United States Patent [19]

Overholser

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[54] **LEVER ATTACHMENT FOR DOOR LATCH-OPERATING DEVICE**

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[52] **U.S. Cl.** **292/347,** 292/DIG. 2

[51] **Int. Cl.** **E05c 21/00**

[58] **Field of Search** ..... 292/DIG. 2, 1, 336.3, 347, 292/350; 16/121; 287/53 H

[56] **References Cited**

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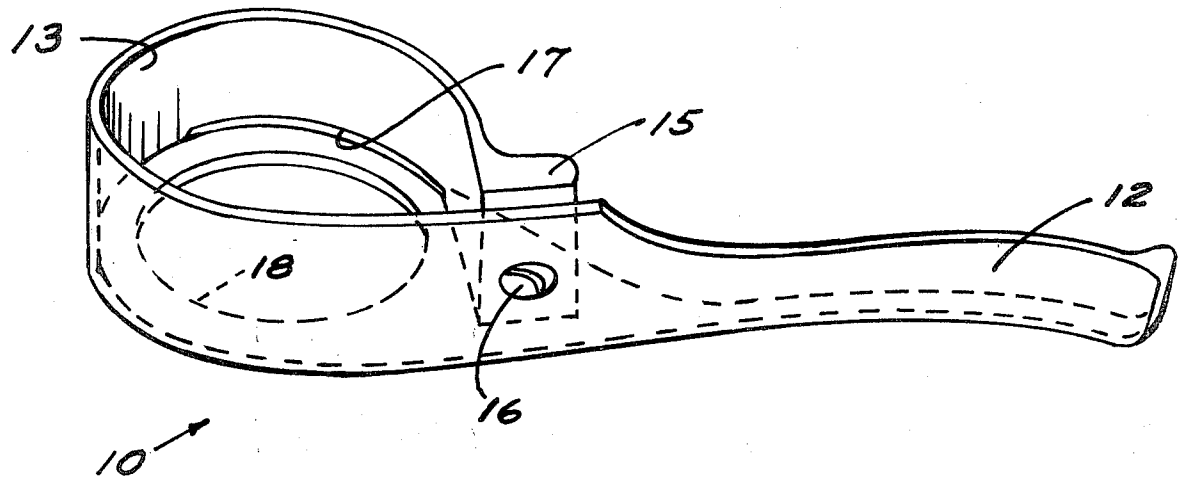
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Primary Examiner—Richard E. Moore

[57] **ABSTRACT**

Lever attachment for facilitating the opening of a door is releasably attached to a door knob. The door latch-operating mechanism is actuated merely by application of a downward pressure to the lever. The device comprises a lever portion, clamp portion, face portion, and a securing means for releasably connecting the attachment to door knobs of differing sizes and configurations.

