

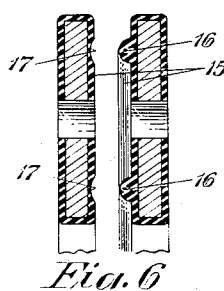
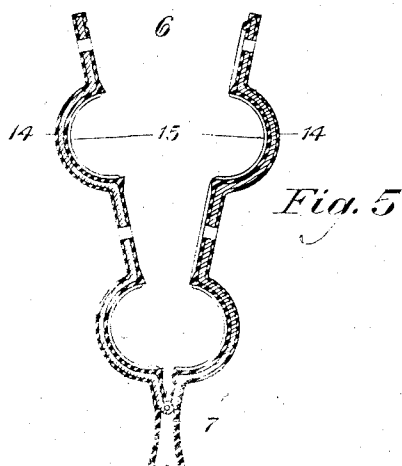
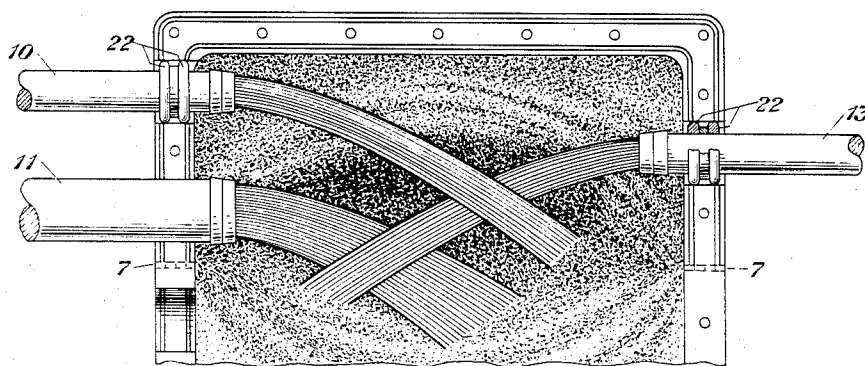
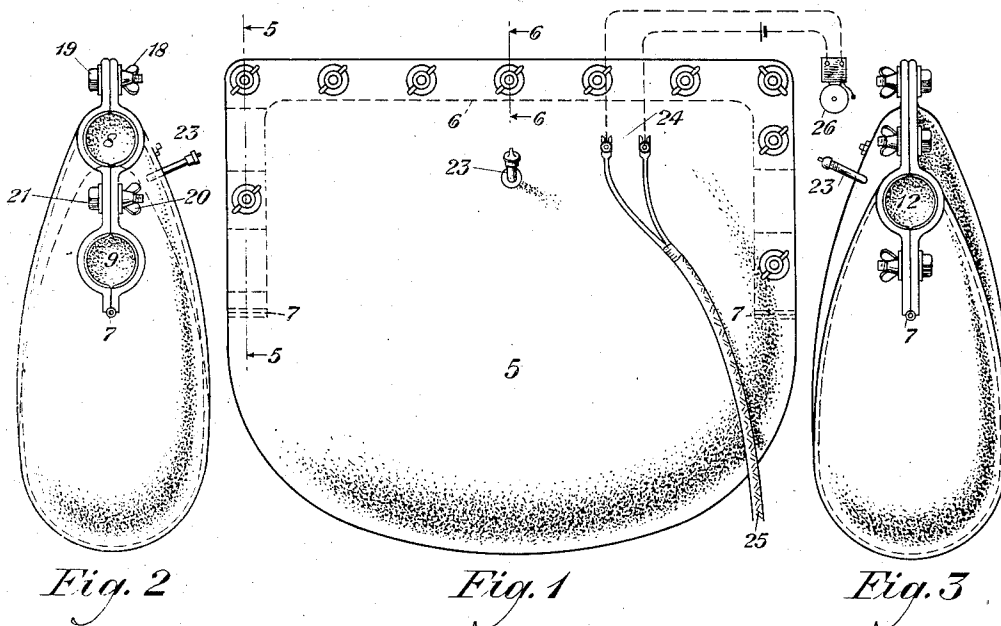
Oct. 23, 1934.

J. F. OSBORNE

1,977,774

PROTECTOR FOR CABLE SPLICES

Filed June 1, 1931



INVENTOR
J. F. Osborne
BY *g r f o l e*
ATTORNEY

UNITED STATES PATENT OFFICE

1,977,774

PROTECTOR FOR CABLE SPLICES

John F. Osborne, Upper Darby, Pa.

Application June 1, 1931, Serial No. 541,507

4 Claims. (Cl. 173—268)

This invention relates to improvements in protectors particularly adapted for use in connection with uncompleted cable splices.

In splicing large cables, of the type having a lead sheath and a number of contained wire conductors, it is frequently necessary to leave uncompleted splices overnight, holidays or week-ends. During such intervals it is the practice to protect these uncompleted splices from moisture and the like, by wrapping a plurality of layers of suitable material about them, and to unwrap such material when access to the splices is again desired. This method involves considerable time and care and is not entirely reliable under certain conditions, as for instance, when a branch splice is required, or where the splice may be totally covered by water.

Accordingly, it is an object of this invention to provide an improved protector for uncompleted splices, and one which will overcome the above disadvantages.

Another object is to provide a protector which will form a moisture-proof enclosure for uncompleted splices.

A further object is to provide a protector which can be applied to and removed from uncompleted splices in a simple and expeditious manner.

These and other objects will be apparent from the following description, when considered in connection with the accompanying drawing, in which one embodiment of the invention is illustrated.

