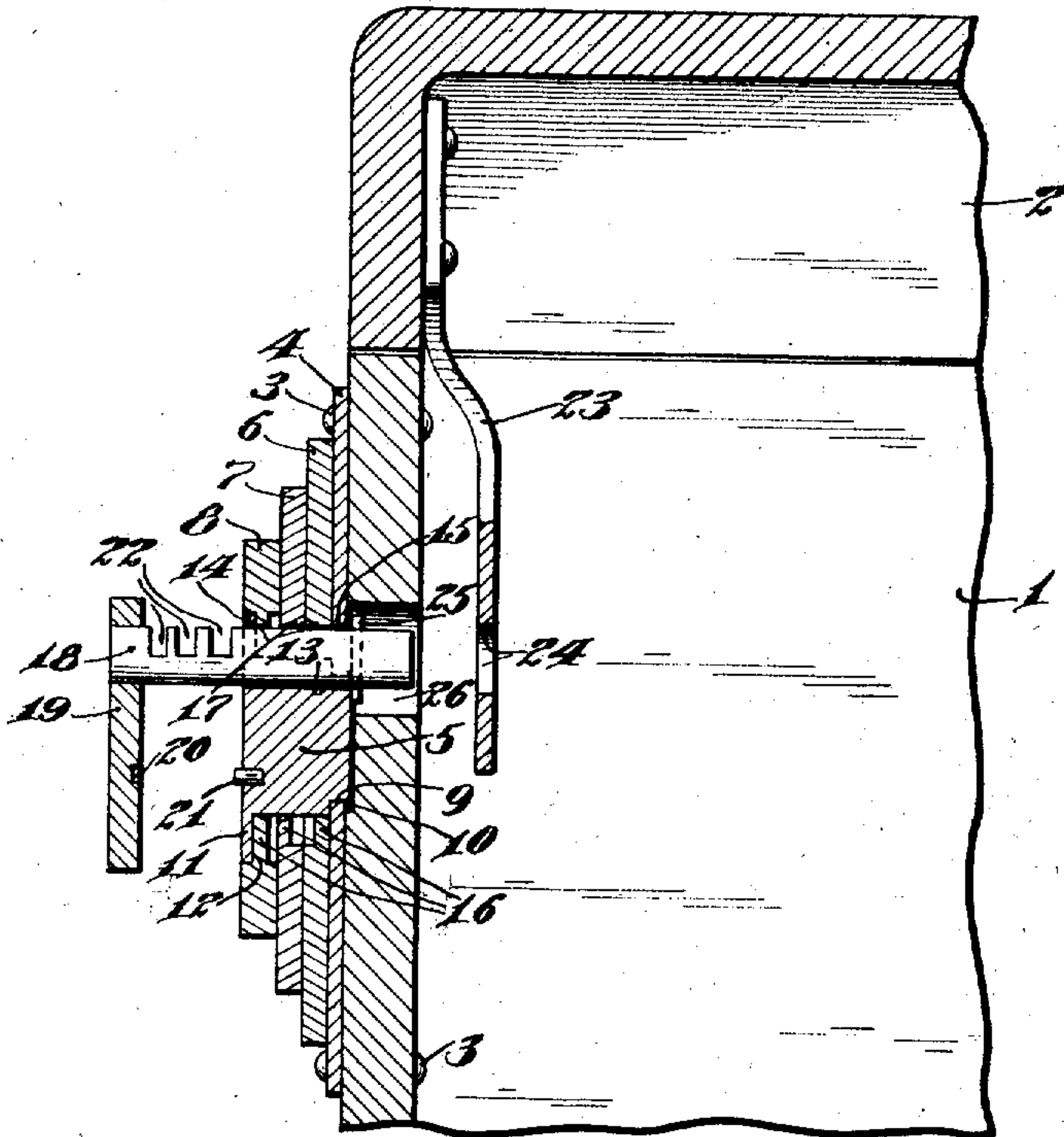
