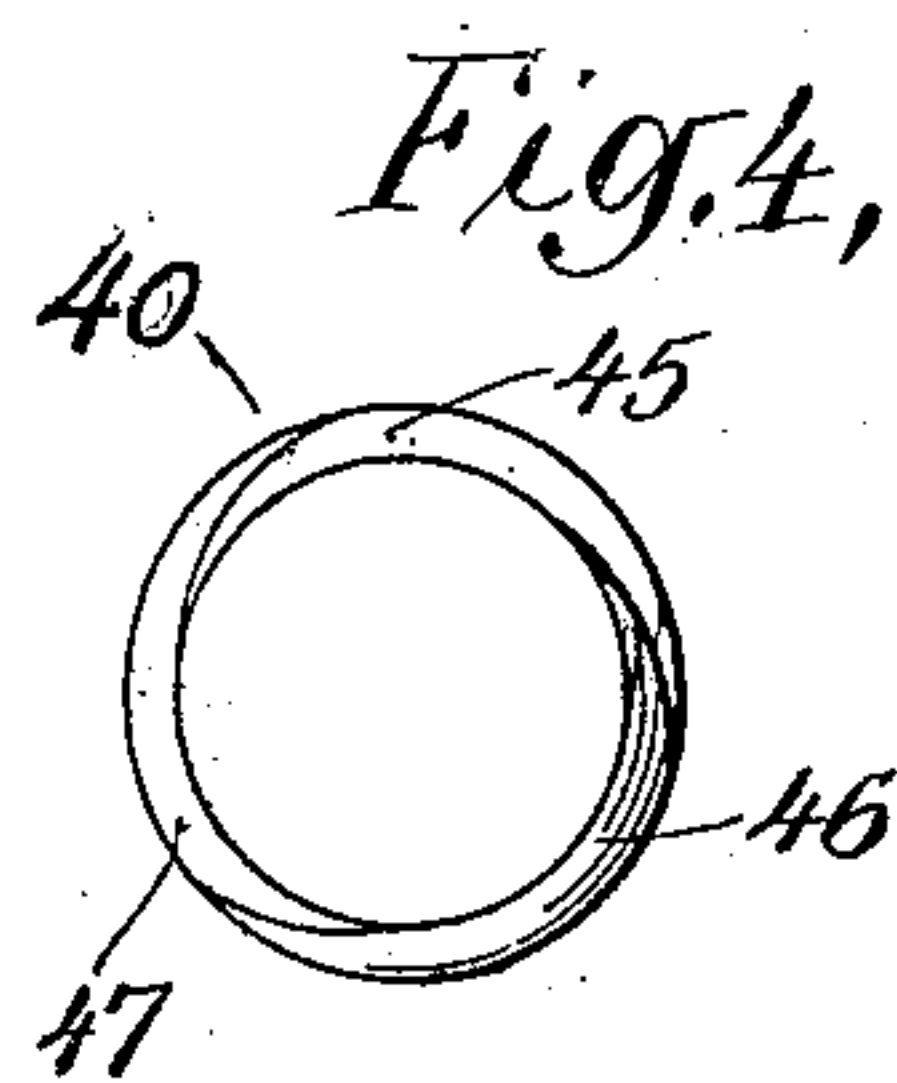
