

(No Model.)

C. M. BURGESS.
DOOR CHECK.

2 Sheets—Sheet 1.

No. 576,431.

Patented Feb. 2, 1897.

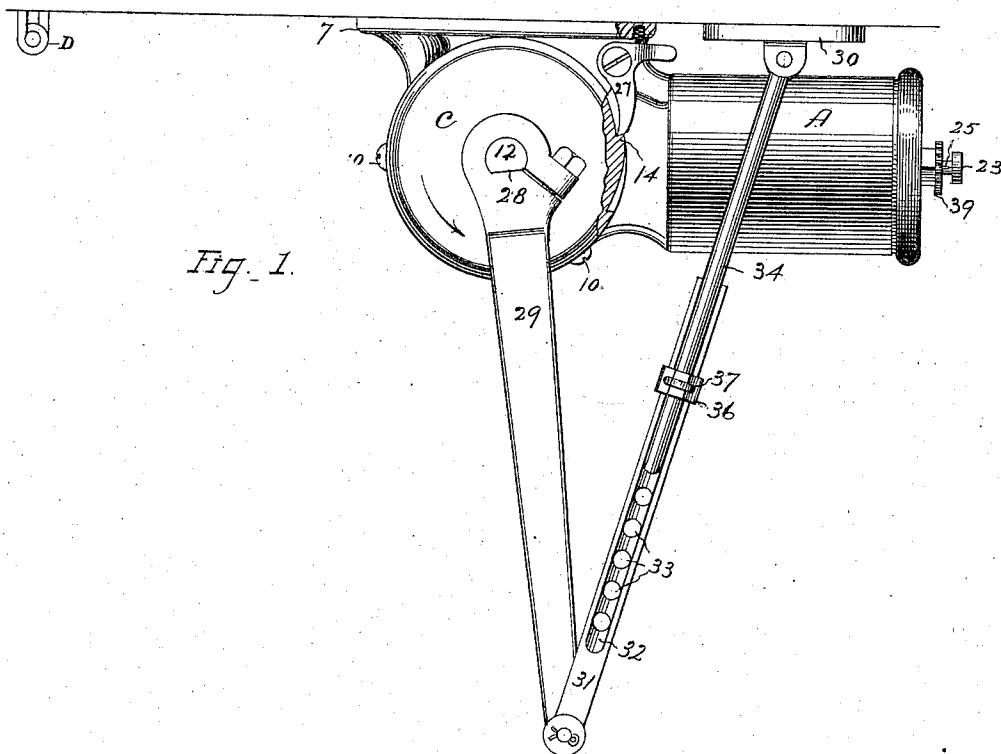


Fig. 1.

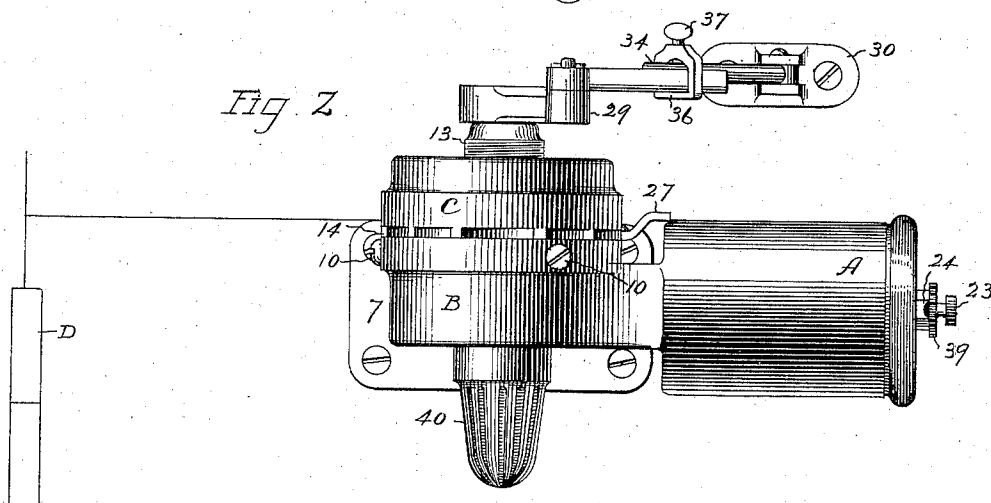


Fig. 2.

Witnesses

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(No Model.)

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2 Sheets—Sheet 2.

