A. B. GRUBER.

PUSH BUTTON LATCH.

APPLICATION FILED FEB. 7, 1918.

1,270,288.

Patented June 25, 1918.

2 SHEETS—SHEET 1.

Fig. 1.

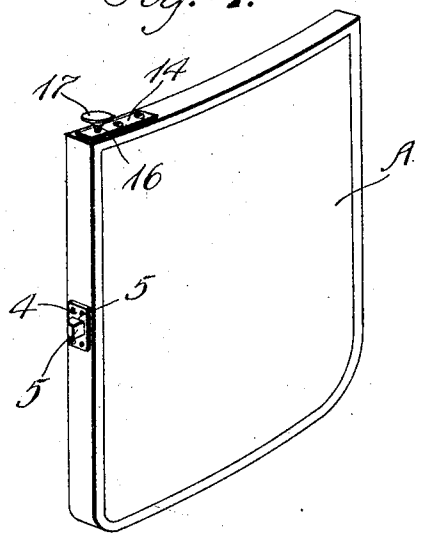


Fig. 2.

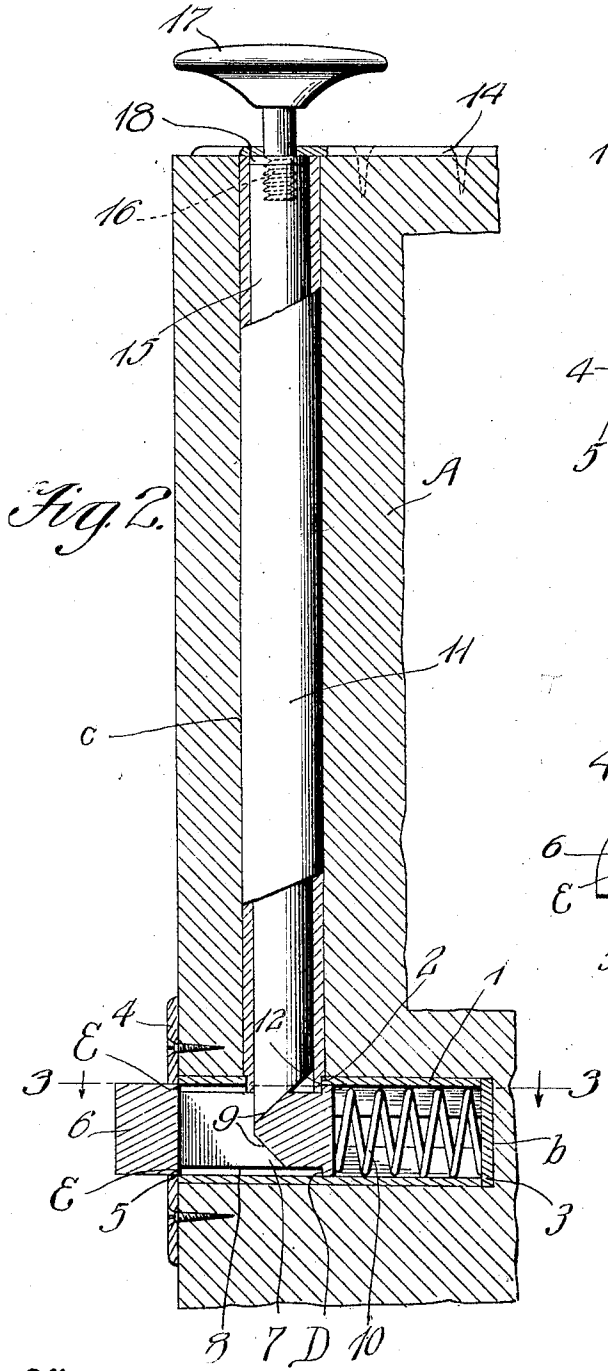


Fig. 3.