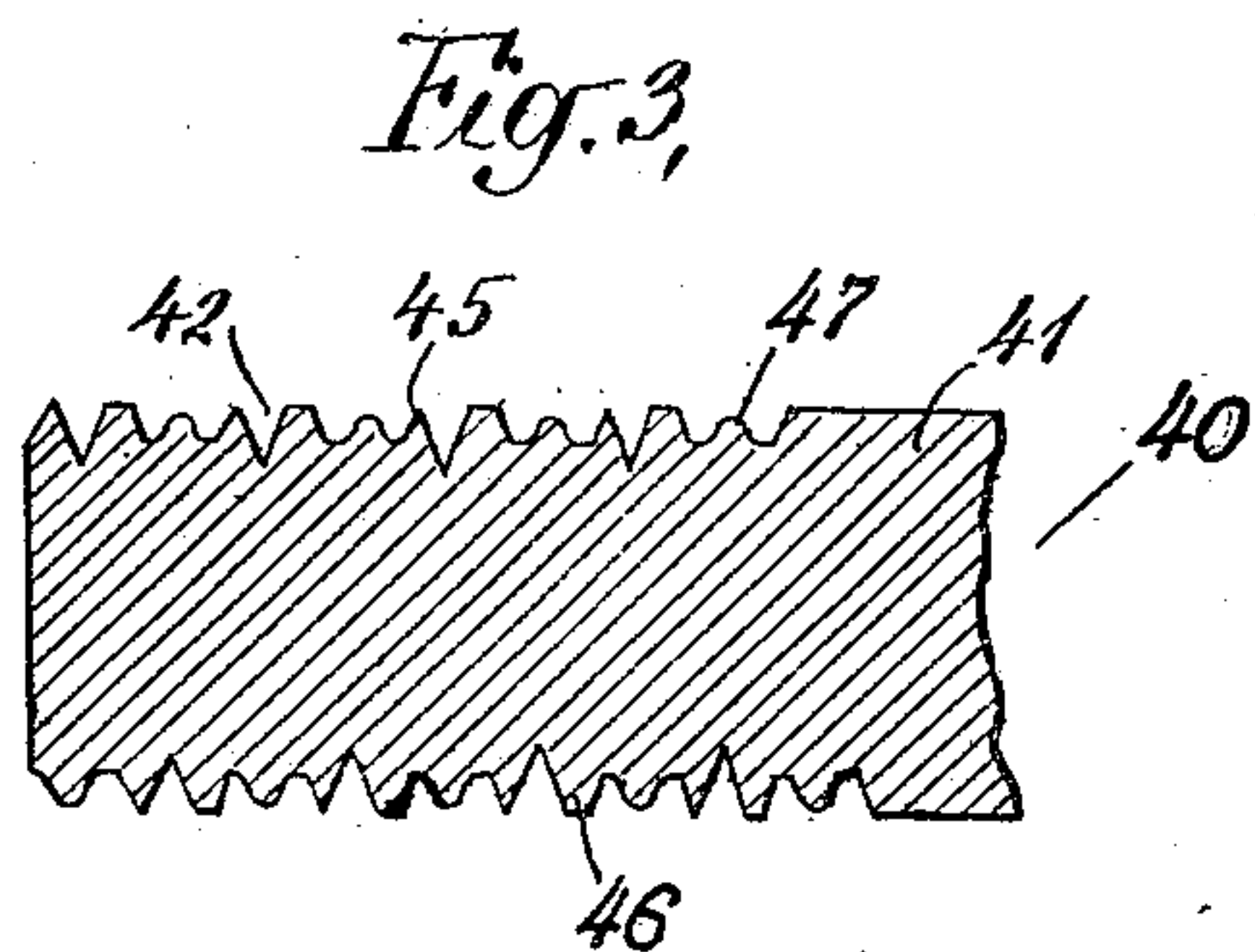
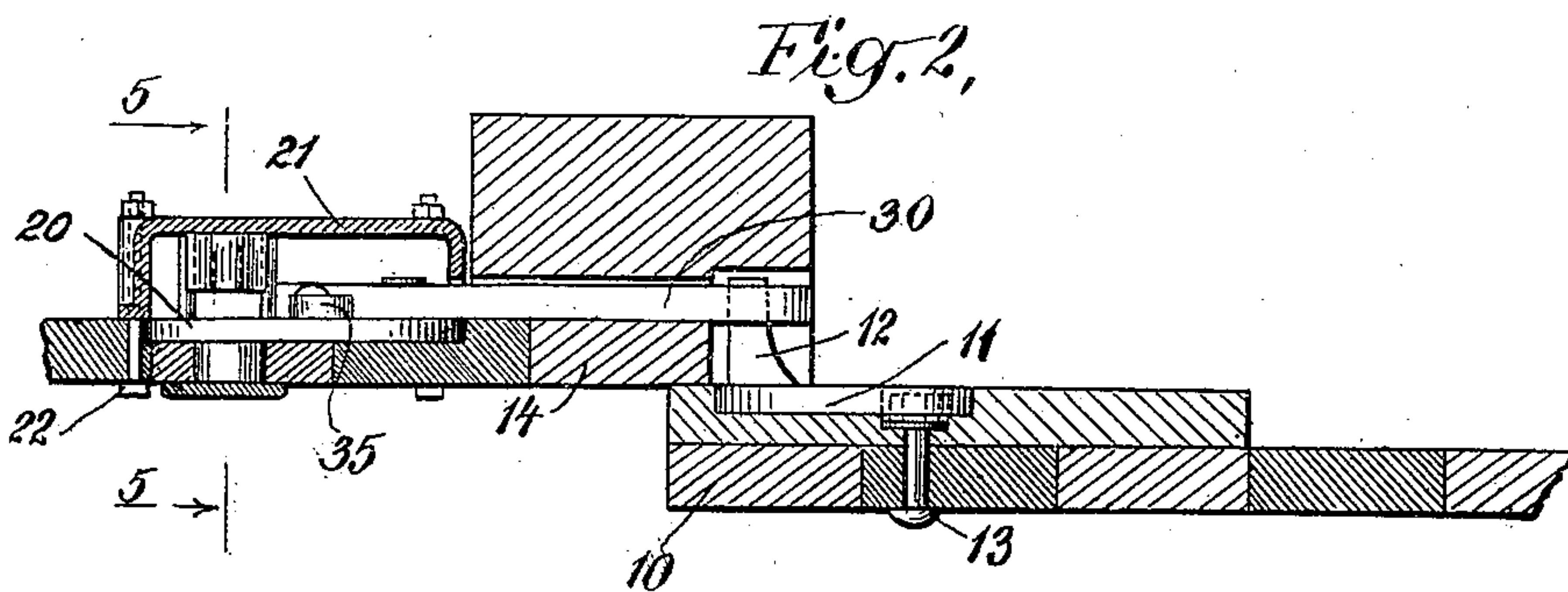
