Oct. 16, 1928. 1,687,650

B. GIRAGOSIAN

LATCH

Filed Jan. 3, 1928

Fig. 1.

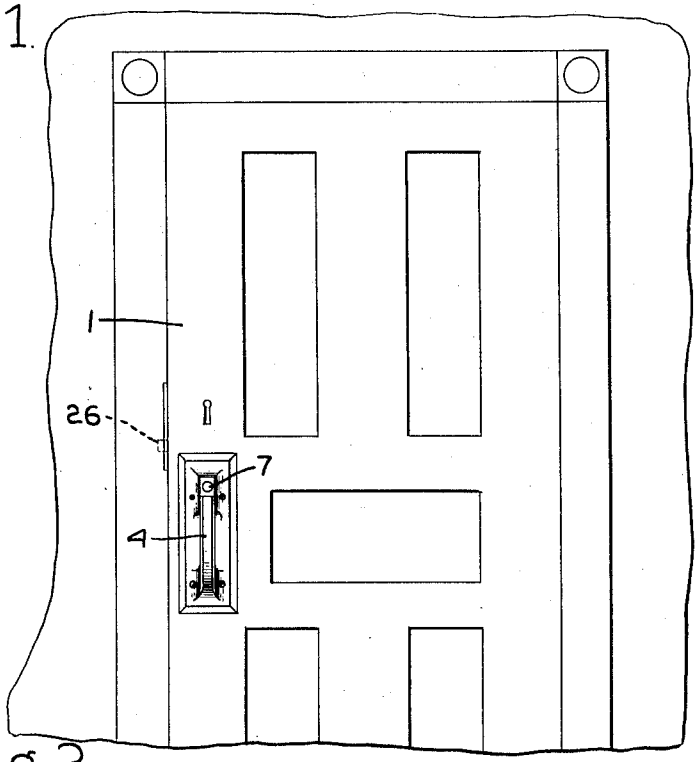


Fig. 2.

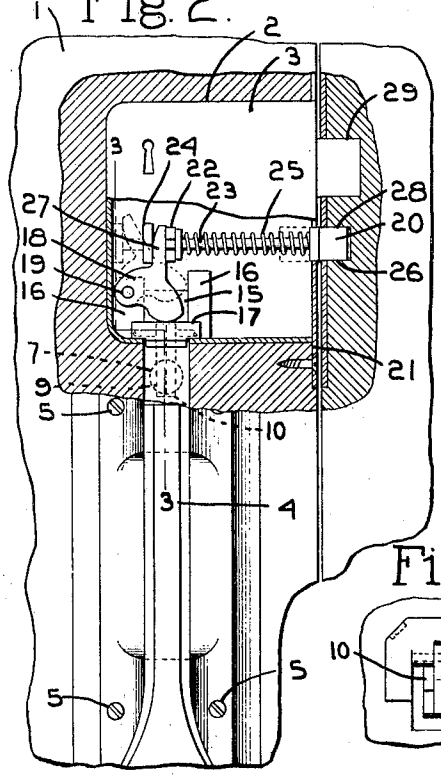


Fig. 3.

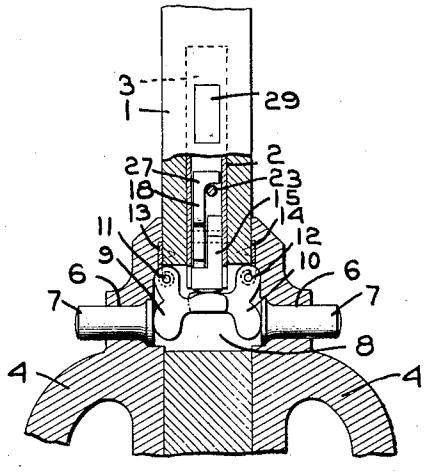


Fig. 4.

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UNITED STATES PATENT OFFICE.

BEDROS GIRAGOSIAN, OF WATERTOWN, MASSACHUSETTS.

LATCH.

Application filed January 3, 1928. Serial No. 244,201.

This invention relates to a latch mechanism for doors and the like and has for its chief object to provide a novel latch mechanism of the push button type which may be easily and quickly installed without requiring the accuracy and skill of an experienced workman.

A further object is to provide a latch mechanism which may be readily substituted for a latch mechanism already installed upon a door or like support.

Another object is to provide a latch which may be readily incorporated into an artistic design wherein the handle or grip of the door may be combined with the latch.

A further object is to provide a latch mechanism which may be operated with a very slight pressure of the thumb or finger without interfering with a firm grip on the handle, thus facilitating the opening of the door.

Another object of the invention is to provide a latch mechanism which is designed to minimize the possibility of wear upon the parts and a consequent maladjustment resulting therefrom.

Other objects and features of the invention will be more particularly pointed in the following description in connection with the accompanying drawings and will be particularly pointed out in the claims.

The latch mechanism forming the subject matter of the present invention may be applied to a door or support of like character. The drawings illustrate the latch as combined with a handle or door pull constituting a unit which is a very efficient adaptation of the device, but I do not wish to be confined to this particular construction. The latch may be entirely separate from other fixtures on the door.

The present device is designed to supplant the rotating knob mechanism which is commonly used to actuate the latch upon a door. Additional locking means may be, and desirably is, incorporated into the design of the device but forms no part of the invention. Owing to the special construction of the device, a number of types of design may be followed in the manufacture of this device. For instance, the grip or door pull may be installed upon the door as a separate unit, while the push button may be located at any point that is readily accessible to the thumb or fingers of the hand. The external elements of the device may be made of any suitable material such as glass, metal or the like. The material used may be adapted to the conditions in which the device is used. For instance, a non-corrosive metal may be used for outdoor installations and colored glass or other colored material may be used for indoor installations. In the latter case they may well have a color to blend with the color scheme of a room.