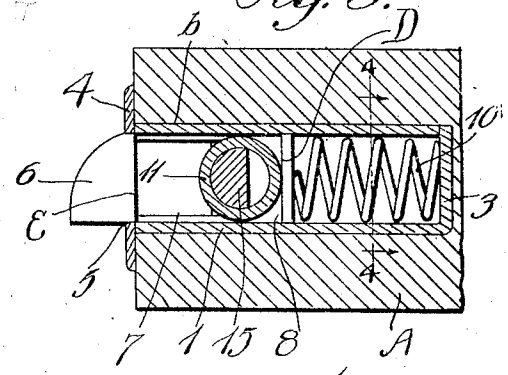
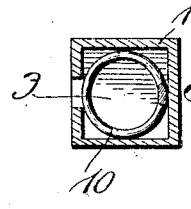


Fig. 4.



Witness

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2 SHEETS—SHEET 2.

FIG. 5.

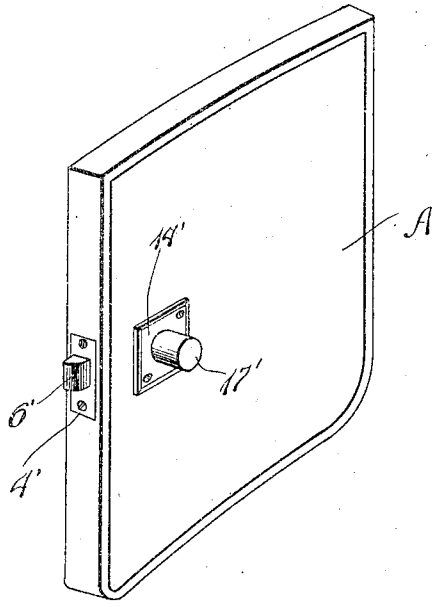


FIG. 7.

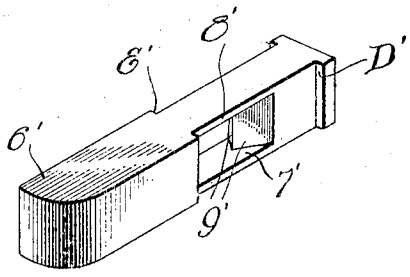
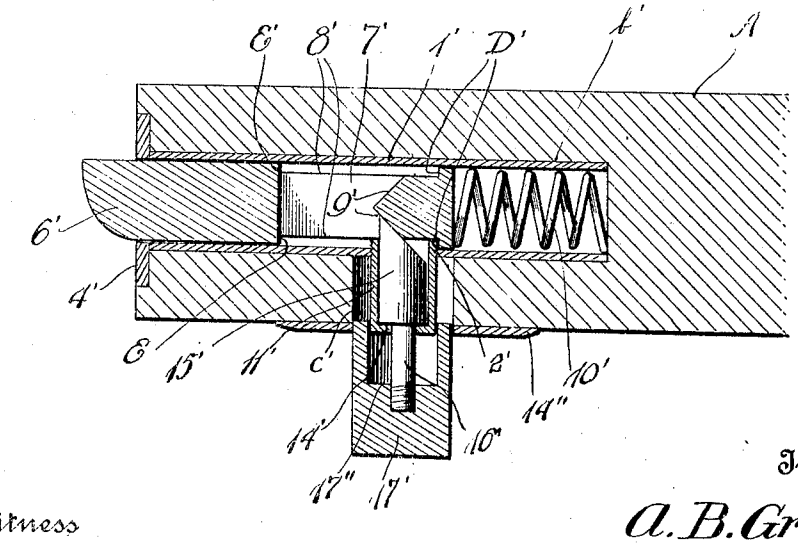


FIG. 6.



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UNITED STATES PATENT OFFICE.

ARCHIBALD B. GRUBER, OF SAN BERNARDINO, CALIFORNIA.

PUSH-BUTTON LATCH.

1,270,288. Specification of Letters Patent. Patented June 25, 1918.

Application filed February 7, 1918. Serial No. 215,809.

To all whom it may concern:

Be it known that I, ARCHIBALD B. GRUBER, a citizen of the United States, residing at San Bernardino, in the county of San Bernardino and State of California, have invented certain new and useful Improvements in Push-Button Latches; and I 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.

This invention relates to certain new and useful improvements in push button latches designed particularly for automobile doors and the like, although the latch may be used in a horizontal position and equipped for use generally upon building doors, drawers, and various other closures.