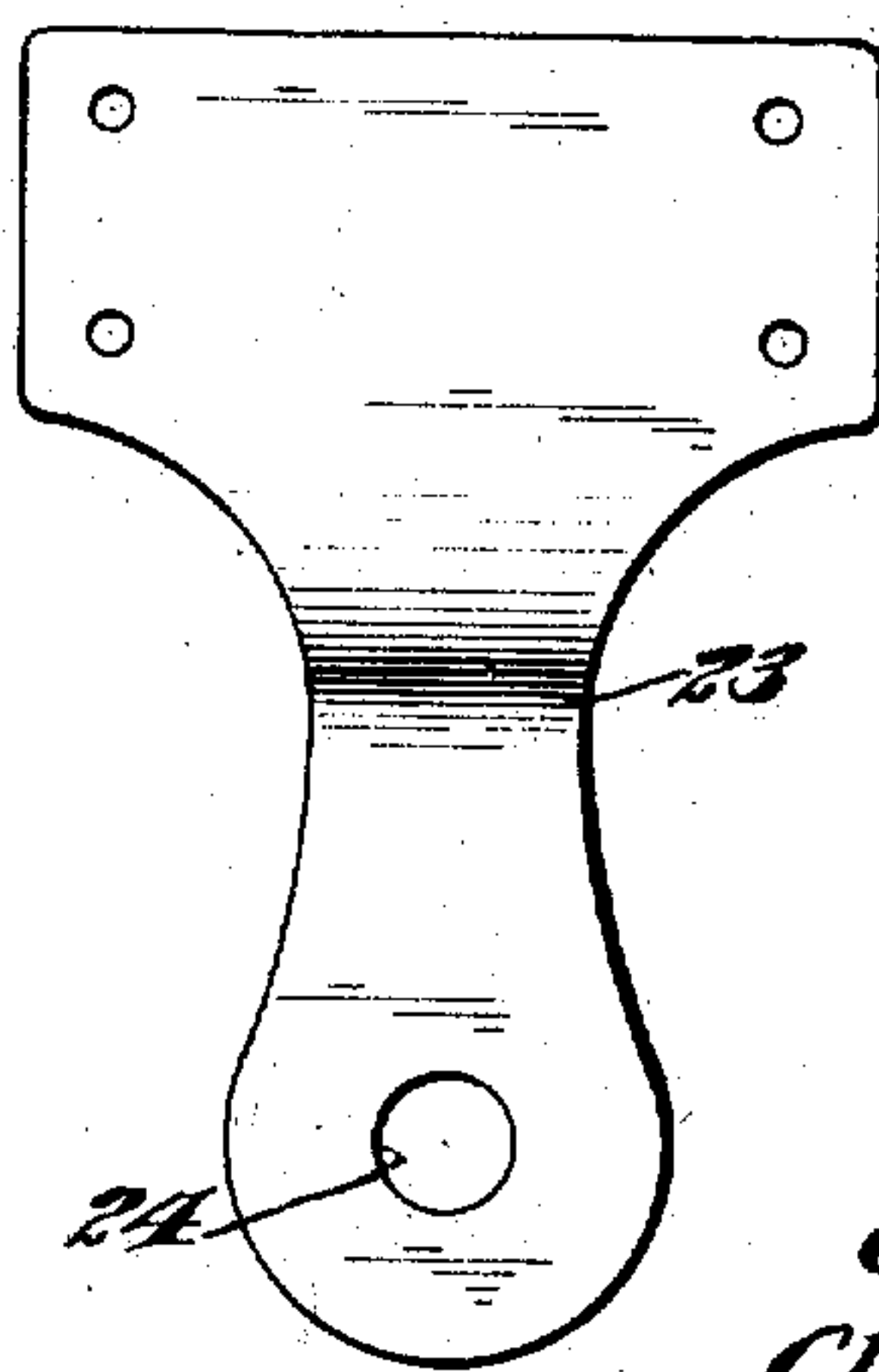