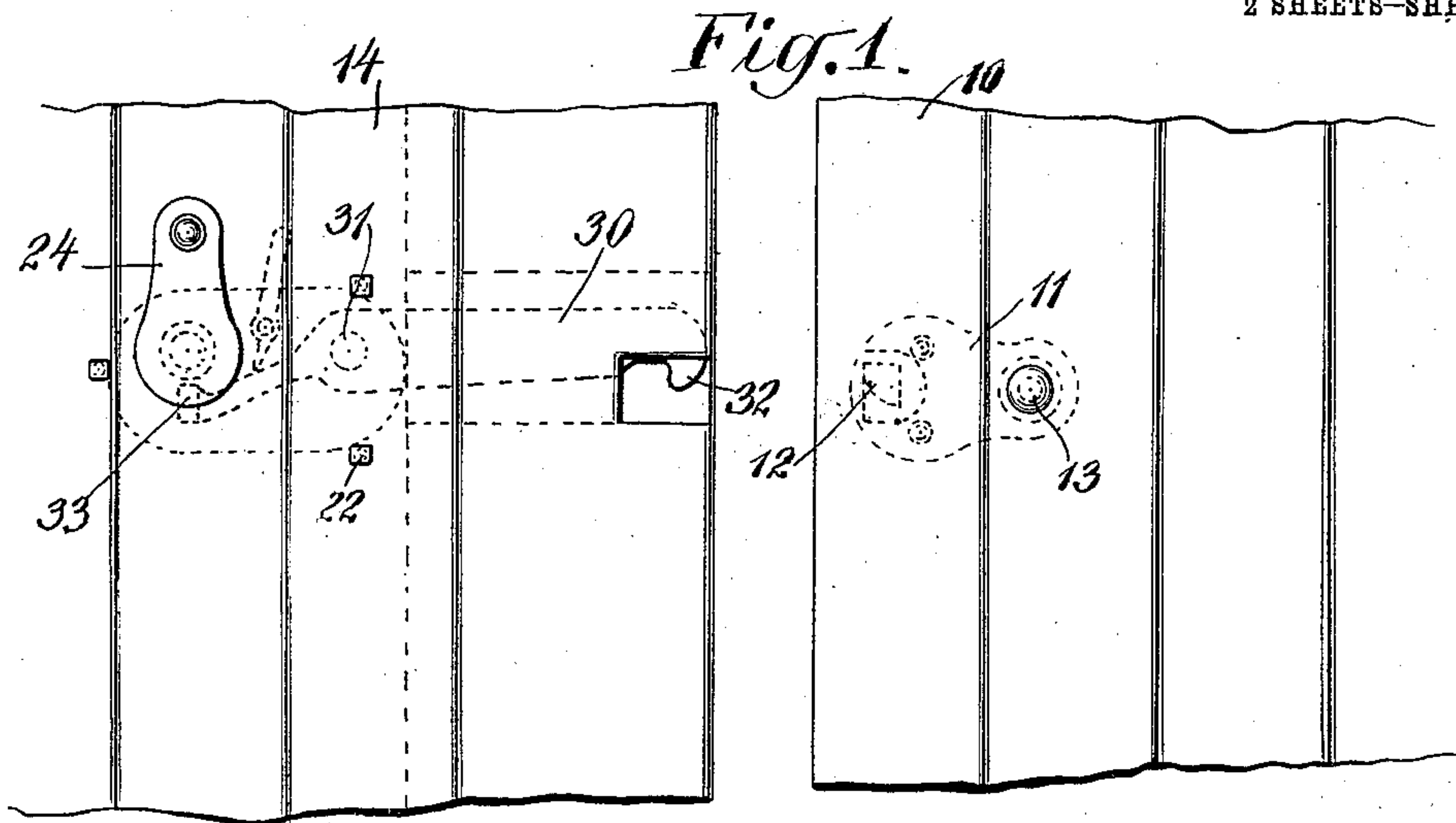


