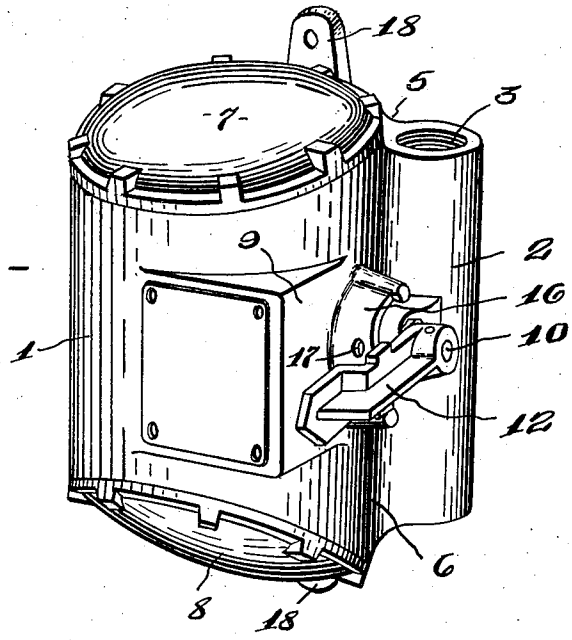
Aug. 11, 1936. R. H. OLLEY 2,050,854

EXPLOSIONPROOF SWITCH BOX

Filed April 10, 1933

Fig-1-



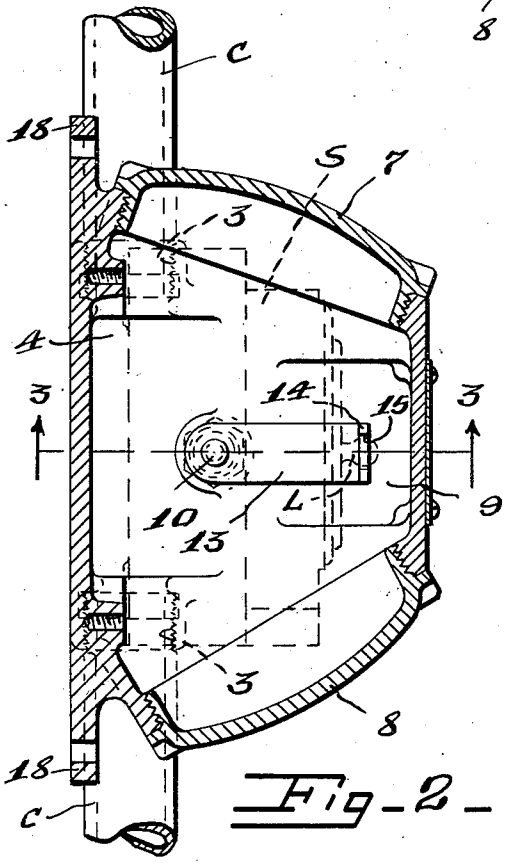


Fig-2-

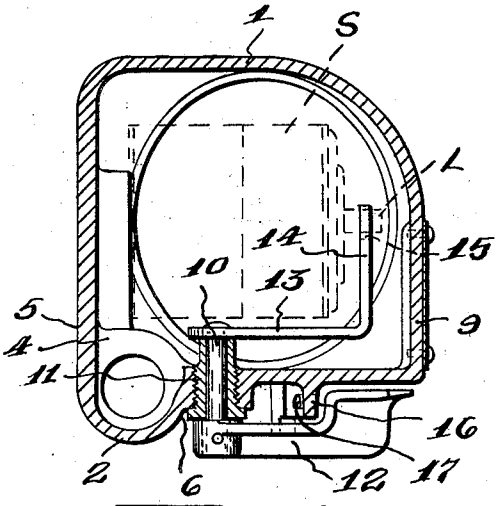


Fig-3-

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EXPLOSIONPROOF SWITCH BOX

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Application April 10, 1933, Serial No. 665,356

6 Claims. (Cl. 247—18)

This invention relates to electric conduit boxes and particularly to explosion-proof boxes for housing switches in places where there are ignitable gases and vapors in the surrounding atmosphere, and has for its object, a conduit box, or switch housing, in which the switch can be readily installed, or removed, and in which the switch can be readily operated from the outside of the box without opening the box.