The primary object of the invention is to provide a latch of this class, wherein it would only necessitate the latch bolt being reversed for use on right or left hand swing doors, which is an advanced simplified improvement over other latches which require separate manufacture for right and left hand doors.

A further object of the invention is to generally improve upon devices of this nature by the provision of an extremely simple, inexpensive and durable construction, one which will be efficient and reliable in operation, and well adapted to the purposes for which it is designed.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of the application, and in which similar reference characters designate like parts throughout the several views;

Figure 1 is a perspective view of an automobile door equipped with a latch constructed in accordance with this invention;

Fig. 2 is an enlarged vertical sectional view of the door and latch;

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a vertical sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a view similar to Fig. 1 but showing a different form of the invention;

Fig. 6 is a horizontal section of Fig. 5; and

Fig. 7 is a perspective of the bolt of Figs. 5 and 6.

The invention is designed primarily for use on automobile doors, and in the drawings such a door is represented by the letter A, although it will be clear that the device may be used horizontally upon other doors, drawers, and various other closures. The door A of Figs. 1, 2 and 3 is provided with mortises *b* and *c*, the mortise *b* extending from the outermost vertical side edge of the door at right angles to this edge to a point spaced a small distance from the same. The mortise *c* extends at right angles to the mortise *b* and the upper edge of the door, and from said upper edge to the inner end of the mortise *b*. The mortise *b* is preferably of square-shaped configuration in cross section, while the mortise *c* is preferably circular in cross section.

Disposed within the mortise *b* is a hollow casing 1, the latter being bent or stamped from a single sheet of metal and having an opening 2 in one side thereof disposed adjacent the inner end of the mortise *c* although this side of the casing might be left entirely closed in some cases. If desired, the casing 1 may be provided with a back wall 3, which may be formed integrally with the casing as a wing extending laterally from one side thereof. Secured to the vertical side edge of the door A is an escutcheon plate 4, serving to give this edge of the door a rather neat appearance. This plate 4 is provided with a centrally disposed opening 5. Slidable within the casing 1 is a reversible latch bolt 6, the latter having a longitudinally extending vertical slot 7 therein and having notches 8 in its upper and lower sides. These notches serve to form a shoulder D on the inner end and a shoulder E on the outer end of bolt 6 for a purpose to be set forth. The forward end of the bolt 6 is beveled for an obvious purpose. The rear wall of notch 7 is beveled from opposite sides as at 9. Disposed within the rear end of the casing 1 and having one

end bearing against the end wall 3 of the same and its other end pushing against the rear end of the latch bolt 6 is a coiled spring 10, the purpose of which is obviously to normally hold the bolt in projected position.

The reference numeral 11 designates a tube which is disposed in the vertical mortise *c*. The lower end of this tube 11 is reduced in diameter as at 12, and this reduced portion extends through the opening 2 in the casing 1, and into the uppermost notch 8 in the bolt 6. The shoulders D and E coact with this end of the tube to limit the inward and outward movement of the bolt. However, it is only necessary for the outward movement of the bolt to be limited. The upper end of the tube 11 is disposed adjacent the upper edge of the door A and is engaged by a plate 14 which is secured to this edge of the door. The tube 11 is thus prevented from shifting longitudinally within the mortise *c*. The end 12 of the tube 11 not only serves to coact with shoulders D and E, but prevents removal of the casing 1 from mortise *b* even though plate 4 be eliminated.

Slidable within the tube 11 is a plunger 15. The lower end of this plunger 15 is beveled and projects into the slot 7 in the bolt 6 to engage the uppermost beveled portion of the rear end wall of said slot so that when the plunger is pushed downwardly the bolt will be retracted. The upper end of the plunger 15 is provided with an internally threaded socket to receive the threaded stem 16 of a knob 17, the stem extending through an opening in the plate 14 so that the knob is disposed at the upper edge of the door. The plate 14 limits the upward movement of the plunger 15. If desirable and necessary, one or more washers 18 may be placed upon the stem 16 between the lower side of the plate 14 and the upper end of the plunger 15.