C. F. RITCHEL.
SLIDING DOOR LOCK.
APPLICATION FILED JUNE 21, 1910.

991,890.

Patented May 9, 1911.

2 SHEETS—SHEET 1.



WITNESSES:

W. M. Millward
Frederic Luce

INVENTOR

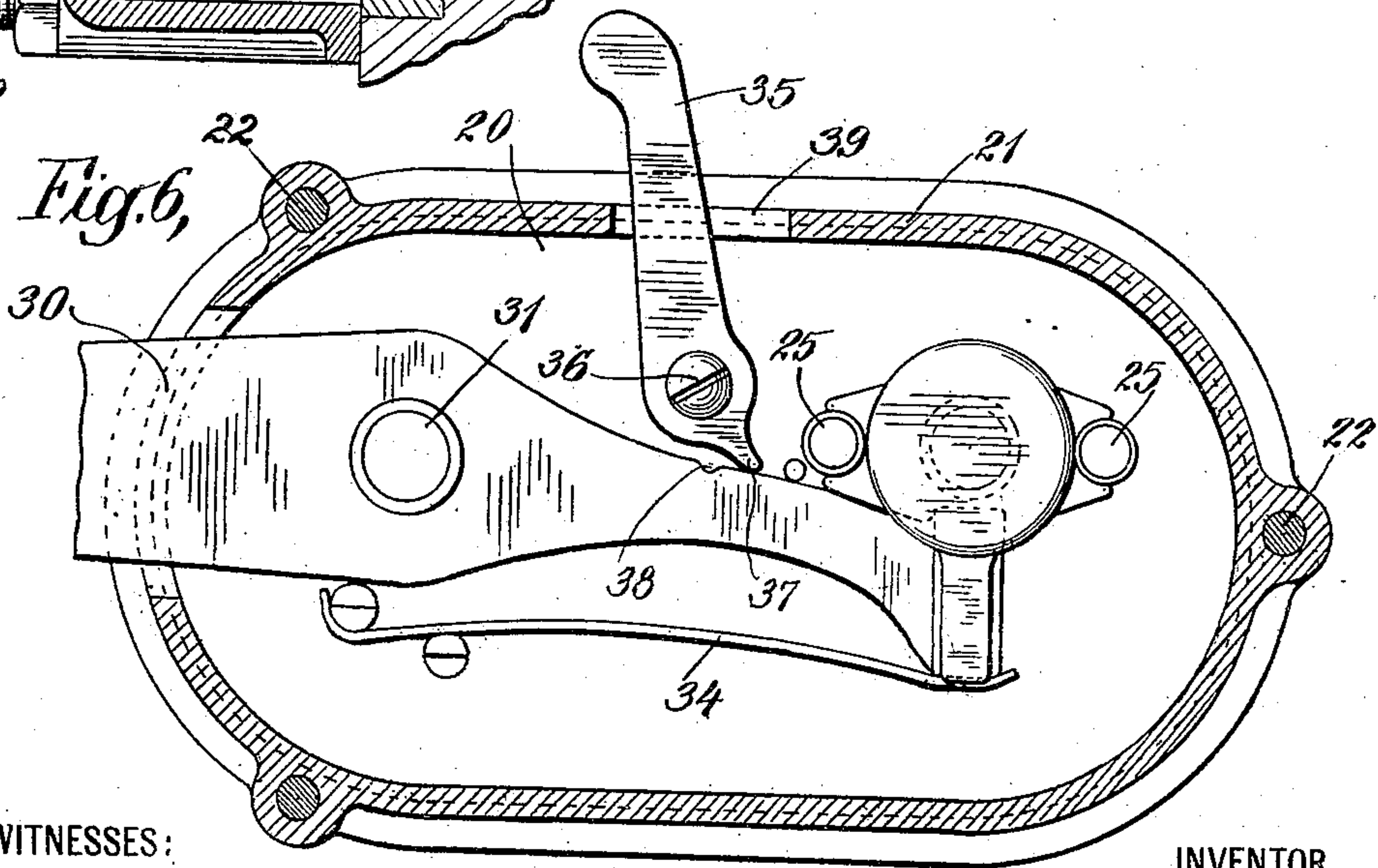
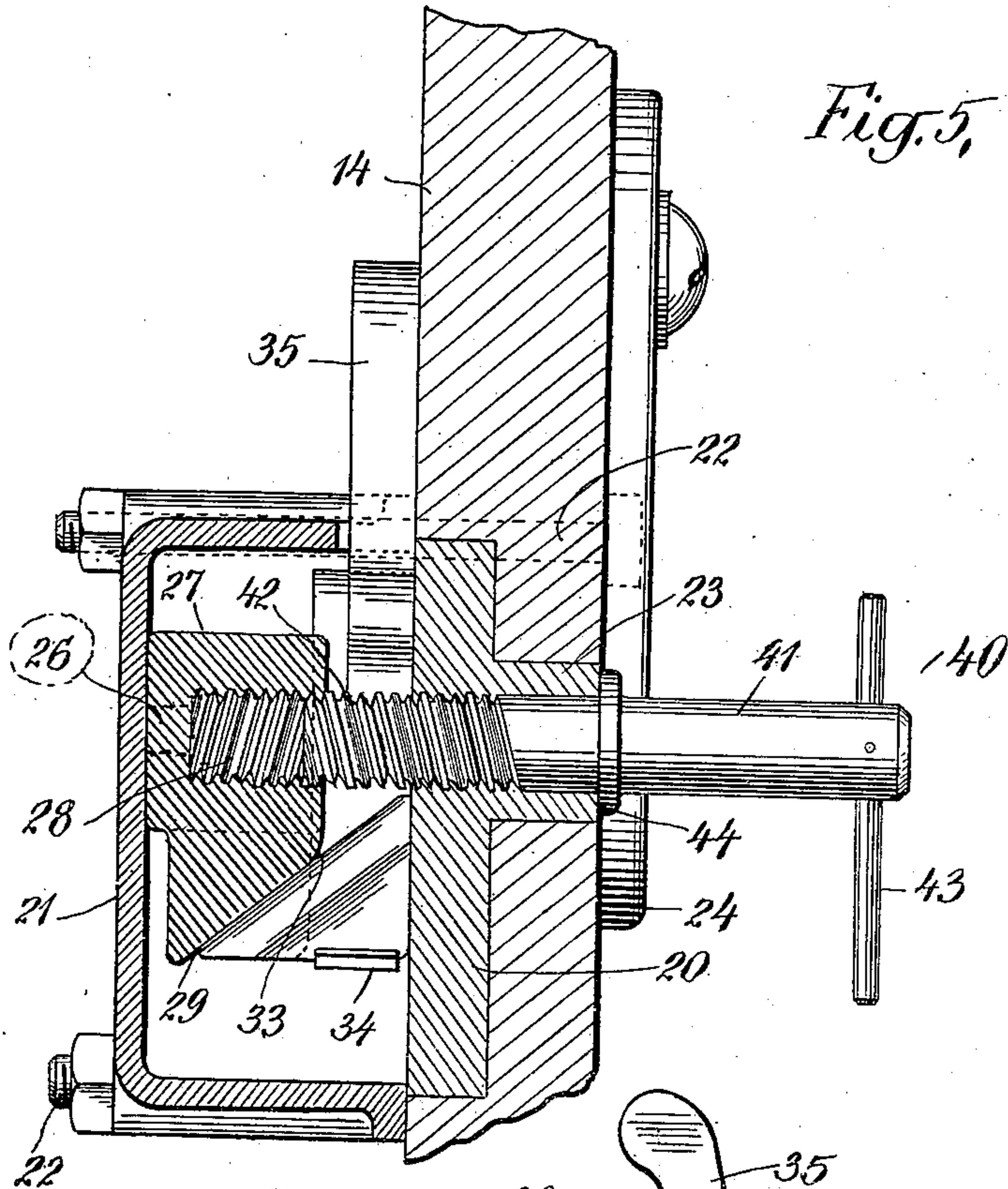
Charles F. Ritchel
BY
E. W. Marshall
ATTORNEY

