(No Model.)

C. J. LANGENBACH.

BOLT.

No. 403,847. Patented May 21 1889.

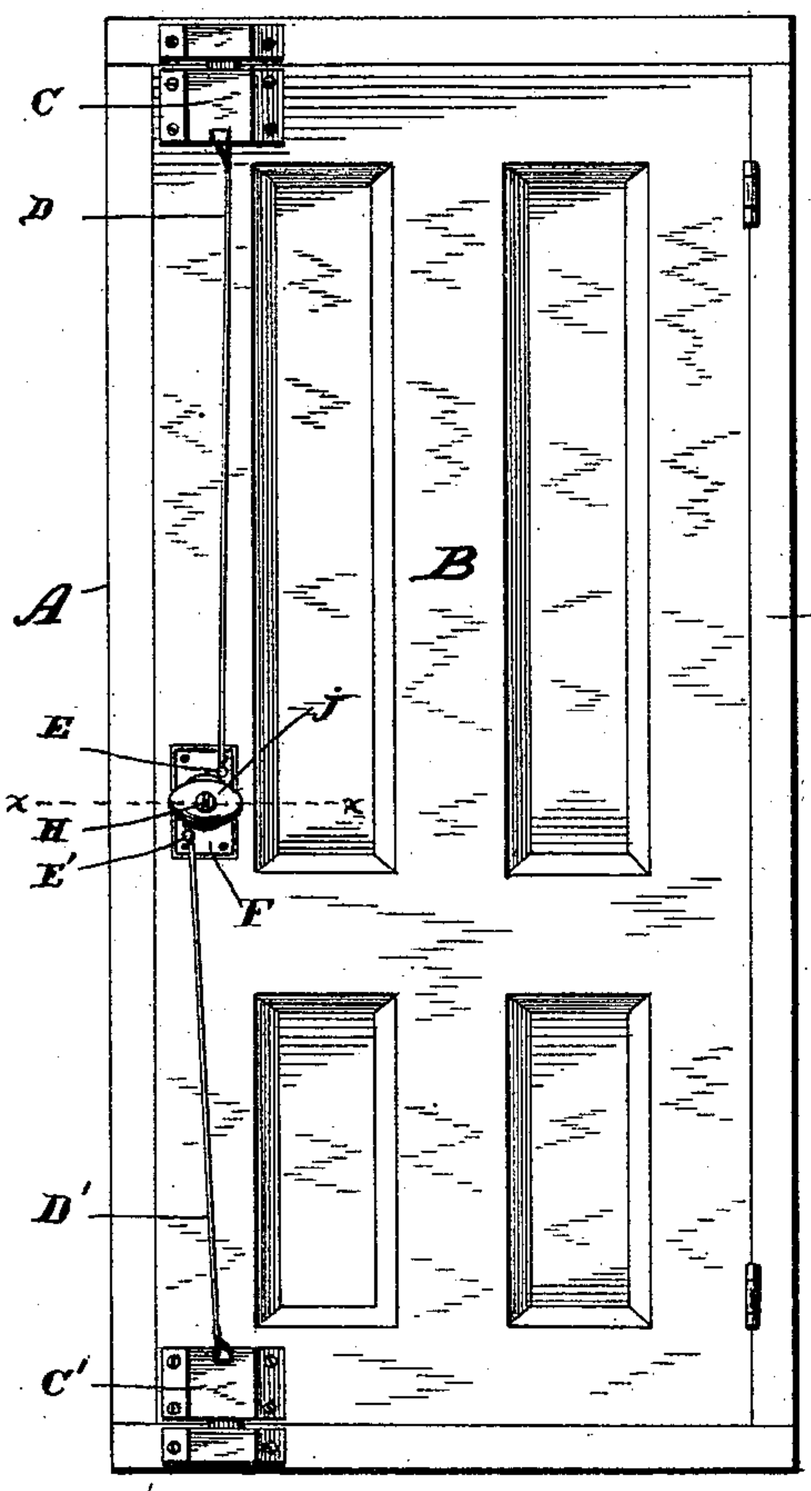

Fig. 1.

