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T. W. WHITE

FOOT TRIP FOR DOOR LATCHES

Filed April 14, 1924

Fig. 1.

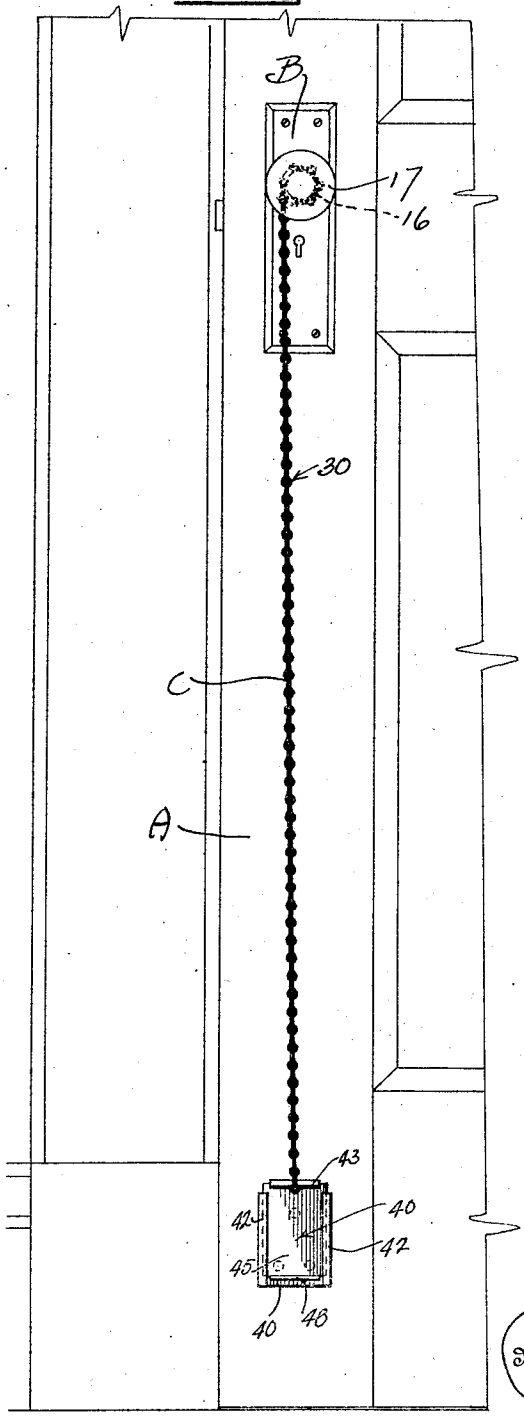


Fig. 2.

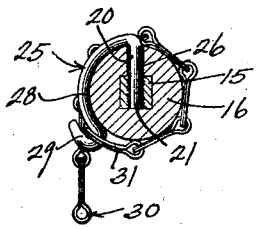


Fig. 3.

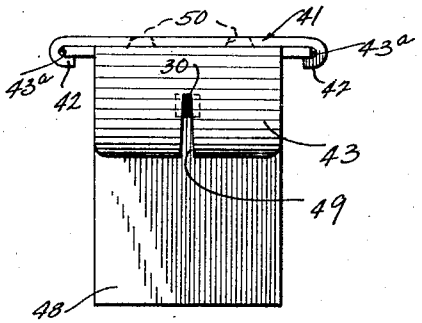
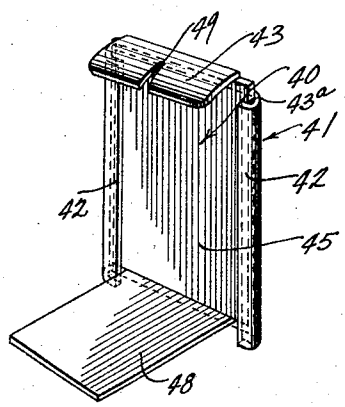


Fig. 4.



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FOOT TRIP FOR DOOR LATCHES.

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This invention relates to improvements in door latch operating mechanism.

The primary object of this invention is the provision of a foot trip for door latches, embodying a relatively simple arrangement which may be compactly and efficiently placed upon a door for operating the conventional hand latch thereof, without detracting from the appearance of the door or latch.

A further object of this invention is the provision of novel foot operated means for operating door latches to permit easy opening of a door, such as by a person whose hands are occupied with the carrying of bundles or the like, the improved door latch operating means being connected in a novel manner with a conventional door latch construction.

Other objects and advantages of this invention will be apparent during the course of the following detailed description.

In the accompanying drawing, forming a part of this specification, and wherein similar reference characters designate corresponding parts throughout the several views.

Figure 1 is a front elevation showing the improved foot trip door latch as positioned upon a door, for operating a conventional type of door latch.

Fig. 2 is a cross sectional view taken through the door latch, showing the means by which the improved foot trip device is connected in a novel relation therewith.

Fig. 3 is a plan view of the foot operating part of the improved device, showing the manner in which a cable or chain may be connected therewith.

Fig. 4 is a perspective view of a foot operating slide and the means of mounting the same upon the door.

In the drawing, wherein for the purpose of illustration is shown only a preferred embodiment of the invention, and a preferred type of door latch with which the same may be used, the letter A may generally designate a door, which may have thereon a conventional type of lock or latch device B, which the improved foot trip C is adapted to release upon operation of the latter.

