

(No Model.)

T. N. SCOTT.
LOCK.

No. 587,456.

Patented Aug. 3, 1897.

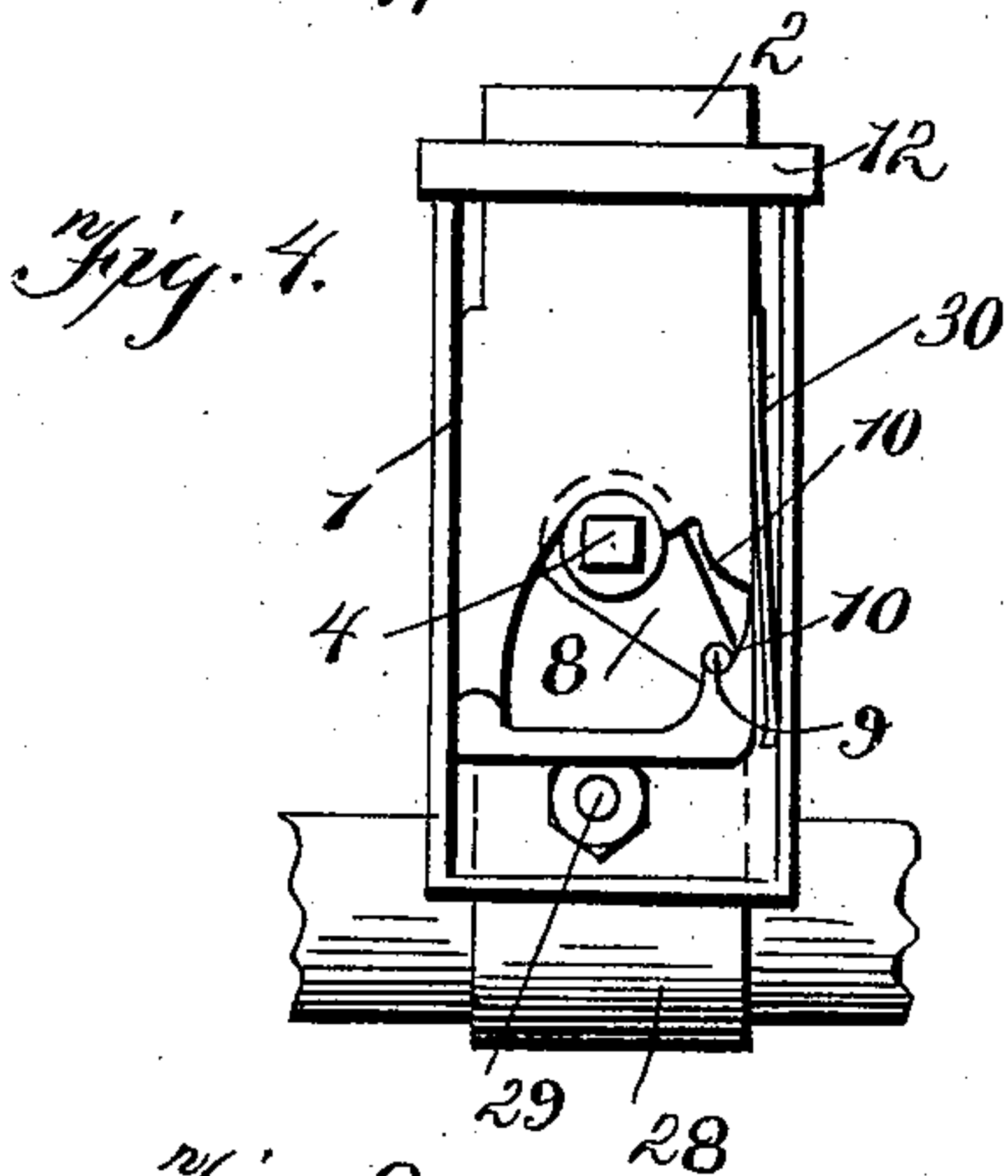
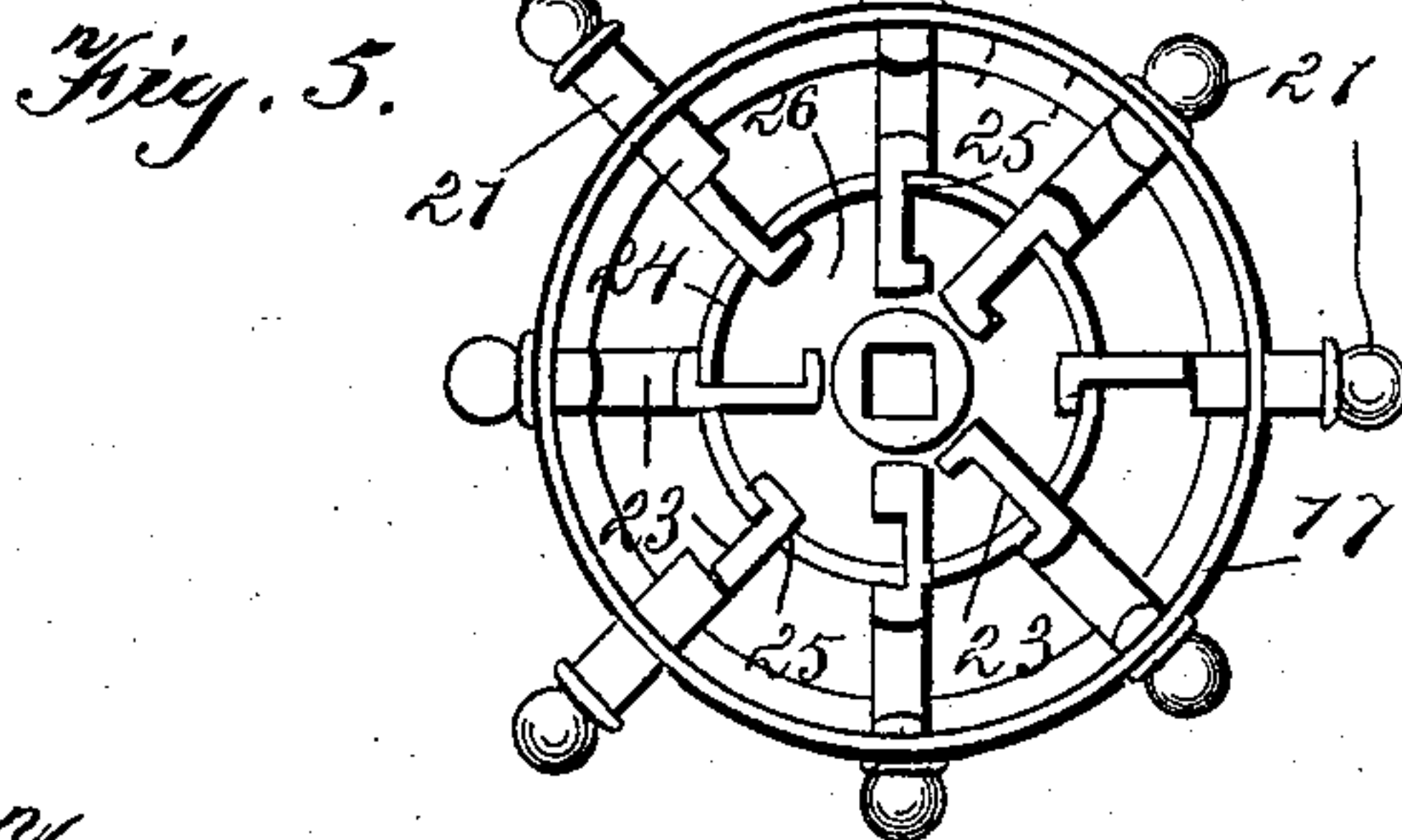
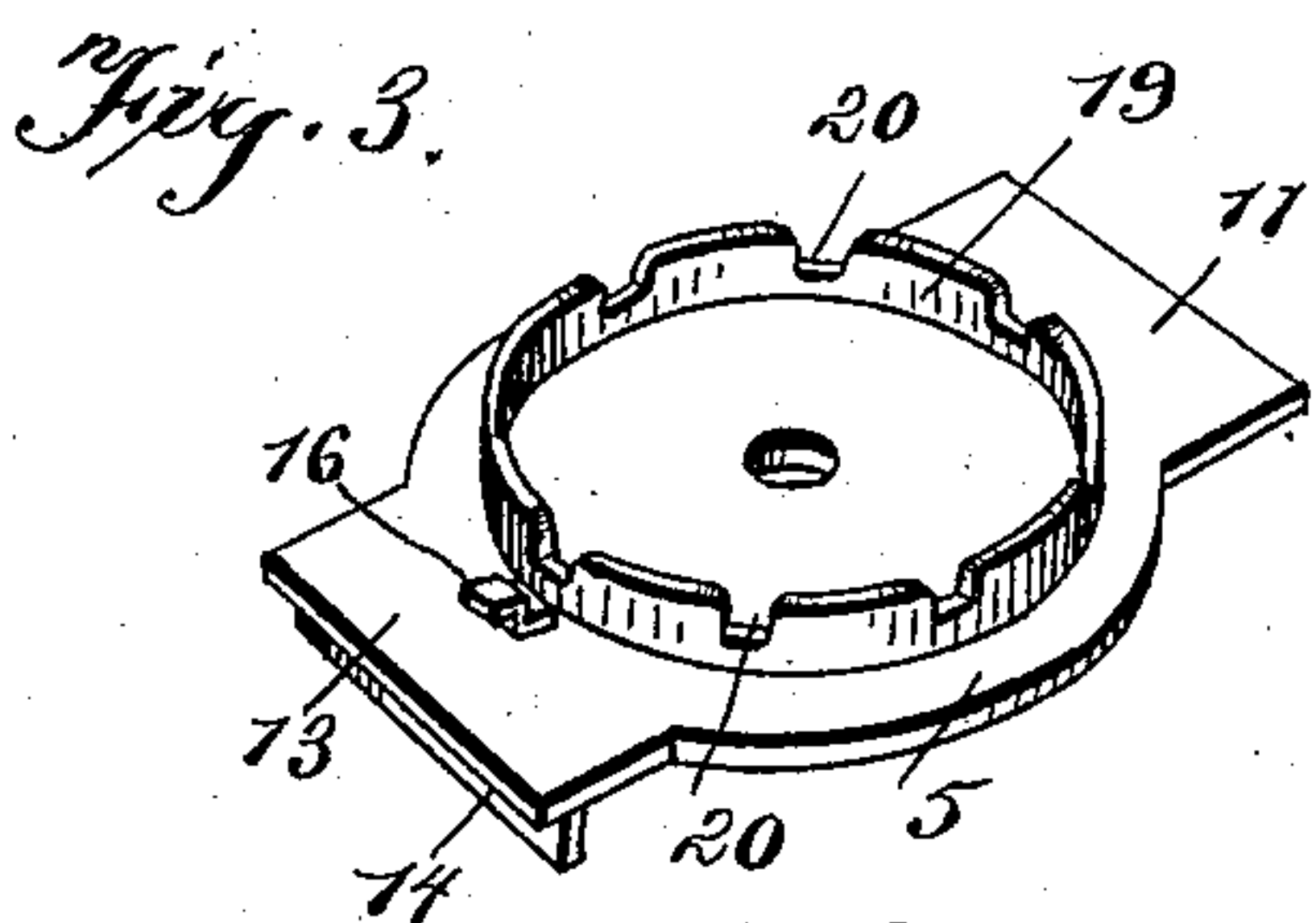