In operating the latch it is only necessary to depress the plunger by pushing downwardly upon the knob 17. When pressure is released from the knob the bolt spring will project the bolt and in doing so the plunger and knob will be raised to their uppermost position. It is very desirable to use a latch of this construction in connection with automobile doors where the operating member of the latch is disposed at the upper edge of the door where access to it may be easily had from either the inside or outside of the door. The device is weather proof or water proof.

In the form of the invention shown in Figs. 5 to 7, the door A is provided with a mortise *b'* receiving the lock casing 1' and with a second bore *c'* opening through either side of the door, or possibly with two of the bores *c'* opening through both sides of said door. Only one bore *c'* however is shown for illustrative purposes. The casing 1' is substantially the same as casing 1 but is provided with no inner end in most cases although such an end might be added. The outer end of the casing in question abuts a plate 4' and is provided in one side with an opening 2' corresponding to the opening 2.

The bolt 6' is slidable in casing 1' and is provided with a longitudinal slot 7' and with notches 8' whose ends form shoulders D' and E' for coaction with the inner end of a tubular plunger guide 11' located in the bore *c'* and threaded into the opening 2'. The inner end wall of the slot 7' is oppositely beveled at 9' for engagement by the beveled inner end of a plunger 15' which is slidable in the guide 11' the outer end of the latter being turned inwardly at 14' to limit the outward movement of the plunger. This plunger is normally forced outwardly by the bolt 6' which is projected by the spring 10'. The plunger 15' is provided with a stem 16' projecting beyond the guide 11' and provided with a cylindrical push button 17' slidable in the bore *c'* which is much larger than the guide 11', the inner end of said button having a socket 17'' to receive the guide as said button is pushed inwardly. An escutcheon plate 14'' is preferably secured to the door and provided with an opening through which the button 17' slides.

The operation and functions of the parts just described are identical with those of corresponding parts herein specifically described in reference to Figs. 1 to 4 and further explanation is therefore unnecessary, except that I may state that the latch may be used on any and all objects to be locked and that by duplicating the parts 11', 15', 16', and 17', the latch may be made to operate from both sides of the object by which it is carried.

As numerous changes in form, proportion, and in the minor details of construction may be resorted to without departing from the spirit of this invention, it is to be understood that I do not wish to be limited to the construction herein shown and described, other than as claimed.

I claim:

1. A push button latch comprising a hollow casing having one side totally or partially closed, a latch bolt slidable longitudinally in said casing and having a longitudinal slot, the rear end wall of said slot being beveled, said bolt having a notch adjacent said side, the ends of said notch forming shoulders, a coiled spring for said bolt to normally hold the same projected, a tube extending at right angles to said casing and having one end projecting through the aforesaid side thereof and into said notch to provide a stop coacting with one of said shoulders for limiting the movement of said bolt, and an operating plunger slidable

in said tube and having its inner end beveled and extending into the slot of said bolt into engagement with the beveled rear wall of said slot.

2. A push button latch comprising a casing having one side totally or partially closed, a latch bolt slidable longitudinally in said casing and having a longitudinal slot, the rear wall of said slot being beveled at both sides of the bolt, said bolt having a notch in each side adjacent said slot, the ends of said notches forming shoulders, a coiled spring for said bolt to normally hold the same projected, a tube at an angle to said casing, said tube having its inner end projecting through the aforesaid side of said casing and into the notch of said bolt to provide a stop for coaction with said shoulders to limit the movement of the bolt, an operating plunger slidable in said tube and having its inner end beveled and extending into the slot of said bolt into engagement with the beveled rear wall thereof, and a push knob having a stem connected to the other end of said plunger.

3. A latch comprising a casing having therein a sliding latch bolt, a tubular guide extending laterally from said casing and having its outer end turned inwardly, a plunger slidable in said guide for operating said bolt, outward movement of said plunger being limited by said inturned outer end of said guide, a stem extending from the outer end of said plunger beyond said guide, and a push button on the outer end of said stem having a socket in its inner end in which said guide is receivable when said button is pushed inwardly to operate said plunger.

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

ARCHIBALD B. GRUBER.

Witnesses:
LOUIS G. MOYERS,
GEORGE J. DAVIS.