June 13, 1950 E. B. CLARK 2,511,668

ENTRANCE FITTING

Filed March 28, 1947

Fig. 8.

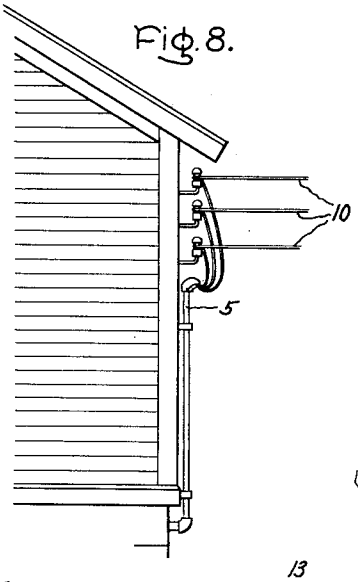


Fig. 9.

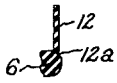


Fig. 10.

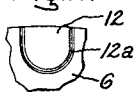


Fig. 1.

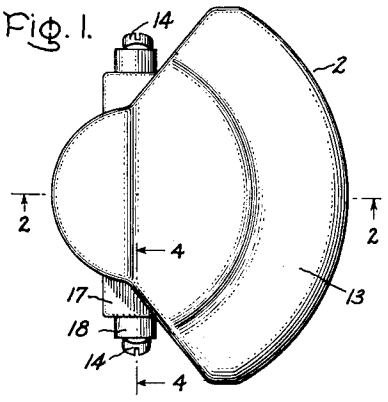


Fig. 2.

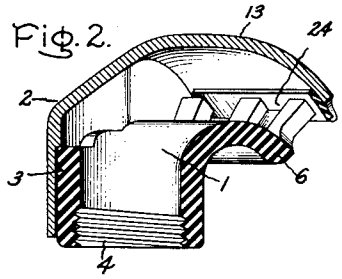


Fig. 3.

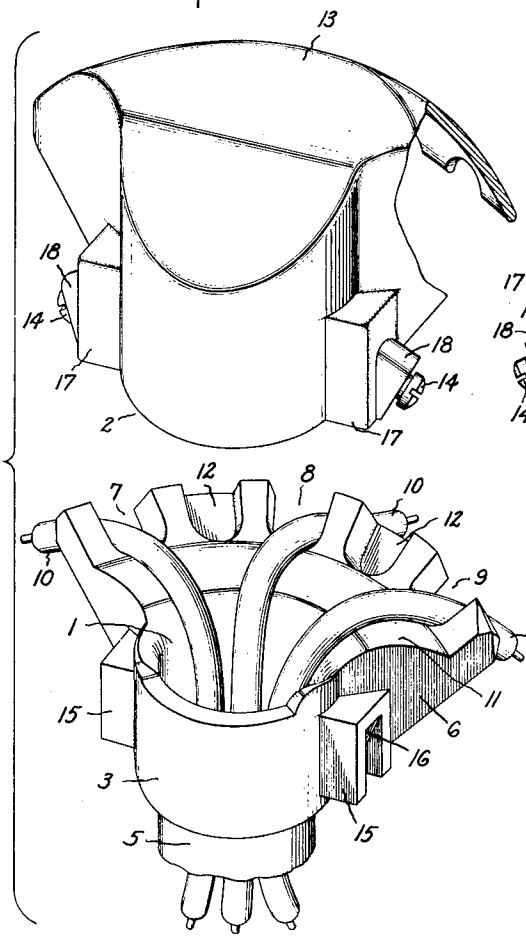


Fig. 4.

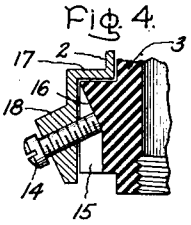


Fig. 5.

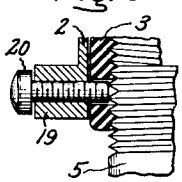


Fig. 6.

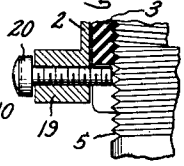
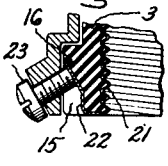


Fig. 7.



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ENTRANCE FITTING

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10 Claims. (Cl. 174—78)

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The present invention relates to entrance fittings for electric service supply lines. More particularly, the present invention relates to a fitting or cap for covering the upper end of an electrical conduit through which service conductors are led from an overhead supply down the side of and into a building.

Service entrance caps are well-known in the art and are customarily in use for the purpose indicated above. Heretofore, however, such caps have been made entirely of metal lined on the inside with some insulating material. It is an object of my invention to provide an entrance cap having a reduced number of parts and which can be manufactured at a lower cost and can be installed with a minimum amount of labor.