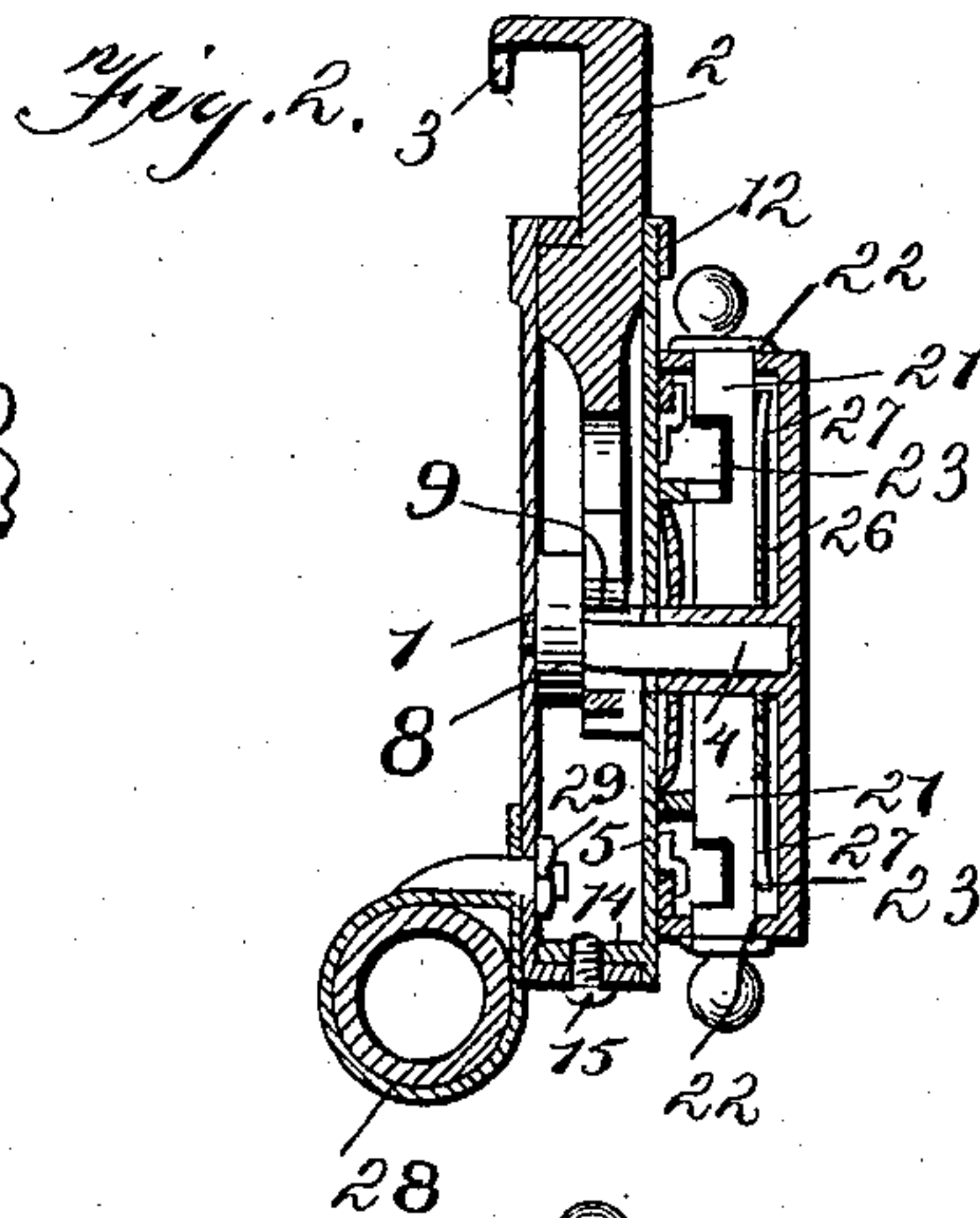
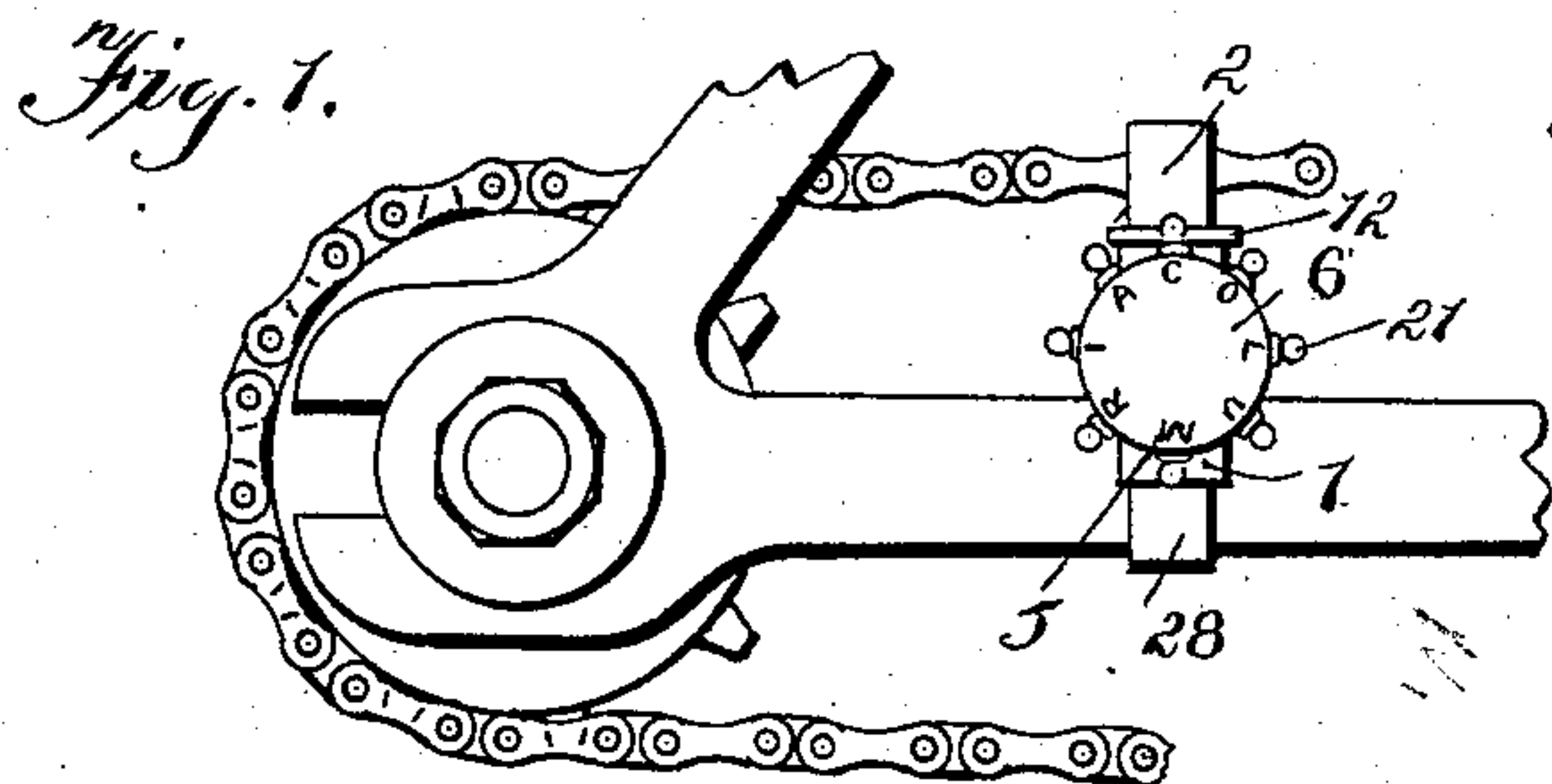


