Dec. 6, 1932. J. M. G. FULLMAN 1,890,050

SERVICE HEAD

Filed July 8, 1929 4 Sheets-Sheet 1

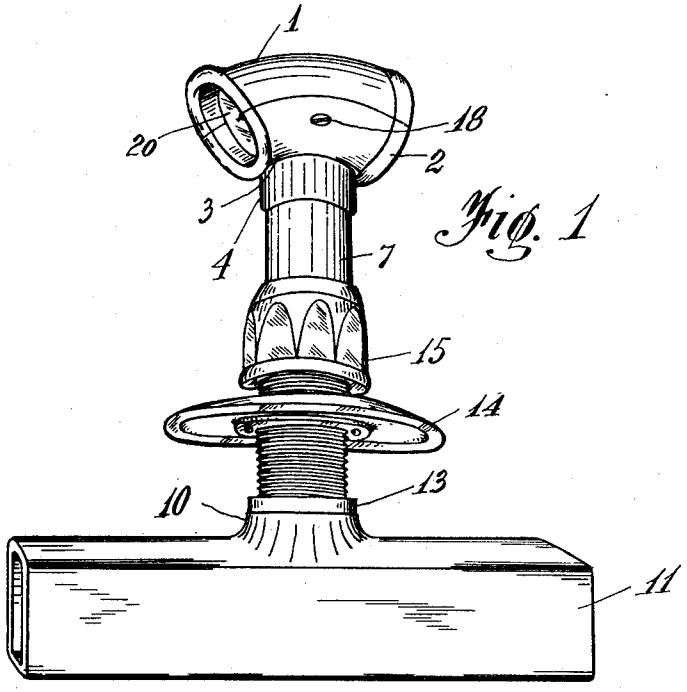



Fig. 1

Fig. 16

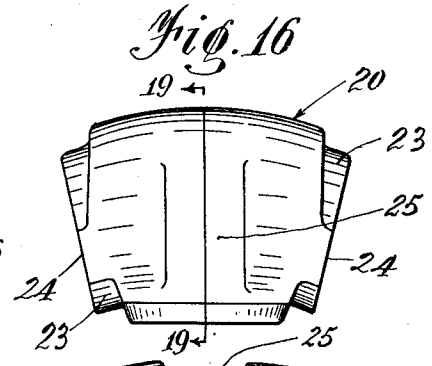



Fig. 17

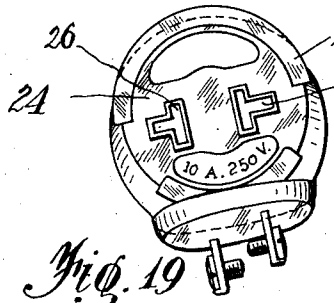
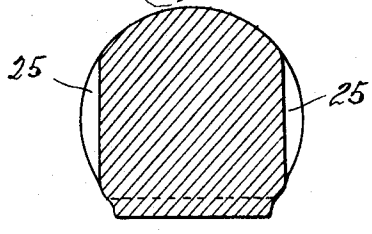



Fig. 19



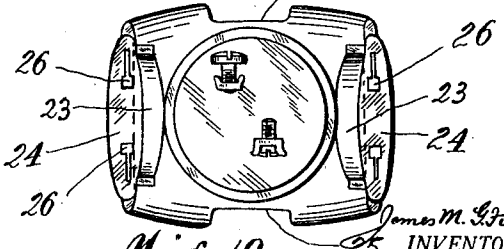




Fig. 18

James M. G. Fullman
INVENTOR.

BY Ralph Donatt & Co
Paul Purchase
ATTORNEYS.

