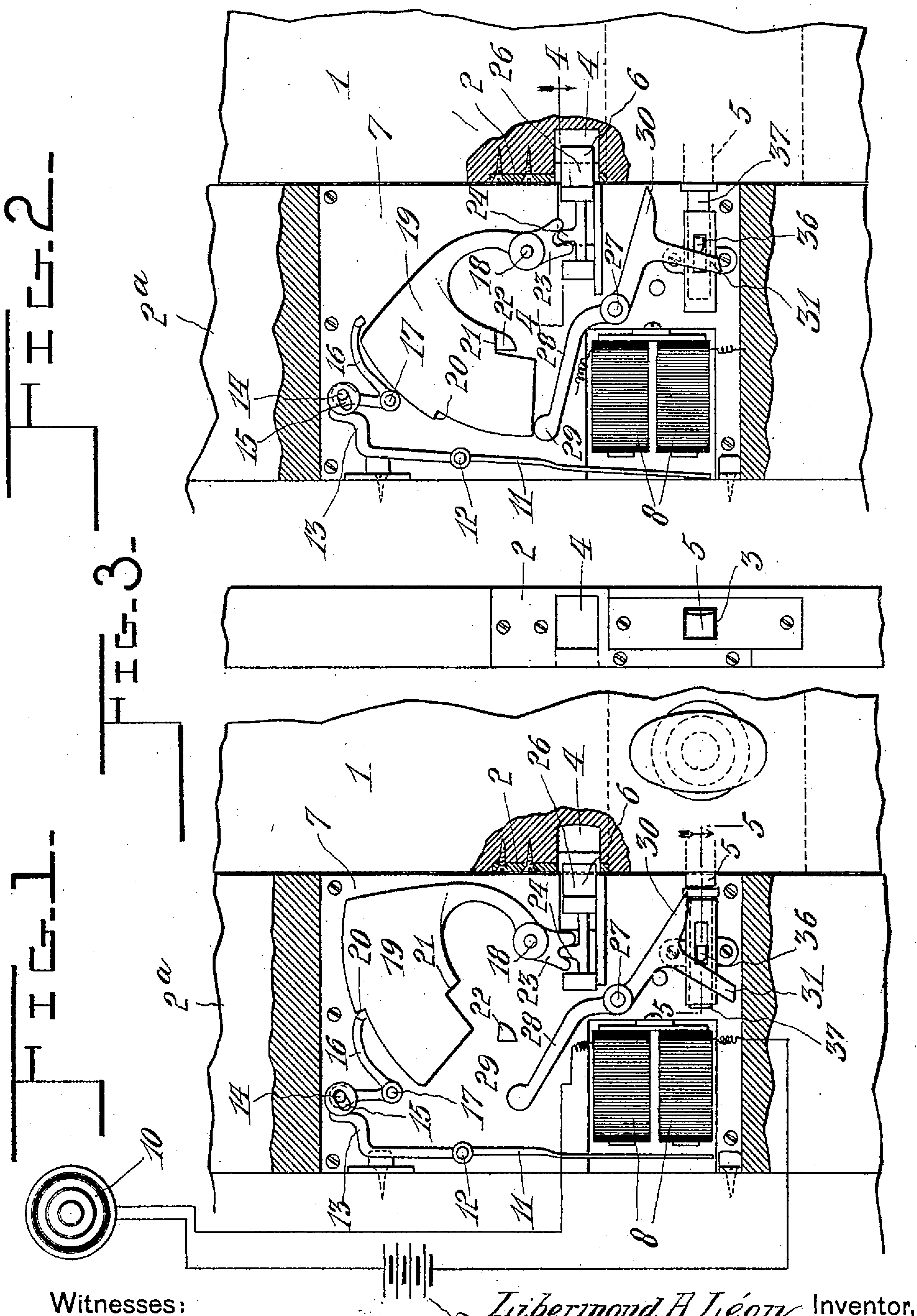
No. 814,461. PATENTED MAR. 6, 1906.

L. A. LÉON.

ELECTRIC DOOR RELEASING DEVICE.