1 Claim, 6 Drawing Figures



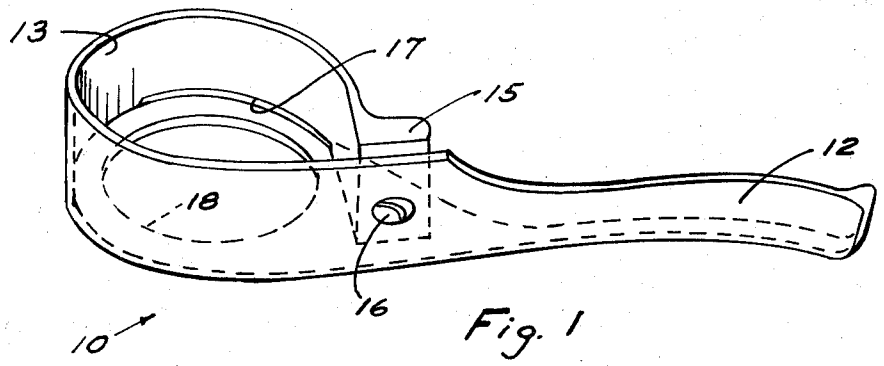


Fig. 1

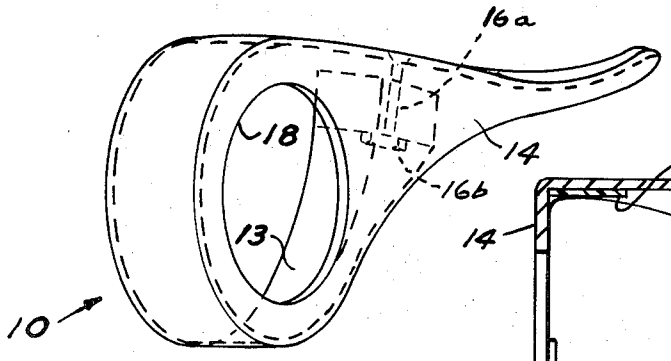


Fig. 2

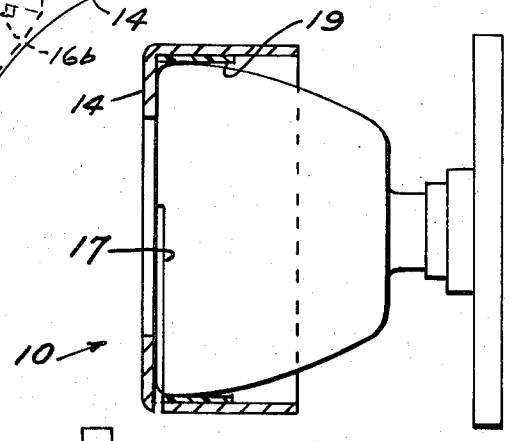


Fig. 3

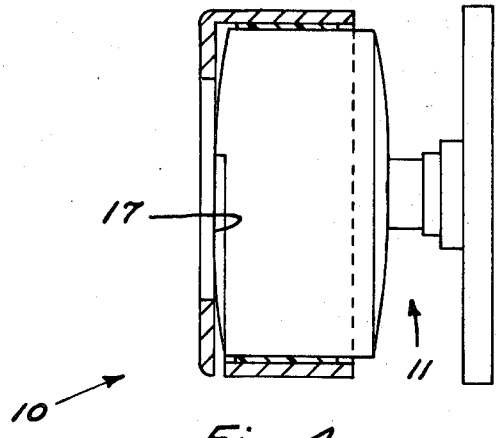


Fig. 4

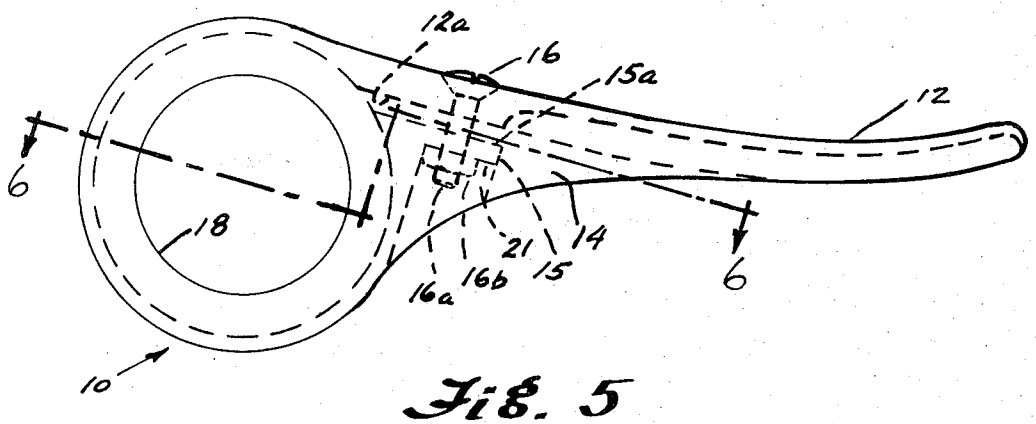


Fig. 5

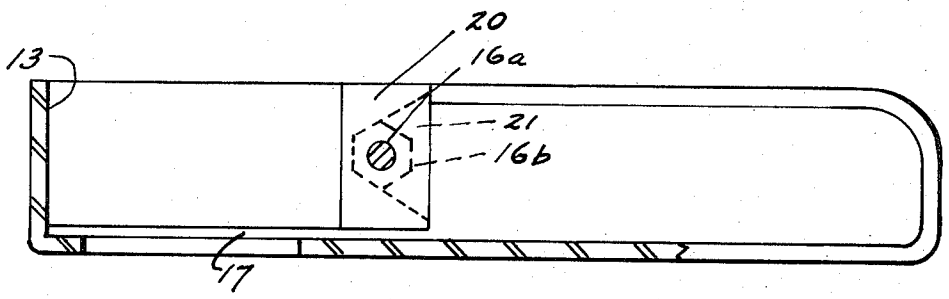


Fig. 6

LEVER ATTACHMENT FOR DOOR LATCH-OPERATING DEVICE

BACKGROUND

The present invention relates generally to doors in hospitals, homes, commercial and industrial establishments and other places wherein the door latch-operating equipment is subject to certain requirements in the interest of safety and convenience of operation. More particularly, the invention relates to improvements in lever attachments for an operating assembly for such doors that are equipped with latches.