Dec. 6, 1932. J. M. G. FULLMAN 1,890,050

SERVICE HEAD

Filed July 8, 1929 4 Sheets-Sheet 2

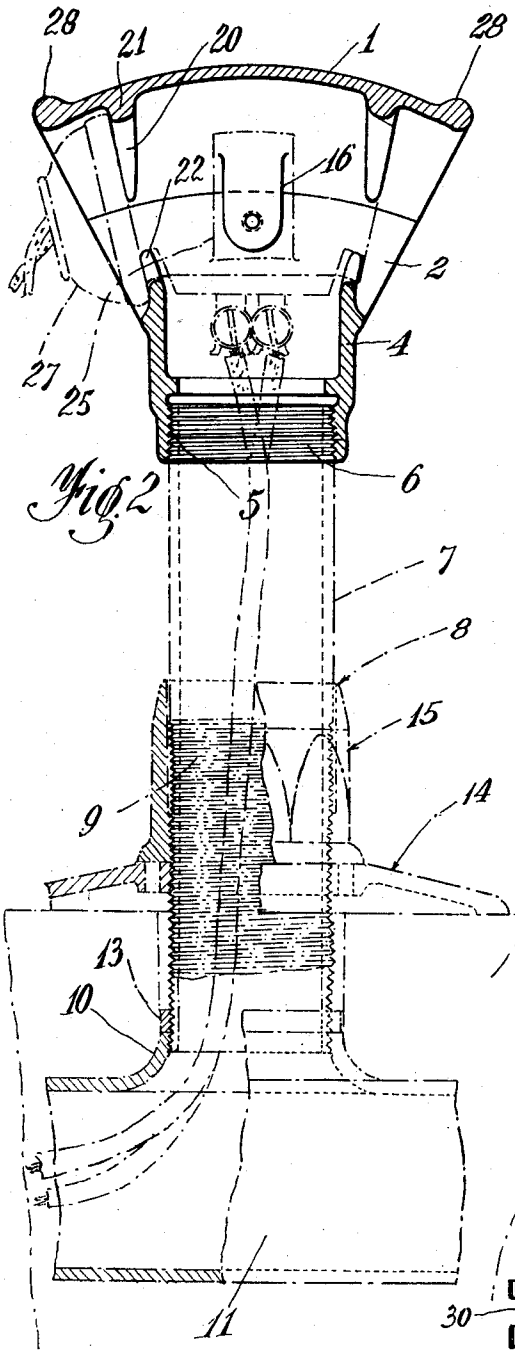



Fig. 2

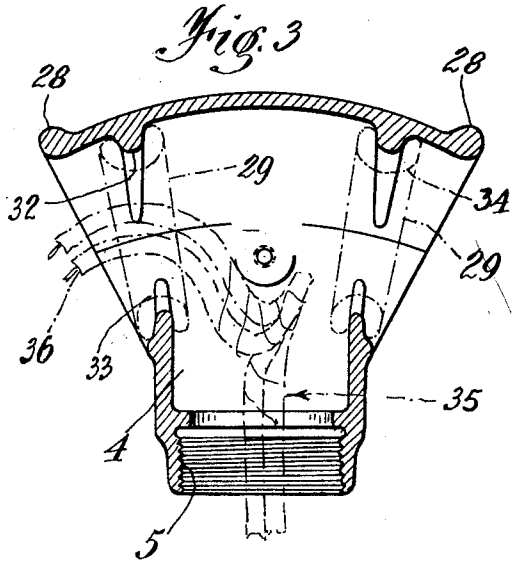



Fig. 3




Fig. 5

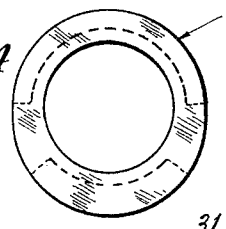



Fig. 4

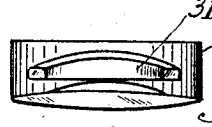



Fig. 6

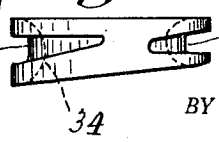



Fig. 7

James M. G. Fullman
INVENTOR.

BY Ralph Bennath and Paul Pinchard
ATTORNEYS.