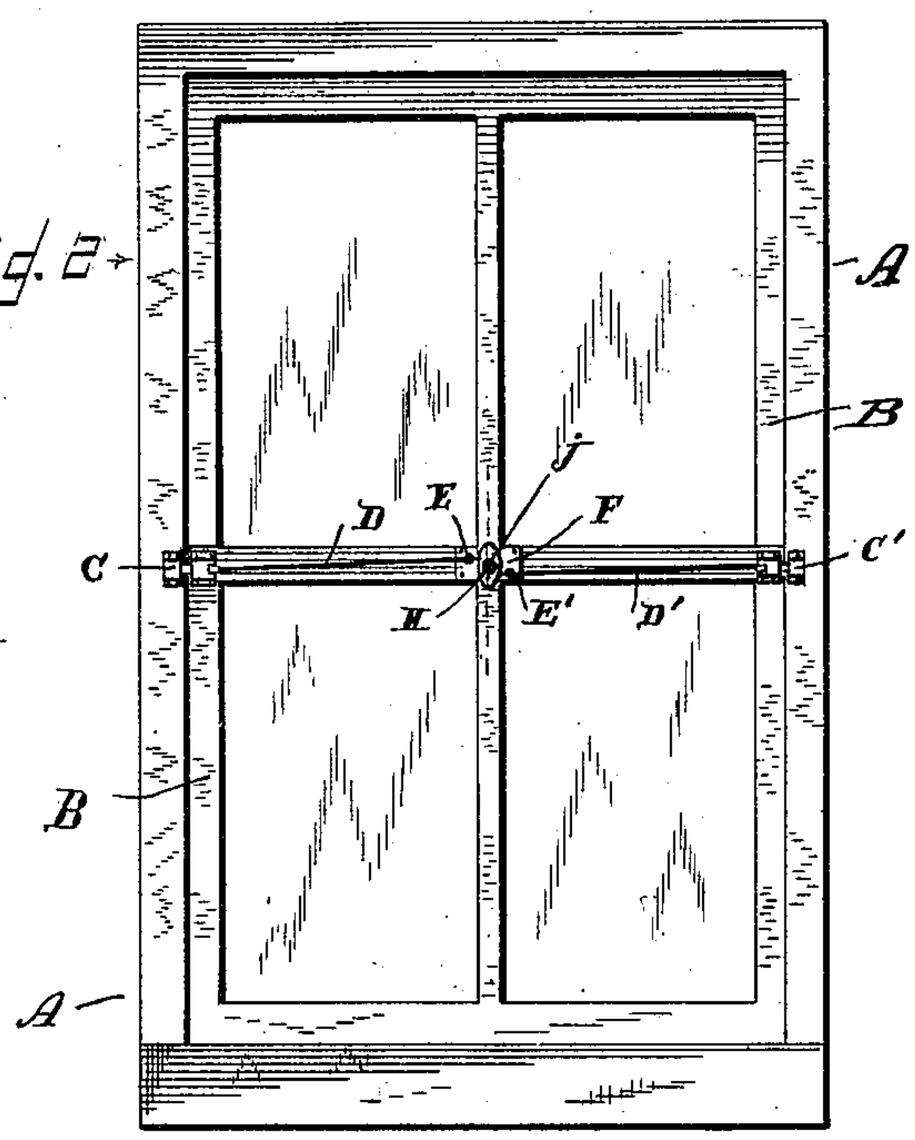

Fig. 2.

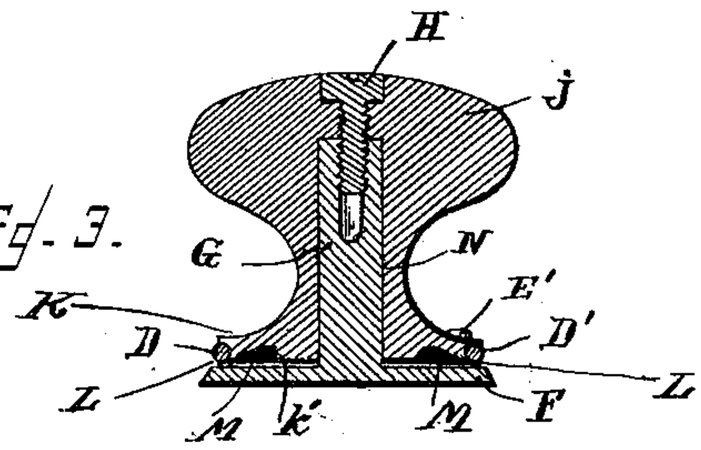

Fig. 3.