APPLICATION FILED MAY 8, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

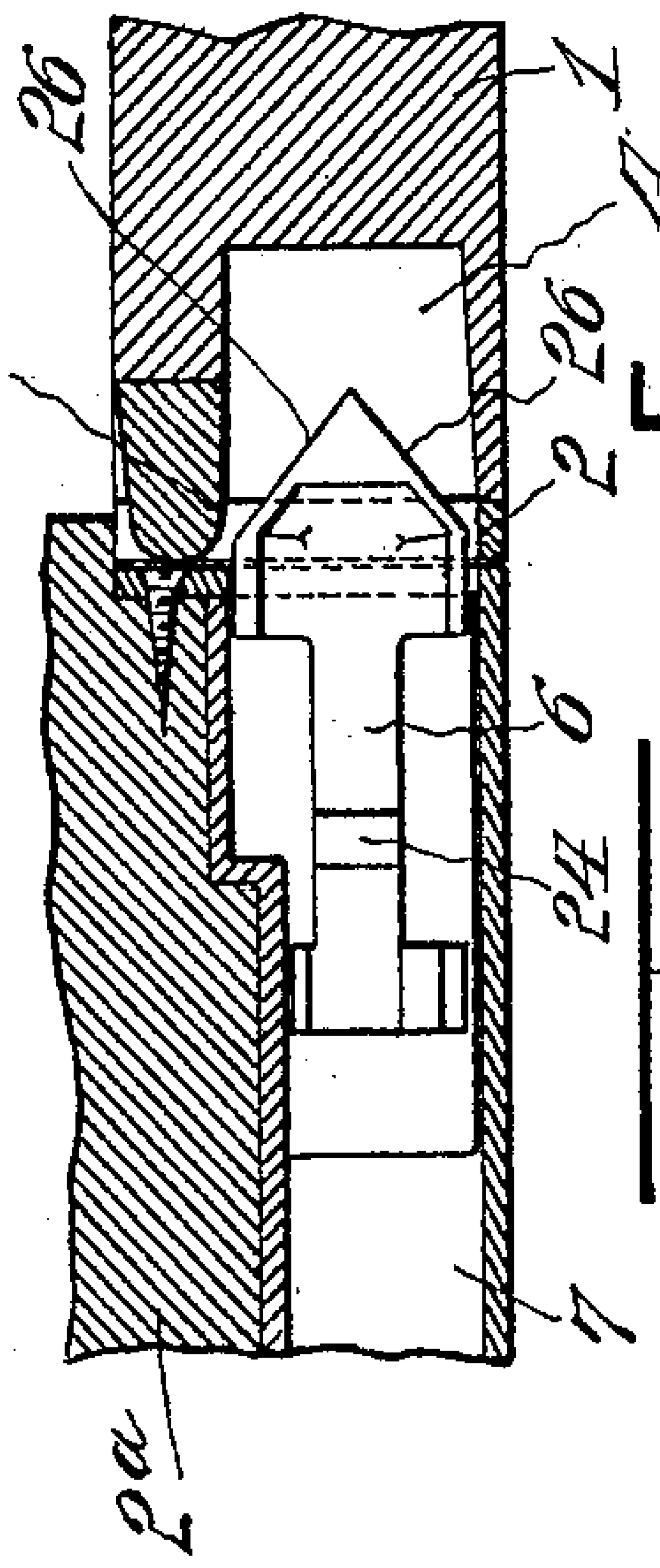


Fig. 5.