Fig. 6.

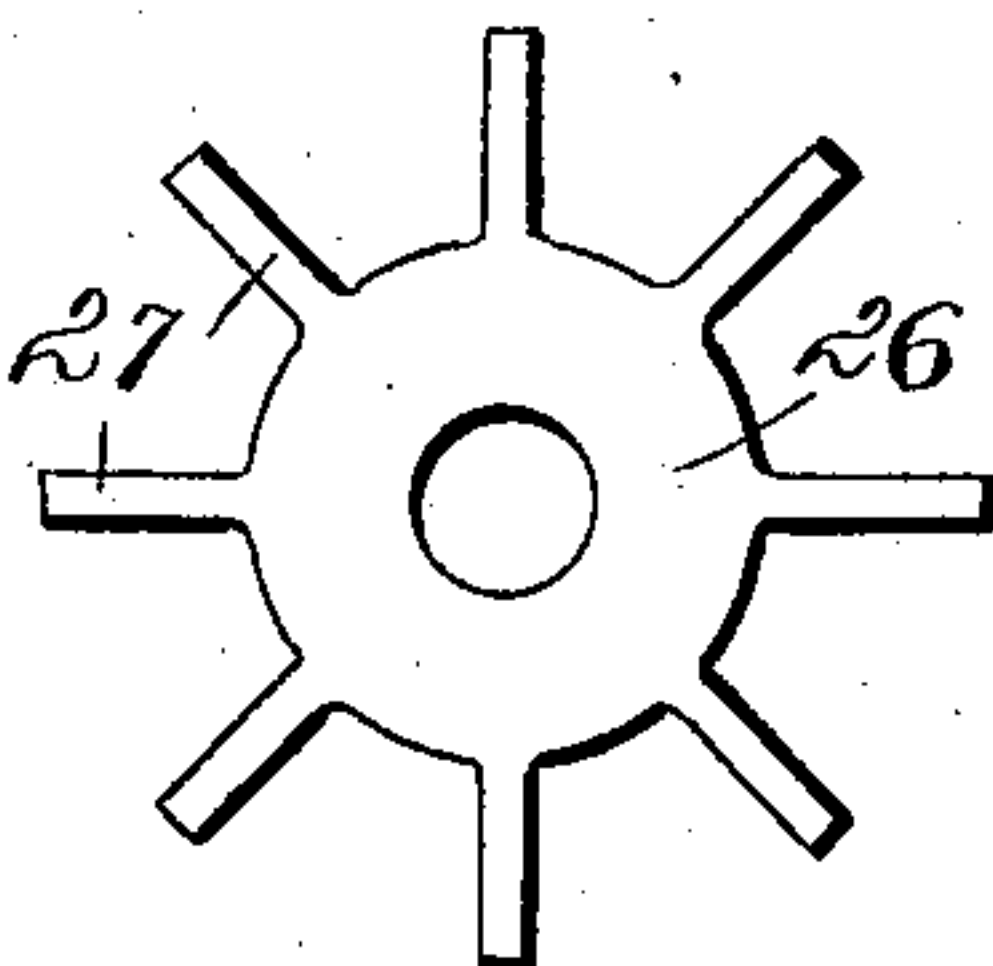


Fig. 7.

