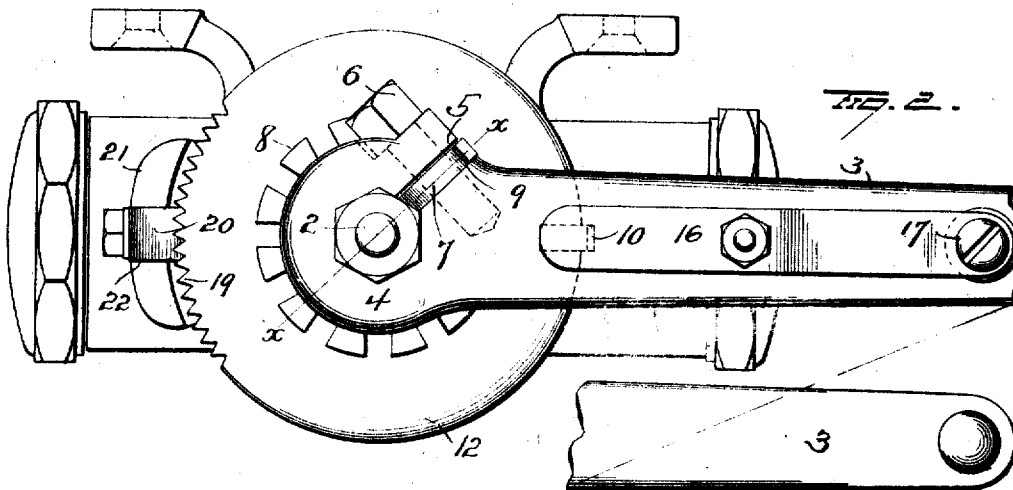
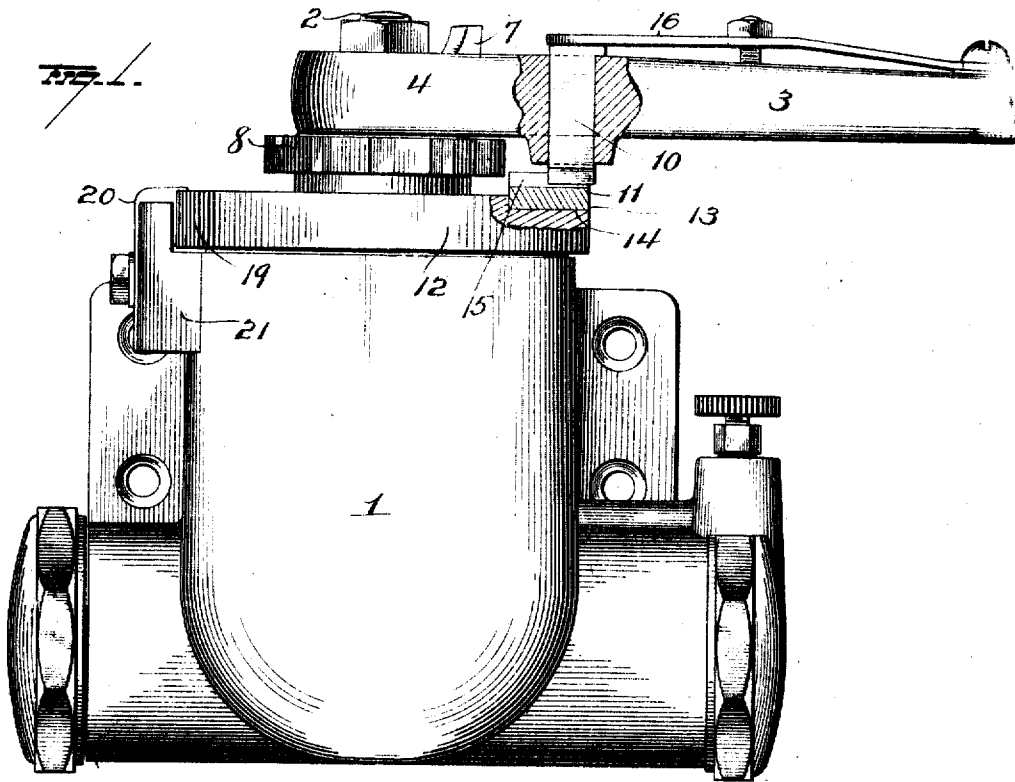


J. C. REGAN.
DOOR CHECK AND CLOSER.
APPLICATION FILED DEC. 20, 1910.

1,003,652.