C. F. RITCHEL.
SLIDING DOOR LOCK.
APPLICATION FILED JUNE 21, 1910.

991,890.

Patented May 9, 1911.

2 SHEETS—SHEET 2.



WITNESSES:

J. R. McIlwain
Charles

INVENTOR

Charles F. Ritchel
BY
E. W. Marshall
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES F. RITCHEL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO GEORGE E. GREENBAUM, OF NEW YORK, N. Y.

SLIDING-DOOR LOCK.

991,890.

Specification of Letters Patent.

Patented May 9, 1911.

Application filed June 21, 1910. Serial No. 568,076.

To all whom it may concern:

Be it known that I, CHARLES F. RITCHEL, a citizen of the United States, and a resident of the city of Bridgeport, in the county of Fairfield and State of Connecticut, United States of America, have invented certain new and useful Improvements in Sliding-Door Locks, of which the following is a specification.

My invention relates to door locks which are especially designed for use on the sliding doors of freight cars, and its object is to provide an inexpensive lock of strong substantial construction, and to improve upon such locks as have heretofore been used.

I will describe my invention in the following specification and point out the novel features thereof in the appended claims.

Figure 1 is a front elevation of a portion of the freight car and its door with my improved lock thereon. In this figure the door is shown partly opened. Fig. 2 is a sectional plan view of the same parts with the door closed and locked. Fig. 3 is a sectional side elevation, and Fig. 4 an end view of a part of a peculiar threaded key which I have invented. These figures show the key on an enlarged scale and are more or less diagrammatic. In Fig. 5 I have shown my lock in sectional elevation, the section being taken on the line 5—5 of Fig. 2. Fig. 6 is a rear elevation of the lock with its cover broken away to more clearly show its construction.

Like characters of reference designate corresponding parts in all of the figures.

10 designates that portion of a freight car of well-known design which forms the door-jamb. A flat metallic plate 11, having a projecting lug 12 is set into the inner surface of the door-jamb and securely affixed thereto by some suitable means which cannot be removed from the outside of the door such, for example, as by a carriage bolt 13.

The door of the car is designated by 14. The lock mechanism is mounted upon a flat metallic base-plate 20 which may be set into the inner surface of the door so that the outer surface of this plate is flush with the inner surface of the door itself.

21 is a cover which incloses the lock mechanism and forms a part thereof. This cover is so designed that it overlaps the edges of the base-plate 20. This cover is secured to

the door by means of through-bolts 22 which pass through the door and through lugs in the cover and are provided with nuts on the inside of the car which securely hold the parts of the lock in place and affix the mechanism to the car door.

The plate 20 is provided with a hollow boss 23 which projects through the door and is preferably flush with its outer surface. If desired a cover 24 may be provided which may be swung over or away from the boss 23.

25, 25 designate a pair of pins which project inwardly from the boss 20 and may be an integral part thereof, and similar pins 26 project from the cover 21 in alinement with the pins 25 in such a way that when the cover is in place these pins are in alinement with each other.

27 is a slidable block which is provided with a peculiarly threaded hole 28 which I will describe more fully hereinafter. The lower portion of this block is constructed to form a cam surface 29. This block is guided on the pins 25 and 26.