Dec. 6, 1932. J. M. G. FULLMAN 1,890,050

SERVICE HEAD

Filed July 8, 1929 4 Sheets-Sheet 3

Fig. 8

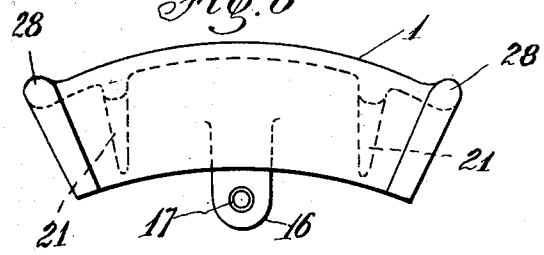



Fig. 10

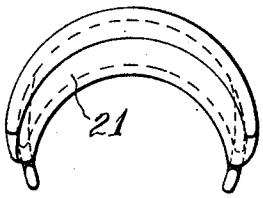



Fig. 9

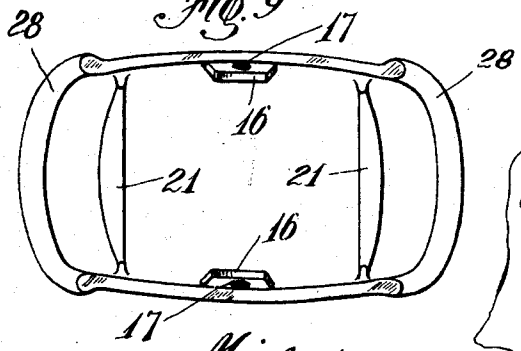



Fig. 15

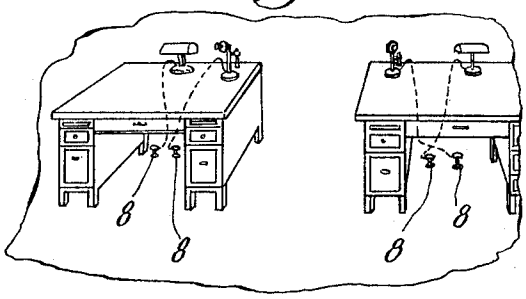
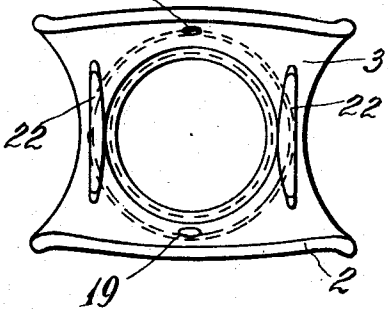



Fig. 11



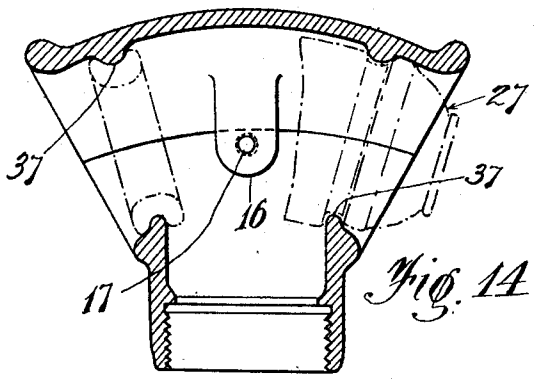




Fig. 14

Fig. 12

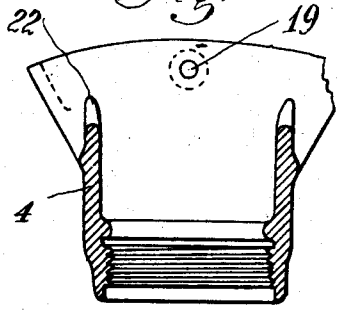
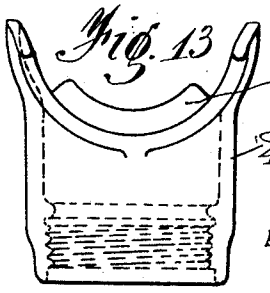



Fig. 13




James M. G. Fullman

INVENTOR.

BY Ralph Dowth et al

Paul Prichard.

ATTORNEYS.