Patented Sept. 19, 1911.

3 SHEETS—SHEET 1.



WITNESSES
E. Nottingham
G. J. Downing

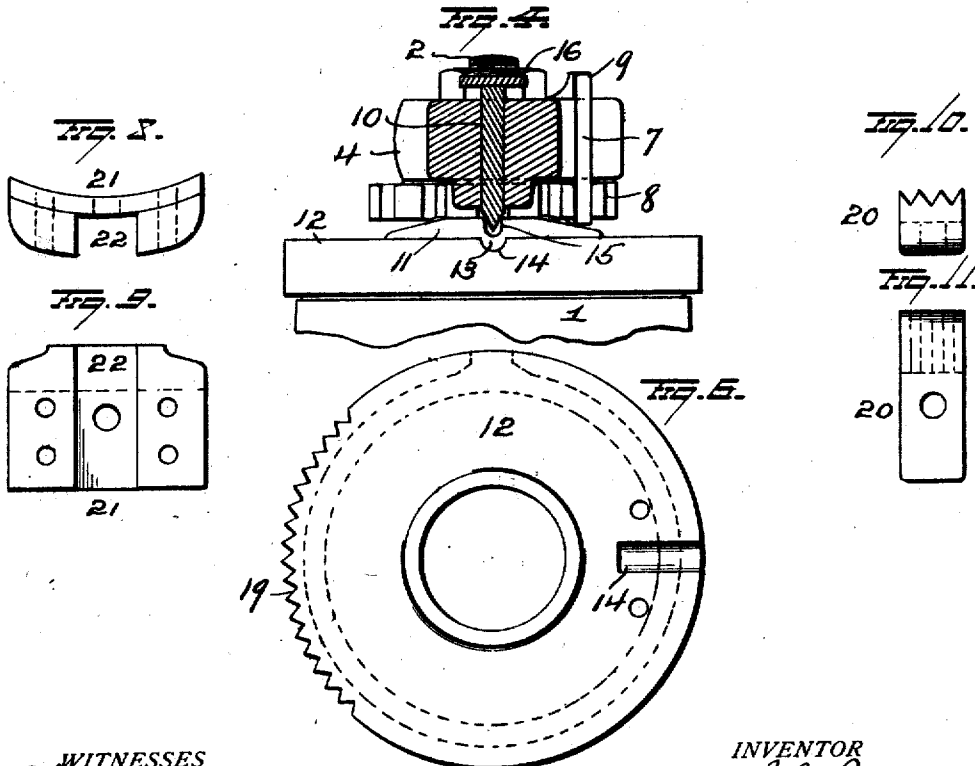
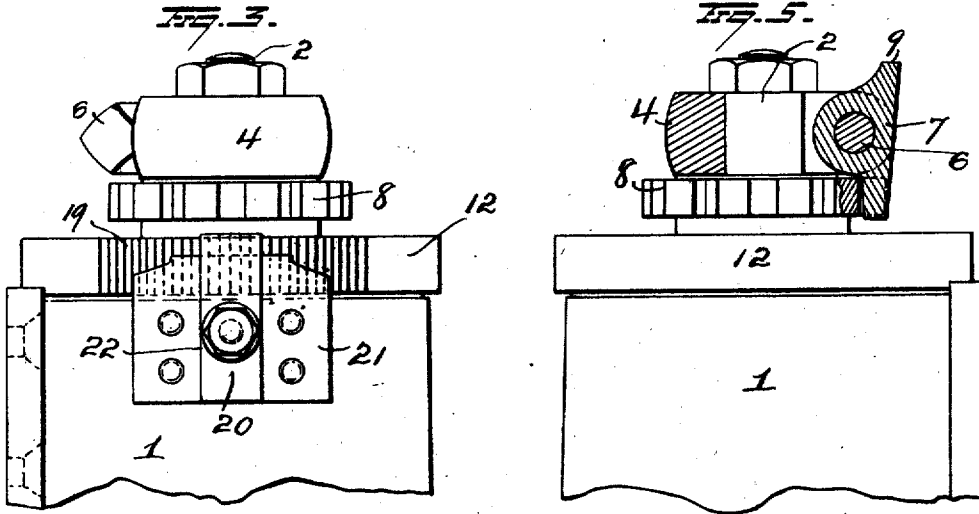
INVENTOR
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E. H. Seymour
Attorney

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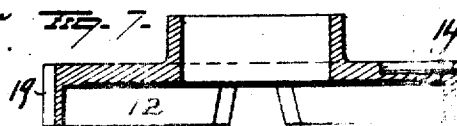
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3 SHEETS—SHEET 2.



