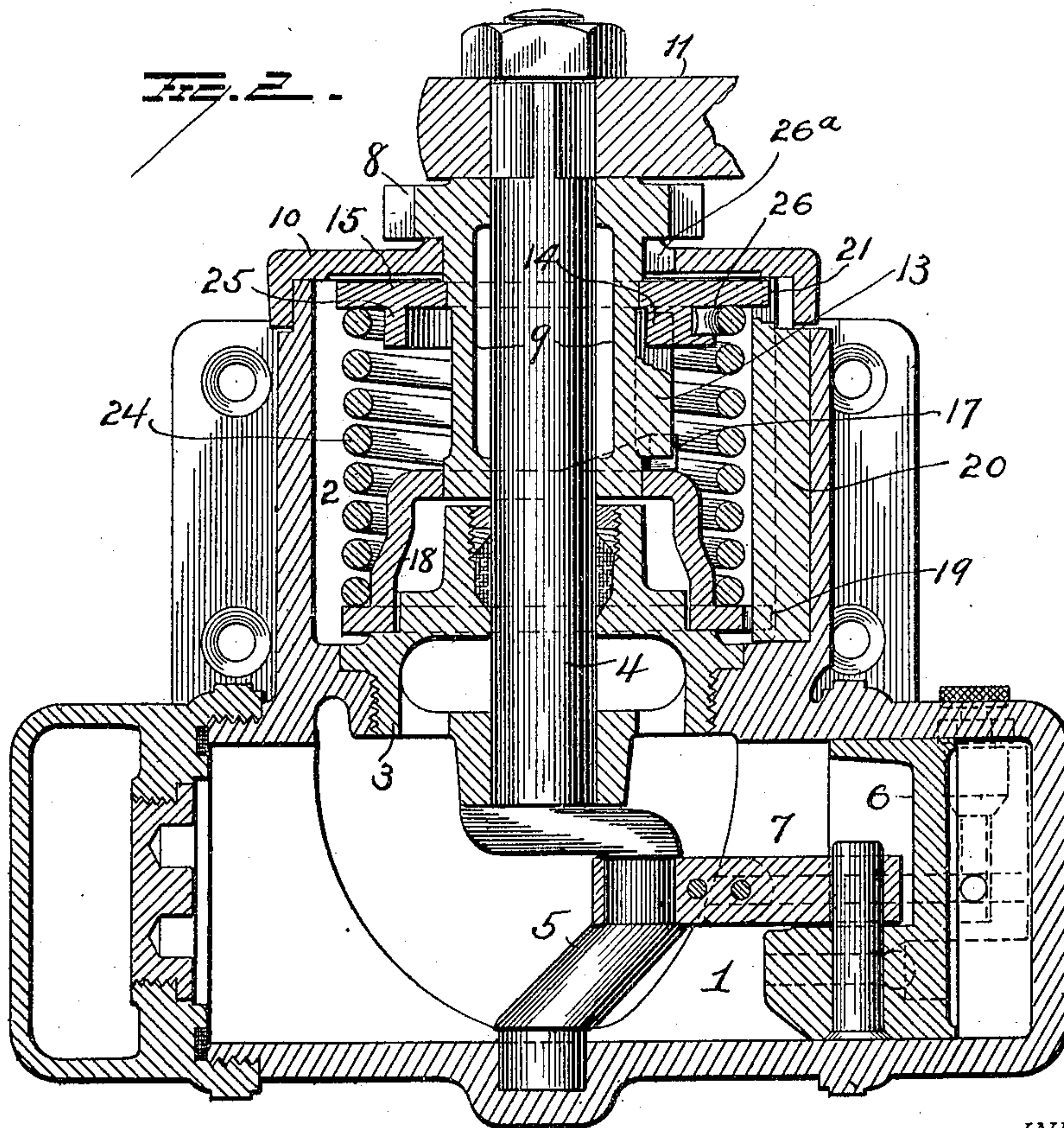
