March 12, 1935. J. H. GRIGG 1,993,881

CONVENIENCE OUTLET

Filed Sept. 12, 1932

Fig. 1

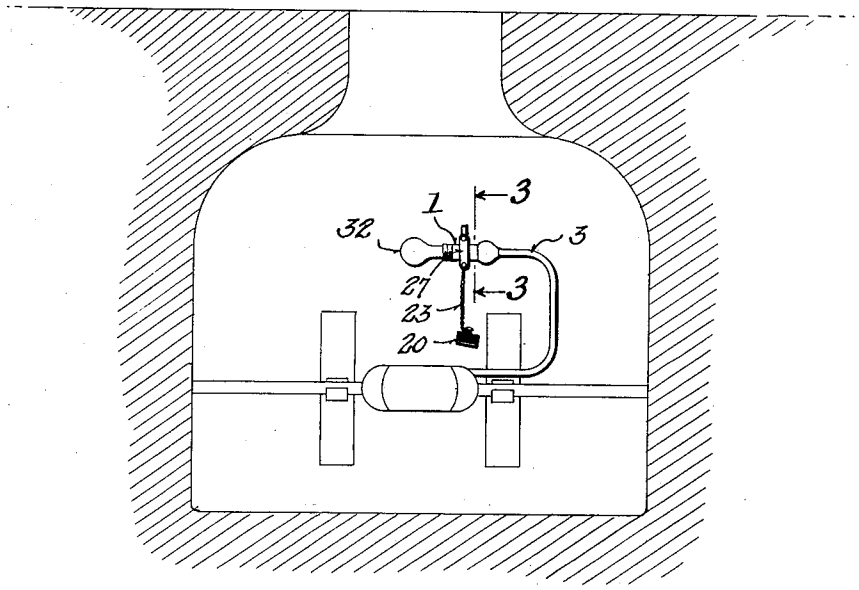


Fig. 2

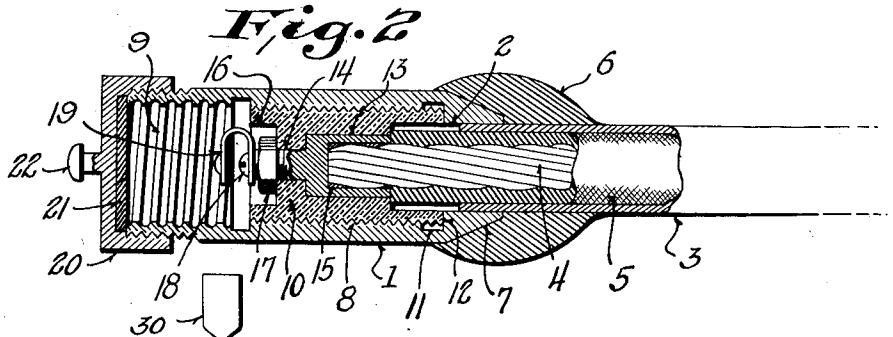
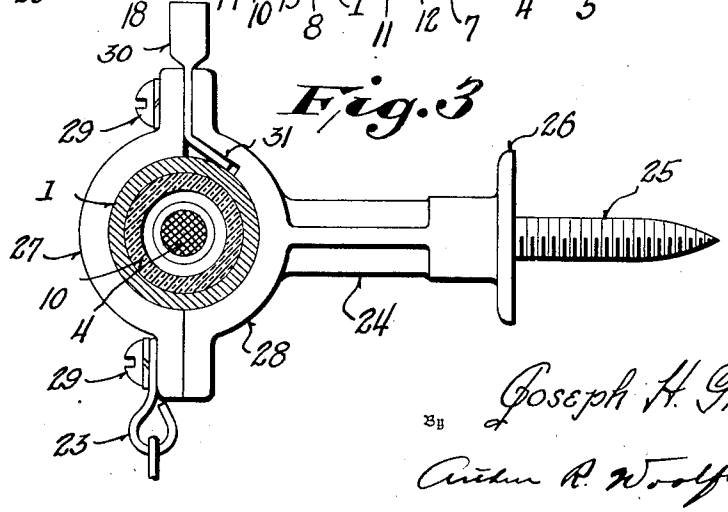


Fig. 3



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CONVENIENCE OUTLET

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4 Claims. (Cl. 173—342)

This invention relates to convenience outlets.