30 designates the latch which is pivoted to the base 20 at 31 and the outer end of which is constructed to form a hook-like portion 32 which is arranged to drop down over the lug 12 on the door-jamb when the door is closed to thereby lock the door and the door-jamb together. The opposite end of the latch 30 is constructed with a cam surface 33 with which the surface 29 of the slidable block 27 is arranged to cooperate. A heavy spring 34 is provided which presses upward against this end of the latch so that it presses the end 32 of the latch firmly downward and holds it in its locking position when it is unacted upon by other devices.

A lever 35 which is pivoted to the base-plate at 36 is provided with a detent 37 which rests upon the upper surface of the inner edge of the latch 30. These parts are so arranged that when the lever 35 is swung over its detent will press down upon the inner end of the latch and will thus raise its hooked end out of engagement with the lug 12. In the upper surface of the latch a notch 38 may be cut for holding this release lever 35 in the position which I have just described. This lever 35 projects through an opening 39 in the cover 21.

40 is a key of peculiar construction which

I have invented for opening this lock. It comprises a shank 41, one end 42 of which is threaded. Its other end is provided with a pin 43 which passes through it at substantially right-angles, and which projects further on one side of the shank than it does on the other side. Intermediate the threaded portion of the key and its handle which is formed by the pin 43 a shoulder 44 is formed. It is my purpose to cut screw-thread or threads upon this key of such unusual form that it cannot be duplicated except at great trouble and expense. One of the ways this result may be accomplished is to cut three parallel threads of the same pitch but of unlike sizes and shapes.

Referring to Figs. 3 and 4 it may be seen that one of these threads 45 is of the usual shape. The next parallel thread 46 is made with a flat top while the third thread 47 has curved sides and top. The height of these threads may differ and so may the grooves between them. The slidable block 27 is cut as at 28 with internal threads corresponding with those upon the key. It is evident that each of these threads will run in its corresponding groove but will not run in the next adjacent one.

This lock may be manipulated from the inside of the door by the release lever 35. From the outside it can only be opened by means of such a key as I have described. The threaded end of the key is inserted through the boss 23 with the longer part of the pin 43 projecting downward. The parts are so made that only in this position will the key enter the block 27. Rotating the key will bring its shoulder 44 against the end of the boss 23, after which further rotation will pull the block 27 over the inner end of the latch 30 and its cam surface 29 acting against the surface 33 will push this end of the latch down and release its catch 32.

The parts of this lock are of heavy construction which, although of cheap construction, are of unusual strength and are so arranged that they cannot be tampered with or broken.

What I claim is:—

1. A sliding door lock comprising a pivoted latch, a releasing block arranged to slide in a direction at substantially right-angles to the swing of the latch, said block being provided with an internal screw-

thread, and a key having a threaded screw arranged to move said block under one end of the latch to release the latch, said screw-threads being of non-standard construction.

2. A sliding door lock comprising a pivoted latch having a cam surface near one of its ends, a releasing block arranged to slide in a direction at substantially right-angles to the swing of the latch, said block having a cam surface arranged to engage with the cam surface on the latch and being provided with an internal screw-thread with its axis parallel with the movement of the block, and a key having a threaded screw arranged to move said block under one end of the latch and to release the latch, said screw-threads being of non-standard construction.

3. A sliding door lock comprising a pivoted latch having a cam surface near one of its ends, a spring for pressing the latch into its locking position, a manually operated release lever for said latch, a releasing block arranged to slide in a direction at substantially right-angles to the swing of the latch, guides for said block, said block being provided with an internal screw-thread with its axis parallel with the movement of the block; and a key having a shoulder and a threaded screw arranged to move said block under one end of the latch to release the latch, said screw-threads being of non-standard construction.

4. A lock having a latch-releasing member constructed with an internal screw, and a key having an external screw fitting said internal screw, both of said screws having a plurality of adjacent threads of dissimilar shapes.

5. A lock having a latch-releasing member constructed with an internal screw, and a key having an external screw fitting said internal screw, said screws having three parallel threads an equal distance apart, each of said threads being of a different shape but all of the threads being of the same pitch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. RITCHEL.

Witnesses:

ELLA TUCH,
ERNEST W. MARSHALL.