R. C. LOVE.

Combined Door Spring and Check.

No. 216,688. **Patented June 17, 1879.**

Fig. 1.

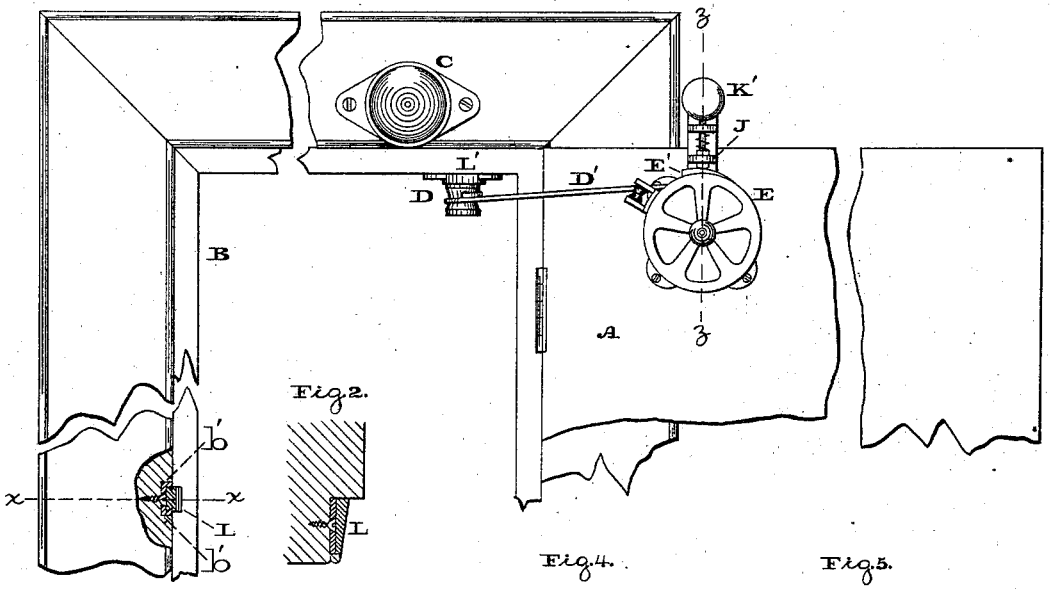


Fig. 2.

Fig. 3.

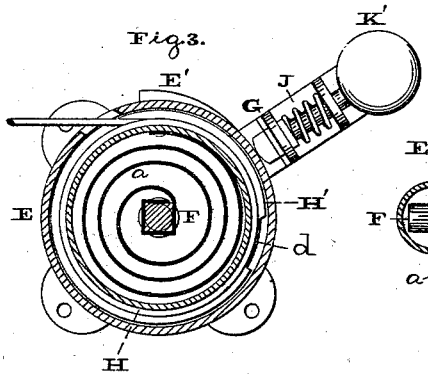


Fig. 4.

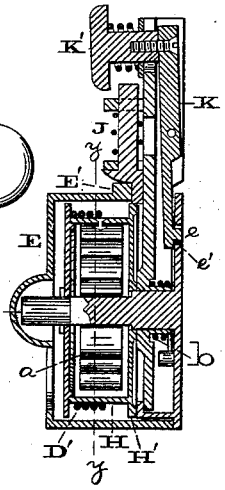


Fig. 5.

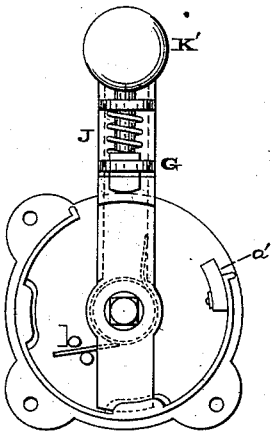


Fig. 6.

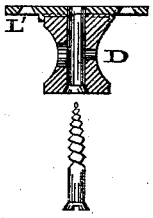
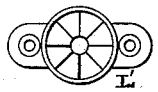


Fig. 7.



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ROBERT C. LOVE, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN COMBINED DOOR SPRING AND CHECK.

Specification forming part of Letters Patent No. **216,688**, dated June 17, 1879; application filed December 27, 1878.

To all whom it may concern:

Be it known that I, ROBERT C. LOVE, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Door Spring and Check, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a face view of the device embodying my invention. Fig. 2 is a horizontal section in line *x x*, Fig. 1. Fig. 3 is a section in line *y y*, Fig. 4. Fig. 4 is a vertical section in line *z z*, Fig. 1. Fig. 5 is a view of the check-lever and interior of the spring-case. Fig. 6 is a vertical section of the cord-holder. Fig. 7 is a view of one end thereof.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists of mechanism, substantially as hereinafter stated, whereby the door in closing is temporarily arrested, so as to be prevented from slamming.