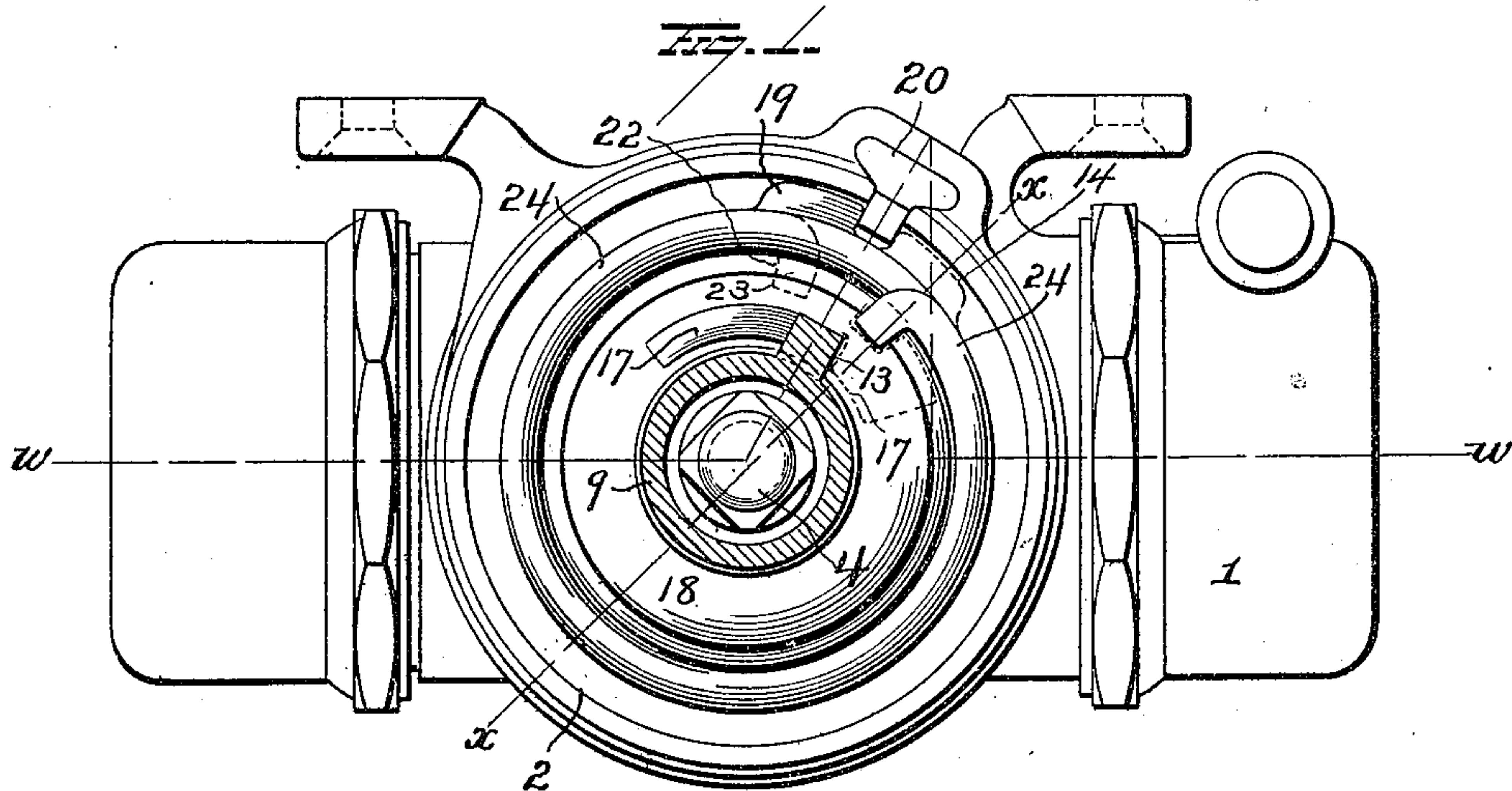