It further has for its object, a switch housing which can be opened without the use of hinged doors, and the like, for installing the switch and giving access to the switch. It is so designed as to present sufficient length of close fitting surfaces as to cool and extinguish any flame resulting from an internal explosion, and further means for operating the switch from the outside of the explosion-proof housing.

It further has for its object, a switch housing connectable in an electric conduit system which is compact in construction, and the relative arrangement of the housing, or switch compartment and the coupling for the electric conduit.

It further has for its object, the relative arrangement of the switch operating means on the outside of the housing, to the switch, and its operating member within the housing, whereby the portion within the housing does not interfere with the space within the box occupied by the switch, so that the switch can be installed without the workman being obstructed by the operating means.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a perspective view of this explosion proof switch box.

Figure 2 is a central, vertical, sectional view.

Figure 3 is a sectional view on line 3—3, Figure 2.

This switch housing, or box, comprises a body 1, which is cylindrical in general form, and a conduit coupling 2 integral with the body 1, and extending lengthwise thereof along one side, this coupling being tubular, or in the form of a conduit, and having means as internally threaded passages 3 at its opposite ends for connection to the conduits C, and opening at 4 between its ends into the box 1 throughout the height thereof, the coupling 2 being offset from the cylindrical box 1 at the base side thereof which lies against the supporting wall, with its sides substantially tangential at 5 and 6 to the base wall, and one side wall of the body 1.

The body 1 is entirely open at its upper and lower ends in order to give ample space for mounting and demounting the switch S, and as shown in Figures 1 and 2, the cylindrical body is truncated at both ends, or its upper and lower edges are on a bias, or inclined toward each other, or toward the front side of the body 1. These openings are closed by plugs 7 and 8 threading thereinto, and forming explosion-proof joints. The switch S is of any well known construction, and includes an operating lever L which, when thrown in one direction, throws the switch on, and when moved in the other direction, throws the switch off.

The box is also formed with an angular offset 9 which squares the box on a portion of its front side midway between its ends, and provides a space for the switch operating mechanism.

The means for operating the switch from the outside of the box comprises a shaft or spindle 10 extending transversely through the wall of the box or housing 1, and journalled in a suitable bearing, or bushing 11 therein, a rock arm 12 mounted on the outer end of the shaft, and a rock arm 13 mounted on the inner end of the shaft and extending into the offset portion 9, the arm 13 having an angular arm 14 having means for coupling it to the switch operating lever L, it being here shown as formed with a slot 15 for receiving the outer end of the switch lever L. The arm 12 moves along a segment 16 formed on the outer side of the box, this segment being formed with holes 17 therethrough for receiving the hasp of a padlock to lock the arm 12 in its position assumed when the switch is "on" or "off". The shaft 10 extends through the wall of the box 1 adjacent the coupling 2, and the free end of the lever 12 moves over one of the flat sides of the offset 9. The housing is provided with suitable means, as lugs 18, on the rear side thereof for attachment to a wall, or other support. The bushing 11 threads through the wall of the body forming an explosion-proof joint, and is comparatively long to provide a long bearing sufficient to cool and extinguish flame that would tend to pass to the outside atmosphere around shaft 10 due to an internal explosion.

This switch box, or housing, is designed for motor starting switches when located in places where there is liable to be explosive gases in the air, and the switch is itself of that type which automatically throws off under an overload, and

which throws to off position under an overload, regardless of whether the operating lever L is held stationary, so that when the lever 12 is locked in its position assumed when the switch is on, the switch can throw to off position under an overload, but can only be reset by operating the lever 12 back to off position then again back to on position.