Dec. 6, 1932. J. M. G. FULLMAN 1,890,050

SERVICE HEAD

Filed July 8, 1929 4 Sheets-Sheet 4

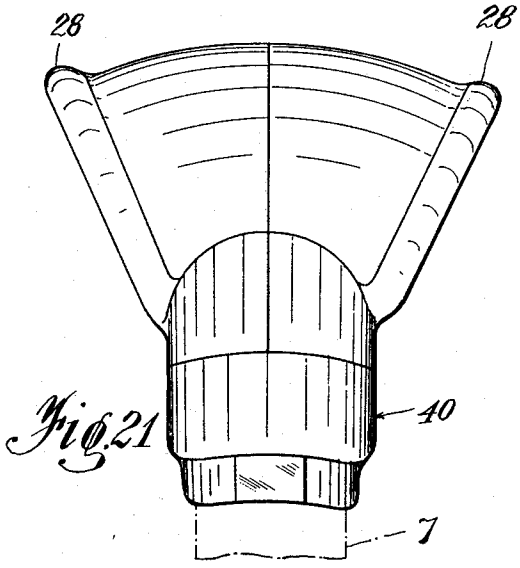



Fig. 21

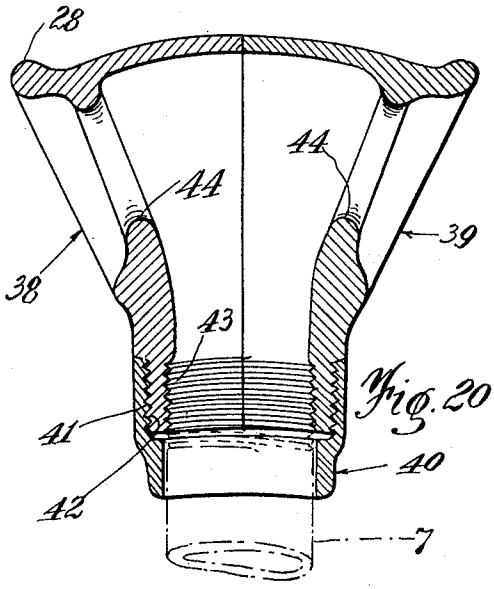



Fig. 20

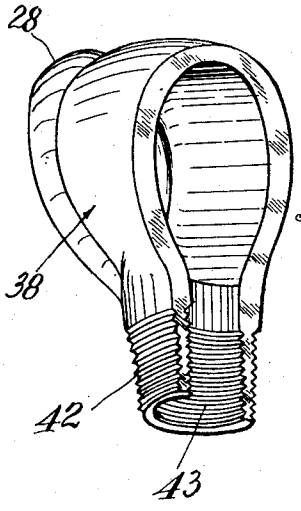



Fig. 22

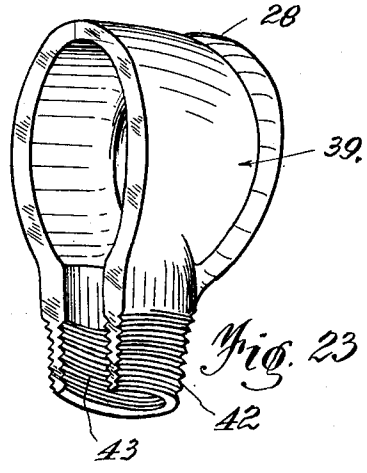



Fig. 23

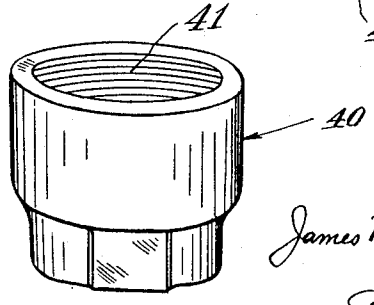



Fig. 24

James M. G. Fullman

INVENTOR.

BY Ralph Daniath
Paul Pinchard & Co
ATTORNEYS

Patented Dec. 6, 1932 1,890,050

# UNITED STATES PATENT OFFICE

JAMES M. G. FULLMAN, OF SEWICKLEY, PENNSYLVANIA, ASSIGNOR TO NATIONAL ELECTRIC PRODUCTS CORPORATION, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF DELAWARE

## SERVICE HEAD

Application filed July 8, 1929. Serial No. 376,599.