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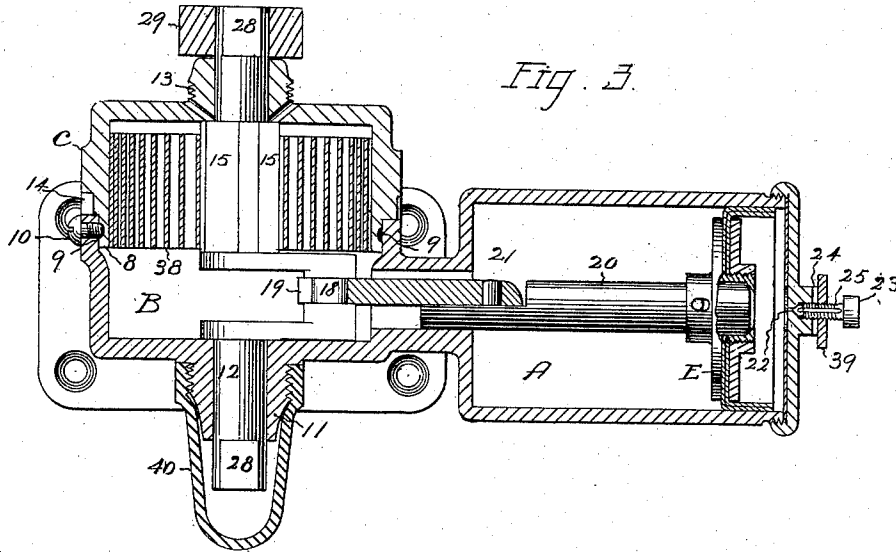


Fig. 3.

Fig. 4.

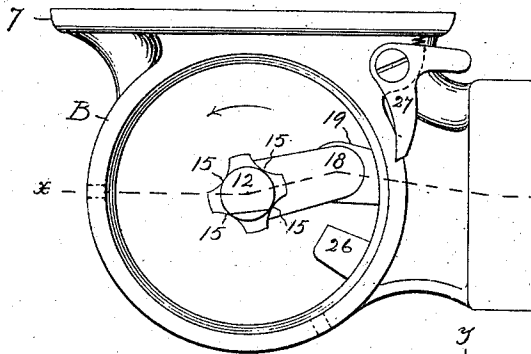


Fig. 5.

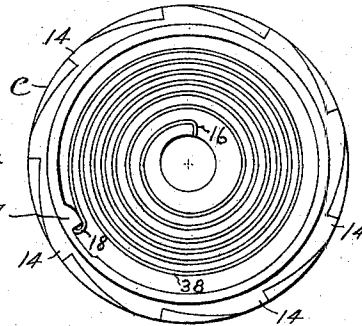


Fig. 6.

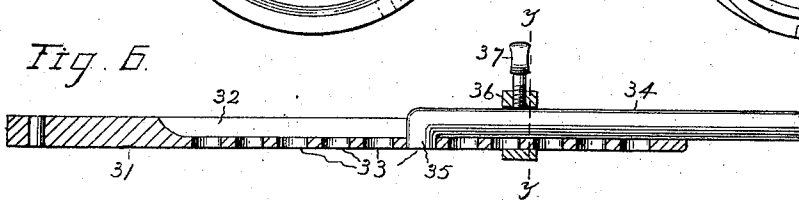
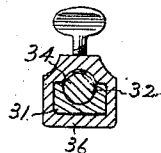


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

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DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 576,431, dated February 2, 1897.

Application filed October 2, 1896. Serial No. 607,629. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. BURGESS, a citizen of the United States, residing at New Britain, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Door-Checks, of which the following is a specification.

My invention relates to improvements in door-checks; and the main objects of my improvements are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawings, Figure 1 is a plan view of my check, partly in horizontal section, together with one of the door-hinges D and a line representing the face of the door and its casing. Fig. 2 is a front elevation of the same. Fig. 3 is a vertical section on the line *x x* of Fig. 4, some of the parts being shown in elevation. Fig. 4 is a plan view of portions of my check, the spring and spring-chamber being removed. Fig. 5 is a detached plan view of the inner end of the spring-chamber and spring. Fig. 6 is a central longitudinal section of the main portion of the adjustable connecting arm or link, and Fig. 7 is a transverse section of the same on the line *y y*.

A designates the cylinder, B the crank-chamber, and C the spring-chamber, adjustable thereon. These parts together constitute the case or frame, the crank-chamber being provided with the bracket 7, by means of which the check may be secured to the door. The spring-chamber C is provided with a shouldered tenon 8, fitted into the upper end of the crank-chamber and having a circumferential groove 9 on said tenon, into which the end of one or more fasteningscrews 10 may enter and secure the said spring-chamber to the said crank-chamber to prevent vertical displacement, while at the same time the spring-chamber is free to be rotated or partially rotated therein when desired. A central boss 11 at the outer end of the crank-chamber has formed in it a suitable bearing for one end of the crank-shaft 12, and the outer end of the spring-chamber has a similar boss 13 and bearing for the other end of said crank-shaft. The spring-chamber is also provided near its shouldered tenon 8 with a

series of ratchet-teeth 14, while a spring-pressed pawl 27 for engaging said teeth is pivoted to the bracket portion of the crank-chamber. The crank-shaft at the portion within the spring-chamber is longitudinally grooved or shouldered, as at 15, for engagement with the hook 16 at the inner end of the spring 38, while the wall of said spring-chamber is provided with a proper shoulder 17 for the hook 18 of the outer end of the spring to engage, or any other ordinary connection of the ends of the spring, respectively, with the crank-shaft and spring-chamber may be substituted for said hooks and engaging shoulders.