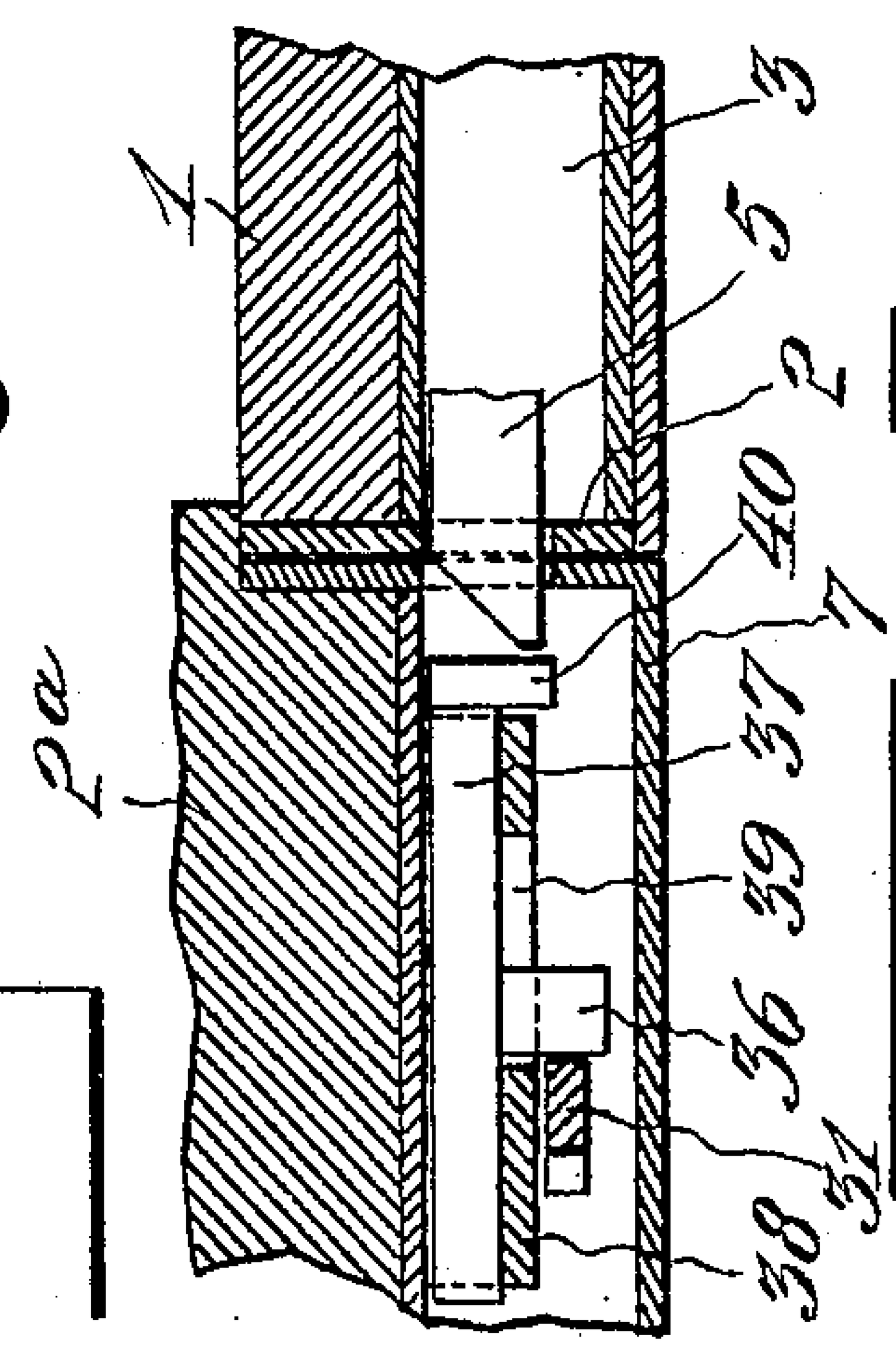


Fig. 7.