This invention relates to new and useful improvements in service heads for electrical distribution and more in particular to service heads adapted for use in connection with concealed ducts.

The primary object of the invention resides in providing a service head or outlet which is adapted to encase and house a duplex receptacle for high potential lines or a pair of bushings for low potential lines and protect said receptacles or bushings together with the protruding conductors or attachment plugs against any damage or destruction which might ordinarily occur by reason of the exposed position of the service connection.

Another object resides in providing a service head having complementary elements which, when applied to a stand-pipe, provide a splicing chamber, when bushings are used in connection therewith, so that together with the space available within the stand-pipe, ample room is provided for splicing relatively inexpensive concealed conductors with more costly exposed conductors.

A still further object resides in providing an improved head for a service extension connection adapted to support bushings therein, or to securely position therein a duplex receptacle.

Still another object is to provide a service head which will withstand a reasonable amount of abuse in connection with its exposed position.

A still further object resides in providing a service head which is comparatively simple in construction, inexpensive to manufacture and one which will be very efficient and useful in operation.

With these and numerous other objects in view the invention consists in the novel features in construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

Reference being had to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which

Figure 1 is a perspective view of an extension service connection, showing one improved service head in assembled position.

Figure 2 is an enlarged vertical section thereof, a duplex receptacle and an attachment plug being shown in dot and dash lines assembled in the service head.

Figure 3 is a vertical detail section of an improved service head, showing bushings applied thereto instead of a receptacle.

Figure 4 is a plan view of one of the bushings.

Figures 5, 6 and 7 are detail elevations of said bushings.

Figure 8 is a side elevation of the cap section of the service head, shown in Figures 1 and 3.

Figure 9 is a bottom plan view thereof.

Figure 10 is an end elevation of said cap section.

Figure 11 is a plan view of the base portion of the service head used in Figures 1 and 3.

Figure 12 is a vertical section therethrough.

Figure 13 is an end elevation of the same.

Figure 14 is a vertical section through a slightly modified form of service head, showing circular beads therewithin for holding the receptacle or bushing in place.

Figure 15 is a section of an office, showing two desks having lamps (high potential lines) and telephones (low potential lines) thereon which have conductors extending therefrom to improved service heads.

Figure 16 is a front elevation of a receptacle adapted for use in connection with the improved service head.

Figure 17 is an end view thereof.

Figure 18 is a bottom plan view of the receptacle.

Figure 19 is a cross-section therethrough as seen on the line 19—19 in Figure 16.

Figure 20 is a vertical cross section through a modified form of service head, showing the same parted on a vertical plane, and provided with circular holding beads.

Figure 21 is an outline view thereof.

Figures 22 and 23 are perspective views, showing the two halves of the service head, and Figure 24 shows a coupling for clamping said halves together.

Reference being had to the drawings, a service head of the type shown in particular in Figures 1 and 2 comprises an arcuate, semi-circular cap 1 and a correspondingly shaped base portion 2 having at the center of its bottom wall 3 a hollow extension or hub 4, provided with internal threads 5 by means of which the base may be screwed on the suitably threaded upper end 6 of the stand-pipe 7 of the extension service connection shown in dot and dash line and indicated in a general manner by the numeral 8. The lower end of the stand-pipe has threads 9 which extend a considerable distance up the pipe and is screwed into one of the suitably threaded hollow bosses 10 formed integrally with a substantially rectangular metallic conduit 11 embedded a suitable distance below the surface of a floor 12, or any other kind of building partition.

The extension service connection 8, forming, per se, the subject matter of an application for Letters Patent Serial No. 363,334, filed May 15, 1929, by L. Alan Sharp, may, therefore, be succinctly described as comprising the following additional elements: 13 is a stop collar by means of which the standpipe 7 is securely locked on a boss 10 and the amount of engagement therewith definitely determined; 14 is a flange-plate internally threaded to engage the screw-threads 9 and adapted to bear on the surface of the floor or partition 12; and 15 is a lock-nut serving the dual purpose of locking the flange-plate and protecting and hiding that portion of the threads 9 which would otherwise be exposed above the floor surface.