In the drawings:

Fig. 1 is an illustration of the device applied to a door.

Fig. 2 is a view mainly in cross section showing a part of the handle in elevation.

Fig. 3 is a vertical transverse cross section on line 3—3 of Fig. 2.

Fig. 4 is a fragmentary detail view showing the method of securing a portion of the mechanism to the door.

A particular embodiment of the invention is illustrated in the drawings. A door 1 has formed therein a rectangular recess 2 into which is fitted a housing 3 containing mechanism by which the latch is actuated. A handle or grip member 4 is fixed to the door preferably on either side thereof in any suitable manner, as by screws 5. Each handle member has a transverse aperture 6 therein which receives a push button 7. Adjacent to and communicating with the aperture 2 is another aperture 8 in which the bell crank levers 9 and 10 may be swung about their respective pivots 11 and 12. The pivots 11 and 12 may conveniently be formed in sheet metal plates 13 and 14 which are secured to the face of the door in any suitable way, such as by striking up points from the plate, which points are driven into the door. One arm of the levers 9 and 10 is engaged by the push buttons 7. The other arms thereof engage a slide 15 which is guided in ways 16 of the housing 3. The slide 15 has a shoulder 17 formed thereon against which rests one arm of a bell crank lever 18 pivoted at 19.

A latch 20 is guided at one end in the front plate 21 of the housing 3 and at its other end by a bifurcated post 22 fixed in the housing 3. The inner end of the latch has a reduced shank 23 which has a head 24 thereon. A helical compression spring 25 surrounds the shank 23 and has a bearing at one end against the large head 26 of the latch and at its other end upon the post 22. The bell crank lever 18 has an arm 27 thereon which normally is held between the head 24 of the latch and the post 22 by the action of the spring 25. The

tension of the spring 25 also maintains the latch 20 normally in the usual recess 28 of the door-jamb, thereby securing the door in closed position. An additional bolt or night lock 29 may be built into the casing 3, but forms no part of the present invention.

If it is desired to install this device upon a door already having a latch mechanism of any of the usual types, it is a very simple matter to effect a change. After removing the old latch mechanism, the housing 3 of my device may be inserted in the same aperture and in some cases it may not be necessary to cut any further apertures in the door. In any event, the aperture 8 may be readily cut to receive the levers 9 and 10. The plates 13 and 14 carrying the respective pivots 11 and 12 of the levers 9 and 10 are driven into either face of the door in their proper position adjacent to the slide 15. The handle members 4 are then secured in position over the plates 13 and 14 so that the levers 9 and 10 will be in proper relative position to the push buttons 7 to be engaged thereby.

To operate the device, it is merely necessary to grasp the handle and exert a slight pressure upon the push buttons with either the thumb or finger which releases the latch, enabling the door to be opened. Upon releasing the pressure on the push button, the spring 25 will restore the latch to its normal extended position ready to latch the door when it is again closed.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A latch mechanism adapted to be mounted on a door or like support comprising a push button having motion transverse to the plane of the support, a lever pivoted upon the support engaged at one end by said push button, a slide mounted in the support and capable of linear motion therein at right angles to the motion of said push button and engaged by the other end of the lever, a shoulder on said slide, a latch having a head on its inner end, a latch actuating lever pivoted upon the support engaged at one end by said shoulder and engaging the latch head at its other end, a guideway rigid with the support adapted to guide the latch and a spring tending normally to project the latch.

2. A latch mechanism adapted to be mounted upon a door or like support and associated with a handle grip comprising a push button having motion transverse to the plane of said support, a bell crank lever pivoted upon the support engaged at one end by said push button and engaging at its other end a slide, a housing in which the slide is guided, a latch, a latch actuating lever pivoted within the housing engaged at one end by said slide and at its other end engaging said latch to withdraw the same upon actuation of the push button and automatic means tending normally to extend the latch.

3. A latch mechanism adapted to be mounted upon a door or other support and associated with a handle grip comprising a push button extending from either side of the support and having motion transverse to the plane thereof, bell crank levers pivoted upon the support engaged at one end by said push buttons and engaging at their other ends a single slide having a shoulder thereon, a housing in which the slide is guided, a latch, a latch-actuating lever pivoted within the housing engaged at one end by said shoulder and at its other end engaging the inner end of the latch to withdraw the same upan actuation of the push button and a spring tending normally to extend the latch.

4. A latch mechanism adapted to be mounted upon a door or like support and associated with a handle grip comprising a push button extending from either side of the support and having motion transverse to the plane thereof, bell crank levers pivoted upon the support engaged at one end by said push buttons and engaging at their other ends a single slide having a shoulder thereon, a housing in which the slide is guided, a latch-actuated lever pivoted within the housing, a latch member within said housing having a stem, a guideway rigid with the housing adapted to guide the stem at a point intermediate of its length, a head on the outer end of the stem to engage a door frame or like structure, a compression spring surrounding the stem bearing at one end upon said head and at its other end upon said guideway, a head upon the other end of said stem engaged by said latch-actuating lever to withdraw the latch from engagement with the door frame or like structure upon actuation of either push button.

In testimony whereof, I have signed my name to this specification.

BEDROS GIRAGOSIAN.