June 1, 1926.

1,587,367

L. A. BORNE

DOORCHECK

Original Filed March 7, 1925

Fig. 1.

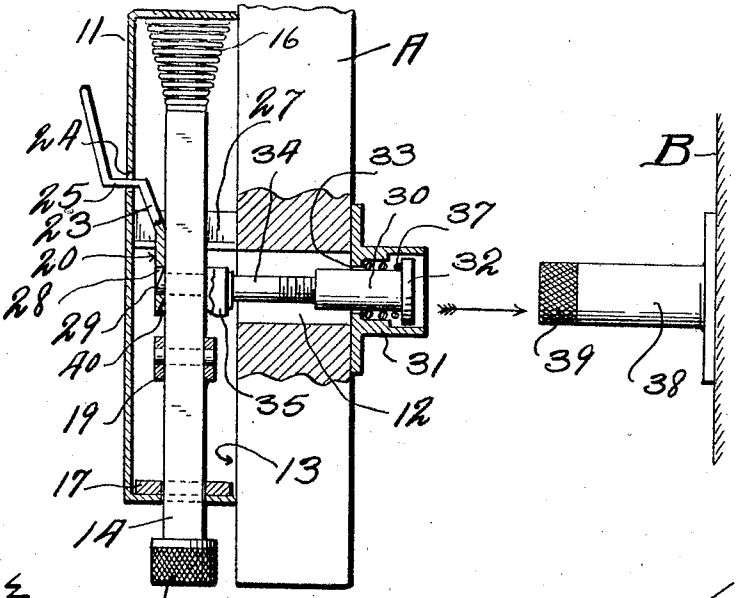


Fig. 3.

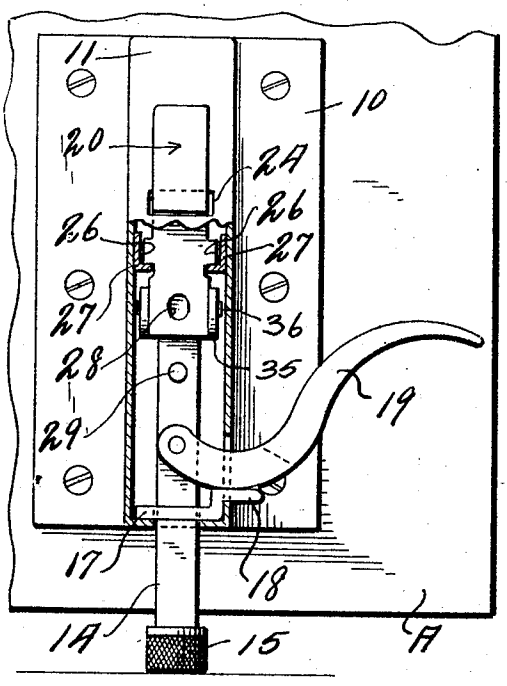
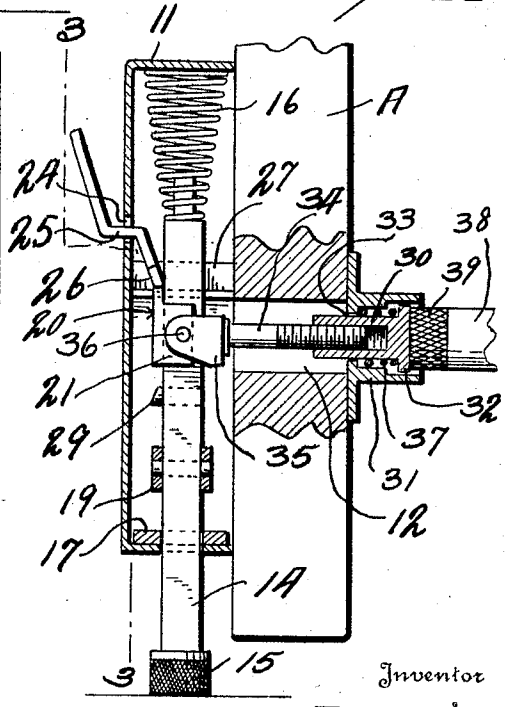


Fig. 2.



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UNITED STATES PATENT OFFICE.

LOUIS A. BORNE, OF MILWAUKEE, WISCONSIN.

DOORCHECK.

Application filed March 7, 1925, Serial No. 13,896. Renewed February 16, 1926.

This invention relates to door checks of the type illustrated in my pending application for patent Serial No. 745,936, filed October 25, 1924.

The object of the present invention is to improve upon the construction shown in my prior application by making the device more effective, neater, and stronger.

