

[54] **CAR DOOR OPENER**

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[22] Filed: **June 30, 1972**

[21] Appl. No.: **268,216**

[52] U.S. Cl. **294/19 R, 81/3 R, 294/1 R**

[51] Int. Cl. **A47f 13/06**

[58] Field of Search **294/1 R, 2, 19 R, 294/24, 26; 81/3 R; 254/131**

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[57] **ABSTRACT**

A tool for use by a driver of an automobile to open and close the door lock button and turn the window crank of the door opposite the driver's seat while the driver remains in the driver's seat, including an elongated member with a handle end and an opposite operating end. The operating end includes a button-operating wall with a slot for receiving the stem of a door lock button to lift it to open the door lock, and having a flange extending around the slot for receiving the enlarged head of the door lock button so the button-operating wall can push down the button to lock the door. The operating end also has a short tubular portion which can receive the knob of the window crank so that the driver can open and close the window.

4 Claims, 10 Drawing Figures

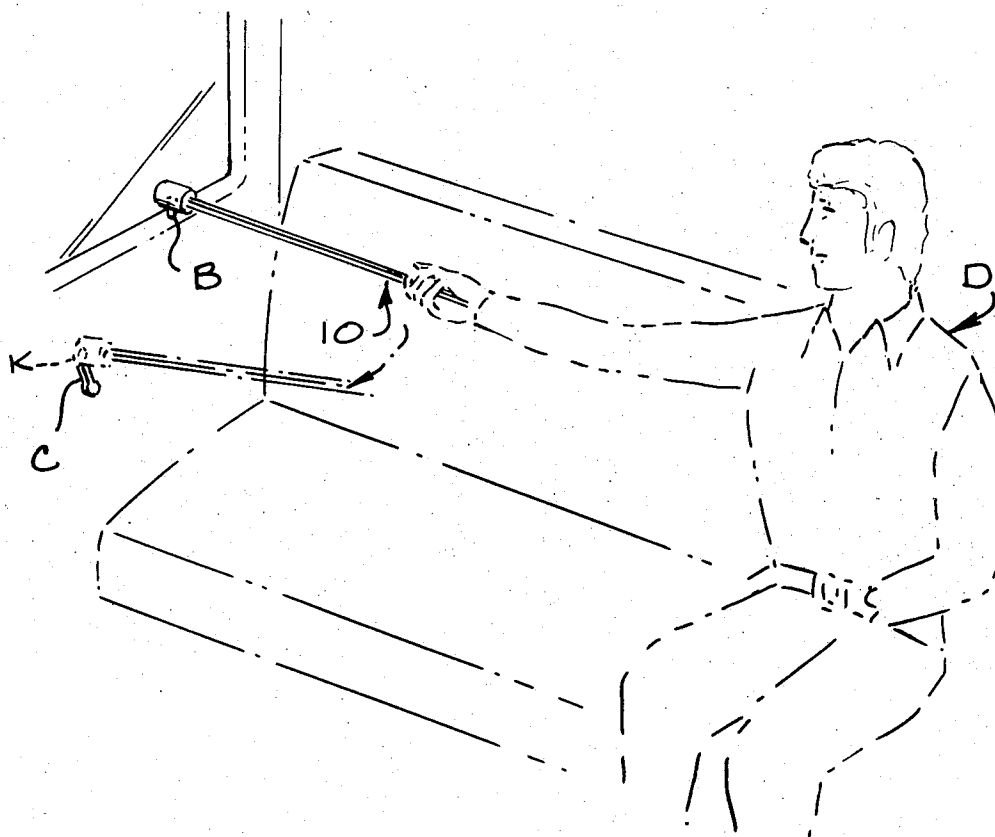


Fig. 1

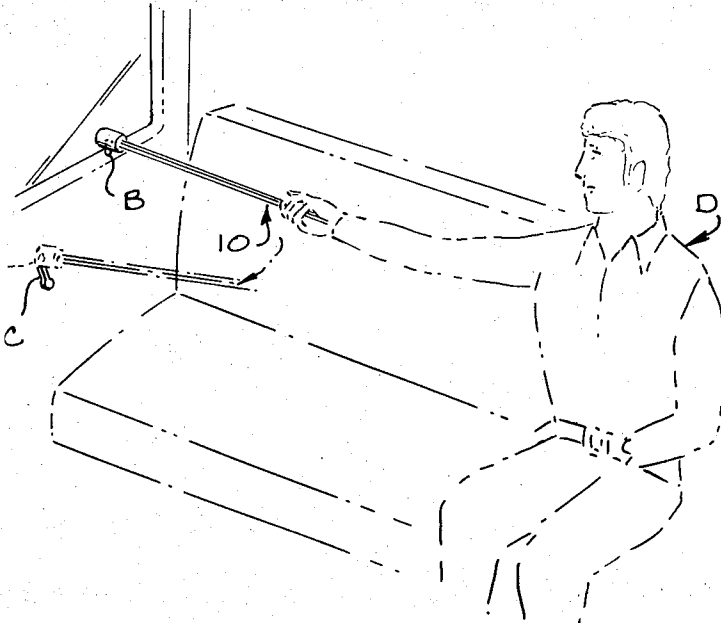


Fig. 6

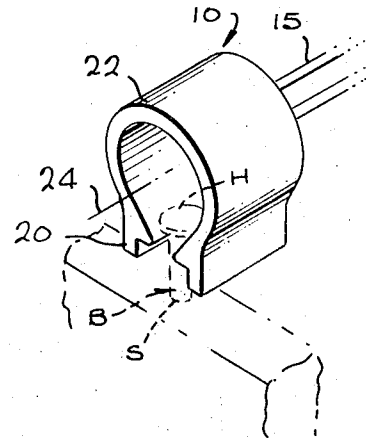


Fig. 7

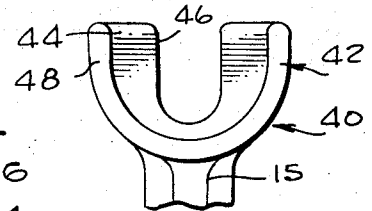


Fig. 2

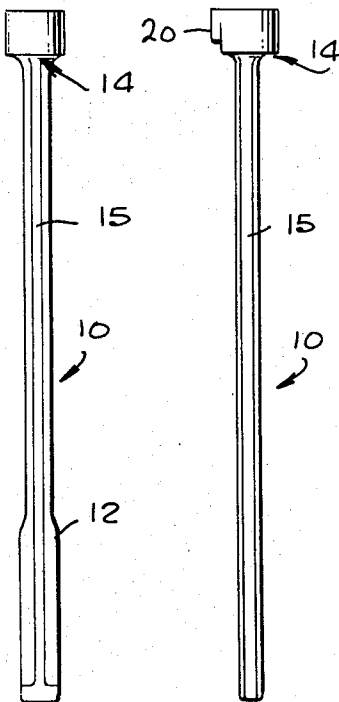


Fig. 4

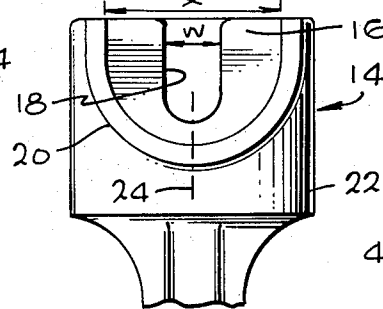


Fig. 8

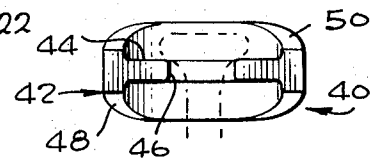


Fig. 8A

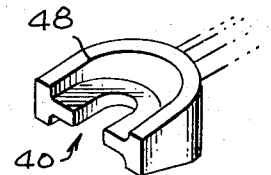


Fig. 5

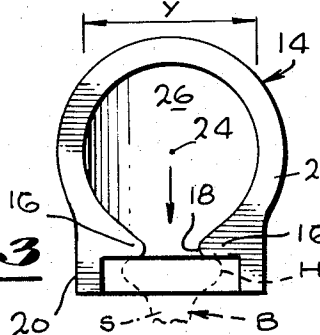


Fig. 9

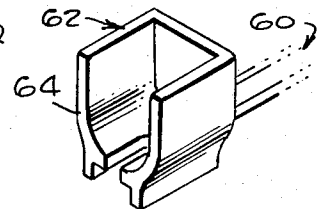
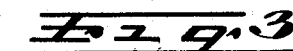


Fig. 3



CAR DOOR OPENER

BACKGROUND OF THE INVENTION

This invention relates to an automobile door operating tool for use by a driver in operating devices on a door which is located a distance from the driver's seat.

