(No Model.)

E. B. LA FOLLETTE.

DOOR CHECK.

No. 453,930. Patented June 9, 1891.

Fig. 1.

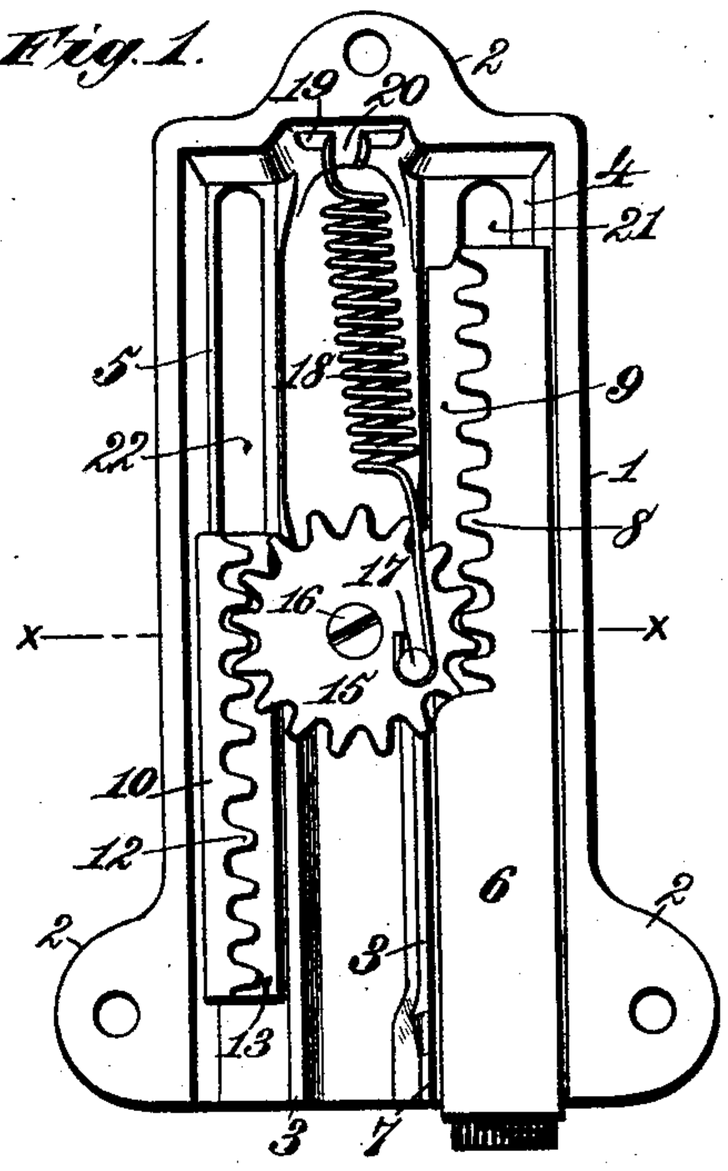


Fig. 3.

