No. 678,790. Patented July 16, 1901.

G. W. NUSHAWG & J. A. NISWONGER.

DOOR CHECK.

(Application filed June 11, 1900.)

(No Model.) 2 Sheets—Sheet 1.

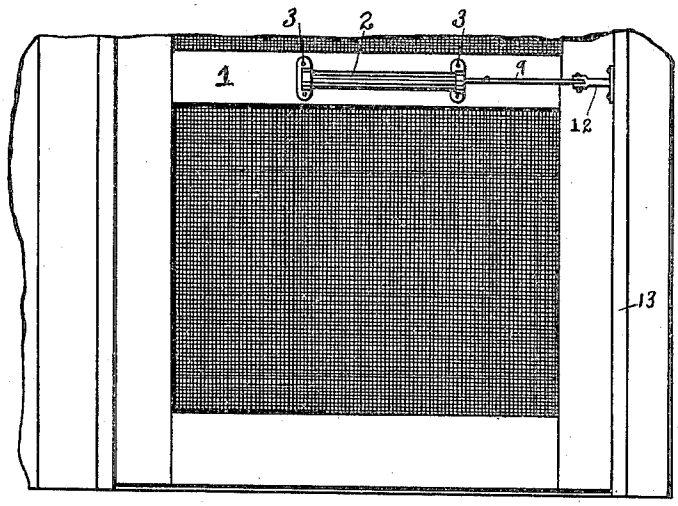


Fig. 1.

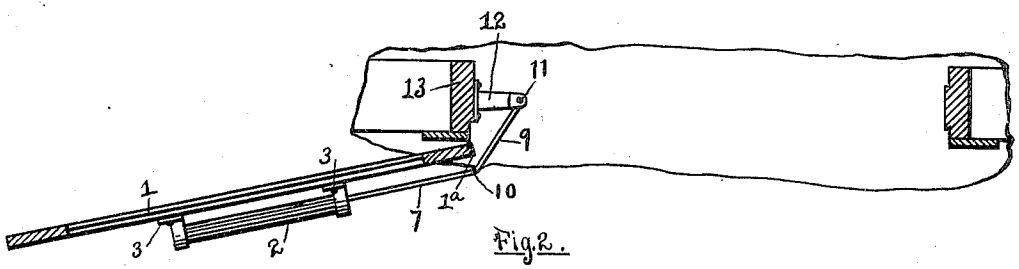


Fig. 2.

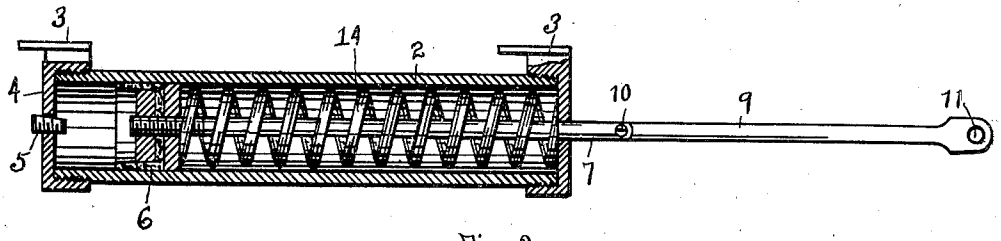


Fig. 3.

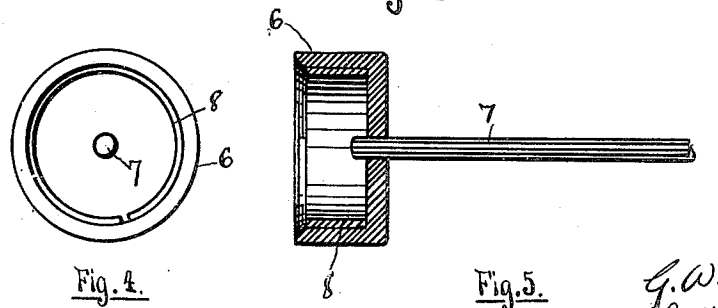


Fig. 4. Fig. 5.

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2 Sheets—Sheet 2.

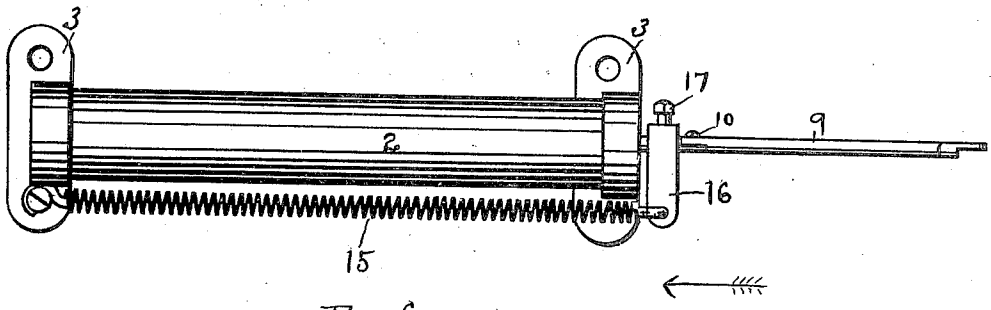


Fig. 6.