Obviously, upon throwing of the lever 12, the lever L will be operated. Also, as the angular lever arm 13, for the most part, is located in the offset 9, it does not interfere with the switch, or the workman when installing the switch through the open ends of the body 1, and these open ends being inclined, giving maximum room in a given size box for the workman to work through. Owing to the relative arrangement of the body 1, and coupling 2, and the offset 3, the housing is particularly compact in construction and lends itself to being connected into an electric conduit system, and owing to the removable caps or plugs 7 and 8, and the cylindrical formation of the box 1, the switch can be readily installed when the plugs are removed, or ample room is given for the installation of the switch, and owing to the coupling 2 offset at one side of the cylindrical body 1, so that the wires are led into the body 1 from one side throughout the length thereof, the space occupied by the switch is entirely open, or not obstructed by the conduit coupling. Also owing to this location of the coupling 2, the ends of the box are left free for being opened to give access to the switch.

What I claim is:

1. A housing for switches, said housing comprising a substantially cylindrical body, and a conduit coupling integral with and extending lengthwise thereof, with its walls tangential to the body, the conduit coupling having means at its ends for connection to electric conduits, and opening between its ends into the body, the body being open at its ends, and plugs closing said open ends.

2. A housing for switches, said housing comprising a substantially cylindrical body, and a conduit coupling integral with and extending lengthwise thereof with its walls tangential to the body, the conduit coupling having means at its ends for connection to conduits, and opening between its ends into the body, the planes of the end faces of the body being inclined in opposite directions relatively to each other, and the body being open at its ends, and plugs threading in said open ends.

3. A housing for switches comprising a cylindrical body, and a conduit connection integral with the body and extending lengthwise thereof, said connection having its side walls substantially tangent with the cylindrical wall of the body, and having means at its ends for connection to electric conduits, and opening between its ends into the body, said body being also formed with a boxlike offset on one side adjacent the coupling, the side walls of the offset extending tangent to the cylindrical wall of the body, a rock shaft journalled in the wall of the body and having an operating lever at its outer end, and a rock arm at its inner end movable in said offset, and having means for connection to the operating member of the switch in the housing.

4. A housing for switches comprising a cylindrical body, and a conduit connection integral with the body and extending lengthwise thereof, said connection having its side walls substantially tangent with the cylindrical wall of the body, and having means at its ends for connection to electric conduits, and opening between its ends into the body, said body being also formed with a boxlike offset on one side adjacent the coupling, the side walls of the offset extending tangent to the cylindrical wall of the body, a rock shaft journalled in the wall of the body and having an operating lever at its outer end, and a rock arm at its inner end movable in said offset, and having means for connection to the operating member of the switch in the housing, said cylindrical body being open at its ends, and explosion-proof plugs threading in said open ends.

5. A housing for switches comprising a cylindrical body, and a conduit connection integral with the body and extending lengthwise thereof, said connection having its side walls substantially tangent with the cylindrical wall of the body, and having means at its ends for connection to electric conduits, and opening between its ends into the body, said body being also formed with a boxlike offset on one side adjacent the coupling, the side walls of the offset extending tangent to the cylindrical wall of the body, a rock shaft journalled in the wall of the body and having an operating lever at its outer end, and a rock arm at its inner end movable in said offset, and having means for connection to the operating member of the switch in the housing, said body having its ends truncated oppositely to each other, whereby the end edges of the body are on a bias converging toward each other for permitting installing and removing of the sash, and explosion-proof plugs closing said open ends.

6. An explosion proof housing for electrical switches comprising a tubular body formed with a flat bottom wall, the open ends of the body converging toward the top of the body and being threaded internally, a plug closure threaded in each end of the body, a rock shaft journalled in one of the side walls of the body in flame tight relationship thereto and having an operating lever at its outer end, and means at its inner end coacting with the switch to actuate the same into on and off positions upon movement of the operating means, and a conduit coupling opening into the interior of the box adjacent the bottom wall.

RAYMOND H. OLLEY.