My invention will best be understood from the following description taken in connection with the accompanying drawing in which Fig. 1 is a plan view of my assembled entrance fitting; Fig. 2 is a vertical section taken along the line 2—2 in Fig. 1; Fig. 3 is a perspective view with the parts of my fitting disassembled; Fig. 4 is a section taken along the line 4—4 in Fig. 1 showing a method whereby the cover may be fastened to the base portion of my fitting; Fig. 5 is a sectional view of a modification of Fig. 4 which provides for grounding of the metal cover; Figs. 6 and 7 are sectional views of further modifications showing other arrangements for grounding the metal cover; Fig. 8 is a partial elevation of a building showing my entrance fitting in use; Fig. 9 is a vertical section through one of the knockout webs 12 shown in Fig. 3; and Fig. 10 is a front view of the knockout web shown in Fig. 9.

As shown in Fig. 3 my entrance fitting is composed of only two major parts, a base member 1 and a cap or cover member 2. The base member 1 is formed of suitable insulating material and preferably is molded from a phenolic composition. It comprises a hub portion 3, the lower part of which is internally threaded as shown at 4 to receive the threaded end of an entrance pipe or conduit 5. Projecting upwardly and outwardly from the hub 3 for a part of its circumference is a flange portion 6, the outer edge of which is notched or slotted as at 7, 8, and 9 for the entrance of service wires 10. The inner surface 11 of the flange portion 6 is smoothly curved to join the interior of the hub 3. The slots are rounded at the bottom to reduce abrasion of the wires when they rub against them. Any desired number of slots may be provided. The illustrated embodiment of my invention has five slots, which makes the fitting well suited for use on both two wire and three wire services. During manufacture of the base element 1, the slots are preferably closed by knockout webs 12,

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so that the user may select the number and location of slots required in accordance with the number of service wires. These knockout webs are molded integrally with the body of the base member 3 and are preferably made considerably thinner than the adjacent flange wall. Moreover, the edges of the webs 12 are undercut as indicated at 12a, Figures 9 and 10, to permit easy removal of the webs.

As shown in Fig. 3, the webs have been removed from the slots 7, 8, and 9 and entrance wires 10 placed in them. For a three wire service I prefer to use the two outside slots and the center slot, thereby keeping the outer portions of the wire separated from each other.

The cap or cover 2 may be formed of metal or of insulating material such as a molded phenolic composition. It is formed with a lower portion adapted to surround the rear part of the hub 3 of the base member and with an upper or cap portion 13 adapted to extend up and over the flange 6, thereby completely enclosing the wires after they enter the slots in the flange. The front edge of the cover 2 where it is fitted over the edge of the flange 6 is scalloped to provide rounded upper edges opposite the wire entrance slots as indicated in Fig. 3. In order to provide substantially complete insulation for the wires at the point of entrance into the fitting, I press an insulated strip 24 into the cap 2 along its outer edge.

Fig. 4 illustrates a manner of fastening the cover 2 on the base 1. Projections 15 are formed on the hub portion 3. These are partly cut away inside leaving an inclined surface 16. The cover 2 is provided with similar projections 17 which are designed to fit over the projections 15 on the hub 3. The projections 17 on the cover 2 are provided with outwardly extending bosses 18 which are drilled and threaded to receive the screws 14. The latter are inclined so as to meet the surface 16 at right angles, thereby drawing the cover 2 tightly down over the base 1.

Where a metal cover is used, Underwriter's regulations normally require that it be grounded to the conduit. Various ways of accomplishing this are illustrated in Figures 5, 6, and 7. These arrangements are intended to be used as substitutes for the cover fastening shown in Fig. 4 although they may be provided additionally if desired.

As shown in Fig. 5, a boss 19 is formed on the cover 2 opposite the hub 3. A threaded hole is formed in this boss in alignment with a clearance hole in the hub 3. A screw 20 may then be threaded through the boss 19 and the hub 3, so as to make contact with the threads on the conduit 5 and thereby effectively ground the cover 2.

The modification shown in Fig. 6 is similar to

the arrangment in Fig. 5, except that the hub 3 is slotted to receive the screw 20, thereby avoiding the necessity for accurate alignment between the cover 2 and the hub 3.

The two modifications shown in Figs. 5 and 6 provide effective grounding of the cover, but they are not so effective to hold the cover 2 tightly against the base 1 as is the arrangement shown in Fig. 4. The modification shown in Fig. 7 combines the advantages of these arrangements. As shown in Fig. 7, the hub 3 has fitted to its interior surface, metal threads 21 to which is fastened a tab 22 which may be bent up around the outside of the hub to lie against the inclined surface 16 of the projection 15. I prefer to make the threads 21 in the form of a rolled thread insert which with its tabs 22 is molded directly into the hub portion 3. The hub is thereby strengthened and can receive the full pressure of the screw 23 which simultaneously serves to draw the cover 2 tightly down over the base 1 and to ground the cover to the conduit.