The opening of a door in an establishment of the type referred to above ordinarily requires a turning of the door knob by a twist of the hand. Such manipulation is difficult or impossible by a person whose hands are carrying objects or are otherwise occupied. The same is true of persons suffering from common ailments such as arthritis, as well as persons who are partially paralyzed as well as other handicapped persons, especially amputees who may be unable to open such a door without assistance.

Accordingly, a principal object of the present invention is to provide a simple, durable and inexpensive attachment for door knobs of a range of sizes and varied contours and which provides a lever by which the knob may be readily turned merely by applying pressure to the lever.

SUMMARY

In general, the invention contemplates a simple operating lever in conjunction with an annular clamp that is readily detachably connectable to door knobs of a range of sizes and of varied contours.

DESCRIPTION

Other objects of the invention will become apparent from the following description taken in connection with the accompanying drawings in which:

FIG. 1 is a perspective view of a form of lever attachment embodying the present invention;

FIG. 2 is a perspective view of the embodiment of FIG. 1 taken from the opposite side thereof;

FIG. 3 is a sectional view showing the embodiment of FIG. 1 mounted on one type of door knob;

FIG. 4 is a view, similar to FIG. 3, showing a door knob of a different contour;

FIG. 5 is a side elevational view, similar to FIG. 2, showing a modification of the embodiment of FIGS. 1 and 2; and

FIG. 6 is a sectional view looking in the direction of arrows 6-6 of FIG. 5.

In accordance with the present invention, lever attachment 10 comprises a lever portion 12, a clamp portion 13 and a face portion 14. The attachment may be formed of materials such as metal and/or synthetic resin (plastic) by a convenient known forming process such as casting, molding and/or welding.

Lever portion 12 may be of any desired length, and if desired, may be slightly curved. The clamp portion is an extension of lever portion 12 and defines an inner surface that is substantially cylindrical in shape. The clamp portion also includes a depending portion 15 in which a drilled hold is provided to receive threaded fastening means 16 such as screw 16*a* and nut 16*b*.

In order to provide a degree of resiliency to the clamp portion, a certain portion thereof is spaced apart from face portion 14 by a slot portion 17, as is best shown in FIG. 1. If desired, face portion 14 may define an opening 18 to provide access to a locking device that is sometimes centrally located relative to the front face of a door knob on which lever attachment 10 may be mounted.

The clamp portion 13 is made slightly larger than the corresponding diameter of the largest knob on which the lever attachment may be mounted, thus providing space for the accommodation of a plastic shim 19 so as to prevent scratching or other surface damage to the surface of a door knob on which the device is mounted. The provision of shims of various sizes limits the magnitude of the movement required of the clamp portion and yet permits the device to be installed on knobs of varying sizes.

The modified embodiment shown in FIGS. 5 and 6 is essentially like the embodiment shown in FIGS. 1 and 2. In the modified embodiment however, the inner surface defined by clamp portion 13 is continuous except for a very small gap defined between the upper surface 15*a* of the depending portion which is closely spaced apart from the lower surface 12*a* of the lever portion, as is best shown in FIG. 5. Additionally, the modified embodiment includes ribs 20 interconnecting the clamp portion 13 and the depending portion and these ribs are disposed along opposite sides of the depending portion, as is shown in FIG. 6. One of the sides of each of said ribs is angularly disposed relative to the other side to provide added stiffness and rigidity to the device and to simultaneously function as a wrench to prevent turning of nut 16*b*.

From the foregoing it is believed that assembly and use and operation of the device will be readily apparent. A shim of suitable size is inserted within the clamp portion and the clamp portion and shim is then inserted over and onto a door knob and clamped in desired position by tightening the threaded fastening means 16. The construction is such that the device can be used with almost any cross-sectional shape of door knob as is indicated in FIGS. 3 and 4. The face portion 14 engages the front face of the door knob and properly positions the device relative to the door knob, and effective clamping action is achieved regardless of the particular shape or contour of the knob. Thus, an operator need not exert any gripping action on the door knob and the door-latch operating mechanism can be actuated merely by applying a downward pressure on the latch portion 12.

While a particular embodiment of the invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications can be made without departing from the invention, and it is intended in the appended claims to cover all such changes and modifications that fall within the true spirit and scope of the invention.

What is claimed is:

1. An actuating attachment for door knobs of differing cross-sectional shapes comprising

an actuating member having

a lever portion and

an integral clamp portion having a cylindrical surface connected to the lever portion for releasably gripping door knobs of varied contour,

a member depending from said clamp portion and spaced closely adjacent the lever portion, and

means connecting said depending member and said lever portion together and readily detachably connecting said cylindrical surface to a door knob, wherein said clamp portion and said depending portion are interconnected by spaced apart ribs and wherein a surface of at least one of said ribs is angularly disposed and engaged with a portion of said connecting means.

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