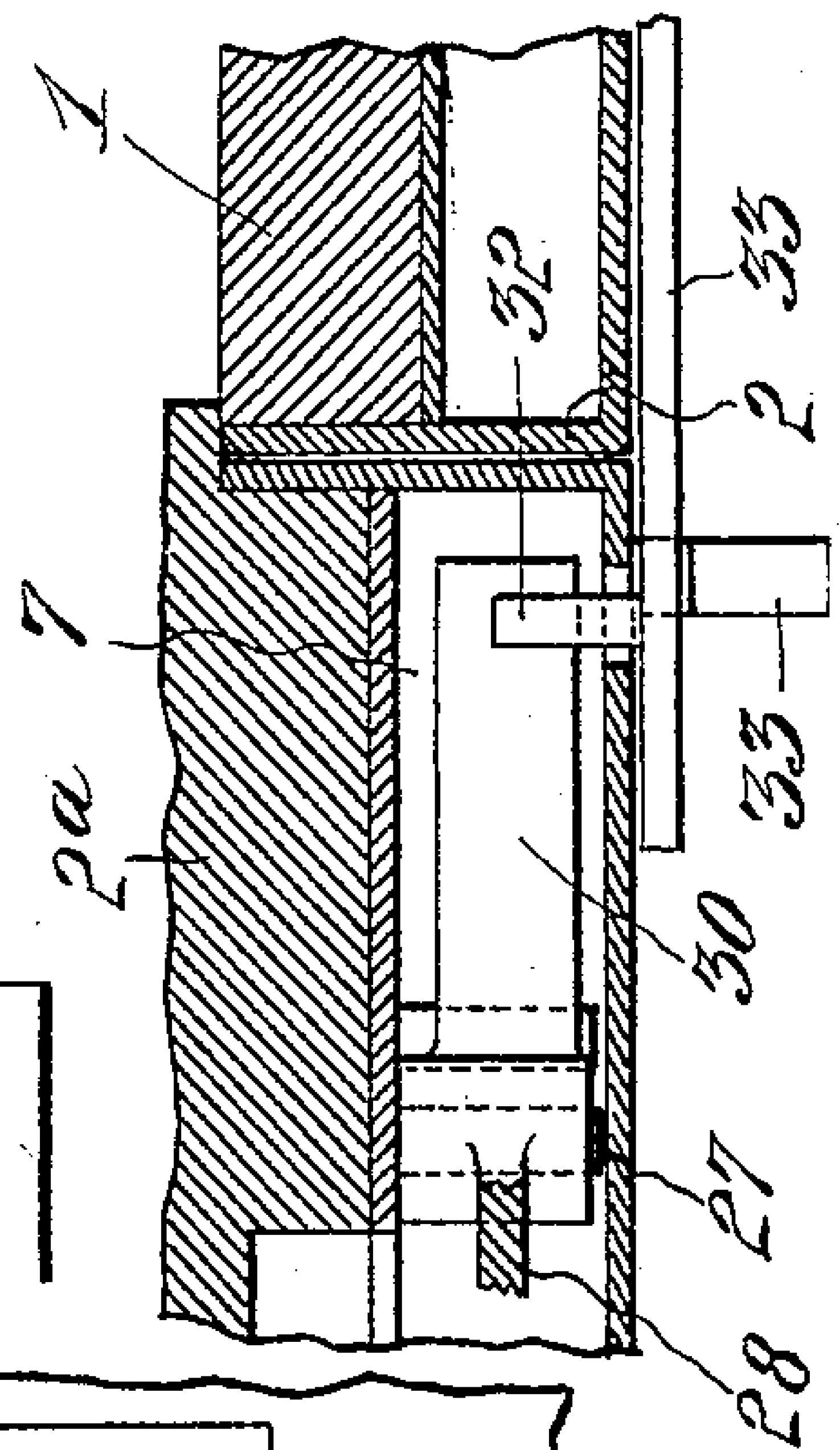
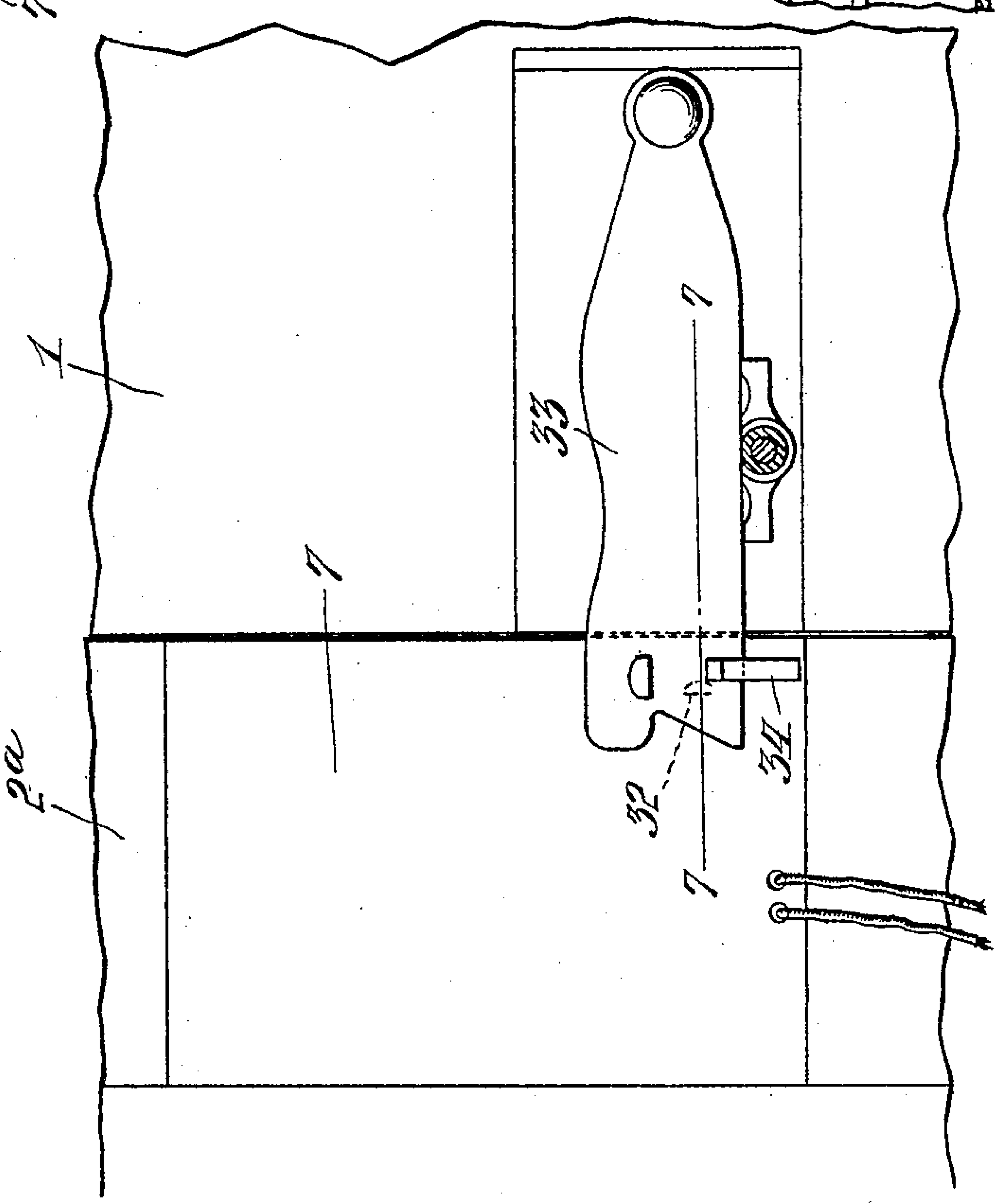