Referring to the type of door latch B, the same of course includes a suitable sliding bolt device which operates within a keeper of the wall in which the door is positioned, and for the purpose of this invention the latch B may also include the square or polygonal shaped shank portion 15 which fits within the sleeve part 16 of the door knob 17. The door knob 17 is normally adapted to be grasped with the hand of a person, in order to operate the door latch, as can easily be understood. A screw or other element is normally adapted to be positioned through aligning openings 20 and 21 formed in the sleeve 16 and the shank 15 respectively, for the connection of the door knob for operation of the latch shank 15, as can well be understood by anyone skilled in the construction of conventional door latches. This screw or other element used in place thereof I replace with a hook shaped retaining member 25, which is a part of the improved device C, and which includes a straight portion 26 adapted to radially extend through the aligning openings 20 and 21, and at its inner end may be snugly driven into the opening 21, soldered therein, or otherwise secured to the latch device. The hook 25 furthermore includes the segmental arcuate portion 28 which overlies a portion of the outer circumference of the sleeve 16, and at its free end is provided with a hook end 29 facing upwardly when the latch sleeve 16 is normally positioned.

The improved device C furthermore includes a cable 30, consisting of a plurality of relatively short links, and at the upper end the cable 30 includes a link 31 which is engaged over the hook end 29, and the cable 30 is spiraled or circumferentially wound about the sleeve 16, for at least one revolution, and depends in tangential manner from the sleeve 16, for connection to the novel foot operating slide member 40.

A support 41 for the slide 40 is provided, which at the side edges thereof is provided with the channel shaped flanges 42, providing grooves 43[a] adapted to receive the side marginal portions of a plate 45 of the slide 40. The slide 40 in addition to plate 45 includes a top flange 43, which is relatively narrower than the plate 45, and which extends outwardly substantially at right angles to the plate 45, at the same side thereof which faces toward the flanges 42; the flange 43 being of a width so that the same will not contact the retaining flanges 42 during a sliding movement thereof in the member 41. At its lower end the plate 45 has a foot engaging flange 48, extending substantially at right angles thereto, and of a width less than the width of the plate 45, so that

t will not interfere with the retaining flanges 42 during sliding movement of the member 40 within its support 41. The upper flange 43 is relatively short, and midway of the side edges thereof is provided with a substantially V-shaped slot 49 which is adapted to receive any of the links of which the cable 30 is formed, so that the length of the cable may be adjusted into a desired length between the latch construction B and the foot operated slide 40.

The supporting member 41 in the back thereof is provided with a series of openings 50, which may receive screw elements for securing the supporting or retaining part 41 to the lower part of the door A, and as is illustrated in the drawing. The slide 40 fits in sliding relation within the member 41 so that the flanges 43 and 48 face forwardly of the door A.

In operation in order for a person to operate the latch B with his foot, it is merely necessary to press downwardly upon the slide flange 48, and the cable 30 will be drawn taut, and incident to the connected relation of the cable at its upper end with the latch sleeve 16, the latch operating mechanism will be rotated to withdraw the bolt (not shown) to permit opening of the door, and as can readily be understood.

From the foregoing description of this invention it is apparent that a novel foot trip device for door latches has been provided, which is extremely practical, and simple in its nature, cooperating as it does directly with the conventional latch mechanism. The improved foot trip device does not necessarily have to be associated with the specific type of door latch shown, but may be used with other types of door latches, as the construction of the same readily adapts itself to other types of latches.

Various changes in the shape, size, and arrangement of parts may be made to the form of invention herein shown and described, without departing from the spirit of this invention or the scope of the claims.

I claim:

1. In combination with a door and its latch which includes a rotatable operating part, a member connected with the rotatable operating part including an open J-shaped hooked end, a chain including a link looped over said hooked end and circumferentially wound about the rotatable part of the latch, and a foot operated member movably connected with the door at the lower part thereof and connected with said chain.

2. In combination with a door including a latch mechanism which includes a rotatable shank and a sleeve fixed thereover, said shank and said sleeve having openings therein, a retaining member including a pin extending through said openings for connecting the shank and sleeve to prevent detachment thereof, said member having a hooked end outwardly of the sleeve, a foot operated member, and a cable connected at its upper end to the hooked end of the member and being wound about said sleeve and extending for connection to the foot operating member whereby upon operation of the latter the cable will be drawn taut downwardly for rotation of said sleeve and shank to operate the latch.

3. In combination with a door and a latch which has a radial opening in a rotary operating part thereof, a member including a portion extending into the opening of said rotary part and including a hooked end lying exteriorly of the rotary operating part, a flexible member connected with the hooked end of said member and extending circumferentially about said rotary part and extending in depending relation with the door, and a movable operating member connected with said door and the opposite end of said flexible member.

4. In combination with a door and its operating latch, a foot operated member movably connected for vertical sliding on the lower part of said door and including a flange extending outwardly substantially at right angles from said door and having a substantially V-shaped notch inwardly of the free endge of said flange, a chain including a plurality of links, means connecting said chain at its upper end with the operating latch of said door, said chain at its lower end adapted to have any of its links detachably engage in said notch of the flange of said foot operating member.

5. In combination with a door including a latch mechanism with a rotatable shank portion, an end to end flexible chain comprising a plurality of short links, a hook-shaped member carried by the rotatable portion of said latch mechanism for receiving thereover a link at the upper end of said chain, a foot operating member including a body portion, a lower foot engaging right angled flange, and an upper chain engaging right angled flange, means slidably connecting the body portion of the foot operating member for vertical reciprocation at the lower portion of said door below said latch mechanism, the upper flange of said foot operating member having a V-shaped notch inwardly of the outer edge thereof for detachably receiving any of the links at the lower end of said chain whereby to vertically adjust the positioning of said foot engaging flange with respect to a floor surface.

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