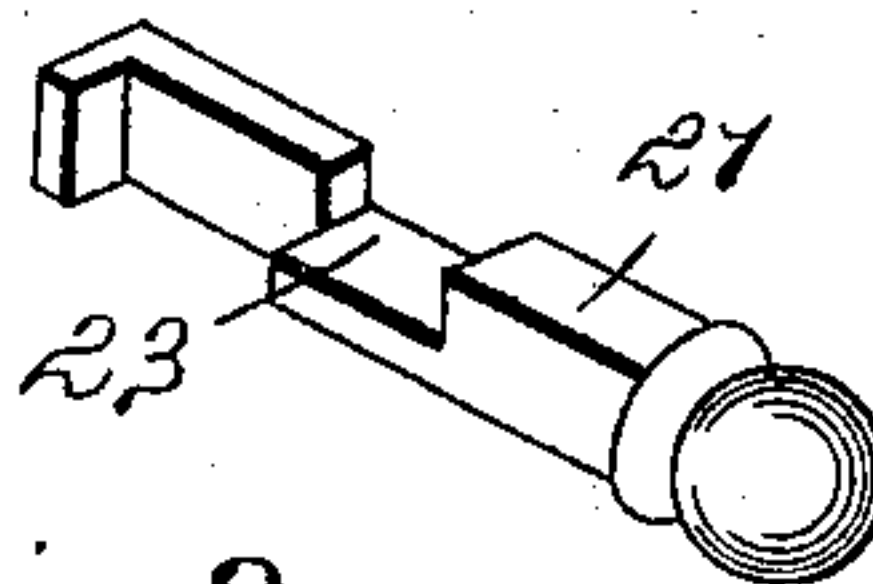


Fig. 8.

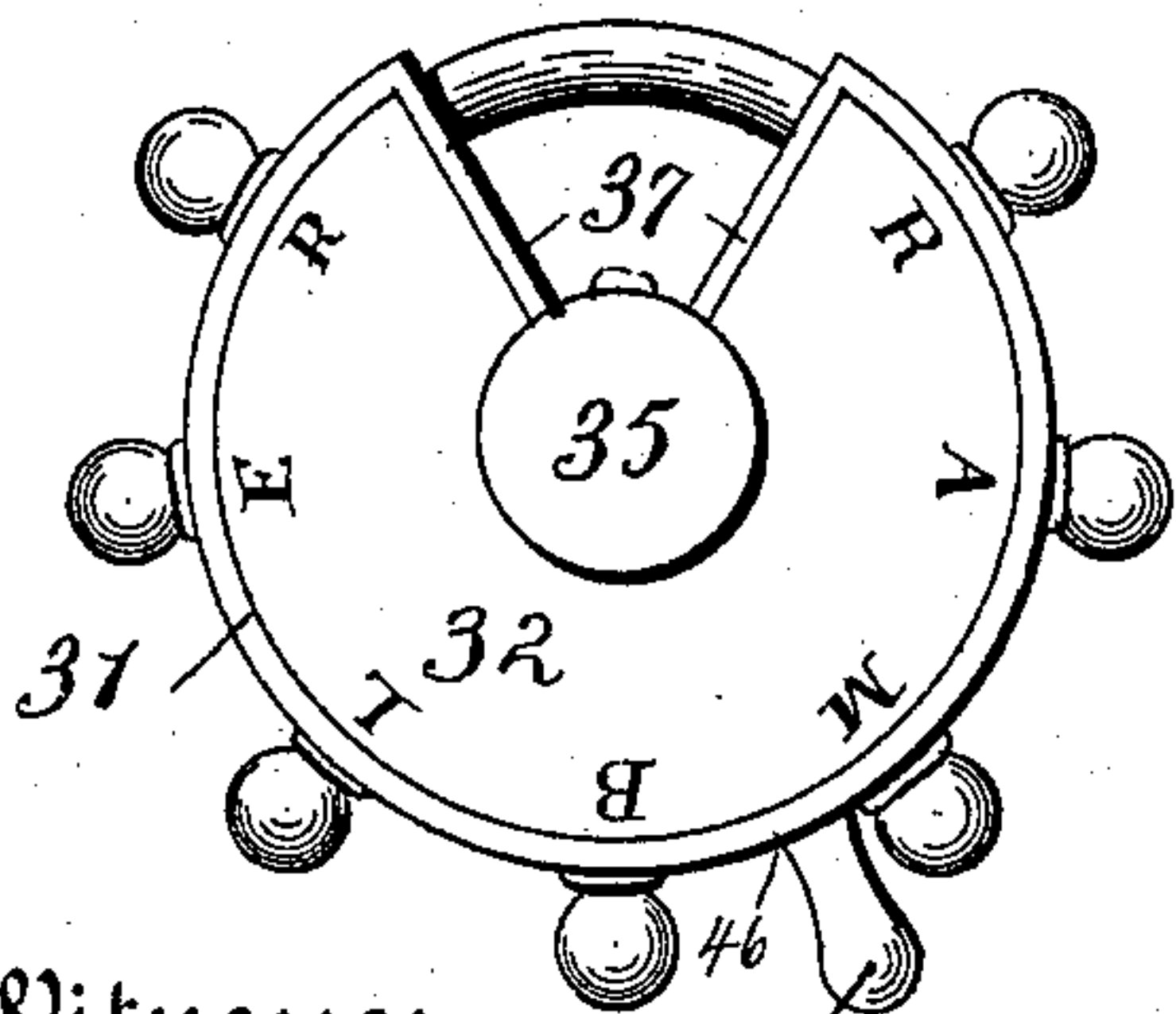


Fig. 9.