It is the usual practice to place the cables supplying power underground and to provide manholes usually at the street intersections, as the cables are very heavy and usually are supplied in a length approximating that of a city block. Obviously the cables are spliced at the junction and it is often necessary to do a considerable amount of work at these points in a deficiently lighted area.

This invention is designed to supply a convenience outlet which is so made that it may be permanently installed in a manhole or other location as will appear hereinafter, and which permits the insertion of an ordinary lamp or the attachment of other devices, such as working tools, drills, compressors, or other devices of this general type, and which is formed as a permanent fixture easily positioned within the manhole and held out of the way of the worker.

These manholes, and, in fact, customer's transformer vaults which are usually built under the sidewalk and furnish a location for the transformers, switches, or other devices, are sometimes flooded and are often constantly subjected to a moist atmosphere. It is, therefore, imperative in a device of this type to provide some means for hermetically sealing the device after it has been used, and this invention, therefore, contemplates the further object of providing a convenience outlet which is readily accessible and may be temporarily employed in the manner indicated hereinabove, but which nevertheless is so made that it can be completely sealed or closed against the entrance of water after it has been used, and in which this closing or sealing is effected in a very ready and handy manner.

Further objects of this invention are to provide a convenience outlet which is so made that it is sealed directly to a lead or metal sheathed cable which is held permanently in place by a simple form of bracket, thereby relieving the joint with the cable from breaking strains, which is of very simple and compact construction, and which may be cheaply produced.

An embodiment of the invention is shown in the accompanying drawing, in which:

Figure 1 is a vertical sectional view through a a manhole showing the device in place.

Figure 2 is a sectional view through the convenience outlet.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Referring to the drawing, particularly Figures 2 and 3, it will be seen that the convenience outlet comprises a tubular metal member or body portion 1, which is bored out as indicated at 2, and which receives the lead or other sheath 3 of a cable 4, insulation 5 being, of course, positioned between the conducting portion 4 of the cable and the sheath 3. A lead or wiped joint 6 is formed between the beveled end 7 of the body portion 1 of the outlet and the cable sheath 3 to form a water-tight joint.

It is preferable to form the body portion 1 with bores of two different diameters, the smaller bore being provided with an internally threaded portion 8, and the larger bore being provided with an internally threaded portion 9, such latter portion forming a lamp or plug receiving socket, the threaded portion 9 being the standard threads for a lamp or other threaded plugs.

An insulating core 10 is externally threaded and screwed into the body portion 1 of the outlet. It is preferable, as will be seen from Figure 2, to provide a cutout or clearance space 11 and a shoulder 12 in the body portion 1, so that the threads may be completely formed down to the cut-out 11 and the insulating portion or core 10 screwed down into abutting relation with the shoulder 12 to permanently and firmly hold the member 10 in place.

The member 10 is provided with a relatively large bored out portion which receives the enlarged portion 13 of a connector and is provided with a smaller bored out portion which receives the threaded shank or reduced portion 14 of the connector. This connector is itself provided with a bored out portion 15 which receives the conductors 4 of the cable and to which such conductors are soldered.

It is also preferable to provide a recessed portion 16 in the insulating core 10 within which a lock nut 17 screwed upon the shank 14 is positioned. The shank 14 is threaded to receive the screw 18, such screw holding in place the central contact spring clip 19 which contacts with the center contact of a lamp or plug when screwed into the threaded portion 9.

It is to be noted that the insulation 5 of the conductors 4 of the cable is cut off abruptly to form a shouldered portion, and that this shouldered portion engages the internally shouldered portion of the insulating core 10. Therefore, when the device is drawn into place and the nut 17 tightened, a binding and sealing action occurs against the shouldered portion of the insulation 5 and the insulating core 10, thus providing a seal or water tight joint. This will be apparent from reference to Figure 2.

The extreme outer end of the body portion 1 is externally threaded and receives the removable brass or other metal cap 20, such cap being provided with a gasket or washer 21 to seal against the end of the body portion 1. It is preferable to provide a headed pin 22 on the cap 20, and this headed pin may be formed centrally of the cap to facilitate rotation of the cap. A chain 23, see Figures 1 and 3, has its end swivelled to the headed pin 22. The other end of the chain is held by

a permanently positioned supporting bracket 24, which will be described hereinbelow.