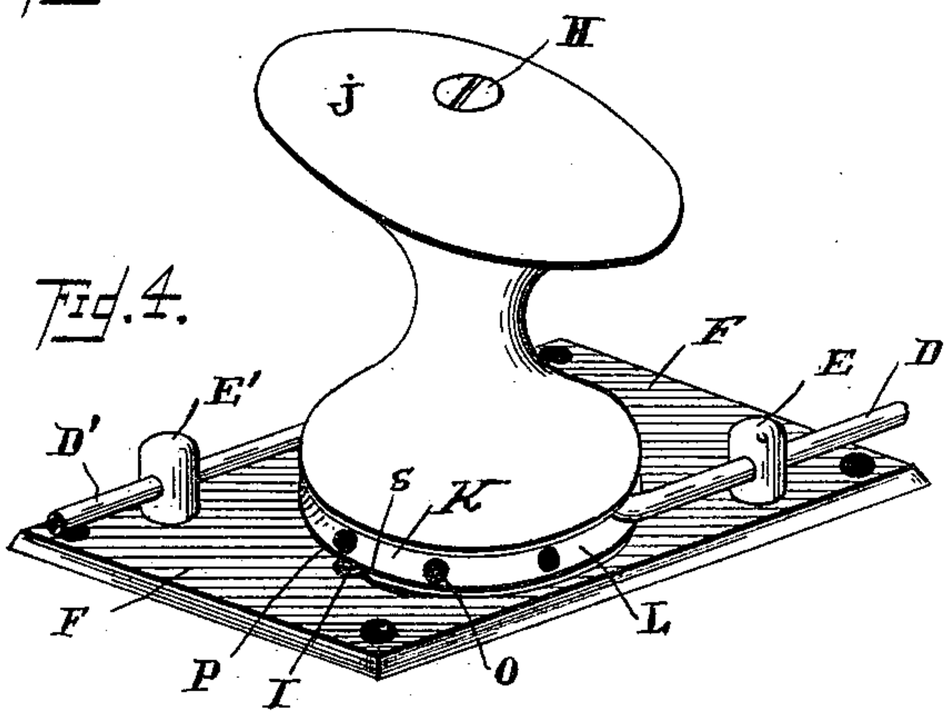

Fig. 4.

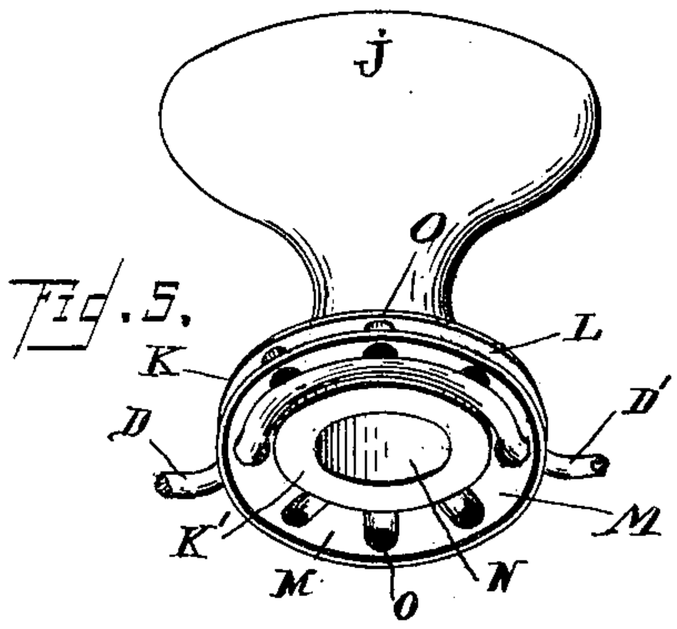

Fig. 5.

