

No. 723,239.

PATENTED MAR. 24, 1903.

A. J. BUTLER.

LOCK AND PULL FOR SLIDING DOORS.

APPLICATION FILED MAY 16, 1902.

NO MODEL.

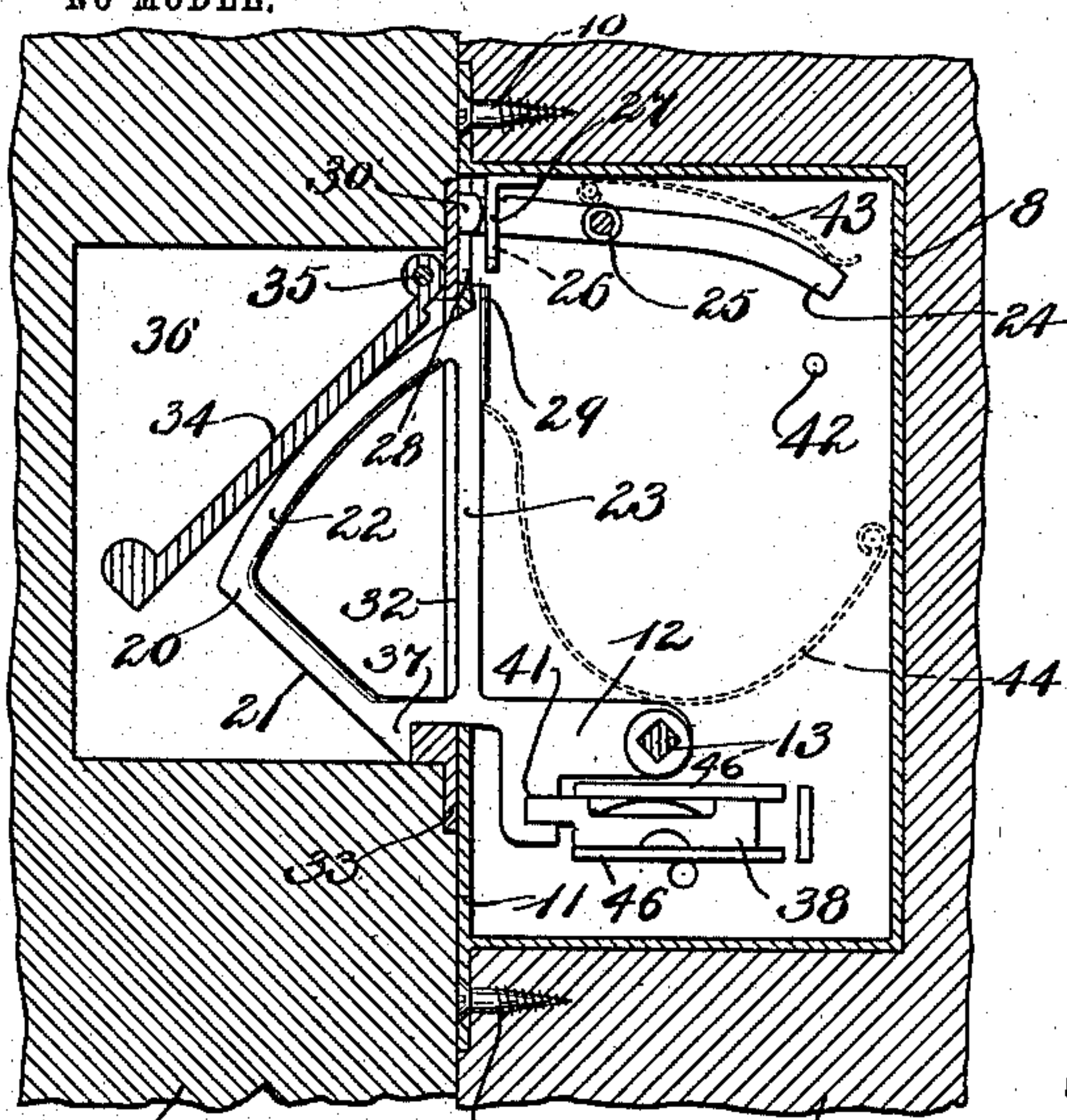


FIG-1-

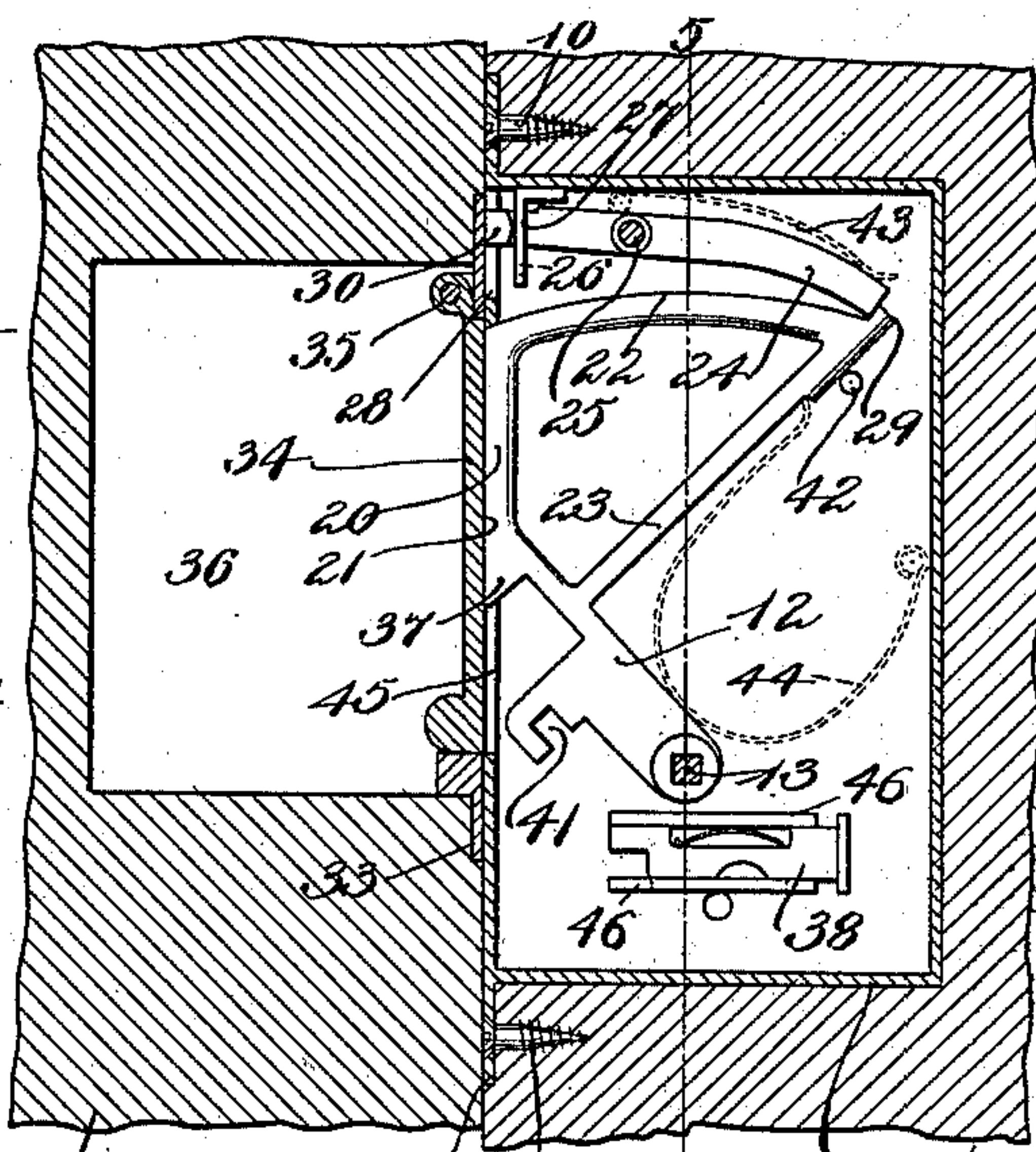


FIG-2-

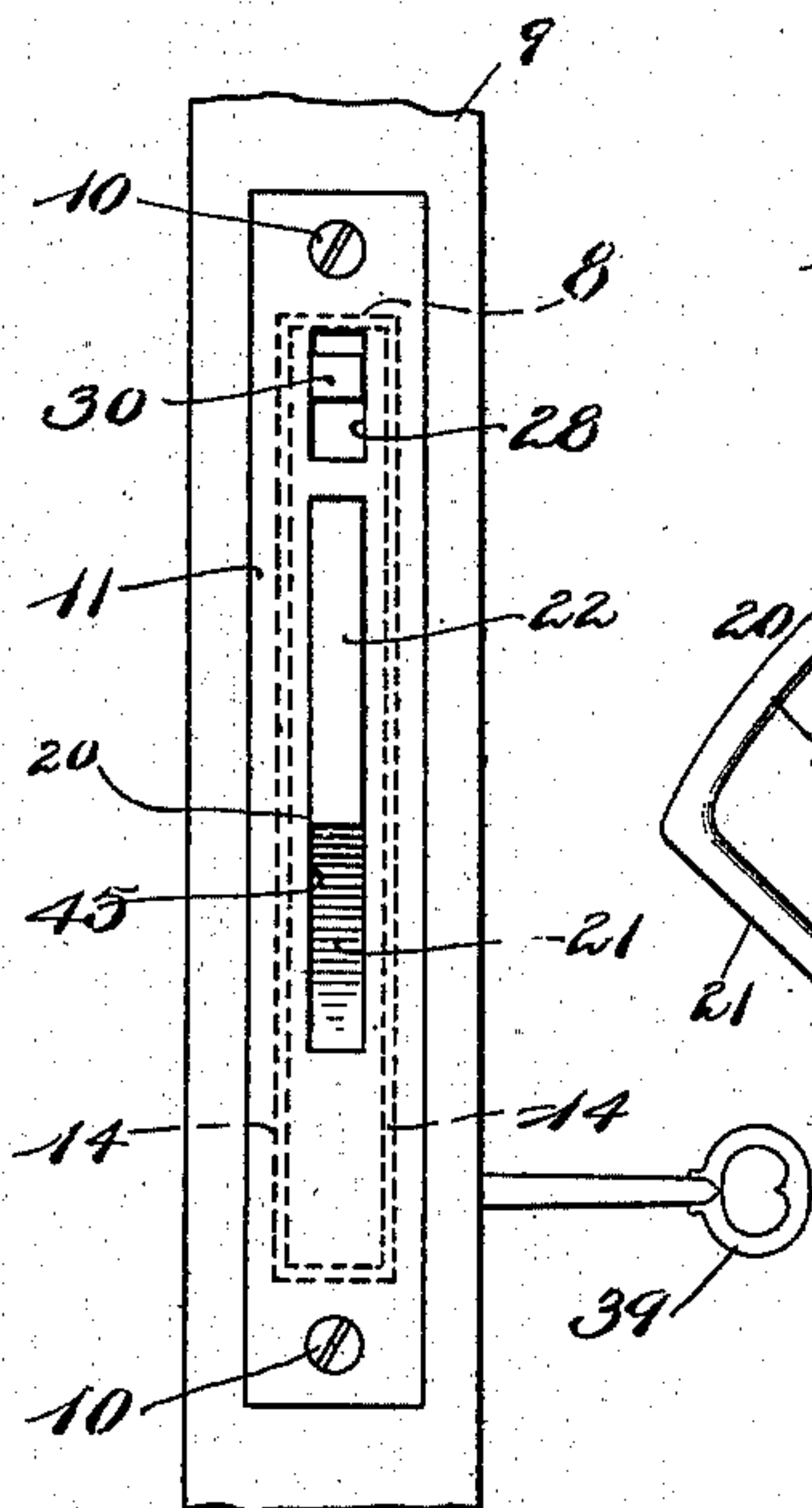


FIG-3-

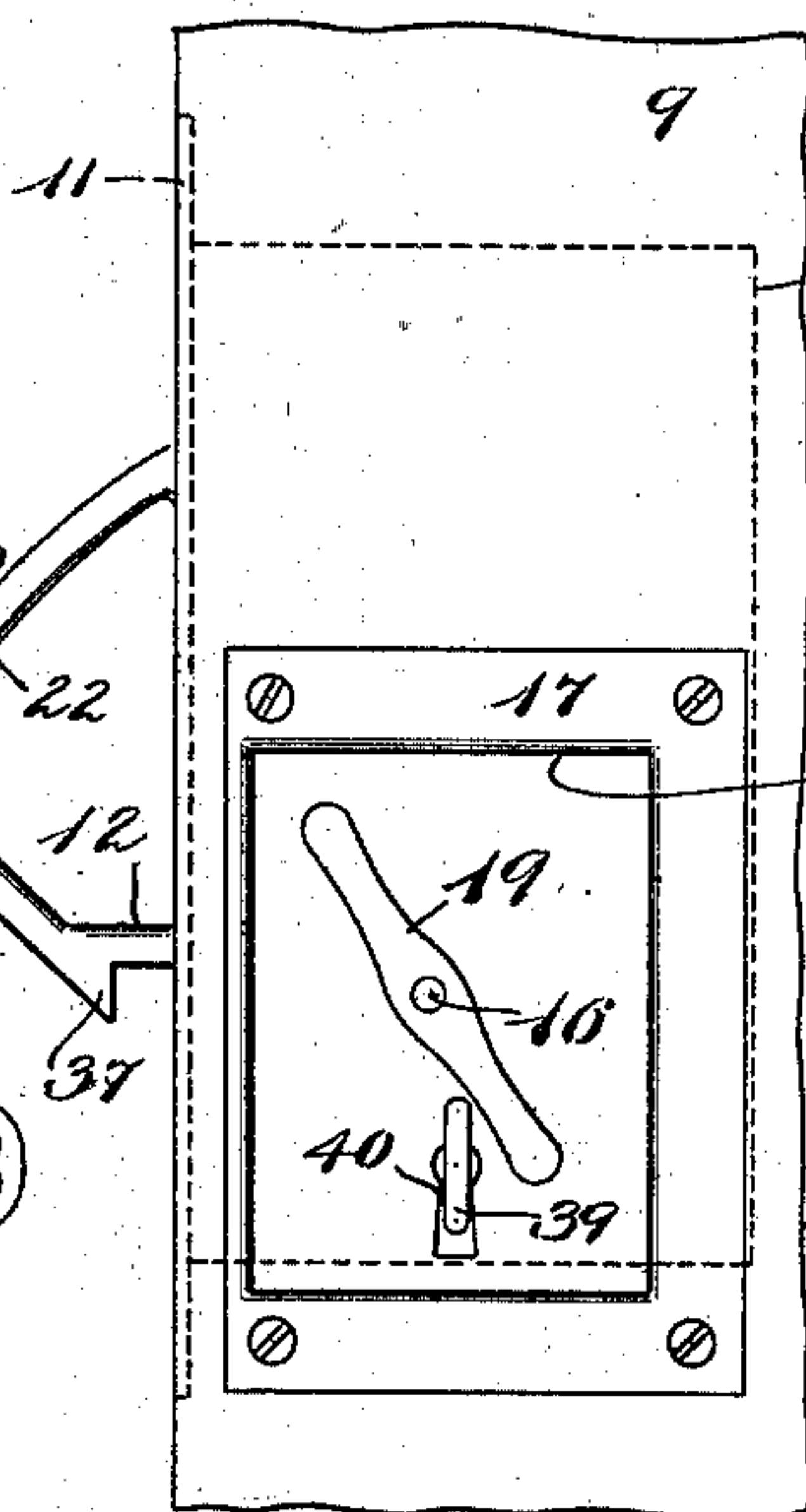


FIG-4-

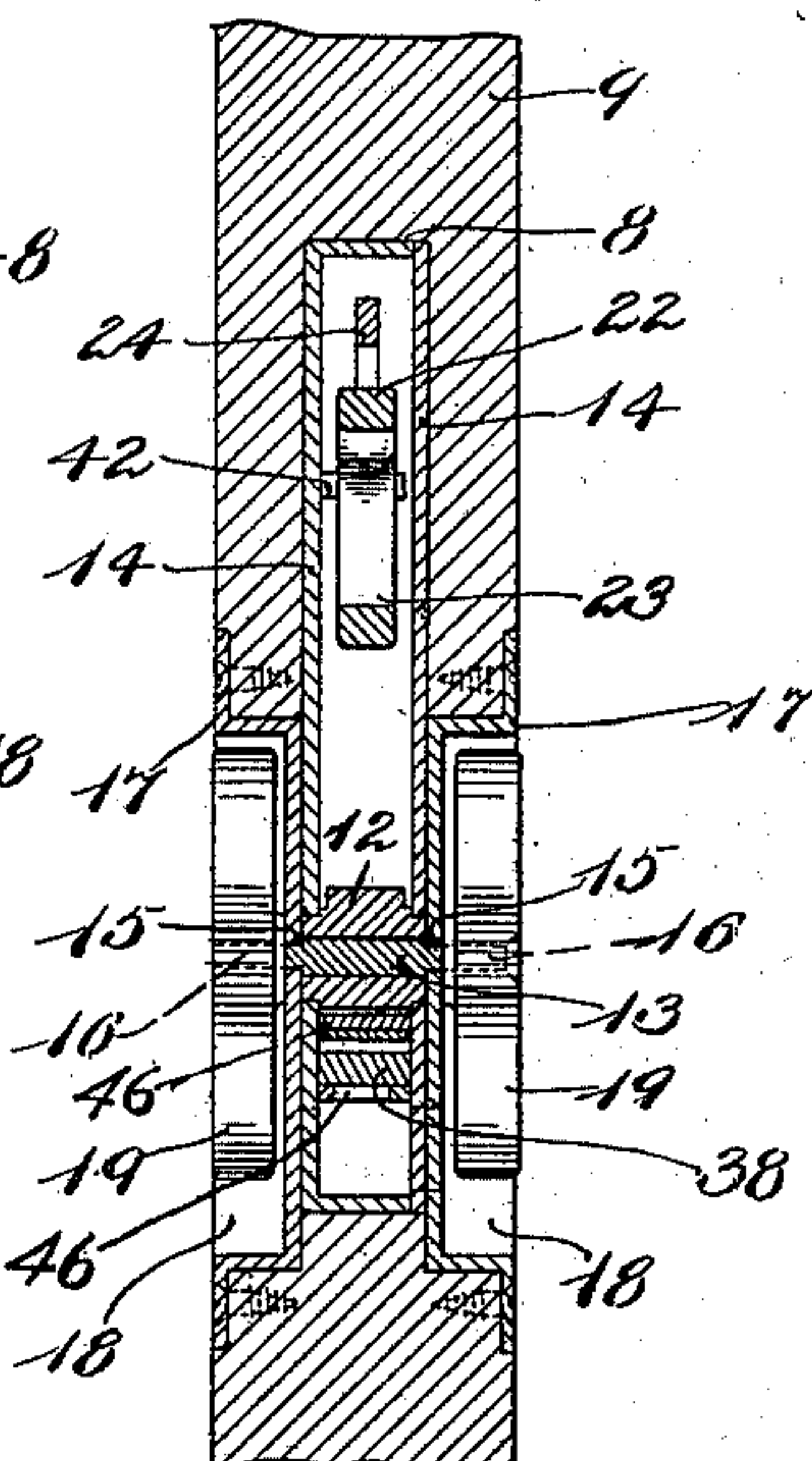


FIG-5-

WITNESSES:

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# UNITED STATES PATENT OFFICE.

ALFRED J. BUTLER, OF BOSTON, MASSACHUSETTS.

## LOCK AND PULL FOR SLIDING DOORS.

SPECIFICATION forming part of Letters Patent No. 723,239, dated March 24, 1903.

Application filed May 16, 1902. Serial No. 107,556. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED J. BUTLER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Locks and Pulls for Sliding Doors, of which the following is a specification.

The object of this invention is to provide a lock for sliding doors, a portion of said lock being so constructed as to provide a pull-handle by means of which one of said doors may be moved.

The object of the invention is further to provide a lock of the character described so constructed as to be capable of being arranged to leave a smooth face upon the front edge of each door without any projections.

The invention consists in a casing, a latch-bolt pivoted thereto, said latch-bolt provided with a pull-handle normally projecting beyond said casing, a lever pivoted to said casing above said latch-bolt, one end of said lever projecting into a slot provided in the front of said casing, the other end arranged to engage a projection upon said latch-bolt and lock said latch-bolt inside of said casing in such a position that said handle will not project beyond the front face of the casing, thus leaving a perfectly smooth front edge to the door in which said casing is inserted.