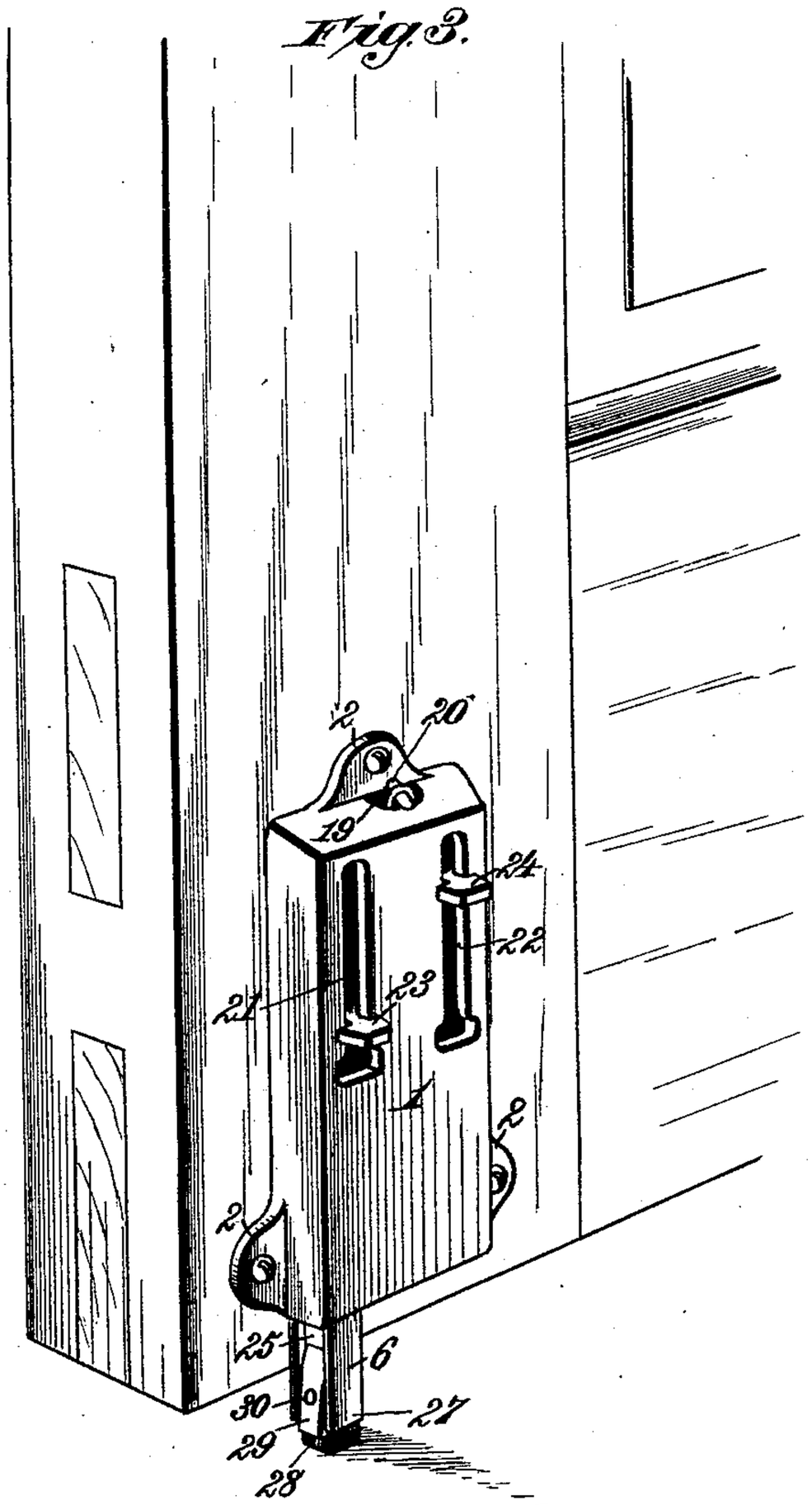


Fig. 2.

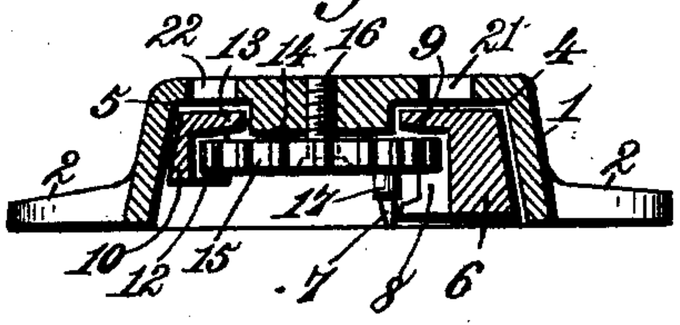


Fig. 4.

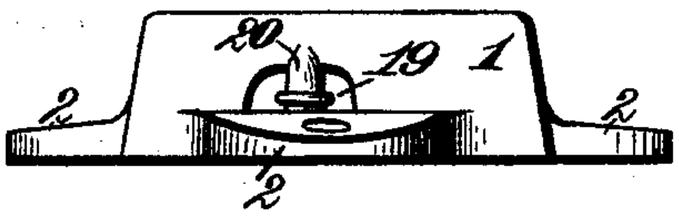


Fig. 5

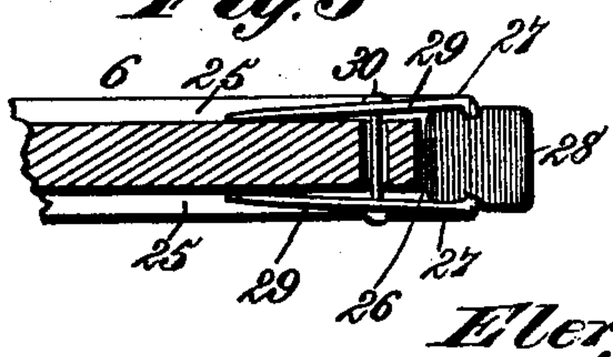
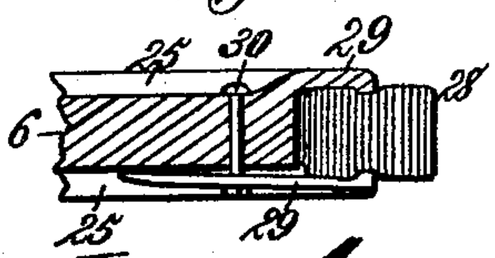


Fig. 6.



