Jan. 13, 1953 E. T. CHRISLER 2,625,631

INDICATOR FOR ELECTRICAL SWITCHES

Filed Jan. 4, 1950 2 SHEETS—SHEET 1

Fig. 1.

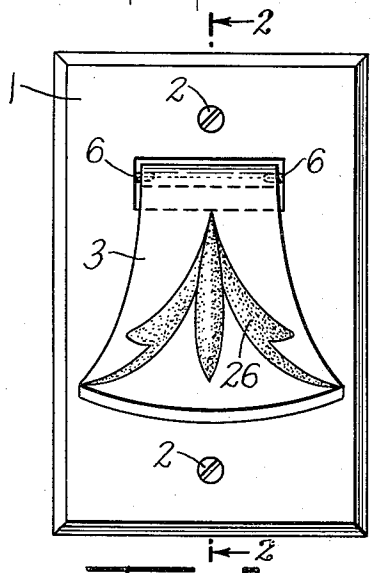


Fig. 2.

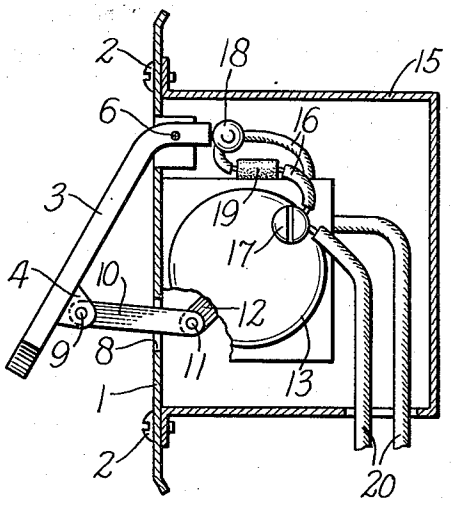


Fig. 3.

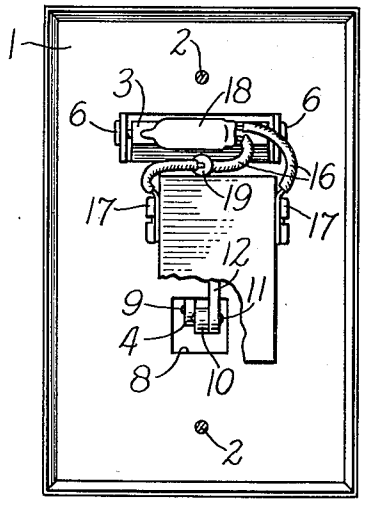
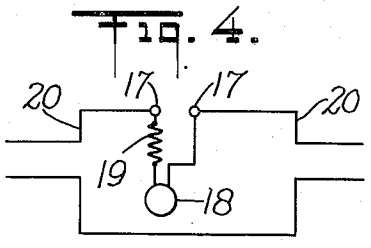


Fig. 4.



INVENTOR
Eugene T. Christer
BY
Curtis, Morris & Safford
ATTORNEYS

Jan. 13, 1953 E. T. CHRISLER 2,625,631

INDICATOR FOR ELECTRICAL SWITCHES

Filed Jan. 4, 1950 2 SHEETS—SHEET 2

Fig. 5.

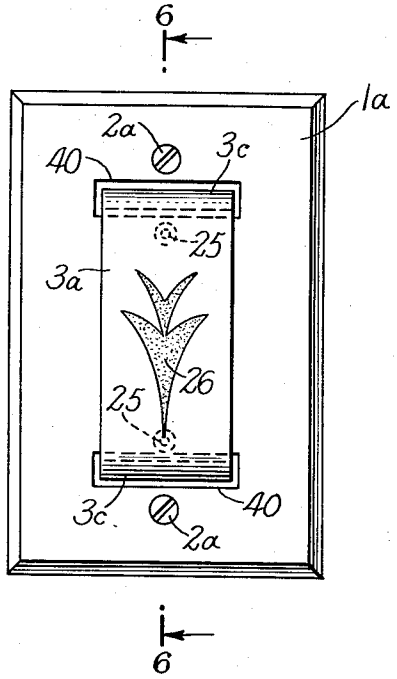
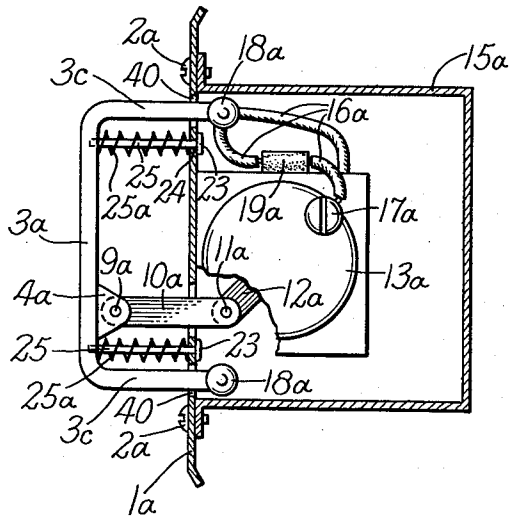


Fig. 6.