Automobile drivers often wish to keep all car doors locked and windows closed to prevent strangers from entering and robbing them. However, the drivers often experience difficulty in operating the door lock button and window crank of the doors on the side of the automobile opposite the driver. In order to operate these controls, the driver often must shift his position or lean over and stretch his body. The difficulty is compounded when the driver is wearing safety belts or for elderly or handicapped people or others who cannot readily shift position in their automobile. Some automobiles are provided with electric controls for the operator to automatically operate the door locks and windows, but this adds substantial cost to the automobile and such devices are not as reliable as manual controls. A simple mechanical device which enables a driver to operate the controls on the opposite door or doors without leaving the driver's seat or excessively stretching his body could greatly reduce the annoyance and irritation arising in car door operation. Such a device would contribute to driver safety by enabling the driver to readily keep the car doors locked and the windows closed while driving.

SUMMARY OF THE INVENTION

In accordance with one embodiment of the present invention, a simple automobile door operator is provided which enables a driver to operate the door lock button and/or the window crank on the doors opposite the driver without requiring the driver to leave the driver's seat or excessively stretch and bend his body. The operator is an elongated member with opposite handle and operating ends, the operating end having a button-operating wall with a narrow slot. The slot receives the stem of a door lock button but is too narrow to pass the head of the button, so that the driver can position the stem in the slot and lift the operating end to lift the button and thereby open the door lock. A button-head locating flange partially surrounds the slot and defines a space large enough to receive the head of the button, so that the flange can be positioned around the head of the button and the operating head pushed down to close the door lock. The operating end is also provided with a tubular portion which is large enough to receive the knob of the window crank. The driver can insert the tubular portion over the knob of the window crank and move it in a circle to open and close the window of the opposite door.

The novel features that are considered characteristic of this invention are set forth in the appended claims. The invention will best be understood from the following description when read in connection with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a portion of a car interior, showing how the car door operator of the invention is utilized;

FIG. 2 is a plan view of the operator of FIG. 1;

FIG. 3 is a side elevation view of the operator of FIG. 1;

FIG. 4 is a partial bottom view of the operator of FIG. 1 showing the operating end thereof;

FIG. 5 is an end view of the operator of FIG. 4, showing how it is used to depress the door lock button;

FIG. 6 is a partial perspective view of the operator of FIG. 1, showing how it is used to lift the door lock button;

FIG. 7 is a partial plan view of a car door operator constructed in accordance with another embodiment of the invention;

FIG. 8 is an end view of the operator of FIG. 7;

FIG. 8A is a perspective view of the operator of FIG. 7; and

FIG. 9 is a partial perspective view of a car door operator constructed in accordance with still another embodiment of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates a portion of an automobile interior, showing a driver D seated at the driver position on the front seat of an automobile, and showing how the driver can utilize the car door operator 10 of the invention to operate the door lock button B or the window crank C of the door on the side of the automobile opposite the driver. As also shown in FIGS. 2-6, the operator 10 is an elongated member with a handle 12 at one end, an operating head 14 at the opposite end, and a shank 15 extending between them. The operating head 14 includes a button-operating wall 16 with an elongated slot 18 therein. The door lock button B includes a stem S and an enlarged head H at the top of the stem. The slot 18 is formed so it can receive the stem S but is too small for the head H to pass through. Accordingly, after the stem S has been received in the slot and the operating end 14 is lifted, the door lock button B will lift up to open the door.

The operating head 14 is formed with a head locating flange or wall 20 which surrounds the slot 18 but which is spaced from it so that the locating wall 20 can partially encompass the enlarged head H of the door lock button as indicated in FIG. 5. When the head H of the button has been received within the locating wall 20 and lies under the button operating wall 16, downward movement of the operating head 14 causes the button to be depressed, thereby locking the car door. It would be possible to eliminate the locating wall 20, but then the operating head 14 would be likely to slip off the head H of the button, particularly inasmuch as the driver may find it difficult to manipulate the operating head 14 which is at the end of a long neck of the car door operator. The locating wall 20 extends in approximately a half circle, so that the driver can hook it over the head H of the door lock button to prevent the operating head from sliding off the button as downward force is applied.

The operating end 14 of the car door operator includes a tubular portion 22 formed about an axis 24 which is substantially parallel to the length of the elongated car door operator 10. The tubular portion 22 has a closed end 26 nearest the shank 15 of the car door operator and has an opened end facing away from the shank. The tubular portion 22 is designated to receive the knob K which is on the window crank C that can be turned to raise and lower the window. The driver can project the tubular portion 22 over the knob K and move the car door operator so that the tubular portion

22 moves clockwise or counterclockwise in a circle to open or close the window. The tubular portion 22 surrounds the knob K on all sides so that it does not disengage from the knob until the driver pulls the handle 12 away from the car door. The slot 18 extends into the tubular portion 22, but it is too narrow for the passage of the door crank knob K therethrough so that the knob will not be disengaged by passing through this slot.