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UNITED STATES PATENT OFFICE.

ELERY BELL LA FOLLETTE, OF CLARKSBURG, WEST VIRGINIA.

DOOR-CHECK.

SPECIFICATION forming part of Letters Patent No. 453,930, dated June 9, 1891.

Application filed March 24, 1891. Serial No. 386,250. (No model.)

To all whom it may concern:

Be it known that I, ELERY BELL LA FOLLETTE, a citizen of the United States, residing at Clarksburg, in the county of Harrison and State of West Virginia, have invented new and useful Improvements in Door Checks and Bolts, of which the following is a specification.

My invention relates to the construction of door checks and bolts and fastenings of similar type wherein a bolt or bar is arranged within a casing and adapted to be shot therefrom to engage a socket or keeper or to carry a clamp—such, for example, as a rubber cushion—against an engaging surface.

It is the purpose of my said invention to provide novel means of simple and inexpensive construction, whereby the said bolt may be securely held in either its withdrawn or its projected position without employing a catch, a catch-spring, or a ratchet.

It is my purpose, also, to provide means of this character which may be so combined with the bolt and with an independent bolt-actuating bar that both shall be held by the same, and whereby, also, the bolt may be operated from either side or from above or below.

It is my purpose, also, to provide and combine with a device of this type specified simple means whereby the operation of the bolt in either direction may be facilitated, and whereby it may be held securely in either position, whether the bolt moves vertically or horizontally, and whereby, also, the power of the holding device may be increased, if necessary, by a simple duplication of one member of the combination.

My invention also provides a novel and simple construction for clamping and holding the elastic cushion without the use of glue and without injury to said cushion, or mutilation thereof.

The invention consists to these ends in the several novel features of construction and new combinations of parts, hereinafter fully set forth, and then more particularly pointed out and defined in the claims following this specification.

To enable others skilled in the art to which my invention pertains to understand and use the same, I will proceed to describe the same in detail, reference being made to the accompanying drawings, in which—

Figure 1 is a view of the interior of the casing of a door or other bolt or clamp in which my invention is embodied. Fig. 2 is a transverse section of the same on the line *x x*, Fig. 1. Fig. 3 is an elevation of the device as it appears when mounted in position upon a door or other movable structure. Fig. 4 is a detail view showing the upper end of the casing and illustrating the construction by which a fastening is provided for the spring. Fig. 5 is a detail view showing the manner of fastening the elastic cushion to the bolt when the device is used as a clamp. Fig. 6 is a detail view showing one manner of forming the clamp-bar to receive the elastic cushion or block.

In the said drawings the reference-numeral 1 indicates the casing of the apparatus, which may be of any form to suit the various forms and sizes of the bolt should it be necessary to vary the latter to adapt it to serve different purposes. Lugs 2 are formed at suitable points upon the casing to enable it to be screwed or bolted in place. Upon the inner surface of the casing are ribs or raised edges 3, which form ways or channels 4 and 5 parallel with each other and with the side walls of the casing. In the channel 4 lies a substantially rectangular bolt or bar 6 of such size as to move easily in said channel and between the side wall of the casing and a lug 7 at the end of the casing. This lug may be merely an extension of the rib 3, and may, if used, be of any required length and width.

A portion of the bolt or bar 6 is cut away from its inner end toward the center of the bolt to permit the formation or attachment of a series of teeth 8, the ends of which point or face toward the median longitudinal line of the casing. Upon the front face of the bolt, which lies adjacent to the casing 1, a thin plate or strip 9 is left to give a uniform bearing at all points and to cover the opening in the casing through which the knob of the bolt is attached. In the channel 5 is arranged a bar 10 of suitable length provided with a series of gear-teeth 12, pointing or facing toward the series 8. A face-strip 13 is left upon