Fig. 4



Witnesses

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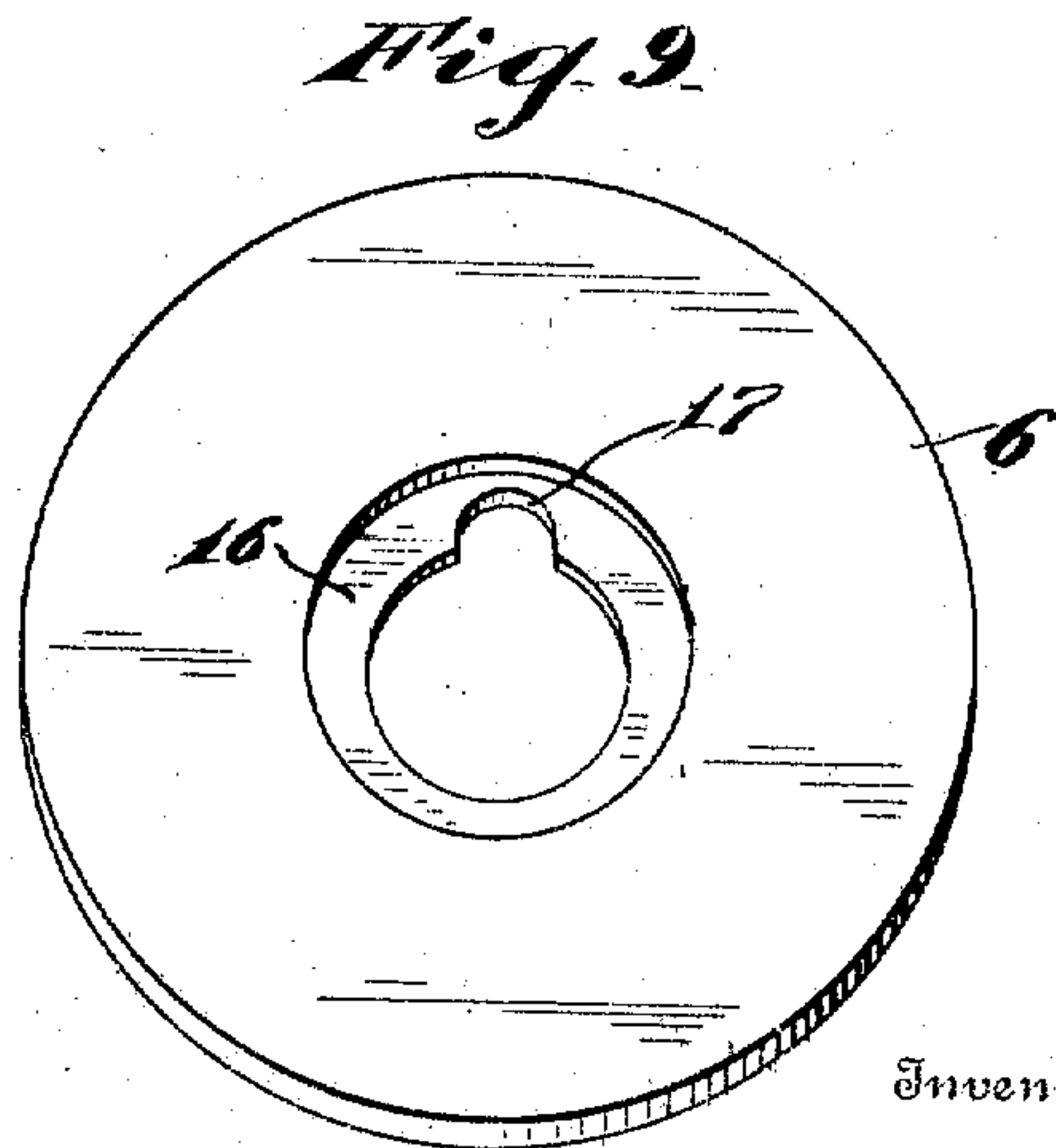
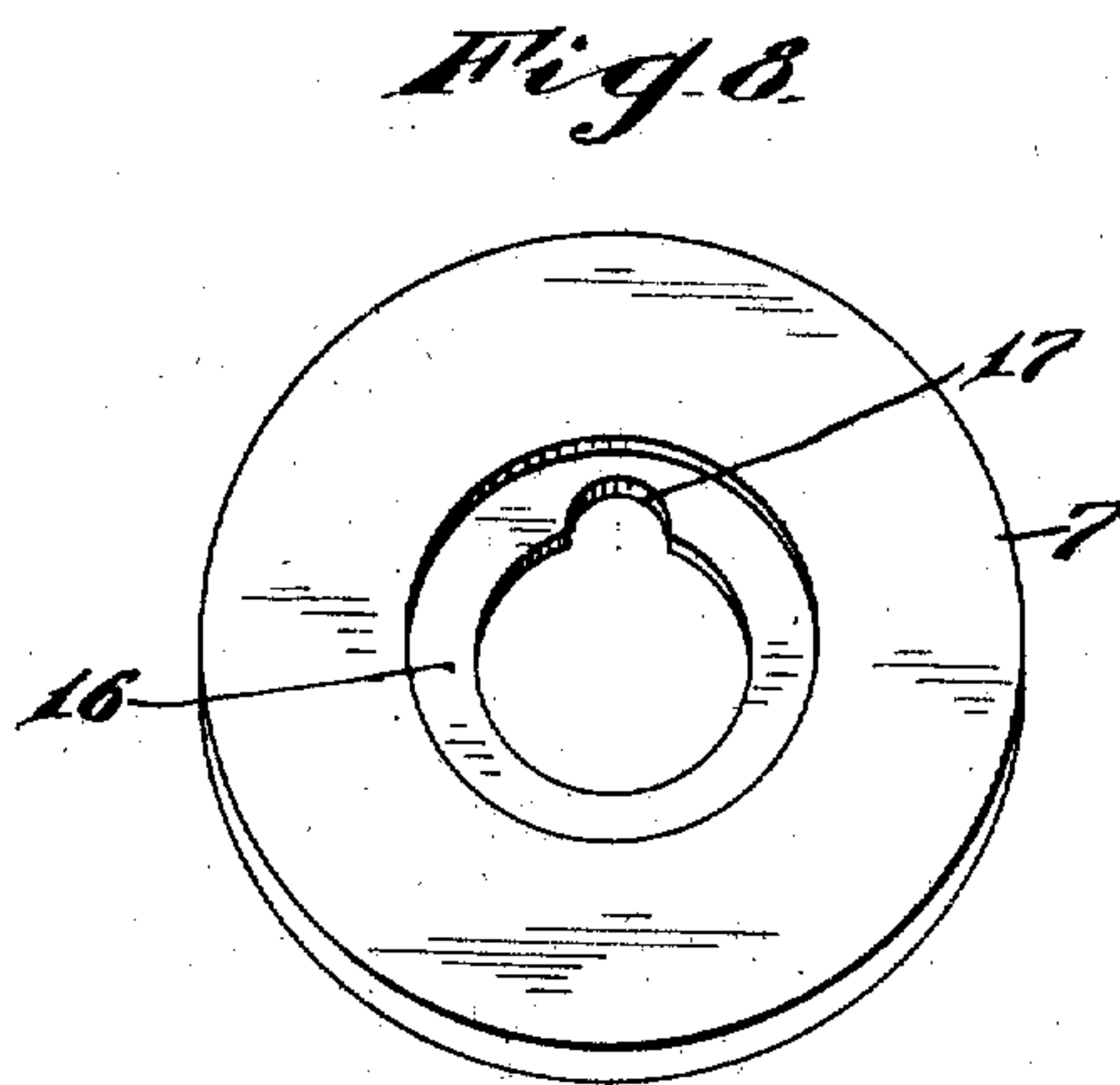