A further object is to provide a releasing button which shall not be released by mere contact with a wall or like surface but which shall require a stop made for that purpose and mounted upon a wall, which stop will enter the casing wherein the releasing button is normally disposed.

A still further object is to provide for a more effective foot lever which is designed to lift the door-holding plunger.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is an end elevation of a door partly broken away and showing my latching device in section and also showing a portion of the wall with the latch tripping device applied thereto;

Figure 2 is a view on the same lines as Figure 1 but showing the latch tripped and holding the door in open position;

Figure 3 is a fragmentary elevation of the door looking at one side face thereof, the housing for the latch being partly broken away;

Referring to this drawing, it will be seen that 10 designates a base plate which is attached to one face of the door A. This base plate carries upon it a rectangular housing 11 and the door is apertured, as at 12, the inner face of the housing being open, as at 13.

Disposed within the housing and operating through an aperture in the bottom thereof is a plunger 14, the lower end of which carries a rubber head 15 designed to contact with the floor. This plunger is urged downward by a compression spring 16 disposed in the upper portion of the housing and bearing against the top thereof and against the top of the plunger. The lower end of this plunger passes through a washer 17 having an outwardly projecting lug 18 (see Figure 3) which extends through an aperture in the side wall of the housing. This washer 17 is spot-welded to the bottom of the housing. Pivotally mounted upon the plunger is a treadle or lever 19. This treadle is downwardly curved or bowed and the lower edge of this downwardly curved portion seats upon the lug 18. The treadle then extends upward and then outward in a curve so as to form a portion upon which the foot may be placed.

It will be obvious now that when the outer end of this treadle is depressed by the foot, the treadle will not only rock upon the fulcrum but will also slide upon this fulcrum and an easy rocking action will be secured which will lift the plunger, the treadle slipping to accommodate the upward movement of the plunger.

For the purpose of locking the plunger in its raised position, I provide a latch, designated generally 20, this latch having ears 21 embracing the plunger, and the upper end of this latch is formed with an upwardly and outwardly extending tang 23 which extends upwardly and outwardly in the housing, then extends out through a slot 24 in the housing, this outward extension of the tang being horizontal, as at 25, the tang then extending upward and outward beyond the housing. The tang 23 at its junction with the latch proper is provided with laterally extending ears 26 which fulcrum upon transversely extending angled members 27, thus rockingly supporting the latch. This latch is formed with an aperture 28 upon its outer face, and the plunger 14 carries an outwardly projecting tooth 29 whose upper face is downwardly and outwardly beveled which, when the plunger is raised, will be projected through the aperture 28, thus locking the plunger from any depression. It will be obvious now, however, that if the tang 23 be forced inward and the latch be rocked that the latch will be drawn out of its engagement with the tooth 29 and in that case the spring 16 will force the plunger downward.

For the purpose of automatically releasing the plunger when the door swings outward and against the wall, I provide a button 30 which is disposed in a small housing 31 attached to the outer face of the door A, this button 30 being interiorly screw-threaded and having a head 32, the outer end of the housing being enlarged to accommodate this head. The body of the button 30 extends through an aperture 33 in the back of the housing 31. Engaged with the screw-threads of the button is a rod 34 which passes

through the longitudinally extending slot 13 of the housing 10, and the inner end of this rod is formed to provide a forked head or yoke 35 which embraces the plunger 14 and also embraces the ears 21 and is pivoted to the ears by trunnions or pivot pins 36. It will be obvious now that the spring 37 will act to force the button 32 outward within the housing and this will draw the latch 20 inward in its normal position, and that when the button is forced inward the latch will be released.

For the purpose of forcing the button inward, I provide a stop 38 which is mounted upon the wall B, this stop having a diameter less than the opening in the housing 31 and having its tip end provided with a rubber head 39. If now the door swings back against this stop, the rubber head 39 will contact with the head 32 and force the button 30 inward against the action of the spring 37 and this will shift the latch outward. The lower edge of the latch is beveled at 40, this bevel coacting with the bevel on the outer surface of the tooth 29.

In the operation of this device, when it is desired to lift the plunger, the foot lever or treadle 19 is depressed, which lifts the plunger against the action of the spring 16 and carries the tooth 29 upward against the beveled surface 20, forcing the latch outward against the action of the spring 37, and then the latch springs down with its aperture over the tooth 29, thus locking the plunger in its raised position. When the door is swung over toward the wall, the stop 39 will enter the member 31, forcing the button inward and releasing the latch, whereupon the spring 16 will force the stop downward and hold the door in its open position. If it be desired to hold the door partly open, a slight kick or pressure on the tang 23 will release the latch from its engagement with the tooth 29 and the plunger will be forced downward.