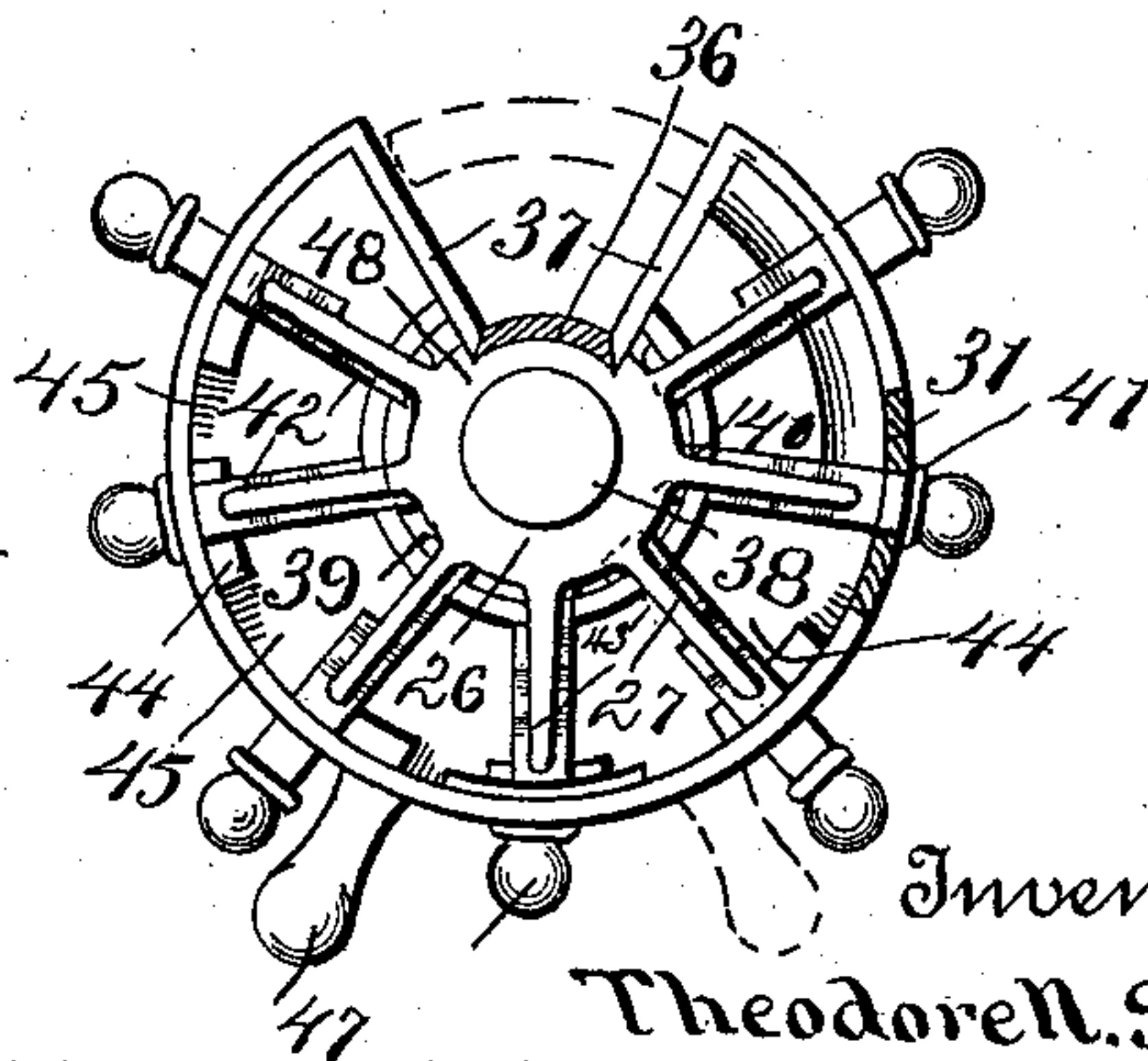


Fig. 10.

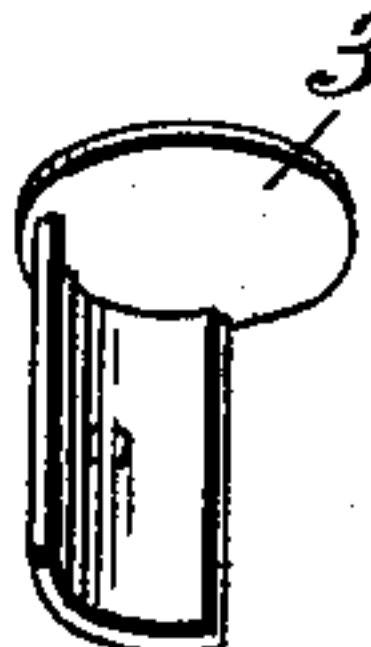
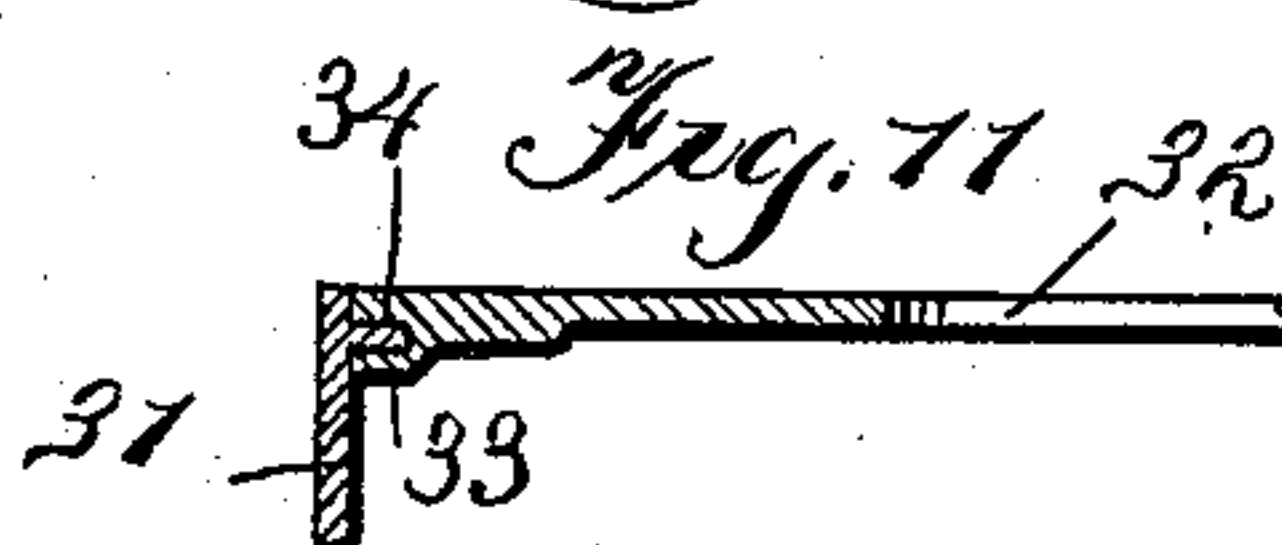