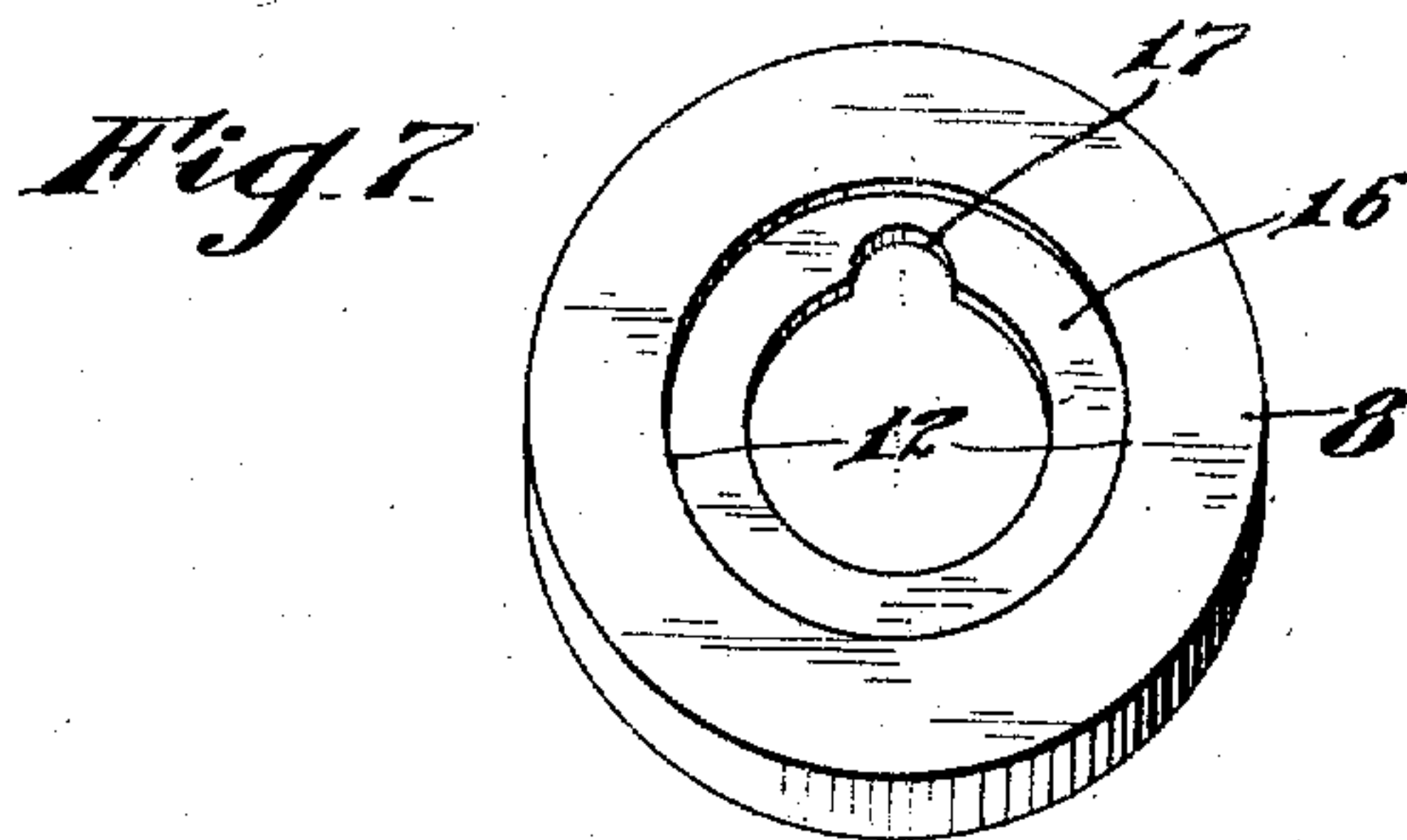
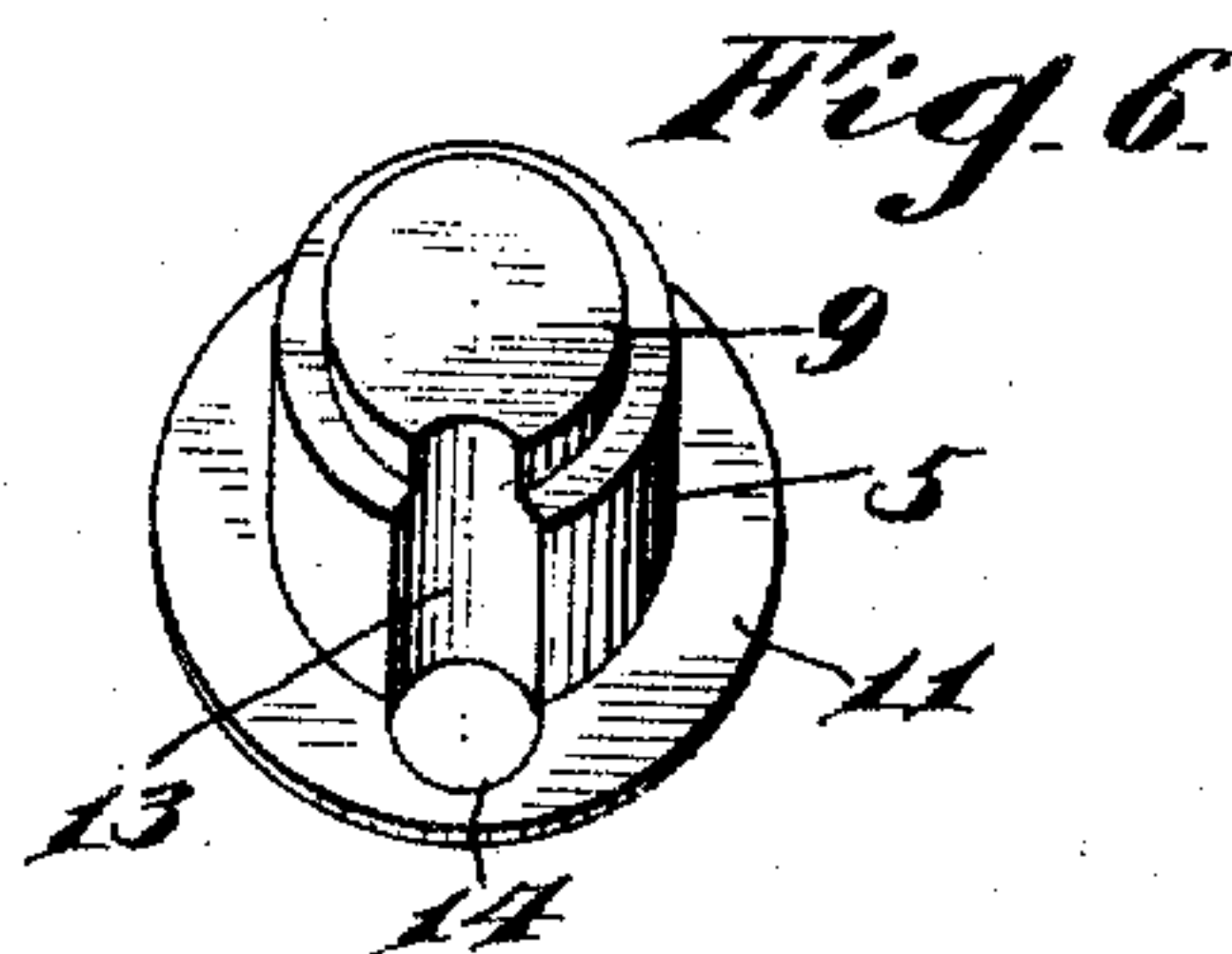