It will be seen that this device is so constructed that a door-locking plunger cannot be released accidentally, as it could be in my prior application, for the reason that the button is disposed at all times within the housing 31 and is not exposed, as it was in my prior construction. At the same time the door may be released by operating or releasing the tang 23. If at any time the tooth 29 should wear, it may be extracted and a new tooth put in place thereof. It will also be seen that the treadle 19 is superior to the treadle shown in my prior application for the reason that there is no tendency to lock or stick because of the rounded lower surface of the lever bearing against the rest or seat 18 because the lever may slide inward and upward as the plunger moves upward. The fulcrum for the latch is particularly strong consisting, as it does, of the two angle irons 27 which are attached to the housing and brace the same, and at the same time this construction permits of a slight sliding movement of the pivot ears 26 upon these fulcrums 27.

I claim:—

1. In combination with a door, a floor-engaging plunger carried by one side thereof, means for urging the plunger in contact with the floor, a latch for holding the plunger raised, means engaged with the latch and extending beyond the opposite side of the door for releasing the latch from the plunger, an open-ended housing attached to the door but within which said means is disposed and by which said means is protected from accidental displacement, and a fixed member having a protuberant portion adapted to be received within said housing and engage said means to thereby release the door.

2. In combination with a door, a floor-engaging plunger, means for urging the plunger into contact with the floor, a latch for holding the plunger in a raised position, means engaging the latch and extending beyond the opposite side of the door for releasing the latch from the plunger and including a button, a housing within which the button is disposed, a spring urging the button outward, the housing extending beyond the outermost position of the button, and a fixed releasing member having a head adapted to enter the housing and engage said button to release the same.

3. The combination with a door, a floor-engaging plunger carried by one side thereof, means for urging the plunger into contact with the floor, a latch for holding the plunger in a raised position and having an aperture, an upwardly beveled tooth carried by the plunger and adapted, when the plunger is raised, to enter said aperture, and means engaged with the latch and extending beyond the opposite side of the door for releasing the latch from the plunger, said means operating under impact to move the latch to a position where it will release said tooth.

4. The combination with a door, a floor-engaging plunger carried by one side thereof, means for urging the plunger into contact with the floor, a latch for holding the plunger in a raised or inoperative position, means engaged with the latch and extending beyond the opposite side of the door for releasing the latch from the plunger, said means operating under impact to move the latch into releasing position, a housing enclosing the plunger and latch, the plunger projecting through the housing, an operating treadle extending through a wall of the housing and pivoted at its inner end to the plunger, the treadle being rounded upon its lower face exteriorly to the housing and then

extending upward and outward, and a seat upon which the rounded lower edge of the treadle rests.

5. In combination with a door, a floor-engaging plunger carried by one side thereof and resiliently urged downward, a housing within which the plunger operates, a latch for holding the plunger in a raised position and rockingly supported upon the housing, said latch having a portion extending parallel to the plunger and having an aperture, the plunger having a tooth adapted to engage with said aperture when the plunger is raised, means for releasing said latch from its engagement with the tooth including a yoke embracing the plunger and the latch and pivoted to the plunger and latch, a member extending from said yoke through the door and beyond the opposite face thereof, and a spring urging said member outward, said member operating under impact to move the latch into inoperative position.

6. In combination with a door, a floor-engaging plunger carried by one side thereof, a latch for holding the plunger in a raised position, means engaged with the latch and extending beyond the opposite side of the door for releasing the latch from the plunger, said means being disposed within a recess, the wall of the recess extending out at all times beyond said means, and a member having a protuberant portion adapted to be inserted within the socket to thereby engage the said means.

7. In combination with a door, a housing mounted on one face of the door, a floor-engaging plunger mounted within the housing and extending through the lower end thereof, means for urging the plunger into contact with the floor, a latch embracing the plunger, the latch being provided with a shoulder, the plunger having a tooth adapted to engage said shoulder when the latch is raised, a fulcrum within the casing upon which the latch rests and rocks, the latch having a tang extending out through said casing and upward whereby the tang may be pressed to shift the latch out of engagement with the tooth on the plunger, and means for automatically shifting the latch out of engagement with the tooth on the plunger comprising a button mounted on the opposite face of the door, a spring urging said button outward, and a member connecting the button with the latch and pivoted thereto.

In testimony whereof I hereunto affix my signature.

LOUIS A. BORNE.