INVENTOR
Eugene T. Christer
BY
Curtis, Morris & Safford
ATTORNEYS

Patented Jan. 13, 1953

2,625,631

UNITED STATES PATENT OFFICE

2,625,631

INDICATOR FOR ELECTRICAL SWITCHES

Eugene T. Chrisler, Whitestone, N. Y.

Application January 4, 1950, Serial No. 136,810

9 Claims. (Cl. 200—167)

1

This invention relates to electrical switches and particularly to switches having a push-button or push-plate which is moved to thereby open or close an electrical circuit. It is especially adapted to wall switches used to operate electric illuminating lights, as in homes.

An object of this invention is to provide a sturdy dependable switch which can easily be located in darkness or semi-darkness. It is another object of this invention to illuminate the push-member of the switch, i. e. a push-button or push-plate, without an excessive consumption of electrical power. It is a further object of the invention to provide a switch which is aesthetic or decorative in external appearance. Other objects of this invention will be in part obvious and in part pointed out hereafter.

In one of its broader aspects my invention comprises an electrical switch which is actuated by a translucent or transparent push-member having the property of refracting light to a high degree. In other words it has a high index of refraction. A push-member of this type may be made of plastic materials such as methyl methacrylate which is presently sold under the trade names "Lucite" and "Plexiglas." A low-power input illuminating lamp is positioned adjacent to the light transmitting push-member; the terminals of the low-power input illuminating lamp are so shunted across the main electrical circuit that the push-member is normally lit when the main circuit is open and illumination thereof ceases when the main switch circuit is closed. A further feature of this invention is that the push-member opens or closes the main electrical circuit by motion thereof in one direction.

The features of the invention may be better understood by reference to the accompanying drawings wherein:

Fig. 1 is an elevation of a switch which is attached to the wall and particularly shows the actuating transparent or translucent push-member.

Fig. 2 is a transverse sectional view along the line 2—2 of Fig. 1 and shows in detail an arrangement of the switch behind the wall.

Fig. 3 is a rear view of the switch shown in Fig. 1, with parts broken away.

Fig. 4 is an electrical wiring diagram which shows the arrangement of the low-power input illuminating lamp in the main electrical circuit.

Fig. 5 is an elevation of another embodiment of the invention as positioned on a wall.

2

Fig. 6 is a transverse sectional view along the line 6—6 of Fig. 5.

Referring to the drawings in more detail, in Fig. 1 is shown wall plate 1 attached to the wall by screws 2. A decorative push-member 3 is shown as being positioned in front of wall plate 1; push-member 3 is made of an optically refractive transparent or translucent material and is pivotally mounted on the pins 6.

Fig. 2 shows in more detail the switch shown in Fig. 1. The switch assembly behind the wall is enclosed in an outlet box 15. Push-member 3 is shown as curved at an upper portion and pivotally mounted on pins 6, and also as extending for a short distance within outlet box 15. An incandescent low-power input lamp in the form of a neon glow bulb or lamp 18 is positioned adjacent to an upper end of push-member 3; conductors 16 are attached to the terminals of lamp 18 and are shunted across the main switch terminals 17, except that there is a resistor 19 in series with lamp 18 to limit the current flow. The main electrical circuit is shown as having conductors 20 which are connected to switch terminals 17 of the switch assembly 13. Switch assembly 13 may be of the "pull-chain" type but instead of being actuated by a pulling chain connected to the switch ratchet arm 12, the switch is actuated by a pushing motion applied to push-member 3, which is linked to the switch ratchet arm 12. It is not absolutely necessary that the switch assembly 13 be of the "pull-chain" type, but any switch utilizing a unilateral or semi-directional actuating principle may be used. As illustrated, when the push-plate 3 is depressed to actuate the switch, a spring mechanism therein returns the push-member to its initial position. The connecting linkage between the underside of the push-member 3 to switch ratchet arm 12 comprises a bracket 4 to which a link 10 is connected and held in place by a pin 9; rigid link 10 is attached to switch ratchet arm 12 by a pin 11. The linkage mechanism passes through aperture 8 of wall plate 1.

Fig. 3 shows a detail of the lamp circuit in relation to the main electrical circuit. Lamp terminals 16 are shunted across the main circuit by virtue of being attached to main switch terminals 17; lamp 18 is shown as being elongated and having resistor 19 in series with its electrical circuit. Pins 6 pass through push-member 3 and permit pivoting of the latter around the axes of the pins. The lamp 18 is positioned adjacent to an upper end of the push-member 3, at least when that member extends outwardly from wall

plate 1. Switch assembly 13 is shown as partially broken away, thus illustrating the relative location of bracket 4, its pivot pin 9, link 10, pivot pin 11 and switch ratchet arm 12 with respect to the aperture 8 in wall plate 1.

Fig. 4 is a diagram showing main circuit conductors 20, switch terminals 17 and lamp 18 shunted across the terminals by means of conductors 16 and resistor 19.