The crank 18 of the crank-shaft 12 is connected by means of the link 19 to the piston-rod 20, one end of said link being pivoted to said crank, while the other end is pivoted to the piston-rod by the pin 21. The piston-rod is provided with any ordinary piston E, properly valved, and the cylinder is provided with a vent 22. I form said vent in a boss on the end of the cylinder, the said boss, in addition to being bored and threaded to receive the adjusting-screw 23, is grooved transversely across its face, as at 24. The adjusting-screw is provided with a set-nut 39, which is turned up firmly against the grooved face of this boss to lock the said screw in its adjusted position after the manner of an ordinary set-nut, while at the same time the transverse groove 24 in the face of said boss prevents the said set-nut from in any way clogging the vent. The said groove should be fully as wide or wider than the diameter of the screw, so that the longitudinal groove 25 in said adjusting-screw will always open into the said groove no matter in what position it may be set. It is also believed that by the employment of the set-nut and grooved boss in connection with the adjusting-screw the vent is less liable to become clogged or partly clogged, so as to change the closing speed of the door.

Upon the inside of the crank-chamber is a stop 26, Fig. 4, to limit the movement of the crank in the direction that it is moved by the spring. The spring-chamber may be rotated or partially rotated upon the crank-chamber to give any desired tension, while the pawl 27, engaging the ratchet-teeth 14 on the

spring-chamber, will hold the said chamber in its adjusted position. The stop 26 is set in such a position as to permit the crank to turn a little farther than the position it will have when the piston is at the extreme limit of its movement toward the outer end of the cylinder.

Both ends of the crank-shaft project from the case and are slabbed off, as at 28, or otherwise made angular to fit the socket or head of the crank-arm 29, and both bosses 11 and 13 are externally threaded to receive the ornamental cap or tip 40 for covering either end of the crank-shaft, as may be desired. The door-check may be secured upon the door with either end of the crank-shaft at the top to adapt the check for use on a right-hand or left-hand door. When the crank-arm is secured to one end of the crank-shaft, for example, at the upper end, as shown, the cap or tip is screwed upon the boss at the opposite end to cover the unused end of the crank-shaft, as shown.

The crank-arm is connected with the door-casing by means of a bracket 30 and an adjustable link. One member of the link is the bar 31, pivoted by one end to the outer end of the crank-arm and having a longitudinal groove 32, with a series of perforations 33 in the bottom of said groove. The other member is the round rod 34, pivoted by one end to the bracket 30 and having at its opposite end the pin or projection 35, standing at right angles to its length and fitted to engage either of the perforations in the series 33, as may be desired. The diameter of the rod should correspond with the longitudinal groove in the bar 31, so as to hold the rod and bar in longitudinal alinement. I lock the rod in the groove in the bar by means of a yoke or ring 36 and its set-screw 37. By loosening the set-screw and slipping the yoke toward the pivoted end of the bar 31 the pin 35 can be set into any desired one of the perforations to give the complete link the desired length, and then the lapped ends of the two members can be secured in their adjusted position by slipping the yoke back into place and tightening out its set-screw.

The parts may be so mounted on a door and casing that when the door is closed the crank and link will stop a little short of com-

ing into alinement, as shown in Fig. 4, and so that the crank 18 will not engage the stop 26 in the ordinary operation of the check. Opening the door will turn the crank-shaft and crank in the direction indicated by the darts in Figs. 1 and 4. In case of any accident causing the release of the crank-arm 29 the crank 18 will be arrested and held by the stop 26 and prevent the force of the spring from doing any injury.

I claim as my invention—

1. In a door-check, the combination of the cylinder, the crank-chamber, the spring-chamber rotatably mounted on said crank-chamber and having a series of ratchet-teeth, the pawl pivoted on the case of said crank-chamber, the spring with its outer end secured to said spring-chamber, the crank-shaft connected to the inner end of said spring and to the piston, and means for connecting the said parts with a door and its casing, substantially as described and for the purpose specified.

2. In a door-check the combination of the cylinder, the crank-chamber, the spring-chamber rotatably mounted on said crank-chamber, the spring with its outer end secured to said spring-chamber, the crank-shaft connected with the inner end of said spring and with the piston, and the stop for limiting the movement of the crank under the influence of the spring, substantially as described and for the purpose specified.

3. In a door-check the combination of the cylinder end having a boss provided with an interiorly-threaded vent-hole and a transverse groove across the face of said boss, that extends from one side of said boss into said vent-hole, the vent-screw fitted to said threaded vent-hole and having the longitudinal vent-groove in its periphery and the set-nut on said vent-screw, one broad side of the said set-nut being arranged to rest firmly upon the grooved face of said boss while the groove therein is open at the ends, substantially as described and for the purpose specified.

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Witnesses:

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M. S. WIARD.