Feb. 16, 1932. J. W. ELY, JR 1,845,079

FIXTURE SWITCH

Filed Aug. 27, 1930

Fig 1

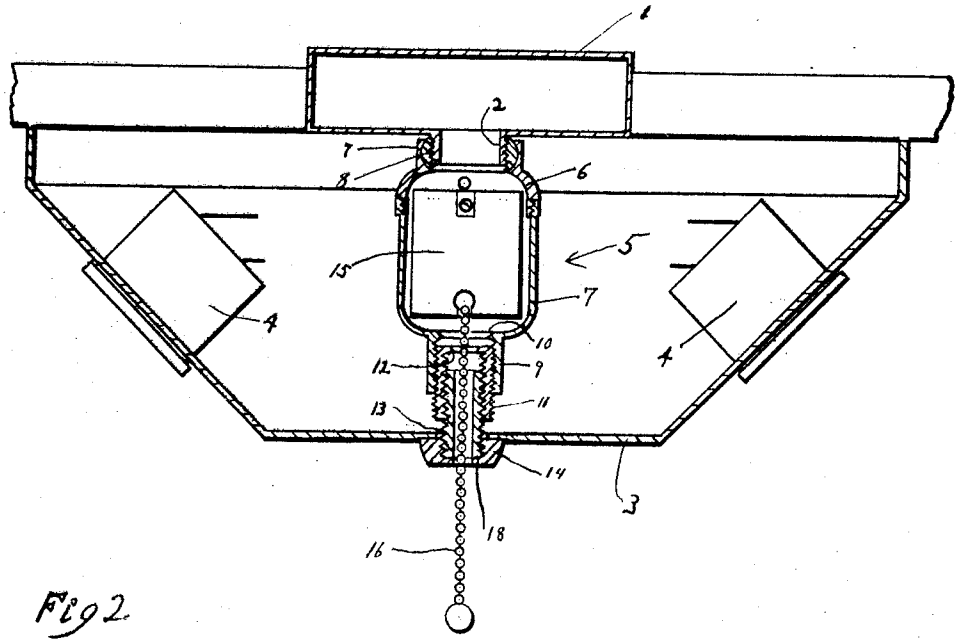


Fig 2

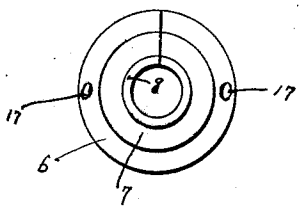


Fig 3

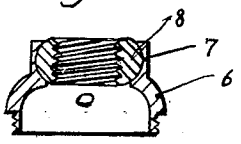
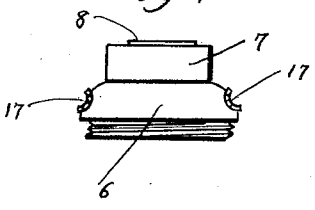


Fig 4



John Wilson Ely Jr., Inventor

By Clarence A. O'Brien
Attorney

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UNITED STATES PATENT OFFICE

JOHN WILSON ELY, JR., OF CRESSKILL, NEW JERSEY

FIXTURE SWITCH

Application filed August 27, 1930. Serial No. 478,231.

This invention relates generally to electric switches and more particularly to new and useful improvements in electric switches for use in ceiling fixtures, and has for its primary object to provide, in a manner as hereinafter set forth, a switch of this character, embodying novel means whereby the same may be expeditiously secured to an outlet box, and suspended from said outlet box in the ceiling fixture.

Another important object of the invention is to provide a switch of the aforementioned character, embodying novel means whereby the same may be adjustably secured for swinging movement on the outlet box to permit the switch to be properly positioned with respect to the ceiling fixture should the outlet box be disposed slightly out of horizontal position.

Another important object of the invention is to provide a switch of the character described, having adjustable means on the lower end for connection with the ceiling fixture, whereby the device may be expeditiously secured to various types of fixtures.

Other objects of the invention are to provide a fixture switch which will be simple in construction, strong, durable, efficient in its use, and which may be manufactured at low cost.

All of the foregoing and still further objects and advantages of the invention may become apparent from a study of the following specification, taken in connection with the accompanying drawings, wherein like characters of reference designate corresponding parts throughout the several views, and wherein:

Figure 1 is a view in vertical section, showing a switch constructed in accordance with this invention, connected to an outlet box and disposed in position in a ceiling fixture, and connected to said ceiling fixture.

Figure 2 is a top plan view of the device per se.

Figure 3 is a detail sectional view of the upper portion of the switch housing, showing the means for adjustable connection with the outlet box.

Figure 4 is a detail view in elevation of the upper portion of the switch housing, which is connected with the outlet box.

Referring to the drawings in detail, it will be seen that the reference numeral 1 designates a conventional outlet box that is secured to the studs in a ceiling, in the usual manner, and has formed centrally thereon the depending externally threaded neck 2. The reference numeral 3 designates a conventional ceiling fixture having a plurality of sockets 4 for the reception of electric light bulbs, the fixture 3 being further provided with a centrally disposed opening in substantially vertical alignment with the neck 2 of the outlet box 1. The switch constituting this invention comprises a housing designated generally by the reference numeral 5 and comprising the threadedly connected upper and lower sections 6 and 7 respectively. The upper section 6 has formed integrally thereon an upstanding flange 7, having an arcuate inner periphery in which is seated the internally threaded annulus 8, which is adapted to be threaded on the neck 2 of the outlet box 1. The outer periphery of the annulus 8 is, of course, curved to conform to the curvature of the inner periphery of the flange 7. In this manner a universal joint is provided, which permits the housing 5 to be swung to any desired position relative to the outlet box 1. The annulus 8 fits tightly in the flange 7, to frictionally prevent idle swinging movement of the housing 5, relative to the outlet box 1. The lower end of the section 7 of the housing 5 has depending therefrom the internally threaded neck 9, having the internal flange 10 in its upper end portion. An internally and externally threaded nipple 11 is threaded for adjustment vertically in the neck 9, and is provided with an internal flange 12 at its upper end. An externally threaded nipple 13 is threaded for adjustment in the nipple 11 and is adapted to project through an opening provided therefor centrally in the fixture 3.

