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SWITCH OPERATOR

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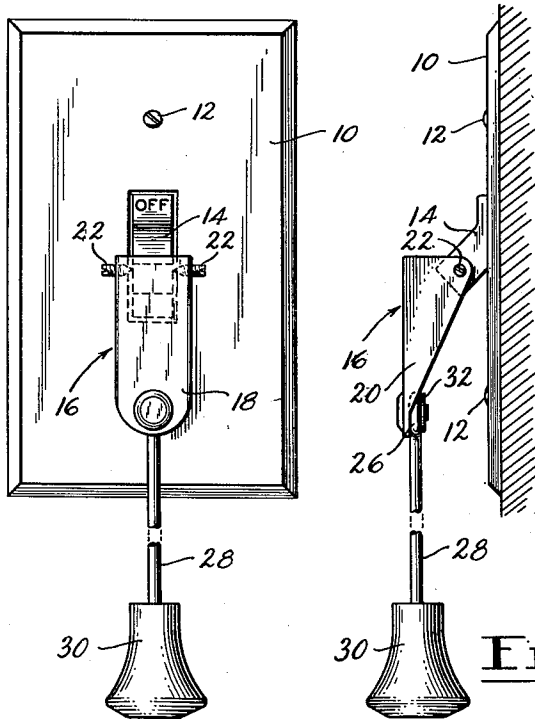
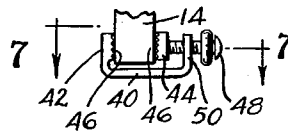


Fig. 6

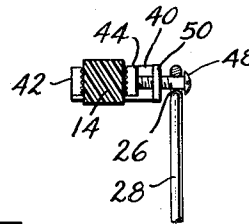


Fig. 7

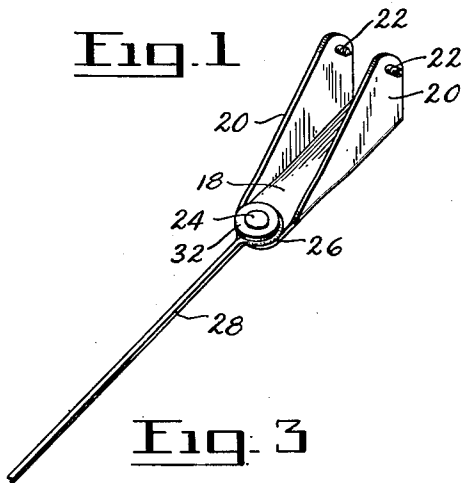


Fig. 1

Fig. 3

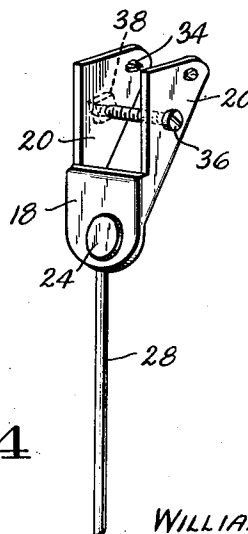


Fig. 4

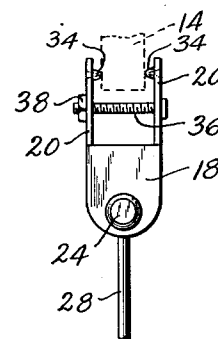


Fig. 5

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## UNITED STATES PATENT OFFICE

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## SWITCH OPERATOR

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1 Claim. (Cl. 200-172)

There have been many arrangements proposed in the past for rendering wall-type toggle switches operable by small children who are not tall enough to reach the customary switch lever. These known devices have required modification of or attachment to the switch cover plate, an operation which will in many cases, call for the aid of a mechanic.

The present invention contemplates an extension or operator for wall-type toggle switches, which extension is readily secured to the switch lever itself in a manner requiring no mechanical skill so that any housewife can readily install it.