The invention again consists in means whereby a latch-bolt of the construction hereinbefore set forth is locked with the pull-handle projecting from the casing into and in engagement with a latch-plate fast to the opposite door of a pair of doors by a bolt, the key operating said bolt being so located as to prevent a rotary handle, by means of which said latch-bolt is rotated, from rotating until said key shall have been withdrawn from the lock, thus making it impossible to push the sliding door backwardly and bring the projecting key into contact with the casing of the door.

The invention finally consists in the combination and arrangement of parts set forth in the following specification, and particularly pointed out in the claims thereof.

Referring to the drawings, Figure 1 is a vertical section, partly in elevation, illustrating my improved lock in connection with a portion of a pair of sliding doors, said doors

being closed and the lock being shown in engagement with the catch-plate and the doors thus locked together. Fig. 2 is a view similar to Fig. 1, showing the device unlocked. Fig. 3 is a front elevation of my improved lock, showing the same attached to a door. Fig. 4 is a right-hand side elevation of the same. Fig. 5 is a transverse vertical section taken on line 5 5 of Fig. 2.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 8 is a rectangular casing inserted in a recess formed in the door 9 and fastened thereto by screws 10 10, extending through the front plate 11 of said casing. A catch-bolt 12 is fast to a shaft 13, extending transversely of the casing 8, and is arranged to rock in bearings 15 in the side plates 14 14 thereof. The shaft 13 is square in cross-section where it extends through the catch-bolt 12 and is turned to form a cylindrical shank 16 at each end thereof, which projects through plates 17 17, fast to opposite faces of the door 9. Said plates 17 are provided with recesses 18 to receive rotary handles 19 19, each of said rotary handles being fast to one of the cylindrical shanks 16 of the shaft 13.

The catch-bolt 12 is provided with a pull-handle 20, preferably substantially triangular in shape, having three sides 21, 22, and 23 surrounding a space adapted to receive the fingers of the hand, which may be inserted through said space and afford a convenient means for moving the door. The said catch-bolt 12 normally stands in the position shown in Fig. 1, the center of gravity of the handle 20 being at all times located at the left of the shaft 13, thus causing said catch-bolt to drop by the attraction of gravity to the position shown in Fig. 1. When the doors are open, it is very desirable that the pull-handle 20 should not project beyond the front edge of the door to which said catch-bolt is attached, and in Fig. 2 said catch-bolt, together with the pull-handle 20, is shown turned upwardly into the interior of the casing 8, being held in the position shown in Fig. 2 by a lever 24, pivoted at 25 to the casing 8. The left-hand end of the lever 24 projects through a slot 26 in the guide-plate 27 and into a slot 28 in the front plate 11 of the casing 8. The right-hand end of the lever 24 engages a projection 29



upon the upper end of the side 23 of the pull-handle 20, thus holding the catch-bolt 12 in the position shown in Fig. 2. If it is desired to disengage said catch-bolt, allowing it to drop into the position shown in Fig. 1, the lever 24 is tipped upon its pivot 25 by depressing the thumb-piece 30 upon said lever.

A catch-plate 33 is fast to the door 31 and is provided with a slot 32, extending vertically therethrough, said slot being normally closed by a plate 34, pivoted at 35 to said catch-plate 33. When the doors 9 and 31 are closed against each other, the pull-handle 20 enters the chamber 36, provided in the door 31, through the slot 32, pushing the plate 34 into the position shown in Fig. 1, the front edge of the side 21 of said pull-handle riding upwardly on the lower end of said slot and the projection 37 upon the under side of said handle finally dropping down upon the rear face of the plate 33, as shown in Fig. 1. The two doors are thus locked together by the catch-bolt 12, and said catch-bolt is rigidly fastened in the position shown in Fig. 1 by a bolt 38, arranged to slide toward the right and left, Figs. 1 and 2, in ways 46, formed upon the interior of the casing 8, and being moved by a key 39, inserted from either side of the casing 8 through a keyhole 40, Fig. 4. By turning the key to the left the left-hand end of the bolt 38 enters a notch 41, provided in the catch-bolt 12, and thus holds the said catch-bolt rigidly fastened in the position shown in Fig. 1. It will be seen that the rotary handle 19 cannot be turned toward the right, Fig. 4, to disconnect the catch-bolt from the catch-plate without first withdrawing the key 39, so that with my improved device it will be impossible to push the doors back and bring the key in contact with the casings surrounding the door, thus impairing the casing and bending or breaking the key in the lock. When the catch-bolt 12 is thrown into the position shown in Fig. 2, the side 23 rests against the stop-pin 42 and the side 21 projects into and substantially closes the slot 45 in the front plate 11. It will be seen that the lever 24 is pivoted to the left of the center of said lever, Figs. 1 and 2, so that the weight of the right-hand portion of the lever causes said lever to engage the projection 29 upon the catch-bolt 12, and also it will be seen that the weight of the catch-bolt 12, being largely to the left of the shaft 13, causes said catch-bolt to drop to the position shown in Fig. 1 by gravity; but, if desired, a spring 43 (shown in dotted lines, Figs. 1 and 2) may be used to actuate the lever 24, and a spring 44 (also shown in dotted lines, Figs. 1 and 2) may be used to actuate the catch-bolt 12.