In use, the base is attached to the pipe or conduit 5 through which the wires or cable are run, as shown in Fig. 8. The wires are fanned out and laid in place in the slots, after which the cover 2 is positioned over the base member 1 and fastened by the screws 14, and preferably grounded as shown for example in Figs. 5–7.

While I have shown and described particular embodiments of my invention, it will be obvious to those skilled in the art that various changes and modifications may be made without departing from my invention in its broader aspects and I, therefore, aim in the appended claims to cover all such changes and modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent in the United States is:

1. An entrance fitting comprising a hollow base member of insulating material having a lower hub portion and an upper outwardly and upwardly projecting flange portion extending partially around the circumference of said hub portion, said flange portion forming a flat chamber open at the top and communicating with the hub portion and having a plurality of slots in its outer edge adapted to receive entrance wires, and a separable cover member having a lower portion adapted to cover the back of said hub portion of said base and an upper portion adapted to extend over and cover said chamber and the upper edges of said slots, means for securing said cover to said base, said means including an outwardly extending projection on said base having an inclined lower surface, a threaded aperture in said cover opposite said projection and inclined in a direction substantially at right angles to said surface and a screw threaded therein and abutting said surface.

2. An entrance fitting comprising a hollow base member of insulating material having the lower hub portion internally threaded and adapted to receive the threaded end of an entrance wire conduit and an upper outwardly and upwardly projecting flange portion extending partially around the circumference of said hub portion, said flange portion forming a flat chamber open at the top and communicating with the hub portion and having a plurality of slots in its outer edge adapted to receive entrance wires, and a metallic cover member having a lower portion adapted to cover the back of said hub portion of said base and an upper portion adapted to extend over and cover said chamber and the upper edges of said slots, and means for fastening said cover to said base and for grounding said cover comprising a metallic rolled thread insert molded in said hub portion of said base and adapted to make electrical contact with the entering conduit, said insert having an outwardly extending tab shaped to bear against the outer surface of said hub portion and a screw extending through said cap and making electrical contact therewith and with said tab.

3. An entrance fitting comprising a hollow base member of insulating material having a lower hub portion and an upper outwardly and upwardly projecting flange portion extending partially around the circumference of said hub portion, said flange portion forming a flat chamber open at the top and communicating with the hub portion and having a plurality of slots in its outer edge adapted to receive entrance wires, a metallic cover member having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and the upper edges of said slots, and a strip of insulating material fitted along the under, outer edge of the upper portion of said cover member for insulating the upper edges of said slots.

4. An entrance fitting comprising a hollow base member of insulating material having a plurality of slots in its upper edge adapted to receive entrance wires, a metallic cover member for covering said base member and a strip of insulating material along the outer edge of said cover member positioned to abut and close the open upper ends of said slots.

5. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plurality of slots in its outer edge, each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral cover member having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member thereby closing said slots.

6. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plu-

rality of slots in its outer edge, each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral cover member separable from said base member and having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member thereby closing said slots and means for securing said cover member to said base member.

7. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plurality of slots in its outer edge, the bottom of each slot being rounded and each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral cover member having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member thereby closing said slots, the outer edge of said cover being scalloped to form with said slots rounded openings for entrance wires.

8. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plurality of slots in its outer edge, each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral metallic cover member having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member and a strip of insulating material fitted along the under, outer edge of the upper portion of said cover member for insulating and closing the slot openings.

9. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said

flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plurality of slots in its outer edge, each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral metallic cover member separable from said base member and having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member thereby closing said slots, and means for simultaneously securing the cover member to the base member and grounding the cover member including a screw, said screw being threaded through a threaded aperture in the cover member and extending into locking engagement with said base member and being arranged to form at least a portion of an electrically conductive path between the cover member and a conduit on which the entrance cap may be mounted.

10. An entrance fitting comprising an integral base member of insulating material having a lower hub portion apertured for the reception of the end of an entrance wire conduit, a flange portion extending outwardly from a part of the circumference of the upper rim of the hub, said flange portion having a curved upper surface forming a shelf adapted to support entrance wires, and a second flange portion extending from the outer edge of the first flange portion and projecting upwardly at an angle therefrom to form with said first flange portion a shallow chamber open at the top and communicating with the aperture in the hub, said second flange portion having a plurality of slots in its outer edge, each slot being adapted to receive an entrance wire whereby the flange portions between the slots form insulating partitions for separating wires in the slots, and an integral metallic cover member separable from said base member and having a lower portion adapted to cover the back of said hub portion of said base member and an upper portion adapted to extend over and cover said chamber and to extend over the upper edge of said second flange portion of said base member thereby closing said slots and means for grounding said cover member including an aperture in the hub portion of said base member, a threaded aperture in said cover member and a screw extending through the two last named apertures and adapted to make contact with an entering conduit.

EDWARD B. CLARK.

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