Sept. 2, 1924. 1,507,525

L. W. STEWART

DOOR CATCH

Filed June 9, 1923

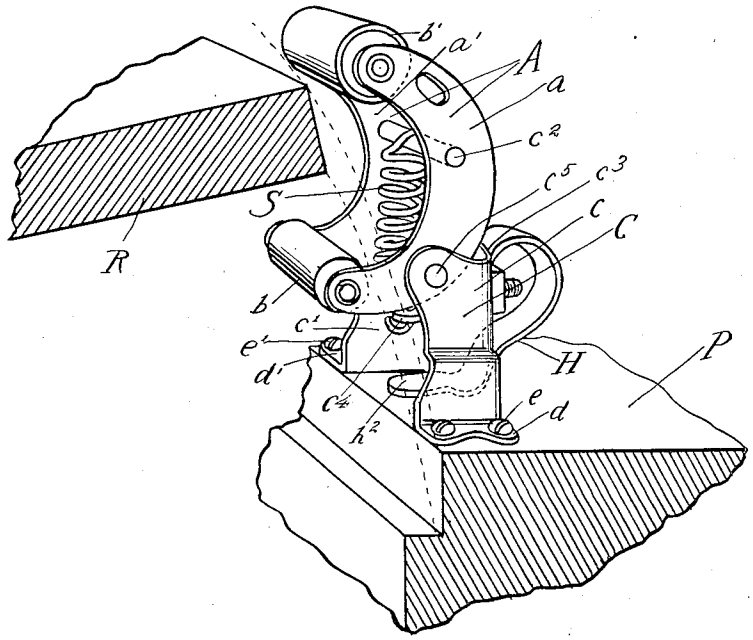

Fig. 1.

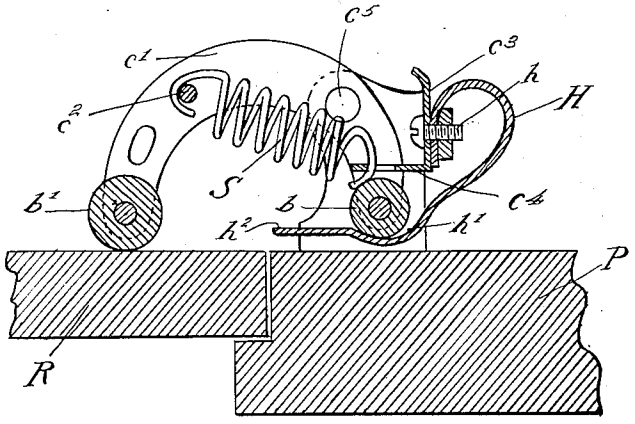

Fig. 2.

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UNITED STATES PATENT OFFICE.

LEONARD W. STEWART, OF CINCINNATI, OHIO.

DOOR CATCH.

Application filed June 9, 1923. Serial No. 644,295.

To all whom it may concern:

Be it known that I, LEONARD W. STEWART, citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Door Catches, of which the following is a specification.

My invention relates to door catches of the type adapted to be tripped into operating position by the closing of the door and to resiliently hold said door closed, being automatically reset when the door is opened. Door catches of this type have been found to make a loud report on being brought into operating position, which at times would become annoying to individuals.

It is the object of my invention to provide a neat, sturdy door catch that will operate efficiently with a minimum of noise.

My invention is illustrated in the accompanying drawings in which—

Figure 1 is a plan view showing the door catch in open position prior to being snapped into closing position by the closing of the door R;

Fig. 2 is cross sectional plan view showing the door catch in closed position and the buffer b seated in the recess h' of the resistance spring H.

Referring now to the drawings:

A crescent shaped operating lever A comprising parallel arms a and a' spaced apart by rubber buffers b b' is fulcrumed at c^5 to the supporting bracket C which in turn is secured to a suitable door frame P.

The supporting bracket C is preferably stamped in one piece from sheet metal and comprises in detail the side portions c and c' each having a flange d d' by which said bracket is secured to the door frame with screws e, e'.

The back portion c^3 extends between the upper part of the side portions c and c' and is provided with a lug c^4 to which is secured one end of a coiled spring S, the other end of said spring being secured to a pin c^2 secured between the arms a and a' of the operating lever A. A leaf spring H is secured to the back portion c^3 of the bracket C by the screw h, and is curved to form a recess h' to leave room for the buffer b when the catch is tripped, and the door R is closed.

It will be seen from the drawings that the coiled spring S is so secured and positioned between the bracket C and crescent shaped operating lever A, and the lever A is fulcrumed to the bracket C in such a manner that when the lever A is brought into open position by the opening of the door the spring S will operate to keep the lever A in open position, said lever being limited in its opening movement by the back c^3 of the bracket C. When the door is swung to closed position it trips the buffer b bringing the spring over the dead center line with respect to the fulcrum c^5, causing it to draw the buffer b' into contact with the door thereby holding the door in closed position.

Because of the fact that a substantially strong spring is required to hold the door in closed position, the tendency of the device is to make a loud report when the catch is tripped. To obviate this loud report the end h^2 of the spring member H is so positioned as to contact with the underside of the buffer b to form a resistance to the lever A when the spring S is passing the dead center line after the catch has been tripped, thereby materially reducing the snapping effect of the buffer b' on the door. When the buffer b' contacts with the door the buffer b has reached the recess h' therein being free from the resistance action of the spring H, leaving the coiled spring S free to exert a maximum pressure on the lever A to hold the door in position.

The device so constructed acts with a maximum of efficiency and a minimum of noise.

Obviously many changes may be made in the device without departing from the spirit of my invention, all of which are claimed as within the scope of the claims.

I claim as my invention and desire to secure by Letters Patent of the United States:

1. In combination with a spring actuated door catch comprising an arm fulcrumed to a bracket, and a spring disposed between said bracket and said arm, said arm adapted to be tripped into operating position by the action of a closing door and held thereto by said spring, means for resisting the action of said spring during said tripping operation.

2. In combination with a door catch comprising a bracket adapted to be secured to the door frame, an arm pivoted to said bracket, and adapted to be tripped by the door as it passes in either direction, a spring adapted to exert pressure on the door thru the arm when the door is closed, and

means for so checking the force exerted by said spring as to break the blow of the arm member upon the door.

3. In combination with a spring actuated door catch comprising an arm fulcrumed to a bracket and a spring extending between said arm and said bracket, tending to swing said arm toward the limit of its movement in either direction, a resilient member secured to said bracket for resisting the movement of said arm.

4. In combination with a spring actuated door catch comprising an arm fulcrumed to a bracket, and a spring disposed between said bracket and said arm, said arm adapted to be tripped into operating position by the action of a closing door and held thereto by said spring, a resilient member secured to said bracket adapted to contact with and resist said arm during said tripping operation.

In testimony whereof I have hereunto set my hand.

LEONARD W. STEWART.