J. C. REGAN.  
DOOR CHECK AND CLOSER.  
APPLICATION FILED FEB. 8, 1911.

999,522.

Patented Aug. 1, 1911.

2 SHEETS—SHEET 1.



WITNESSES  
*E. Nottingham*  
*G. J. Downing*

INVENTOR  
*J. C. Regan*  
*Cy. H. Seymour* Attorney





# UNITED STATES PATENT OFFICE.

JOSEPH CHARLES REGAN, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE YALE & TOWNE MANUFACTURING COMPANY, OF STAMFORD, CONNECTICUT.

## DOOR CHECK AND CLOSER.

999,522.

Specification of Letters Patent.

Patented Aug. 1, 1911.

Application filed February 8, 1911. Serial No. 607,402.

*To all whom it may concern:*

Be it known that I, JOSEPH CHARLES REGAN, of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Door Checks and Closers; and I do hereby 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.

My invention relates to an improvement in door checks and closers adapted for use on right and left hand doors, and known to the trade as reversible checks.

The objection to the reversible checks now in use, is, that when applied to a door, the action of the closing spring in one direction may be satisfactory, while in the other direction, the friction is so great as to seriously interfere with the proper operation of the check, and the object of this invention is to provide a check adapted for both right and left hand doors, without changing or readjusting any of the parts, and which will be equally efficient on both kinds of doors.

A further object is to provide a construction in which the spring and the parts that are connected thereto and coöperate therewith, may be readily assembled on the outside and then placed in position within the casing.

With these and other objects in view my invention consists in the parts and combinations of parts as will be more fully explained and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in plan, the cap being removed, and the ratchet sleeve shown in section. Fig. 2 is a view in longitudinal vertical section. Fig. 3 is a view partly in section and partly in elevation on the line *x x* of Fig. 1. Fig. 4 is a view in plan and Fig. 5 is a view in section of the lower plate or winder, and Figs. 6 and 7 are similar views of the upper plate or winder.

1 represents the piston chamber or cylinder, and 2 the spring chamber. These chambers are cast integral and in open communication with each other, the opening between the chambers being closed by the packing nut 3 which serves as a bearing for the spindle 4. This spindle has a crank 5 to which the piston 6 is connected by the rod 7, and it passes up through the packing nut

3, through spring chamber 2 and terminates in a plane above the top of the latter.

Mounted on the spindle 4 is the ratchet wheel 8, having an integral depending sleeve 9, which latter passes downwardly through a central opening in the top cap 10 and terminates just above the upper edge of the packing nut 3. This ratchet 8 is connected to the lever 11, which latter is secured on the angular upper end of the spindle 4, by the pawl 12, and the sleeve 9 of the ratchet, is provided with an integral driver 13, the upper edge of which is adapted to engage a vertical lug 14 on the lower face of the top plate or winder 15, and the lower edge engages a lug 17 on the top face of the lower plate or winder 18, the lug 14 bearing against one side of driver 13, so as to be moved by the latter when the ratchet sleeve is rotated in one direction, and the lug 17 on the lower plate or winder engaging the opposite side of said driver 13 so as to be moved when the latter is rotated in the opposite direction. The lower plate or winder, is cup shaped as shown, and surrounds the upper portion of the packing nut 3, and is provided on its lower edge at its periphery with a horizontally projecting lug 19, which rests on one side of the stop 20 seated in a recess in the side wall of the cylinder 2, and projecting into the latter, and the top plate or winder 15 is provided at its periphery with a horizontally projecting lug 21, which is also located to engage the stop 20. The lug 19 on the lower plate or winder 18 engages one side of the stop 20, while the lug 21 on the upper plate or winder 15 engages the opposite side of said stop, hence with both lugs 19 and 21 in engagement with the stop 20, one plate or winder will be free to turn in one direction, and the other free to turn in the opposite direction.

The driver 13 rests in a plane between lugs 14 and 17 on plates 15 and 18 respectively, hence when the ratchet sleeve 9 is turned in a direction to cause its driver 13 to engage lug 14 on the upper plate, it will carry lug 21 on the latter away from stop 20, and when the sleeve is turned in the opposite direction, its driver 13 by engagement with lug 17 on the lower plate, will carry lug 19 on the latter away from the said stop.

The lower plate or winder 18 is provided centrally in its top with an opening into



which the lower end of the ratchet sleeve 9 projects, the latter forming a bearing for the upper end of said plate. This lower plate is also provided with a hole or recess 22 for the reception of the inwardly bent lower end 23 of the coil spring 24, and the upper plate or winder 15 is provided with a depending flange 25 having a similar hole or recess 26 for the reception of the inwardly bent upper end of coil spring 24. The ends of the springs are connected to said plates by their bent ends as above set forth and shown in the drawing as being a convenient method, but the method of connection is not material and various other methods might be adopted. It will be noted that when the ends of the spring are properly connected to the lower and upper plates these plates and the ratchet sleeve and cover, or top cap 10 are, so to speak, self contained and form an operative unit for the operation of the check.