Most automobiles have door lock buttons and window crank knobs of approximately the same size. The buttons B generally have a stem S which is of approximately $\frac{1}{4}$ inch diameter, and have a head H on the button which is generally about five-eighths inch in diameter. Accordingly, the slot 18 is preferably constructed so that it has a width W of approximately three-eighths inch, so that it readily receives the stem of a button but does not pass the head of the button. The head locating wall 20 has a width X which is preferably more than about three-fourths inch, so that it will readily receive a $\frac{1}{2}$ inch diameter button head. The knobs K on the window cranks generally have a diameter of less than $1\frac{1}{2}$ inches. Accordingly, the tubular portion 22 has a narrowest width Y which can receive a knob of up to $1\frac{1}{2}$ inches. The opening formed by the tubular portion 22 does not have to be round, but it should surround a knob around most of the perimeter of the knob.

FIGS. 7, 8 and 8A illustrate a car door operator 40 constructed in accordance with another embodiment of the invention, wherein the operator is designed only to lift and depress the door lock button. The operator 40 includes an elongated shank 15 with a handle end identical to that of the previously described embodiment, but with an operating head 42 which is of different construction. The operating head 42 includes a button-operating wall 44 with a slot 46 therein and surrounded by a head locating wall 48, these parts being similar to the operating wall 16, slot 18, and locating wall 20 of the previously described car door operator. However, the locating wall 48 is tapered to a smaller height to facilitate its reception under the head of the button in those situations where the head may be close to the car door when the button is in a locked position. In addition, a second head locating wall 50 is provided which extends opposite the first head locating wall 48, so that the head of the door button can be pushed down even if the driver holds the instrument upside down from its usual position.

FIG. 9 illustrates a car door operator 60 constructed in accordance with still another embodiment of the invention. In this operator 60, the operating head 62 has a tubular portion 64 for receiving the window crank knob, but the tubular portion does not completely surround the knob but instead, only partially surrounds it although by more than 180° .

Thus, the invention provides a car door operator which can be used by a driver seated in the driver position, to open and close the door lock button. The car door operator can also be constructed to enable the driver to move the window crank to roll the window up

or down. The car door operator may be kept beside the seat or under the dashboard so it is ready for use at all times. While a primary use of the operator is in manipulating the controls of the car doors, it also can serve as a self-defense weapon, inasmuch as it incorporates a weighted portion at the end of a long shank similar to a club. The operator can be constructed of a variety of materials, such as of aluminum.

Although particular embodiments of the invention have been described and illustrated herein, it is recognized that modifications and variations may readily occur to those skilled in the art and consequently it is intended that the claims be interpreted to cover such modifications and equivalents.

What is claimed is:

1. A car door operator for operating a car door lock button which has a stem and an enlarged head, comprising:

an elongated member having a handle at one end and an operating head at the other end, said operating head having a button operating wall with a slot for receiving an ordinary automobile door lock button without passing the head thereof to permit raising of the button,

said operating head also including a wall facing axially away from the handle and a knob-receiving tubular portion extending from the wall for engaging a window crank knob, to enable a person in the driver's seat of an automobile to open and close the opposite door window.

2. Apparatus for enabling a person in the driver's seat of an automobile to both open and close the door lock button of a door on the opposite side of the automobile, comprising:

an elongated member with an operating head at one end, said head having a wall with a slot for receiving an ordinary automobile lock button to permit raising of the button, and said wall having a flange extending partially about the slot to prevent the wall from sliding off the top of the button when the wall is laid on top of the button and pressed down to lower the button and thereby lock the door.

3. The apparatus described in claim 9 wherein: said flange is tapered in height, with the flange portion nearest the open end of the slot being of smallest height, so that the flange acts as a wedge to lift the button as a person pushes the head towards the button.

4. The apparatus described in claim 9 wherein:

said elongated member is a rigid unitary member with a handle at the end opposite the operating head and with a rigid straight shank portion connecting the handle to the head, so the shank remains rigid under bending forces when a person holding the handle and extending the member horizontally to the opposite door button applies a force to lift or press down the button.

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