the outer side of the bar to give a broad bearing-surface and to cover an opening in the casing, through which the shank of a pedal-piece passes. Between the two channels 4 and 5 is formed or attached a bearing 14, upon which is placed a spur-gear 15, the teeth of which project over each rib 3 and mesh with the series of teeth 8 on the bolt 6, and also with the series of teeth 12 on the bar 10. The spur-gear is pivoted upon a journal or stud-bearing 16, and upon its inner face is formed or mounted a wrist or eccentric 17, which provides an attachment for one end of a spring 18, which, as shown in the drawings, may be a spiral coil, the other end being connected to a suitable fastening at or near the end of the casing. As a convenient construction furnishing an attachment for the end of the spring I propose to form in the end of the casing an opening 19, which is crossed by a bridge-piece 20, around which the end of the wire is looped or hooked. In the wall of the casing slots 21 and 22 are formed, lying in or near the median lines of the channels 4 and 5. Through the former slot the shank of a knob 23, which is connected to the bolt in any suitable manner and through the slot 22, is passed in like manner the shank of a pedal-piece or other suitable device 24, by which the operating-bar of the lock or clamp can be shot in either direction.

When the bolt 6 is used in a clamping device, I form in the edges thereof channels 25 of suitable depth, and in the end of said bolt I cut a notch or slot 26, which is inclosed upon two sides by the end continuations 27 of the low flanges upon each side of the channels 25. Between these ends is pushed the rubber cushion 28, its end having a suitable degree of projection, and upon two sides of said cushion are laid clamp-plates 29, which are arranged in two channels 25 between the flanges inclosing said channels and fastened by one or more pins, bolts, or other suitable devices 30, which draw said plates or clamps against the elastic cushion with the requisite force. This gives a strong and permanent fastening for the cushion and wholly avoids the use of glue or cement of any kind, which is always liable to become soaked or softened and release the cushion.

I may increase the force exerted by the spur-gear 15 by adding a second spring, and this spring may be, and preferably is, arranged upon the other side of the axis 16, and the eccentric or wrist to which it is connected would then be opposite the wrist or pin 17 and on the other side of the journal 16.

It will readily be understood that I may use other forms of springs beside those shown—as, for example, a volute-spring, or a spring which pushes instead of drawing upon the eccentric 17. It should be noted, also, that the actuating-bar 10 may be omitted without in any way affecting the operation of the remaining parts.

My construction for the attachment of the elastic cushion enables me to surround the clamped portion upon all four sides and to preserve flush surfaces throughout. A convenient fastening for these clamps is a pin or small bolt passing entirely through the bar and having its ends lying in openings in the clamping-plates. These ends may be upset or riveted down, or, if preferred, they may be threaded to receive thin nuts; but I do not confine myself to any specific method of effecting this attachment.

In constructing the clamp bar or bolt 6, I may cast one of the clamp-plates 29 solid with the end of the bolt, as shown in Fig. 6, and make only one of the said plates removable.

What I claim as my invention is—

1. In a lock bolt or clamp, the combination, with a bolt or bar provided with a series of teeth, of a spur-gear meshing with said teeth, and a spring connected to a wrist or eccentric, which is thrown from one side to the other of the axis of the gear at each movement of the bolt or bar, substantially as described.

2. In a lock bolt or clamp, the combination, with a suitable casing, of a lock bolt or bar having a series of teeth, an operating-bar arranged opposite the bolt and having a similar series of teeth, an intermediate spur-gear meshing with both, and a spring connected at one end to said casing and at the other end to an eccentric on the gear which normally lies, when at rest, adjacent to one of the series of teeth, substantially as described.

3. In a lock bolt or clamp, the combination, with a lock-casing provided upon its interior with suitable channels, of a lock bolt or bar, from which a portion is removed, leaving a strip or plate upon its face which lies next to the casing, and a spur-gear journaled within the casing and overlying said strip or plate, the teeth of said gear meshing with a series of teeth on the bolt or bar, substantially as described.

4. In a lock bolt or clamp, the combination, with a suitable casing having ways or channels, of a lock bolt or bar, and an operating-bar lying in said ways parallel with each other and provided upon their adjacent faces with teeth arranged or formed next to marginal strips or plates, forming part of the surfaces which slide upon the inner faces of said ways or channels, and cover-slots cut in the casing for the insertion of a knob and pedal-piece or similar device, and a spur-gear journaled between said ways and meshing with both series of teeth, said gear overlying the marginal strips and holding the bolt and operating-bar in their ways, substantially as described.

5. In a clamp, the combination, with a bolt or bar having its opposite edges channeled and its end notched or slotted to form thin projecting plates, which are end continuations of the flanges on the slotted edges of

the bolt, of an elastic cushion inserted between said plates, and clamp-plates arranged in the channels and inclosing said cushion between their ends, said clamps being fastened by suitable means, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

ELERY BELL LA FOLLETTE. [L. S.]

Witnesses:
F. Y. HORNOR,
B. T. HORNOR.