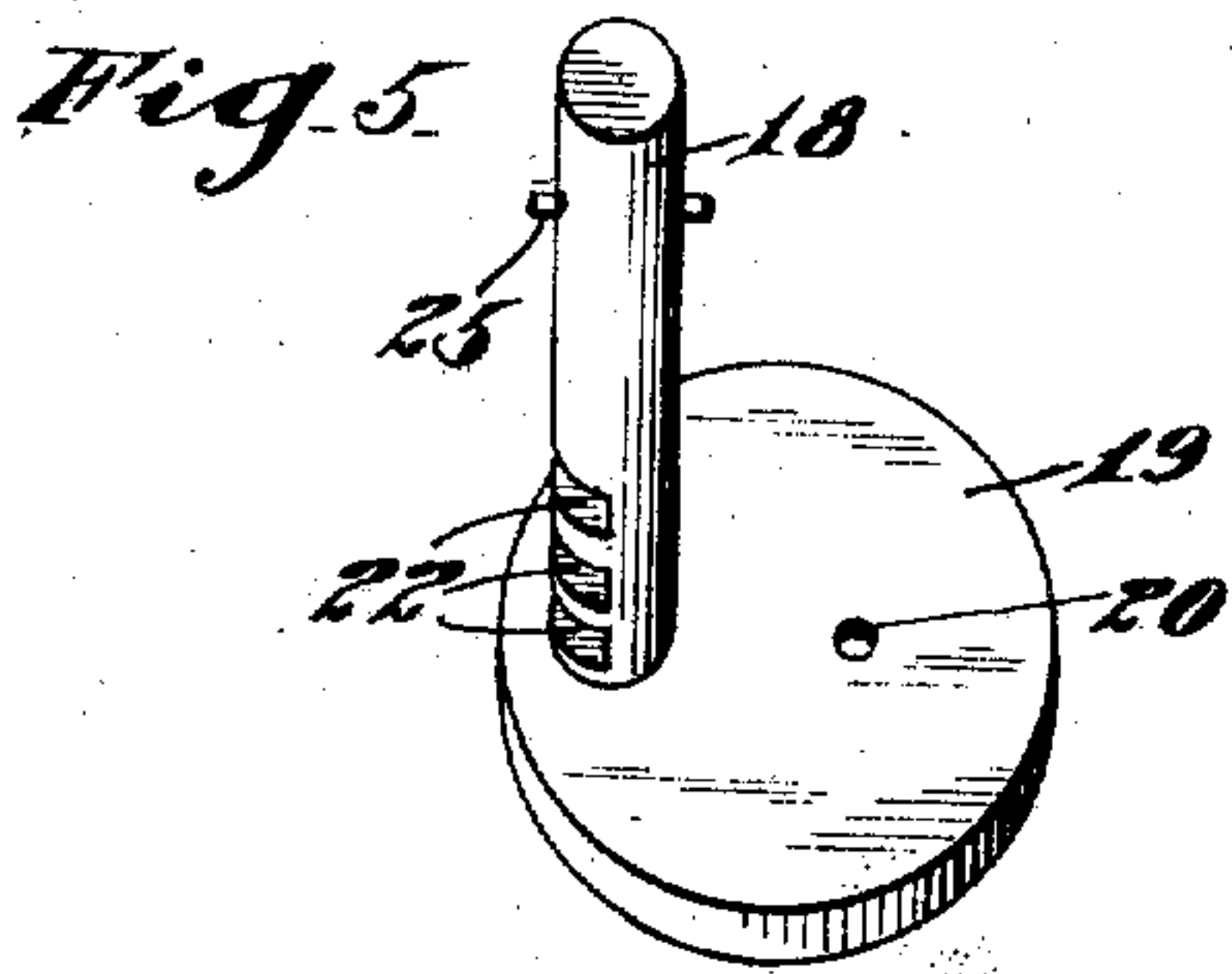
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