The cap 1 is secured to the base portion 2 by means of lugs 16 formed integrally with the inside walls of the cap and protruding within the base portion. In the lugs 16 are provided threaded apertures 17 adapted to receive screws 18 inserted through countersunk apertures 19, provided in the side walls of the base portion and registering with said threaded apertures.

When high potential receptacles 20 of the shape shown in Figures 16 to 19 are used in connection with the service head, the cap and bottom portions of the latter are provided with suitably shaped interior beads 21 and 22 respectively which engage special recesses or grooves 23 formed partly around the contact ends 24 of the receptacle. The latter also has at the middle of the body and at both sides thereof flat bottomed recesses 25 which are engaged by the lugs 16 and by means of which the receptacle is additionally held in proper place within the service head.

Both contact ends of the receptacle are, of course, supplied with suitable apertures 26 to receive the contact blades of electrical attachment plugs 27 by means of which individual electrical fixtures are connected to the concealed electrical wiring.

As shown especially in Figures 1 and 2, the ends of the cap and base of the service head are made outwardly flaring and extend at their upper ends considerably beyond the contact faces of the receptacle. The purpose of this construction is to protect the inserted attachment plugs and the electrical wires connected thereto against being tramped on and damaged. This feature is especially valuable when extension service connections are to be installed directly under office desks, as plainly suggested in Figure 15. The ends of the cap and base are preferably provided with outward strengthening beads 28 which also protect the edges of the service cap against too rapid abrasion due to desk occupants resting their feet thereon, or due to some other cause. It will be noted that should the feet of a person slip off the service head, they will slip beyond the shearing point of the wires connected to the service head.

In low potential underfloor wiring installations, receptacles are generally omitted in the service head and in their stead bushings of any desired and suitable electrical insulating material are used. As shown in Figs. 3 to 7, the annular bushings 29 are slightly beveled and have at their periphery two or more tapering grooves 30, 31, each extending only partly around the bushing. In the cap and base of the service head are produced respectively the beads 32 and 33 which are suitably tapered to snugly engage their respective grooves in the bushings and whereby the latter are properly held within the service head. The inside walls 34 of these bushings are well rounded off to produce an unobstructed wire way for the wires passed therethrough and eliminate any sharp bends in said wires. The ends of the cap and base are also extended considerably beyond the bushings to afford greater protection thereto and to the wires, for the same reasons as explained heretofore.

It will be noted that in this arrangement, the use of the bushings affords considerable space within the service head wherein to make the necessary splicing connections between the cheaper, concealed, wires 35 and the more expensive and generally silk covered, exposed, wires 36 by means of which telephones, telegraphs, or other low potential apparatuses are connected to a main electrical circuit. Aside of the structural differences just described, the service head shown

in Fig. 3 is analogous to the one illustrated in Figs. 1 and 2, and therefore, the various component parts have been identified by the same reference numerals.

In Fig. 14 is shown another service head which differs from the one shown in Figs. 2 and 3, in particular, very slightly, namely in that the internal holding beads 37 for the receptacles, or bushings, are made full circular and of uniform width, instead of extending only partly around the inner circumference of the service head and being slightly wedge-shaped. This minor variation is made for the purpose of adapting the service head to slightly modified types of receptacles and bushings now available in the trade and suggestively indicated in dot and dash lines.

The modified service head shown in Figs. 20 to 24 is composed of two similar halves 38 and 39 joined together along a vertical plane by means of a clamping ferrule 40 having internal threads 41 adapted to engage corresponding threads 42 cut at the lower, restricted and semi-circular, end of each half of the service head. Both halves are first united by means of the ferrule 40, and the service head is then screwed onto the upper, outwardly threaded, end of the stand pipe 7; suitable threads 43 being provided in each half of the service head for this purpose. In the present embodiment, the service head is shown provided with full circular holding beads 44 of uniform width and both outer ends of the service head are also extended a suitable distance beyond the beads, to protect the receptacles or bushings mounted therein.