Fig. 11.



Witnesses

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LOCK.

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To all whom it may concern:

Be it known that I, THEODORE N. SCOTT, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to locks, and more particularly to that class of locks in which keys are dispensed with and movable pins are used for securing the bolt in either its closed or open position.

The objects of the invention are to produce a lock of this kind which will be simple, cheap, and effective, and which can be applied to a variety of uses, but more especially to locking bicycles, &c.; and it consists in the combination and improved construction of the parts of the same, as will be hereinafter more particularly set forth.

Referring to the accompanying drawings, in which the same reference-numeral indicates corresponding parts in each of the views in which it occurs, Figure 1 is a plan view of a lock embodying my invention applied to a bicycle. Fig. 2 is a longitudinal sectional view of the lock. Fig. 3 is a perspective view of one of the parts removed. Fig. 4 is a plan of the casing with the bolt in position. Fig. 5 is an inverted plan of the cap. Figs. 6 and 7 are detail views. Fig. 8 is a plan view of another form of lock embodying my invention. Fig. 9 is a similar view with the front removed, and Figs. 10 and 11 are detail views.

Referring more particularly to the drawings, 1 indicates the casing within which the bolt 2 is secured, with one end projecting therefrom and preferably provided with hooks or jaws 3 for engaging with the chain of a bicycle and locking it. Journaled in the bottom of the casing is a short spindle 4, which projects up through a plate 5 and is loosely secured at its upper end to a cap 6. The lower end of the spindle is provided with a short arm 8, the outer end of which may be provided with a pin 9, which engages with

shoulders 10, formed in the recessed portion of the bolt, and moves it back and forth as the spindle is oscillated by the movement of the cap. The plate 5 is substantially circular, with a projection 11 at one end which fits under a band 12 and has a similar projection 13 at its opposite end which is bent at an angle or provided with a perforated lip 14, which is secured within the casing by means of a screw 15. If desired, the plate may be provided with two lips or catches 16, which fit underneath the flanged edge 17 of the cap 6 and prevent the edge of the cap and the plate from being disconnected, the flange being notched or recessed, as at 18, for the passage of the lips in assembling the parts.

At a short distance from the edge of the plate 5 it is provided with an annular flange 19, the edge of which is provided with notches or recesses 20. Fitting within these notches are radial pins 21, the ends of which project out through holes 22 in the wall of the cap, and which may be provided with knobs or otherwise ornamented. The sides of the pins adjacent to the flange are each provided with a notch or recess 23, which will permit of the cap being rotated upon the plate when the notches in the pins register with the uncut portions of the flange. For the purpose of guiding these pins and keeping them at the proper distance apart at the inner ends the cap is provided with an annular flange 24, which is provided with notches 25, within which the inner ends of the pins move. These pins are interchangeable, and the notches in a portion of them are located near the inner end, so that they must be drawn out to make them register with the flange. These I call the "actives," as they must be moved to lock or unlock the bolt, while the notches in the other pins, which I call the "inactives," normally register with the flange, so that if they are drawn out they will prevent the bolt being moved in either direction.

For the purpose of retaining the pins in either position in which they are placed suitable springs are provided, which engage with them and hold them in their retracted or extended position. These springs may be formed by providing a plate 26 with a series of arms or leaves 27, the outer end of each arm bearing against one of the pins. By

thus providing a portion of these pins with notches which normally lie in the path of the flange when the cap is rotated and the remainder with notches which normally do not register with the flange it is evident that before the cap can be rotated on the plate the pins that do not register must be moved to such an extent as to cause all of the notches to lie in the path of the flange. This can be done by moving the pins out or in, as the case may be, to cause the notches or recesses to register with the flange and permit of the rotation. As the cap must be moved at least the distance between two pins it is evident that after it has been thus moved the inactive pins may be moved so as to throw their recesses out of register with the flange and thus lock the bolt and prevent its being moved in the opposite direction.

When the lock is to be used in connection with a bicycle, I prefer to secure it to some portion of the frame—as, for instance, adjacent to the chain—by means of a flexible strap or loop 28, one end of which is perforated and the other end is screw-threaded and passes through said perforation and also through a perforation in the wall of the casing and is provided upon its inner end with a nut 29, which when securing the lock to the frame is screwed down tight enough to cause the circular portion of the loop to tightly clamp the frame. In this manner the lock is virtually swiveled to the frame, so that it may be thrown at an angle thereto to engage with the chain or other part of the machine which it is desired to secure against movement. To permit of the retraction of the bolt, the rear end may be slightly raised to pass over the nut 29, or it may be left open by making the shoulders 10, which engage with the pin 9, large enough to prevent the withdrawal of the bolt from the casing. The bolt may also be provided with a spring 30 for causing the different parts to properly engage with each other.