CHARLES R. SMITH AND CLARENCE L. SPENCER, OF CAMDEN, NEW JERSEY.

## COMBINATION-LOCK.

987,265.

Specification of Letters Patent.

Patented Mar. 21, 1911.

Application filed June 16, 1909. Serial No. 502,507.

*To all whom it may concern:*

Be it known that we, CHARLES R. SMITH and CLARENCE L. SPENCER, citizens of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Combination-Locks, of which the following is a specification.

Our invention relates to an improved combination lock, more particularly designed for use as a trunk lock, or as a lock to secure a cover upon a receptacle of any kind, but may of course be utilized for various other purposes, the object of the invention being to provide a locking bolt longitudinally movable within certain limits, and when in locked position engaged by a series of rotary tumblers, all of which latter must be turned to a predetermined position before the locking bolt can be moved to unlocking position.

A further object is to provide an improved locking bolt of this character, adapted to lock a hasp or other suitable device secure to the cover of the receptacle, and located inside of the receptacle, and provide rotary tumblers adapted to lock said bolt in locked engagement with the hasp, except at one position of said tumblers.

With these and other objects in view, the invention consists in certain novel features of construction, and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claim.

In the accompanying drawings, Figure 1, is a view in front elevation illustrating our improvements. Fig. 2, is a view in longitudinal section showing the parts in locking position. Fig. 3, is a view similar to Fig. 2, but showing the parts in unlocked position. Fig. 4, is a view in elevation of the hasp. Figs. 5, 6, 7, 8 and 9, are detail perspective views of the parts of the lock separated.

1 represents a trunk, and 2 a cover therefor. Our improved combination lock is secured to the trunk adjacent the meeting edges of the cover and the trunk, by means preferably of rivets 3 passed through the trunk, and through openings in a plate 4 constituting the base plate of our lock.

5 represents the block, which constitutes a journal on which a series of rotary tumblers 6, 7 and 8 respectively, are mounted to turn.