It also consists of a lever fitted loosely on its post and carrying a catch, which engages with the spring-drum, whereby the lever is raised.

It also consists of the covering-frame or shell, provided with an incline for disengaging the spring-drum and lever when elevated, and permitting the door to be opened to a great or full extent.

It also consists of the lever carrying a latch having a stud, which is adapted to engage with a suitable portion of the shell or covering frame or plate for holding the lever in its elevated position, and a head which is adapted to be struck, in order to withdraw the stud and release the lever.

Referring to the drawings, A represents a door, and B the frame thereof. Secured to the outer face of the top piece of the frame is a buffer, C, and to the inner face thereof a vertically-extending holder, D, for attaching one end of a cord, D′, whose other end is adapted to be wound on and unwound from a spring-drum, as will be hereinafter more fully explained.

E represents a shell or frame, from the back plate whereof projects a post, F, on which is loosely fitted a lever, G, and a drum, H, to which drum is connected one end of a spring, *a*, whose other end is connected to the post F. A spring, *b*, is also connected to the back plate of the shell or post F, so as to bear against the lever G and return it to its normal position, which is horizontal or down, as will be explained.

To the lever G is fitted a spring-catch, J, which is adapted to engage with a notch, *d*, on the inner plate, H′, of the drum H, and ride over an incline, E′, on the upper side of the shell E. To the lever G is also hinged a spring-latch, K, having a head, K′, and stud *e* at opposite ends, which latter is adapted to enter an opening, *e′*, in the back plate of the shell or covering-frame E, and the former is so disposed that it will strike the buffer C and cause the stud *e* to emerge from the opening *e′*.

The operation is as follows: When the door is shut the lever G is below the top of the door-frame. On opening the door, owing to the cord D′ being fixed to the holder D, the drum H is caused to rotate, the spring *a* to wind, and the cord to play out or unwind. The notch *d* engages with the lower end of the catch J, thus locking the lever G and drum H, and causing said lever to turn in the post F, and thereby rise. When the lever has reached its highest point the stud *e* drops into the opening *e′*, and serves to hold the lever elevated and stationary. The catch rides on the inclines E′, and is thereby cleared of the notch *d*, whereby neither the latch nor catch prevents the further rotation of the drum, and consequently permits the door to be opened to a great or full extent, as described.

When the door is let go in order to be closed, the power of the spring *a* is exerted to rotate the drum and wind the cord D′ thereon, thus drawing in the door. The lever G, remaining locked, reaches the buffer C, and the head K′ of the latch K strikes against it, thus checking the door and preventing slamming, and causing the stud *e* and back plate of the shell E to disengage, whereby the lever, being no longer controlled, is forced by its spring *b* to its lowered position, so as to pass under the top piece of the door-frame and permit the full closing of the door with ease.

In order to prevent fracture and strain of

the lever G, a stop, a', of rubber or other elastic material, is secured to a proper part of the shell for the lever to strike against.

To the door-jamb is fixed a stop of rubber or other elastic material, L, which has an inclined face, and is fitted between dovetailed pieces b' b' secured to the jamb, whereby the stop is reliably held in position, and its inclined face prevents noise of the shutting door, and, in a measure, wedges against the door to hold the same.

The cord-holder D consists of a rotating cylinder held to a fastening-plate, L′, by a suitable screw, and having a serrated face, which engages with a serrated face of the fastening-plate.

When the screw is loosened the cylinder may be rotated to the required extent. Then tighten the screw, and the serrations engage, whereby the cylinder is immovable and the cord cannot slip. By this provision of the rotation of the cylinder the length of the cord D′ may be adjusted or its slack taken up, as required or desired.

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

1. In a door spring and check, the combination of the lever G, latch K, spring-drum H, shell or frame E, and buffer or stop C, substantially as described, whereby the door in closing is temporarily arrested prior to being fully closed, as and for the purpose stated.

2. The lever G, fitted loosely on the post F, and engaging with the spring-drum H by means of the catch J, substantially as and for the purpose set forth.

3. The lever G, carrying the catch J, in combination with the frame E, provided with the incline E′, substantially as and for the purpose set forth.

4. The combination, with the spring-drum and buffer, of the lever G, provided with the latch K, having the head K′ and stud e, substantially as and for the purpose set forth.

5. The combination, with the lever G, of the shell having an elastic stop, a', substantially as and for the purpose set forth.

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