Another form of my invention is shown in Fig. 8 and is adapted to be removed entirely from the machine or other place where it is used, and consists of a segmental casing 31, the top of which, 32, is removable and may be secured in position by means of a lip 33, which engages with a shoulder 34 on the wall of the casing and is held in position at the opposite point of the casing by means of a key 35, which fits between shoulders 36, formed by the converging ends of the walls 37, of the cut-away portion of the casing. A hub 38, which projects centrally from the bottom of the casing, supports the top against inward pressure and also serves as a seat for a screw which may pass through the key 35 and prevent removal.

Adjacent to the hub 38 is an annular flange or projection 39, the edge of which is notched or recessed, as at 40, to correspond with the openings 41 in the wall of the casing. Fitting within these recesses and openings are the

longitudinally-movable pins 42, provided with recesses 43 similar to the pins shown in the construction of the other form of lock. Between these pins and the bottom of the casing is a semiannular bolt 44, one end of which projects through an opening in one of the end walls 37 of the casing and is adapted to be projected substantially against the face of the other wall and has its remaining portion provided with notches or recesses 45, within which the uncut portion of one or more of the pins may be located to prevent the movement of the bolt in either direction. To provide means for moving the bolt, the casing is provided with a slot or opening 46, through which projects a knob or handle 47, secured to the bolt. By making the notches in the pins so that some of them are normally out of register with the bolt and the remaining ones in register it is evident that as soon as the actives or those that are out of register are moved so as to cause their notches to register with the bolt the bolt may be moved back and forth as desired. The pins may be held in their adjusted position by means of springs 48, substantially similar to what is shown in the other form of lock.

As the pins in both forms of lock are interchangeable it is evident that their arrangement can be changed at will, thereby requiring a different manipulation and rendering it substantially impossible for any one unacquainted with the arrangement to withdraw the bolt without taking so much time as to attract attention and defeat his object. The difficulty of unlocking the bolt is increased by the use of the inactive bolts, which are as liable to be drawn out as the actives and thereby lock the bolt against movement, although the correct actives are moved.

As an additional feature in the construction of my lock I may provide the portion of the casing adjacent to each pin with the letters spelling the name of the bicycle, thereby utilizing the lock as an advertisement and also as a means for remembering which of the pins are to be manipulated in operating the lock. As hereinbefore set forth, the key 35 may be secured against movement by means of a screw passing through it into the hub, which will be covered with whatever is secured by the bolt and thereby rendered incapable of removal. The same object is secured in the first form of lock by locating the nut 29 upon the inner end of the clip or loop 28 within the casing and then securing the plate and cap upon the casing by means of the screw 7.

From the foregoing description it will be seen that my locks are very compact and simple and that they can be manipulated whether there is light enough to see the combination or not, as all that is necessary is to know the order in which the pins are to be manipulated, and they can be withdrawn or pushed in by locating them by feeling as well as by sight. This will avoid all danger of

being unable to unlock the machine at any place where it is unable to secure a light, and by using the pins for locking and unlocking the bolts there is no need of carrying a separate key, which is in danger of being lost or forgotten and rendering the lock inoperative.

Having described my invention, what I claim is—

10 1. In a lock, the combination, with a casing provided with an inner and an outer recessed flange, of a series of radially-arranged recessed pins therein, the recesses of the pins being normally out of register with each other, and a recessed portion intermediate the flanges in position to be engaged by the unrecessed portion of the pins when the device is in its locked position and to register with the recesses of the pins when it is unlocked, substantially as set forth.

2. In a lock, the combination, with a casing provided with an outer perforated flange and an inner recessed flange, of a series of radially-arranged interchangeable recessed pins therein, a hub projecting from the casing concentrically within the inner flange, a recessed portion intermediate the flanges and adapted to be engaged by said pins, and means for securing the top of the casing to said hub, substantially as set forth.

3. In a lock, the combination, with a casing provided with an outer perforated wall and an inner recessed wall, of a series of radially-arranged interchangeable recessed pins therein, a plate provided with a series of radially-arranged spring-leaves in engagement with said pins and adapted to hold them in their adjusted positions, and a recessed portion intermediate said walls, and adapted to register with the recesses in the pins, substantially as set forth.

4. In a lock, the combination, with a casing, of a locking-bolt therein, an oscillating spindle provided with an arm in engagement with the bolt, a plate over the casing provided with

an annular recessed flange, a cap upon the spindle provided with an outer and an inner recessed flange, a series of interchangeable pins arranged radially within the cap and adapted to engage with the flanges, and means for securing the cap to the spindle, substantially as set forth.

5. In a lock, the combination, with a casing, of a bolt therein, of a plate provided with a recessed flange, a cap provided with a series of recessed pins, a flexible loop, one end of which is perforated and the opposite end is screw-threaded and projects into the casing, and a nut upon the inner end of the screw, substantially as set forth.

6. In a lock, the combination, with a casing, of a substantially rectangular casing, one end of which is open and the other end is provided with a perforation, a bolt within the casing projecting through the open end and provided with means for engaging with the movable portion of a bicycle, a substantially circular plate provided with diametrically opposite projections, one of which engages with a loop at the open end of the casing, and the opposite end is provided with a perforated flange and fits within the opposite end of the casing, said plate being provided with an annular recessed flange, a screw through the end of the casing into the flange, a cap upon the plate provided with radially-arranged recessed pins, a spindle secured to the shaft and projecting into the casing, the lower end of which is provided with means for engaging with the bolt, a flexible loop, one end of which is provided with a screw and projects through the other end and is secured within the casing, substantially as set forth.

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

THEODORE N. SCOTT.

Witnesses:

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W. S. BOYD.