Fig. 6.



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UNITED STATES PATENT OFFICE.

LIBERMOND A. LÉON, OF MONTREAL, CANADA.

ELECTRIC DOOR-RELEASING DEVICE.

No. 814,461. Specification of Letters Patent. Patented March 6, 1906.

Application filed May 8, 1905. Serial No. 259,264.

To all whom it may concern:

Be it known that I, LIBERMOND A. LÉON, a subject of the Republic of France, residing in the city and district of Montreal, in the Province of Quebec, Canada, have invented certain new and useful Improvements in Electric Door-Releasing Devices; and I do hereby declare that the following is 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.

This invention relates to electrically-operated door-locks and means for releasing the same; and it consists in certain features of novelty in the detail construction, arrangement, and operation of the several parts relating thereto, all as hereinafter more fully described, and specifically pointed out in the claims.

The object of the invention is to produce a lock of the character indicated which will be simple in construction and which will provide such coöperative parts as will render it certain in operation, as hereinafter pointed out.

Referring to the accompanying drawings, in which similar numerals of reference indicate corresponding parts in all the views, Figure 1 is an elevational view of a portion of a door and door-stile equipped with my invention with the operative mechanism thereof shown in full lines, the door being closed and locked in closed position. Fig. 2 is a view similar to Fig. 1 except that in full lines the locking means, which also comprise the releasing means, are placed in an abnormal position for the purpose of releasing the latch and placing said releasing means in position to be reset when the door is opened. Fig. 3 is an edge view of a door equipped with my invention. Fig. 4 is a fragmentary sectional view, taken on line 4 4 of Fig. 2, showing the resetting-bar in projected position. Fig. 5 is a fragmentary sectional view, taken approximately on line 5 5 of Fig. 1, showing the latch in its locked position with the retracting-bar hereinafter referred to in its normal position. Fig. 6 is a front elevational view of a fragment of a door and stile which is adapted to be closed with a rockable latch, as shown in that figure, instead of the latch-plunger shown in Fig. 5; and Fig. 7 is a sectional view, taken on line 7 7 of Fig. 6, showing means for raising said pivoted latch.