The operation of the device is as follows: Assuming the doors 31 and 9 to be separated and the pull-handle 20 projecting from the casing 8, the said doors are pushed together. The pull-handle enters the chamber 36, and the projection 37 drops to the position shown in Fig. 1, engaging the rear face of the catch-

plate 33. If desired, the key 39 is then inserted and the bolt 38 thrown from the position shown in Fig. 2 to that shown in Fig. 1, engaging the notch 41 in the catch-bolt 12, and thus rigidly locking the doors together. Upon unlocking the doors the bolt 38 is thrown from the position shown in Fig. 1 to that shown in Fig. 2 by means of the key 39. Said key is then withdrawn, the handle 19 rotated toward the right, rocking the catch-bolt 12 from the position shown in Fig. 1 to that shown in Fig. 2, where said catch-bolt is held inside said casing by the lever 24 dropping upon the projection 29, the plate 34 drops into position, closing the slot 32 in the catch-plate 33, and the side 21 closes the slot 45 in the front plate 11, thus leaving the front edge or face of each door smooth and free from projections when the doors are open.

While I have illustrated and described my improved lock for sliding doors as applied to a pair of sliding doors, it is evident that the same may be applied to a single sliding door, and the catch-plate instead of being attached to another sliding door may be fastened to a stationary post or frame without departing from the spirit of my invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a lock, a casing, a latch-bolt pivoted thereto, said latch-bolt provided with a pull-handle normally projecting beyond said casing, a lever pivoted to said casing above said latch-bolt, one end of said lever projecting into a slot provided in the front of said casing, the other end arranged to engage a projection upon said latch-bolt and hold said latch-bolt inside said casing in such a position that said handle will not project therebeyond.

2. In a lock, a casing, a latch-bolt pivoted thereto, said latch-bolt provided with a pull-handle, a bolt arranged to slide in said casing and hold said latch-bolt in its normal position, with said handle projecting beyond said casing, and a lever pivoted to said casing and arranged to engage and hold said latch-bolt inside said casing in such a position that said handle will not project therebeyond.

3. In a lock, a casing, a shaft extending transversely thereof, a latch-bolt fast to said shaft upon the interior of said casing, provided with a notch, a rotary handle fast to said shaft upon the exterior of said casing, said latch-bolt provided with a pull-handle, a bolt arranged to slide in ways formed upon the interior of said casing and entering said notch to hold said latch-bolt in its normal position, with said pull-handle projecting beyond said casing, said slide-bolt adapted to be operated by a key projecting laterally from said casing across the path of rotation of said rotary handle for the purpose specified.

4. In a lock, a casing adapted to be attached to one of a pair of sliding doors, a catch-plate



adapted to be attached to the other of said pair of doors and provided with a slot in its front face, a latch-bolt provided with a pull-handle normally projecting beyond said casing and arranged to enter said slot, said pull-handle provided with a projection thereunder arranged to engage said catch-plate, and a lever pivoted to said casing above said pull-handle and arranged to engage a projection

upon said pull-handle and hold said catch-bolt and handle inside said casing. 10

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALFRED J. BUTLER.

Witnesses:

CHARLES S. GOODING,  
ANNIE J. DAILEY.