A nut 14 is threaded on the lower end portion of the nipple 13 for engagement with the fixture 3, said nut 14 being provided with an opening in registry with the bore of the nipple 13. A pull switch 15 is secured

in a suitable manner in the housing 5 and has connected there to the pull chain 16, which passes through the neck 9, the nipples 11 and 13 and the nut 14, in the manner clearly illustrated in Figure 1 of the drawings. The upper section 6 of the housing 5 has formed therein a plurality of openings 17 for the passage of conductor wires.

It will thus be seen that I have provided a switch construction which may be expeditiously positioned in a ceiling fixture and connected to an outlet box.

The frictional contact between the annulus 8 and the flanges 7 is strong enough to prevent rotation of the annulus relative to the housing, when it is desired to attach the housing to the neck 2 of the outlet box 1. As before explained, the universal joint provided by the annulus 8 and flange 7, will permit the housing 5 to be constructed as desired, relative to the outlet box 1, and to position the switch properly relative to the fixture 3 and the opening therein through which the nipple 13 projects. The nut 9 and the member 11 and 13 adapt the device for use on ceiling fixtures of different depths. The nut 14 is threaded onto the nipple 13 until the flange 18 on said neck abuts the lower end of the nipple 13 and said nipple 13 will then be caused to rotate and move upwardly into the nipple 11 until the nut 14 engages the fixture 3. If the fixture 3 is of less depth than that illustrated in Figure 3 of the drawings, the nipple 13 may be threaded upwardly in the nipple 11 until the upper end of said nipple 13 abuts the flange 12 on the interior of the nipple 11 and rotary movement will thus be imparted to the nipple 11, in unison with the nipple 13. The nipple 11 is thus threaded upwardly in the nut 9 for engaging the nut 14 with the fixture. The flange 10 limits the upward movement of the nipple 11 in the neck 9.

It will thus be seen that the device constituting this invention provides means for expeditiously clamping the fixture 3 tightly against the ceiling. It will further be seen that the device is adapted, as before explained, for use on fixtures of various depths.

It is believed that the many advantages of a switch constructed in accordance with this invention will be readily understood, and although the preferred embodiment of the invention is as illustrated and described, it is to be understood that changes in the details of construction may be had, which will fall within the scope of the invention as claimed.

What is claimed is:

1. In combination with an outlet box having a depending threaded neck, and a ceiling fixture having an opening therein, a switch comprising a housing, means on one end of the housing for connection with the outlet box, and means on the other end of the housing for engagement with the fixture for clamping said fixture in position on the ceiling.

2. In combination with an outlet box having a depending threaded neck, and a ceiling fixture having an opening therein, a vertically disposed switch comprising a housing, means on one end of the housing for connecting the switch to the outlet box for swinging adjustment relative to the outlet box, and vertically adjustable means on the other end of the housing extending through the openings in the fixture and engaging with said fixture for clamping same in position on the ceiling.

3. In combination with an outlet box having a depending threaded neck, and a ceiling fixture having an opening therein, a switch comprising a housing, means on the housing for connection with the neck of the outlet box, an internally threaded neck on the housing, an internally and externally threaded nipple threaded for adjustment in the neck, an externally threaded nipple threaded for adjustment in the first named nipple and extending through the opening in the fixture, a nut threaded on the second named nipple and engageable with the fixture in a manner to clamp said fixture in position on the ceiling.

4. In combination with an outlet box having a depending threaded neck, and a ceiling fixture having an opening therein, a switch comprising a housing, means on the housing for connection with the neck of the outlet box, an internally threaded neck on the housing, an internally and externally threaded nipple threaded for adjustment in the neck, an externally threaded nipple threaded for adjustment in the first named nipple and extending through the opening in the fixture, a nut threaded on the second named nipple and engageable with the fixture in a manner to clamp said fixture in position on the ceiling, an internal flange in the neck for engagement with the first named nipple in a manner to limit the movement of said first named nipple in one direction in the neck, and internal flange in one end portion of the first named nipple for abutting engagement with the second named nipple, in a manner to limit the movement of said second named nipple in the first named nipple, the second named flange constituting means for locking the nipples together for rotation in unison in one direction.

5. In combination with an outlet box having a depending threaded neck, and a ceiling fixture having an opening therein, a switch comprising a housing, means on the housing for connection with the neck of the outlet box, an internally threaded neck on the housing, an internally and externally threaded nipple threaded for adjustment in the neck, an externally threaded nipple threaded for adjustment in the first named

nipple and extending through the opening in the fixture, a nut threaded on the second named nipple and engageable with the fixture in a manner to clamp said fixture in position on the ceiling, an internal flange in the neck for engagement with the first named nipple in a manner to limit the movement of said first named nipple in one direction in the neck, and internal flange in one end portion of the first named nipple for abutting engagement with the second named nipple in a manner to limit the movement of said second named nipple in the first named nipple, the second named flange constituting means for locking the nipples together for rotation in unison in one direction, a switch unit disposed in the housing, and a switch operating chain depending from the unit through the second named neck, the nipple and the neck.

In testimony whereof I affix my signature.

JOHN WILSON ELY, JR.