In the drawing, Figure 1 is a side elevation of the improved device; Fig. 2 is an elevation as seen from one end of Fig. 1; Fig. 3 is an elevation as seen from the opposite end of Fig. 1; Fig. 4 is a broken-away view showing the interior of the device with the ends of the cables to be spliced positioned therein; Fig. 5 is an end elevation, taken on the line 5—5 of Fig. 1, showing the hinged relation of the frame members, and Fig. 6 is a detail, taken on the line 6—6 of Fig. 1, showing the tongue and groove connection between the frame members.

Referring to the drawing in which the improved device is illustrated, the numeral 5 is applied to a bag or sack made of suitable waterproof material such, for instance, as rubberized fabric. The bag 5 is large enough to provide sufficient space to readily admit the bared ends of cables and the splices which may be formed from these ends. The bag 5 is attached to metal framework 6 formed from two elongated and inverted U-shaped sections. These sections are hinged together at their terminating points 7 by pins which pass through openings in the sections to permit

them to move from the closed position shown in Figs. 1, 2 and 3, to the open position shown in Fig. 5.

The ends of the frame sections have coinciding bent-out portions which cooperate to form circular openings when the frame sections are closed through which the sheathed portions of the cables extend outwardly from the bag 5. These openings while shown as being of a certain number and arranged as indicated, may comprise instead any other desired number and the sizes and positions of the opposite openings may be changed as desired. In Fig. 2 the ends of the frame sections are shown as provided with two openings 8 and 9 through which the respective cables 10 and 11 may extend outwardly. The other ends of the frame sections form an opening 12 through which the cable 13 extends from the sack. The cables 10, 11 and 13 provide for a three-way splice. In case a single splice is desired, as for instance between the cables 10 and 13, either of the openings 8 or 9 may be plugged with some such arrangements as rubber or a dummy piece of cable.

The outer surface of the frame sections have the rubberized fabric 14 applied thereto and maintained in position by a suitable adhesive. Or, if desired, an additional layer of fabric may be provided between the sections and the outer fabric 14, and all may be adhesively united with each other. The fabric 14 is preferably brought over the top portions of the framework sections, and the terminating edges thereof may abut or cohere to a padding of soft rubber 15, or the like. The padding 15 forms an inner compressible lining or gasket for the framework sections throughout. The inner linings 15 may be provided with projections 16 on one side and registering indentations 17 on the other side, which form a tongue and groove connection between the framework sections. The compressibility of the linings 15 is such that when they are clamped together, as will presently appear, they form an airtight and waterproof joint or seal between the framework sections. This compression of the soft rubber 15 also acts upon the closure of the sections to compensate for any abrasions or irregularities in the cable sheaths and forms tight joints at the points of entrance of the cables through the openings in the framework sections.

The framework sections may be joined together by clamping or locking means, such for instance as wing nuts 18 threaded on bolts 19 which extend through coinciding openings provided in the sections from one end to the other. When the nuts and bolts are turned up equally

to the proper limits, they cause the rubber material 15 and its tongue and groove connections to seal the protector throughout. It is preferred to provide a wing nut 20 and bolt 21 between the openings 8 and 9 to insure a proper seal at this point.

The openings 8, 9 and 12 may be of a diameter to accommodate a maximum size cable such as shown at 11. However, in the case of cables of the smaller diameter such as those shown at 10 and 13, rubber tape may be wrapped about these cables and suitable adapters or shims 22 may be applied to the cables at their points of entrance through the framework.

A valve 23 is inserted through the bag 5 and is of such character that gas or the like, may be introduced into the bag under pressure, to determine its condition with respect to being airtight.

An alarm system may be also connected to the improved protector and used as an extra precaution where the protector is positioned over cables in the manhole. This alarm system includes a pair of terminals 24 carried by the protector and having a pair of conductors 25 attached thereto, which extend to an alarm 26 and a connected battery at a central office. The loose ends of the conductors extend downwardly to a predetermined depth in the manhole. In the event of water flowing into the manhole to a point where it reaches the loose ends of the conductors, a circuit is completed to sound the alarm 26.

It will be apparent from the above that a protector for uncompleted cable splices is provided by means of this invention, and that such protector may be readily applied to or detached from such uncompleted splices in a simple and expeditious manner.

What is claimed is:

1. A temporary protector for uncompleted cable splices including a bag of waterproof material, a separable frame integral with the bag and having openings at opposite extremities for the admission into the bag of cable ends to be

spliced together, means for securely clamping the frame together and about said cables adjacent their ends to provide with the bag a watertight enclosure for the cable splice, and means to apply gas under pressure to said enclosure. 80

2. A temporary protector for uncompleted cable splices including a bag of waterproof material, a frame having hinged sections connected with the bag, said sections having cooperating openings for the admission of cable ends to be spliced together, compressible material carried by each section, means on both sides of the hinged sections for clamping the compressible material of said sections together and about said cables adjacent their ends to provide with the bag a watertight enclosure for the cable splice, and a valve for said bag through which gas is applied under pressure to said enclosure. 90

3. A temporary protector for uncompleted cable splices including a bag of waterproof material, a hinged frame integral with the bag and having openings at opposite extremities for the admission into the bag of cable ends to be spliced together, compressible gaskets carried by the frame, means for clamping the frame together to cause said gaskets to apply pressure about said cables adjacent their ends to provide with the bag a watertight enclosure for the cable splice, and means to apply gas under pressure to said enclosure. 100

4. A temporary protector for uncompleted cable splices including a bag of waterproof material, a frame having hinged sections connected with the bag, said sections having cooperating openings for the admission of cable ends to be spliced together, means including compressible gaskets carried by each section, means on both sides of the hinged sections for clamping the sections together to cause said last-mentioned means to apply pressure about said cables adjacent their ends to provide with the bag a watertight enclosure for the cable splice, and a valve for said bag through which gas may be applied under pressure to said enclosure. 110

JOHN F. OSBORNE. 120

50 125

55 130

60 135

65 140

70 145

75 150