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UNITED STATES PATENT OFFICE.

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BOLT.

SPECIFICATION forming part of Letters Patent No. 403,847, dated May 21, 1889.

Application filed January 16, 1889. Serial No. 296,486. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JOSEPH LANGENBACH, a citizen of the United States, and a resident of Dorchester, in the county of Allamakee and State of Iowa, have invented certain new and useful Improvements in Door and Sash Fasteners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of a door equipped with my improved fastener. Fig. 2 is a similar view of a window-sash, illustrating my device as applied as a sash-fastener. Fig. 3 is a cross-section through the knob-plate, knob, and its spindle on line *x x* in Fig. 1. Fig. 4 is a perspective view of the knob-plate and spindle; and Fig. 5 is a perspective view of the knob and its disk, showing the same in an inverted position.

Like letters of reference denote corresponding parts in all the figures.

This invention relates to devices for operating the spring bolts or locks of doors and sashes, and has for its object to provide means for the speedy and simultaneous operation of two spring-actuated bolts located at opposite ends of the door, or on opposite sides of a window-sash, as the case may be.

With this end in view my invention consists in the detailed construction and combination of parts of the operating device, which will be hereinafter more fully described and claimed.

In the accompanying drawings, the letter A designates in Fig. 1 a door-casing, and in Fig. 2 a sash-frame. Similarly, B denotes in the one case a door, and in the other a sliding sash. The spring locks or bolts, which may be of any desired construction, are located within boxes C and C′, opposite to each other, and have their inner ends connected to opposite ends, D and D′, of a wire or thin wire cord, the middle part of which is inserted through perforated guide-studs E and E′, fastened upon the knob-plate F diagonally opposite to each other.

Upon the middle of plate F is secured the spindle G, the upper end of which forms a screw-threaded socket for the insertion of the knob-screw H. Plate F is also provided with a short stud, I, the function of which will be described later on.

The knob J has at its lower end a circular disk, K, having a circumferential groove, L, and an annular recess or face-groove, M, encircling the central spindle-bore, N. A series of equidistant apertures, O, are bored through the edge-groove L into the annular recess M, and a portion of the outer rim or flange of the disk is cut away on the under side, as shown at P. After one end, D, of the operating wire or wire cord has been fastened to the spring-bolt of its appropriate lock C, the free end of the wire is inserted through its appropriate guide-stud E and then through one of the apertures O in the rim of the disk K. The wire is then pulled taut, and its middle part is wound around one side of the central disk-hub, K′, the edge of which is grooved for the reception of the wire. Next the opposite or free end of the wire is inserted through the disk-aperture O, which is diametrically opposite to the aperture through which the wire entered the disk, and after the wire is again drawn taut its free end D′ is fastened in the spring-bolt of its appropriate spring-lock C′, but not until the knob with the wire fastened in it has been replaced upon its spindle G and fastened thereon by the knob-screw H.

The function of the short stud I upon the knob-plate F is to form a stop in turning the knob, as by giving this a quarter-turn the shoulders or offsets *s*, formed by the cut-away portion P of the disk-flange, will strike against this stud and thereby prevent the knob from being turned too far in withdrawing the bolts when it is desired to open the door or sash, as the case may be. After the knob is again let go the spring-tension of the bolts, pulling on opposite ends of the wire, will operate to turn the knob back into its normal position.

It will be seen that the circumferential groove or channel L, in conjunction with the perforated guide-studs E and E′, guides the operating-wire as this is being wound partially around the disk in withdrawing the bolts, while the annular bottom recess, M, af-

fords room for that part of the wire which works between the disk and the flat surface of the knob-plate, so that the knob and its disk may be placed flush with the plate, thus giving to the device a neat and finished appearance.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination, with the operating cord or wire having its ends connected to the oppositely-arranged spring locks or bolts, of the operating device consisting of the knob-plate, guide-studs, spindle, and recessed and apertured knob-disk and knob, constructed and combined to operate in the manner and for the purpose substantially as herein shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

CHARLES JOSEPH LANGENBACH.

Witnesses:

JOHN GUNDERSON,

L. COPPERSMITH.