WITNESSES
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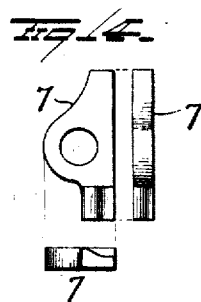
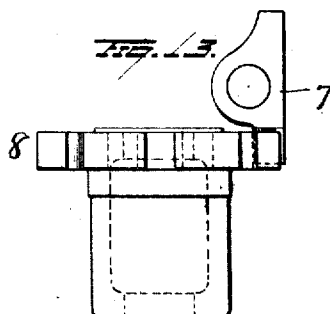
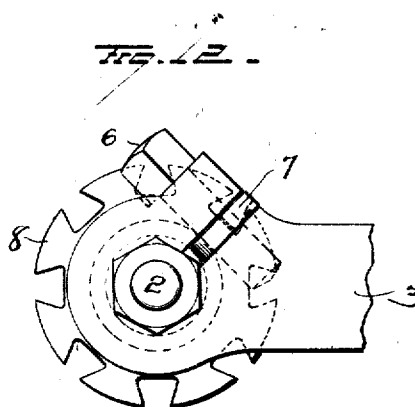
INVENTOR
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3 SHEETS—SHEET 3.



WITNESSES
E. Nottingham
G. J. Downing

INVENTOR
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UNITED STATES PATENT OFFICE.

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

DOOR CHECK AND CLOSER.

1,003,652.

Specification of Letters Patent. Patented Sept. 19, 1911.

Application filed December 30, 1910. Serial No. 598,360.

To all whom it may concern:

Be it known that I, JOSEPH C. 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, and more particularly to door closers having yielding means which, when the door is opened a predetermined distance, will operate to hold it open, and it consists in the parts and combinations of parts as will be more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in front elevation of a combined door check and closer embodying my invention. Fig. 2 is a view in plan of the same. Fig. 3 is a view in elevation of the means for adjusting the cap of the spring chamber. Fig. 4 is a view partly in elevation and partly in section showing the yielding means for holding the door open. Fig. 5 is a view on the line $x-x$ of Fig. 2. Figs. 6 and 7 are views respectively in plan and section of the cap for the spring chamber; Figs. 8, 9, 10 and 11 are views of the means for adjusting the cap and for holding it in position, and Figs. 12, 13 and 14 are views of a modified pawl and ratchet.

1 represents the casing of the door check and closer, and 2 the spindle of same to which the lever arm 3 is secured. This lever arm is provided with an enlarged head 4 having an opening through same for the passage of the spindle 2, and is also provided at one side with a slot 5 extending from the spindle opening through the side of the head, whereby the head may, by means of the screw 6, be clamped to the spindle.

Mounted on the screw 6 within the slot 5 is the pawl 7, shown in Fig. 5. This pawl engages the teeth of the ratchet wheel 8 and operates, in the usual and well known manner, to hold the spring (not shown) of the closer under tension, and is provided with an upwardly projecting end or finger piece 9, by which the pawl may be moved to disengage the ratchet, when a change in adjustment of the spring is necessary or

desired, and by which the pawl may be held out of contact with the ratchet teeth, while turning the latter to put the spring under the necessary tension. This pawl is therefore to one side of the long axis of the lever arm and out of the way of the dog 10, which latter is carried by the lever arm, and is designed to engage the stop 11 for holding the door open. In Fig. 12, I have shown the ratchet wheel 8 with undercut teeth and the pawl 7 is similarly beveled to conform to the under cut of the teeth, so that the wedging action of the two inclined faces tends to hold the pawl in the ratchet against the possibility of displacement. The stop 11 is secured to the top of the cap or cover 12 adjacent the edge of the latter, and comprises a plate curved to conform to the cap and provided on its lower face with a rib 13 resting in a slot 14 formed in cap or cover 12. This stop is thickest at the center, and is provided centrally on its upper face with a groove 15 to receive the lower end of the dog 10, the upper surface of the stop, at both sides of the groove being inclined as shown so as to engage the lower free end of the dog and gradually elevate same as it approaches the groove 15. This dog 10 in the form shown in this application, consists of a vertically movable plunger, provided with a chisel shaped or beveled end adapted to enter groove 15 and normally hold the lever arm against the action of the closing spring. The lever arm may, if necessary, be enlarged at the point where the dog is supported, so as to provide ample bearing for the latter, and it carries on its upper surface the flat plate spring 16, which is secured at one end to said lever arm 3, by the screw 17, and bears at its opposite end against the upper enlarged end of the dog 10 and tends to force the latter downwardly, the tension of the spring 16 being regulated and controlled by the screw 18.