The bracket 24 is provided with a threaded shank 25 adapted to be fastened in the wall of the manhole or vault, and preferably with a flange 26 adapted to bear against the surface of the manhole or vault. This bracket is provided with a removable cap 27 which forms with the portion 28 of the bracket a clamping section adapted to be clamped around the body portion 1, as shown in Figures 1 and 2. The members 27 and 28 are held together by cap screws 29 preferably provided with lock washers, as indicated in Figure 3. One of the screws may receive the end of the chain 23 as shown. The other screw clamps a grounding member or connector 30 in place. It has also been found expedient to provide a small recess 31 in the portion 28 to receive the end of the ground connector 30 and prevent the displacement or turning of said connector.

There is usually a secondary feeder cable running through the manhole or through the vault. The voltage of this cable is of the order of 220 or 110 volts. This is the feeder to which the cable 4 is connected so that the proper voltage is supplied the lamp 32, see Figure 1, or the working tools that may be attached to this outlet.

It will be seen that the construction is very simple and provides a permanent convenience outlet in the manhole or transformer vault which may be instantly available for use by merely unscrewing the cap, or which may be quickly sealed against the entrance of water in the event the manhole becomes flooded, by the repositioning of the cap.

Further, it is to be noted particularly that the device is mounted against the side or at some other convenient location in the manhole or vault, and is completely out of the way. It is rigidly held in place by the clamp or supporting bracket so that no strains are imparted to the cable and consequently no loosening or leaking can occur.

The expression manholes will be used in claiming the invention, although it is to be distinctly understood that this expression is intended as a generic term to cover manholes, transformer vaults, or anything else of this general type. It is used for the purpose of avoiding needless repetition in the claims. Further than this, the socket is to be understood as being designed for the reception of a lamp, the plug from a working tool or other device, but for the sake of brevity it will be recited as a lamp receiving socket with the understanding that this expression also is generic.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A convenience outlet comprising a tubular body portion having opposite ends of tubular shape and having an insulating core, a connector rigidly held by said insulating core, a metal sheathed cable entering said body portion through one end of the body portion and having its conductor connected to said connector and having the metal sheath joined in a water-tight manner to said body portion, said body portion having its other end open opposite the end entered by the cable and having an internally threaded socket at such open end adapted to receive a lamp and having a central contact connected to said connector, said socket having external threads, an internally threaded cap adapted to be screwed upon said socket to temporarily close the outer end of said socket, said socket receiving said cap while said cable is in place, a bracket for supporting said body portion, and a chain swivelled to said cap and joined to said bracket.

2. A convenience outlet comprising a metal body portion having an internally threaded socket at its outer end, an internally located insulating core carried by the inner end of said body portion and having a bored out section, a connector seated within said bored out section and having a threaded shank projecting outwardly towards the front end of said socket, a lock nut screwed upon said shank for holding said connector in place, a metal sheathed cable joined to said body portion with the metal sheath of the cable joined to said body portion in a water-tight manner, the conductor of said cable being electrically connected to said connector, said connector having a centrally located contact, said socket being externally threaded, an internally threaded cap adapted to be screwed upon said socket and provided with a gasket for engaging the end of said socket, said cap having a centrally located headed pin, a support for said body portion, and a flexible retainer secured to said support and swivelled to the headed pin of said cap.

3. A convenience outlet for a manhole comprising a bracket secured within said manhole, a metal body portion clamped to said bracket and rigidly held thereby, a metal sheathed cable entering said body portion and having the metal sheath of the cable joined to said body portion in a water-tight manner, said body portion having a lamp receiving socket at its outer end provided with an internally threaded portion, and a central contact, said cable having a conductor and an insulated portion surrounding said conductor, an insulating core recessed for the reception of the insulation of said cable, a connector carried by said insulating core and electrically joining the conductor of said cable to said central contact, said socket being externally threaded, an internally threaded cap adapted to be screwed upon said socket to temporarily seal the outer end of said socket, and a flexible connector joined to said bracket and having swivel connection with said cap.

4. A convenience outlet comprising a tubular metal body portion, a core of insulating material carried within said body portion, a central contact carried by said core, and a cable entering one end of said tubular body portion, said cable having a central conductor, an intermediate insulating sheath, and an outer metal sheath, said metal sheath being electrically joined to said body portion in a water-tight manner, said conductor being joined to said central contact, and said insulating sheath being clamped by said central contact tightly against the insulating core of said body portion in a water-tight manner, said body portion having an open outer end provided with internal threads for the reception of a lamp, and the conductor and metal sheath forming the electrical conductors for supplying current to said outlet.

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