The extension handle is adapted to be supported solely from the operating lever of a wall-type toggle switch and comprises a connector frame, clamping means carried by the frame for engaging a toggle switch lever and suspending the frame therefrom, and an operating rod pivotally connected to the frame and depending therefrom. Pivot means carried by the frame may engage the toggle switch lever, and clamping means may be provided for the pivot means. Opposed clamping members may be carried by the frame for embracing the switch lever, and the frame may have similarly directed flanges carrying clamping means for penetrating the switch lever. The clamping means may be screw actuated and the frame will preferably provide a universal connection between the switch lever and the operating rod. The connector frame may have a base and a pair of flanges, one or both of which may carry the clamping means.

A more complete understanding of the invention will follow from a detailed description of the drawings wherein:

Fig. 1 is an elevation depicting the invention in one of its forms applied to a wall-type toggle switch;

Fig. 2 is a side elevation of the assembly shown in Fig. 1;

Fig. 3 is a fragmentary perspective of the extension handle of Figs. 1 and 2, removed from the switch;

Fig. 4 is a fragmentary perspective view of a modified form of the invention;

Fig. 5 is a front elevation of the modification shown in Fig. 4;

Fig. 6 is a plan view of another modification applied to a switch lever; and

Fig. 7 is a section taken along line 7-7 of Fig. 6.

The wall-type toggle switch depicted in Figs. 1 and 2, is provided with the usual cover plate

10 secured by means of screws 12, and an operating lever 14 projecting through a central slot formed in the cover plate.

A connector frame 16 comprises a base 18 and flanges 20 directed at right angles to the base, and suitably tapped to receive set screws 22 whose pointed ends are advanced to penetrate the operating lever to pivotally secure the frame thereto.

Perpendicular to the pivotal axis defined by the set screws 22, a second pivotal axis is defined by a rivet 24 penetrating the lower end of the base 18 and the eye 26 formed on one end of an operating rod 28 whose lower end may be provided with a suitable handle 30. One or more washers 32 may be applied to the rivet in accordance with the customary practice.

It will be clear from an inspection of Figs. 1 and 2 particularly, that the extension handle can be swung about the pivotal axis defined by the set screws 22 as well as about the axis perpendicular thereto, defined by the rivet 24, yet any pull or thrust applied to the rod 28 will be transmitted to the operating lever. This relationship avoids bending and breakage of parts regardless of the position, within very wide limits, at which the force is applied to the handle 30 or other terminal portion of the rod 28.

The modification shown in Figs. 4 and 5, provides a shorter base 18 from which the parallel flanges 20 project at right angles, the flanges in this case being more flexible due to the difference in the base construction compared with that of the preceding figures. Instead of the set screws for engagement with the switch lever, this modification contemplates attached or struck-up projections 34 near the apices of the flanges remote from the base, corresponding to the positions assumed by the set screws of the Figures 1 to 3. The clamping action is effected by a screw 36 and its nut 38, the screw extending through openings suitably formed in the flanges.

Here again, it will be clear that the universal movement of the operating handle with respect to the switch lever will again be present, and again, the device can be attached with great facility, requiring no modification whatsoever of the switch installation.

The modification depicted in Figs. 6 and 7, comprises a connector frame 40 having a fixed jaw 42 and an adjustable jaw 44 arranged in a manner suggestive of the ordinary C-clamp. The surfaces of the jaws contacting the switch lever 14 may be suitably knurled or roughened to provide serrated surfaces 46, the movement of the

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adjustable jaw being accomplished by a screw 48 threaded through the flange 50 of the frame. The eye 25 of the operating rod 28 loosely engages the shank of the screw 48 so as to provide flexibility about two axes, for reasons similar to those previously discussed.

Thus, it will be seen that the entire device contemplated by the present invention will be supported from the operating lever of wall-type toggle switches and articulated thereto for simple and dependable operation with a minimum danger of breakage even at the hands of children, for whose use the device is primarily intended.

Although only a few modifications have been depicted and described for purposes of illustration, variations will suggest themselves to those skilled in the art just as they have occurred to the present inventor, and it is therefore intended that the invention be not restricted to the examples given beyond the scope of the appended claim.

I claim:

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An operator for a wall-type toggle switch having an operating lever, comprising a connector frame, clamping means carried by said frame pivotally engageable with said lever for movement about a horizontal axis and suspending said frame therefrom, and an operating rod depending from said frame and pivoted relative thereto about an axis substantially normal to the first said axis.

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