Figs. 5 and 6 show another embodiment of the invention wherein optically refractive push-member 3a is substantially U-shaped and, instead of being pivoted about any one point, has two legs which extend within a switch-box 15a. As in the previous embodiment described, wall plate 1a is mounted in front of a wall by means of screws 2a which also serve to hold switch-box 15a behind the wall. Push-member 3a is positioned in front of the wall, but has its two legs 3c extend for a short distance behind the wall, passing through apertures 40 of wall plate 1a. Switch assembly 13a has main switch terminals 17a for the main conductors (not shown). Lamps 18a are detachably mounted on the ends of each leg 3c of push-member 3a; the lamps are shunted across the main switch terminals 17a by means of conductors 16a and series resistor 19a.

Push-member 3a is shown as having a decorative representation 26 on its outer surface. The movable pins 25 pass through apertures 24 of wall plate 1a and have caps 23 on their inner ends; pins 25 are mounted on the portion of push-member 3a which is substantially parallel to wall plate 1a. The compressive springs 25a are mounted on pins 25 and serve to restrain or limit motion of push-member 3a towards switch-box 15a. Switch assembly 13a is operated by movement of ratchet arm 12a which is movably connected to push-member 3a by means of a linkage assembly comprising bracket 4a, pin 9a, link 10a and pin 11a.

As various embodiments may be made of the above invention and as changes could be made in the embodiments above set forth, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. An electrical switch comprising, a light-transmitting actuating member which has a push plate portion and a bent portion extending from one end thereof in a plane substantially transverse to the plane of said push plate portion having the property of substantially refracting light, switch-means operable by uni-directional motion and connected with said actuating member, spring-means for returning the actuating member to an effective position, and a low-power input illuminating means detachably attached to the said switch and adjacent to the end of said curved portion of the actuating member whereby light is transmitted internally through said push plate portion to illuminate the edges thereof and distinctive figures thereon.

2. An electrical switch comprising a push-member which has a flat push plate portion and an end portion extending in a plane substantially perpendicular to said push plate portion at one end thereof formed of a light-transmitting plastic material having a high index of refraction, switch-means operable by uni-directional motion and movably connected with said push-member, means for returning the push-member to an effective position, a detachably mounted low-power input lamp positioned adjacent to said end of the push-member, said lamp being electrically shunted across said switch-means whereby light is transmitted internally along said push plate portion.

3. An electrical switch as described in claim 2 wherein a resistor is placed in electrical series with the lamp.

4. An electrical switch suitable for attachment to a wall comprising a wall plate positioned on the front surface of a wall, an enclosing switch box mounted on the back surface of said wall, switch-means mounted within said switch-box, said switch-means being operable by unidirectional motion, a push-plate formed of a solid light-transmitting plastic substance having a high-index of refraction, said push-plate being pivotably mounted on said wall and extending for but a small distance behind the wall, said push-plate being also connected by a movable linkage to said switch-means, and a low-power-input lamp detachably mounted within the switch-box and being positioned adjacent to the portion of the push-plate extending behind the wall, said lamp being electrically shunted across said switch-means.

5. An electrical switch according to claim 4 wherein a resistor is placed in series with the lamp whereby the lamp is not illuminated when the switch circuit is closed.

6. An electrical switch for attachment to a wall which comprises an apertured wall plate positioned on the front surface of a wall, an enclosing switch-box mounted on the back surface of said wall, switch-means mounted within said box, said switch-means being operable by unidirectional motion, a push-plate formed of a solid light-transmitting plastic substance having a high index of refraction, said push-plate being substantially U-shaped and having its two ends extend for a short distance through the apertures of the wall plate, said push-plate also being connected by a movable linkage to said switch-means, at least one compressive spring-actuated pin mounted on said push-plate and movably positioned within an aperture of the wall plate, and a low power-input lamp placed adjacent to at least one end of the push-plate, said lamp being electrically shunted across said switch-means.

7. An electrical switch according to claim 6 wherein said lamp is detachably mounted to an end of the push-plate.

8. An electrical switch comprising, a light transmitting actuating member which has a push plate portion pivotally mounted adjacent one end and a switch actuating portion, said actuating member having the property of substantially refracting light, switch means operable by unidirectional motion and operatively connected to said switch actuating portion, means for returning said actuating member to an effective position and a low power input illuminating means detachably positioned adjacent said pivotally mounted end of said actuating member, said lamp being electrically shunted across said switch means whereby light is transmitted internally along said push plate portion.

9. An electrical switch comprising, a push member which has a push plate portion and a switch actuating portion formed of a light transmitting material having a high index of refraction, switch means operable by uni-directional motion and connected with said switch actuating portion of said push member, spring means for returning said push member to an effective position, a de-

tachably mounted low-power input lamp positioned adjacent one end of said push member, said lamp being electrically shunted across said switch means whereby light is transmitted through said push member when said switch means is in the disconnected position.

EUGENE T. CHRISLER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,642,187	Young	Sept. 13, 1927
2,035,998	Thompson	Mar. 31, 1936
2,214,317	Bash et al.	Sept. 10, 1940

FOREIGN PATENTS

Number	Country	Date
767,918	France	May 7, 1934