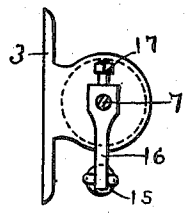


Fig. 7.

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UNITED STATES PATENT OFFICE.

GEORGE W. NUSHAWG AND JESSE A. NISWONGER, OF DAYTON, OHIO.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 678,790, dated July 16, 1901.

Application filed June 11, 1900. Serial No. 19,859. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. NUSHAWG and JESSE A. NISWONGER, citizens of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Door-Checks; and we do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in door-checks, and comprises a door check and spring combined, with the special features of advantage hereinafter specified.

The object of the invention is to provide a door-check having the structural features and advantages hereinafter described and claimed.

Figure 1 is a front elevation of the lower portion of a door, showing our improved door check and spring attached thereto, the door being closed. Fig. 2 is a top sectional view through the door jamb or frame, showing the door opened to its utmost limit. Fig. 3 is an enlarged sectional view of the cylinder in which the door-spring, piston, and piston-rod are shown. Fig. 4 is an end elevation of the piston; Fig 5, a sectional view of the piston. Fig. 6 is an elevation of the device, showing an exterior spring which may take the place of the interior spring shown in Fig. 3. Fig. 7 is an end elevation looking in the direction of the arrow in Fig. 6.

In a detailed description similar reference characters indicate corresponding parts in the several views of the drawings.

1 designates a transverse lock-bar of the door, which door in the present instance is shown to be a screen-door.

2 is a piston-cylinder which is shown to be attached to said lock-bar 1 at both ends by means of suitable brackets 3. The said brackets 3 being screwed to said lock-bar, the piston will always occupy a fixed parallel position with the door, regardless of the position of said door with relation to the jamb. One end 4 of the cylinder has an air plug or valve 5, which has a tapering surface and may be adjusted for the escape of a proper amount of air therefrom. In other words, the plug 5 is adjusted to permit the air to escape to regulate the speed of the door in closing, so as to prevent said door from slamming.

6 designates a piston-head, which is preferably constructed of leather or other suitable material having a more or less elastic nature and having a flaring edge, as shown in Fig. 5. This piston-head is in the form of a cup and has a rigid connection with the piston-rod 7. On the interior of said piston-head there is located a convolute spring 8, which has a constant pressure outwardly on the inner sides of the piston-head to maintain a proper contact of the sides of said piston-head with the interior of the cylinder.

The piston-rod 7, as shown in Fig. 2, is made in two sections 7 and 9, with a flexible joint 10. Section 9 of said piston-rod is an essentially shorter section and has a flexible connection 11 with a bracket 12, which is secured to the inner side of the jamb 13. This bracket 12 when secured in position, as shown in Fig. 2, projects out to a suitable extent. The length of said bracket is such that when the door is opened to a position at right angles with the door frame or jamb the piston-rod will be permitted to assume a position in substantially a straight line with the cylinder 2, and when a further opening of the door takes place, as is shown in Fig. 2, the piston-rod is permitted to break the joints 11 and 10 and is held away from the inner edge 1^a of the door by the length of said bracket. (See Fig. 2.) We may further state that owing to the length of said bracket the flexible piston-rod is maintained in a practically straight line with the cylinder (which is always parallel with the door) until said door is opened to a position beyond a right angle, at which time the piston-rod breaks the joints, thereby permitting the door to open, as shown in Fig. 2.

Inclosing the part 7 of the piston-rod which moves within the cylinder is a combined piston-rod-controlling spring and door-spring 14, which serves the double function of a door-spring and a spring for controlling the piston-rod when the door is closing. The expansion of the spring 14 as the door closes moves the

piston-rod into the cylinder, and thus prevents any cocking of the joint 10 or any movement of said joint which would have a tendency to lock or throw the piston-rod into an improper or abnormal position, and thereby prevent the piston-rod from moving in.

Referring to Fig. 6 of the drawings, this shows an exterior spring 15, which may be employed in place of the interior spring 14. (Shown in Fig. 3.) This spring occupies a position parallel with the cylinder and has one end fixed to the outer bracket 3 and the other end adjustably secured to the piston-rod by means of a yoke or block 16, which is attached to said piston-rod by means of a set-screw 17. As before stated, this yoke or block 16 has an adjustable connection with the piston-rod and may be moved a suitable distance along said piston-rod and attached thereat in obtaining a desirable tension for the spring. The spring 15 performs all the functions of the interior spring 14, but owing to its being located on the outside of the cylinder it may be detached with ease in cases where a door has the ordinary spring-hinge, thereby avoiding the necessity of removing the spring-hinges from the door. In other words, instead of removing the spring-hinges from the door the spring 15 may be easily detached from the device.

It will be understood that when the spring 15 is detached the device performs the function of a door-check only, the regular spring-hinges of the door performing the other function.

Having fully described our invention, we claim—

In a door-check, the combination with a cylinder, a piston-rod, an exterior spring 15, of an adjusting device movable on said piston-rod and adapted to operatively connect said spring to said rod, and means for securing said adjusting device in its adjusted position.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE W. NUSHAWG.
JESSE A. NISWONGER.

Witnesses:
R. J. McCARTY,
JOHN W. KALBFUS.