Many changes in the precise construction and arrangement of the various parts may be made without exceeding the scope of the claims, and the liberty of making all such changes as may be thought desirable is hereby reserved.

What is claimed is:

1. A head for an extension service connection adapted to receive a substantially cylindrical receptacle and comprising longitudinally and transversely arcuate complementary sections removably secured together; complementary ribs positioned on the inner walls of said sections and in partial peripheral engagement with said receptacle, the ends of said head tapering inwardly toward the bottom thereof to provide overhanging projections at the top ends of said head adapted to protect from the top said receptacle.

2. In an extension service connection, a standpipe threaded at its upper end and a head therefor adapted to receive a substantially cylindrical receptacle and comprising complementary sections removably secured together; means for removably securing the head to said standpipe; converging ribs positioned on the inner walls of said sections adjacent the ends thereof and in partial peripheral engagement with said receptacle to secure same within said head against longitudinal and rocking movement; the end edges of said head being inclined inwardly from the upper to the lower portions thereof to provide overhanging projections adapted to protect said receptacle and electric wires immediately connected thereto.

3. In an extension service connection, a standpipe threaded at its upper end and a head therefor adapted to receive a substantially cylindrical receptacle and comprising complementary sections removably secured together; means for removably securing the head to said standpipe; converging ribs positioned on the inner walls of said sections adjacent the ends thereof and in partial peripheral engagement with said receptacle to secure same within the head against longitudinal and rocking movement; the end edges of said head being inclined inwardly from the upper to the lower portions thereof to provide overhanging projections adapted to protect said receptacle and electric wires immediately connected thereto, and exterior reinforcing beads formed integrally with and at the edges of said projections

4. A head for an extension service connection adapted to receive a substantially cylindrical receptacle and comprising longitudinally and transversely arcuate complementary sections removably secured together; complementary converging ribs positioned on the inner walls of said sections and in partial peripheral engagement with said receptacle to secure same against longitudinal and rocking movement; the ends of said head tapering inwardly toward the bottom thereof to provide overhanging projections at the top ends of said head adapted to protect from the top said receptacle, and exterior reinforcing beads of parti-circular cross-section formed integrally with and at the edges of said projections.

5. A head for an extension service connection adapted to receive a substantially cylindrical receptacle and including a pair of complementary sections removably secured together; said head being arcuate in longitudinal section and comprising a base portion and a complementary cap in arcuate contact relation therewith; means for removably securing together said base portion and cap; converging ribs positioned on the inner walls of said head adjacent the ends thereof and in partial peripheral engagement with said receptacle; the ends of said head tapering inwardly toward the bottom to provide overhanging projections at the top ends of said head adapted to protect from the top said receptacle.

6. A head for an extension service connection adapted to receive a substantially cylindrical receptacle and comprising a base portion and a complementary cap portion in

arcuate contact relation therewith; lugs positioned on the inside of one of said portions and adapted to interiorly engage the other portion; means for removably securing said portions together; converging ribs positioned on the inner walls of said head in partial peripheral engagement with said receptacle; said lugs and ribs being severally adapted to secure said receptacle within said head against longitudinal and rocking movement, and the ends of said head extending beyond said ribs to provide overhanging projections adapted to protect said receptacle and electric wires immediately connected thereto.

7. A service fitting comprising in combination, a standpipe, a head fitted on said standpipe and a conductor-receiving device mounted in said head and having substantially horizontal conductor-receiving openings, said head having an upper substantially laterally extending flange to protect said device and conductors received thereby from outside mechanical injury from above.

8. A service fitting comprising a standpipe, a head fitted on the top of said standpipe, a cord-connecting receptacle mounted in said head, said head having a flange projecting from the upper part thereof beyond the receptacle to protect the receptacle and cord connection against outside mechanical injury.

In testimony whereof I have affixed my signature.

JAMES M. G. FULLMAN.