From the foregoing it will be apparent, that when the parts are assembled, with the spring under a slight tension, the latter will hold the lugs 19 and 21 of the two plates in contact with the stop at opposite sides of the latter, and when the lever arm 11 is moved in one direction, one plate, say the lower one 18 will be held against movement, and the upper plate 15 rotated by the driver, thus winding up the spring at its top, and when the lever arm is turned in the opposite direction, the upper plate 15 will be held against movement and the lower plate 18 rotated by the driver 13, thus winding up the spring from the bottom, the tension of the spring operating in both instances, to restore the lever arm 11 to its normal or neutral position as soon as it is released.

The cap 10 is provided with a slot 26<sup>a</sup>, and the top plate is provided with a slot 27 for the passage of the driver 13 on the ratchet sleeve.

In assembling the mechanism the cap 10 and top plate 15 are passed over the inner end of the ratchet sleeve into the position shown in Fig. 2, and one bent end of the spring 24 is inserted in the hole 26 in top plate or winder 15; the lower plate or winder is then placed in position over the inner end of ratchet sleeve 9 and the lower bent end 23 of spring 24 is inserted in hole 22 in lower plate or winder 18. The parts thus assembled are then passed into the upper chamber 2, and onto the spindle 4, and are held therein by the lever arm 11 which is secured in place by a nut. By now rotating the ratchet sleeve in one direction, the spring will be wound up from one end and its other end held against movement, and by reversing the direction of rotation of the ratchet sleeve, the end of the spring that was formerly restrained will be free to turn, and the other end held against movement,

and when the ratchet sleeve is released, the spring which is under tension, will operate in the ordinary manner to rotate the spindle and close the door, thus restoring the parts to their neutral position.

The ease with which the parts may be assembled not only reduces the cost of manufacture but also renders it possible for a person of ordinary skill to readily take it apart and assemble it, in the event the change or renewal of parts should be necessary.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention. Hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown and described, but

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a door closer, the combination with a casing, and a stop carried by said casing, of a sleeve having a driver thereon, upper and lower winder plates, each having a lug to engage the driver and each having a lug to engage the stop, and a spring connected to both plates, the construction being such that when the driver is engaging its lug on one plate to wind up the spring from one end, the other plate will be held against movement by the stop lug thereon engaging the stop on the casing.

2. In a door closer the combination with a casing and a stop projecting into the casing chamber, of a ratchet sleeve having a fixed driver thereon, top and bottom plates each having a lug to be engaged by the driver, and each having a lug to engage the stop, and a coiled spring interposed between the plates and connected to both.

3. In a door closer, the combination of a cover or cap, a ratchet sleeve having a fixed driver thereon, two plates surrounding the sleeve, each plate having a lug to be engaged by the driver, and a spring connected at its opposite ends to the plates, so that said parts are self contained and together form the driving unit for the check.

4. In a door closer, the combination with a casing, top and bottom winder plates each having a vertical lug and a horizontal lug, and a spring intermediate the plates and secured to each, of a sleeve having a driver resting in a plane between the vertical lugs and adapted to engage either, and a stop on the casing resting in a plane between the horizontal lugs and forming an abutment for either.

5. In a door closer, the combination with a casing, a piston, a spindle, and a lever arm secured to the latter, of a sleeve secured on and rotatable with the spindle and provided with a laterally projecting driver, a



top plate having a vertical lug adapted to be engaged by the driver and also a horizontal lug, a bottom plate having a vertical lug adapted to be engaged by said driver and  
5 also a horizontal lug, a spring intermediate the two plates and connected to both, and a stop on the casing, the said stop being between the horizontal lugs on the plates and adapted to be engaged by either.

10 6. The combination with a casing, a stop projecting inwardly from the wall of the casing, a spindle, a lever arm, and a sleeve embracing the spindle and having a laterally projecting driver, of a cap closing the top  
15 of the casing and having an opening for the

sleeve and its driver, top and bottom winder plates the former having an opening for the passage of the sleeve and its driver, each plate having vertical lugs to engage the driver and horizontal lugs to engage the stop  
20 on the casing and a coiled spring embracing the sleeve and secured at its ends to the winder plates.

In testimony whereof, I have signed this specification in the presence of two subscrib-  
25 ing witnesses.

JOSEPH CHARLES REGAN.

Witnesses:

SCHUYLER MERRITT,

C. M. CROZIER.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,  
Washington, D. C."

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