The inner end of this block 5 is reduced to form a shoulder 9, and the reduced portion of the block is positioned in an opening in plate 4, and is upset at its inner end as shown at 10, to clamp the shoulder 9 against plate 4 and rigidly and permanently connect the block and plate. The outer end of block 5 is provided with an annular flange 11, which is positioned in a corresponding recess 12 in the outer tumbler 8, so that when said parts are assembled, the tumblers, while permitted free rotary movement, are prevented from any movement longitudinally of the block 5, so as to prevent any possibility of the disconnection of the tumblers from the journal block 5. This journal block is provided with a longitudinal recess 13 registering with an opening 14 in the flange 11 of said block, and also with an opening 15 in plate 4. All of the tumblers 6, 7 and 8, are made with narrow inwardly projecting circular flanges 16, the inner diameter of the circle formed by said flanges being just the proper size to turn freely on the journal block 5, and at predetermined points, the said flanges 16 are made with semi-circular recesses 17, so that when all of the recesses 17 in the tumblers 6, 7 and 8 register with the recess 13 in block 5, a cylindrical opening is provided to accommodate a cylindrical bolt 18, which latter is rigidly secured to a disk or head 19 at its outer end, and the latter is provided on its inner face with a socket 20 to receive a pin 21 on block 5, and hold the head or disk 19 against rotary movement.

The locking bolt 18 is provided with a series of recesses 22, which when the tumblers 6, 7 and 8, are turned, so that their recesses 17 do not aline with the recess 13 of the block, will receive the flanges 16 of said tumblers, and prevent any longitudinal movement of the bolt, thus securely holding the bolt in its locked position as shown most clearly in Fig. 2.

To the inner face of cover 2, a hasp 23 is secured, and is made with an opening 24 to receive the locking bolt 18, when the latter is in its locking position, and a cross pin 25 is secured in the locking bolt 18, and is movable through an opening 26 in the trunk wall 1, and serves to engage the plate 4 and limit the outward or unlocking movement of the bolt.

The operation of our improvements is as



follows: When the parts are in the position shown in Fig. 2, the bolt 18 is projected inwardly through the opening 24 in hasp 23, and the tumblers 6, 7 and 8 are turned, so as to bring their recesses 17 out of register with the bolt, and hence position the flanges 16 in the recesses 22, and securely lock the bolt against longitudinal movement. When it is desired to unlock the trunk, a person knowing the proper combination, turns the tumblers 6, 7 and 8 to a position to bring the proper numbers on the face of the tumblers into alinement with a mark on the plate 4, and when these tumblers are so turned, the recesses 17 in the tumblers will all register with the recess 13 in block 5, and the head 19 and bolt 18 may be drawn outward far enough to release the hasp 23, but any such movement will be limited by the pin 25 striking plate 4, as shown clearly in Fig. 3. Of course, in constructing locks of this kind, the recesses 17 will be located at various positions, and only the owner of the lock will know at what numbers on the tumblers such recesses are located, and hence no one, except he knows the combination, could turn the tumblers so as to register the recesses and permit the bolt to be opened.

As shown in Fig. 3, when the bolt is drawn outward, it is positioned in the several recesses 17, so that the tumblers cannot be turned until the bolt is in locking position, and this is a desirable feature, as it prevents any annoyance of having to work the combination to lock the bolt, as well as unlock it.

Various slight changes might be made in the general form and arrangements of parts described without departing from our invention, and hence we do not restrict ourselves to the precise details set forth, but consider ourselves at liberty to make such

changes and alterations as fairly fall within the spirit and scope of the claim.

Having thus described our invention what we claim as new and desire to secure by Letters Patent is:

In a lock, a base plate, a cylindrical block projecting from the face thereof having an outwardly extending peripheral flange on the outer end thereof, a plurality of tumblers rotatably mounted on said block and fitting snugly between said plate and said flange, a sliding cylindrical bolt eccentrically mounted in said block and extending longitudinally therethrough, said bolt extending laterally beyond the periphery of said block, the portion of said bolt beyond the periphery of said block being provided with a plurality of transverse grooves or recesses to receive the inner edges of said tumblers, said grooves being narrower than the thickness of said tumblers and the inner edges of said tumblers being reduced in thickness to extend within said grooves, and said reduced inner edges being notched to permit sliding and rotation of the bolt when in one position, an eccentric head on said bolt adapted to lie concentric with said tumblers when in one position and co-acting locking devices on the inner face of said head and on said block to maintain the bolt and head in proper position when said bolt is in innermost position, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

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Witnesses:

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