Referring to the parts, 1 is a door equipped with a face-plate 2 upon the edge thereof, which plate is provided with openings 3 and 4, through which are adapted to project the locking bolt or latch 5 and the resetting-latch 6, respectively.

2^a indicates the stile of the door-frame, in which the mechanism comprising the present invention is placed.

It is to be understood that the lock used with the door 1 may be of any suitable type in which its locking-bar 5 is preferably provided with a beveled face, as shown in Fig. 5, and said locking-latch may be retracted by pressure exerted longitudinally thereof for the purpose of withdrawing said latch from engagement with the stile plate or strike.

Within a suitable casing 7, which is placed in position in the stile of the door, is supported a pair of magnets 8, which are in circuit with the battery 9 and push-button 10, so that said magnets may be energized from said push-button. Suspended in convenient proximity to the cores of said magnets is a pivotally-supported rockable armature-bar 11, which when the magnet is energized is drawn to said magnet. The bar 11 is supported on the pivot 12 and is provided with the upwardly-curved extension 13, which carries a laterally-projecting pin 14, which pin is adapted to ride in the cam-shaped slot 15, provided in the enlarged upper end of the rockable locking-bar 16, which locking-bar is pivotally supported upon the pintle 17, projecting into the casing 7. Supported upon the pintle 18 is a gravity-hammer 19, which has a shoulder 20, with which said locking-bar 16 is adapted to contact for the purpose of holding said hammer 19 in its normal or elevated position, as shown in Fig. 1. The lower portion of the hammer 19 is provided with a shoulder 21, which is adapted to strike the stop 22 when the hammer reaches its lowered position, as indicated in Fig. 2, to prevent excessive downward thrust of said hammer under the influence of gravity. Depending below the pivot 18 of said hammer is a bifurcated portion 23, the bifurcation of which is adapted to engage with the lug 24, which extends upwardly from the resetting-latch 6, before referred to, so that when the hammer falls from the position shown in Fig. 1 to the position shown in Fig. 2 said resetting-latch is projected beyond the edge of the door-stile, so as to be in position to impinge the door in the event of said door being moved either to open or close the same, in which case the forward edge of the door will bear against one of

the cam-faces 26 of said resetting-latch and project the same into the door-stile. In convenient proximity to said magnets is a pin 27 upon which is supported a rockable lever 28, which lever has at one end the anvil portion 29, adapted to be struck by said hammer 19, and at its opposite end has the shoulder 30 and depending integral leg 31, the said shoulder 30 being adapted to strike the inwardly-projecting lug 32, connected with the rockable latch 33, to lift said latch and free it from engagement with the strike 34 and the depending leg 31 being adapted to strike the laterally-extending lug 36, which projects from the retracting-bar 37. As will be noted in Fig. 5, said retracting-bar 37 is slidable longitudinally in a case or slide 38, which has a slot 39 thereon, which permits said lug 36 to move the required distance either toward or away from the door.

The retracting-bar 37 is provided with an enlargement or head 40, which is adapted to contact with the reciprocatory locking-latch 5, as shown best in Fig. 2, for the purpose of retracting said locking-latch to unlock the door.