The stop 11 is so located with relation to the lever arm 3, that the dog 10, carried by said arm, will be over the stop when the door is open, but the position of said stop with relation to the lever arm, may be adjusted thereafter to different positions by providing the cap 12 with teeth 19 throughout a portion of its periphery (as shown in Fig. 2), and the casing 1 with a removable locking block 20 having teeth to engage the teeth on the periphery of the cap 12. This lock-

ing block comprises a plate 21 (shown in Figs. 8 and 9) curved to conform to the curvature of the casing 1, and secured to latter adjacent the top by screw or rivets. This plate is provided with a vertical recess 22, in its outer face in which the stem of locking block proper 20 rests, and in which it is removably secured by a screw. The head of block 20 is in a plane above the plate 21 with its teeth in engagement with the teeth on the periphery of the cap 12, hence when it is desired to change the position of the stop 11 with relation to the dog 10, when the door is open, so as to increase or lessen the opening movement necessary to carry the dog onto the stop, it is simply necessary to remove the locking block 20 and turn the cap 12 so as to carry the stop 11 away from or toward the door, as may be desired.

From the above, it will be apparent, that when the door is opened the dog 10 is moved toward the stop, and if opened sufficiently far, engages the inclined surface of the stop and drops into the groove in the latter. This engagement of the dog with the stop on the cap will be sufficient to hold the door open against the closing action of the spring, but may be overcome by a slight pull or push on the door, which will cause the bevel edge of the dog to ride up out of the groove in the stop and thus release the door to the closing action of the spring.

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 spindle, a lever arm engaging said spindle the head of said lever arm having an open slot, and a screw for clamping the lever arm to the spindle, of a ratchet embracing the spindle and a pawl mounted on said screw within the slot, and engaging the ratchet for locking the ratchet to the lever arm.

2. In a door closer, the combination with a casing, a spindle, a lever arm and a stop located on the upper surface of the cap of

the casing and provided with a double inclined upper surface and a groove at its apex, of a vertically movable plunger carried by the lever arm and adapted to engage the stop and enter the groove in the latter and a spring for yieldingly forcing the plunger downwardly.

3. In a door closer, the combination with a casing, a spindle and ratchet embracing the spindle, of a lever arm on the spindle, a pawl connected with said lever arm and engaging the ratchet, a stop secured to the cap of the casing, means for adjustably connecting the latter to the casing whereby the stop may be adjusted toward or away from the closed position of the door, and a yielding dog carried by the casing and adapted to engage said stop.

4. In a door closer, the combination of a casing, a removable cap for same, the latter having teeth on a portion of its periphery, a toothed clamping block detachably secured to the casing and adapted to engage the teeth on the cap, a spindle, a ratchet embracing the spindle, a lever arm secured to the spindle and carrying a pawl adapted to engage the ratchet, and a spring dog carried by the lever arm and adapted to engage a stop on the movable cap.

5. In a door closer, the combination of a spindle, a lever arm engaging said spindle, and provided in its head with a slot disposed diagonally to the long axis of the arm, a ratchet embracing the spindle and having undercut teeth and a pivoted pawl mounted in said diagonally disposed slot and having a beveled edge adapted to engage the undercut side of the ratchet teeth.

6. In a door closer, the combination of a casing, a movable cap for same, the latter having teeth on a portion of its periphery and a stop on its upper surface, a toothed clamping block secured to the casing and adapted to engage the teeth on the cap, a spindle and a spring actuated dog carried by the lever arm and adapted to engage the stop on the cap.

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

JOSEPH CHARLES REGAN.

Witnesses:

W. H. TAYLOR,
S. A. SMITH.