It is to be understood that the door may be unlocked in the usual manner by a key, and the device herewith shown and described, while operative for the purpose of unlocking the door, is not meant as a substitute for the key, but as an auxiliary thereto, so that if it is desired to admit a person to the house, which person is not provided with a key, the door may be unlocked from any position remote from said door through the instrumentality of the mechanism herein shown and described, and to accomplish that object all that is necessary when the device is in position is to press the button 10, thereby energizing the magnets 8, upon which the armature-bar 11 will be drawn toward said magnets, thereby rocking the locking-bar 16 upon its pivot and releasing the forward end thereof from engagement with the shoulder 20 of the hammer 19, whereupon said hammer will fall by gravity and strike the anvil portion 29 of the rockable lever 28, thus carrying said lever to the position indicated in Fig. 2, in which the shoulder 30 thereof will be elevated to lift the latch, as 33, and the depending leg 31 of said lever will be thrown in a direction toward the door, as shown in said Fig. 2, to project the retracting-bar 37 forwardly to expel the locking-latch 5 from the recess in the stile-plate in which it is normally situated. During this movement the retracting-latch 6 is projected in a direction toward the door, and if the door is closed said latch is projected into the opening 4, and as soon as the door is opened the shoulder 4^a thereof will contact with one of the faces 26 of the resetting-latch, thereby retracting said latch into the door-stile. The lug 24 projecting upwardly from said resetting-latch and engaging with the bifurcated portion 23 of the hammer 19, it is evident that as the resetting-latch is retracted into the door-stile the hammer must be rocked on its pivot 18 and raised to its normal position, as indicated in Fig. 1, whereupon the locking-bar 16 will drop by gravity into engagement with the shoulder 20 of said hammer, and thereby lock it in its elevated position, in which position said hammer will be held regardless of whether the door is closed or opened, until such time as the magnet is again energized and the locking-bar is lifted from its engagement with the shoulder of said hammer. Thus it is evident that the device once placed in position is always normally in position to perform its function in unlocking the door until the magnets are energized, and as soon as the door is moved again after the magnets are energized the releasing means herewith shown and described are immediately restored to normal or operative position.

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

1. In a device of the character indicated, a pivoted gravity-hammer, a rockable locking-bar adapted to normally hold said hammer in an elevated position, electrically-operated means for rocking said locking-bar, a rockable lever one portion of which is in the line of movement of said hammer, and a latch-releasing device in the path of movement of said rockable lever.

2. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, and latch-releasing means normally in the path of movement of said rockable lever.

3. In a device of the character indicated, a pivoted gravity-hammer, gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be actuated by said lever, and a resetting-latch in operative engagement with said hammer.

4. In a device of the character indicated, a pivoted gravity-hammer having a bifurcated portion below the pivotal point thereof, a resetting-latch in engagement with said bifurcated portion, a rockable locking-bar adapted to rest normally in contact with said hammer, an electrically-operated means for rocking said locking-bar from engagement with the hammer, a rockable lever one portion of which is in line of movement of said hammer, and a latch-releasing device in the path of movement of said rockable lever.

5. In a device of the character indicated, a pivoted gravity-hammer, rockable locking means therefor, an electrically-operated le-

ver in engagement with said locking means, a rockable lever in the path of movement of said hammer, and latch-releasing means normally in the path of movement of said rockable lever.

6. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, latch-releasing means normally in the path of movement of said rockable lever, and a resetting-latch engaging said hammer.

7. In a device of the character indicated, a pivoted gravity-hammer, locking means therefor, electrically-operated means for releasing said hammer, a rockable lever in the path of movement of said hammer, latch-releasing means normally in the path of movement of said rockable lever, and a resetting-latch actuated by said hammer.

8. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking-bar supported in convenient proximity to said hammer, a rockable armature-arm engaging said rockable locking-bar, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be operated by said lever, and a resetting-latch in operative engagement with said hammer.

9. In a device of the character indicated, a pivoted gravity-hammer, gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, and a reciprocatory latch-operating means adapted to be actuated by said lever.

10. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated releasing means adapted to actuate said locking means, a rockable lever in the path of movement of said hammer, latch-operating means adapted to be actuated by said lever, and a resetting-latch in operative engagement with said hammer.

11. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, a reciprocatory latch-operating means normally in the path of movement of said lever, and a resetting-latch in operative engagement with said hammer.

12. In a device of the character indicated, a pivoted gravity-hammer, a gravity-operated locking means therefor, electrically-operated means for lifting said locking means, a rockable lever in the path of movement of said hammer, a reciprocatory latch-operating means normally in the path of movement of said lever, and a reciprocatory, beveled resetting-latch in operative engagement with said hammer.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

LIBERMOND A. LÉON.

Witnesses:

FREDERICK H. GIBBS,

JOHN F. DEUFTERWIEL.