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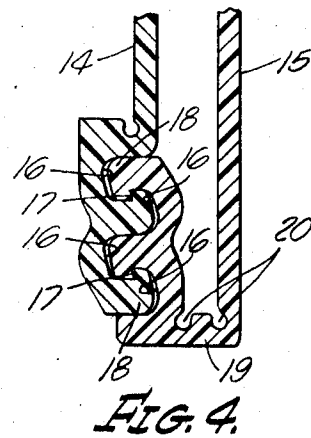
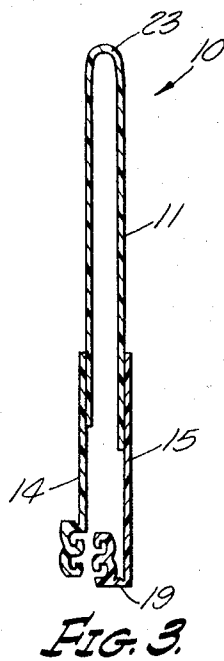
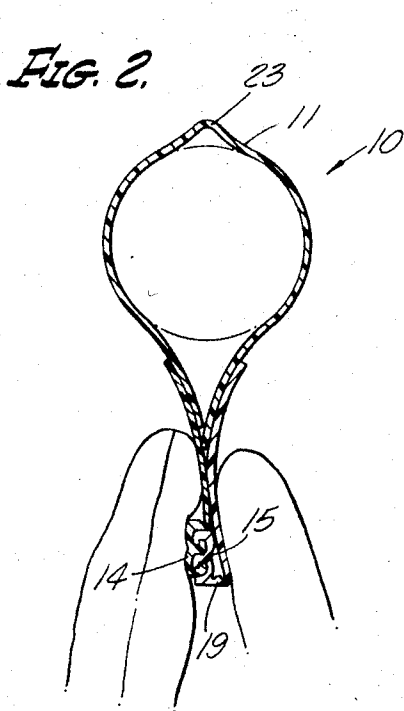
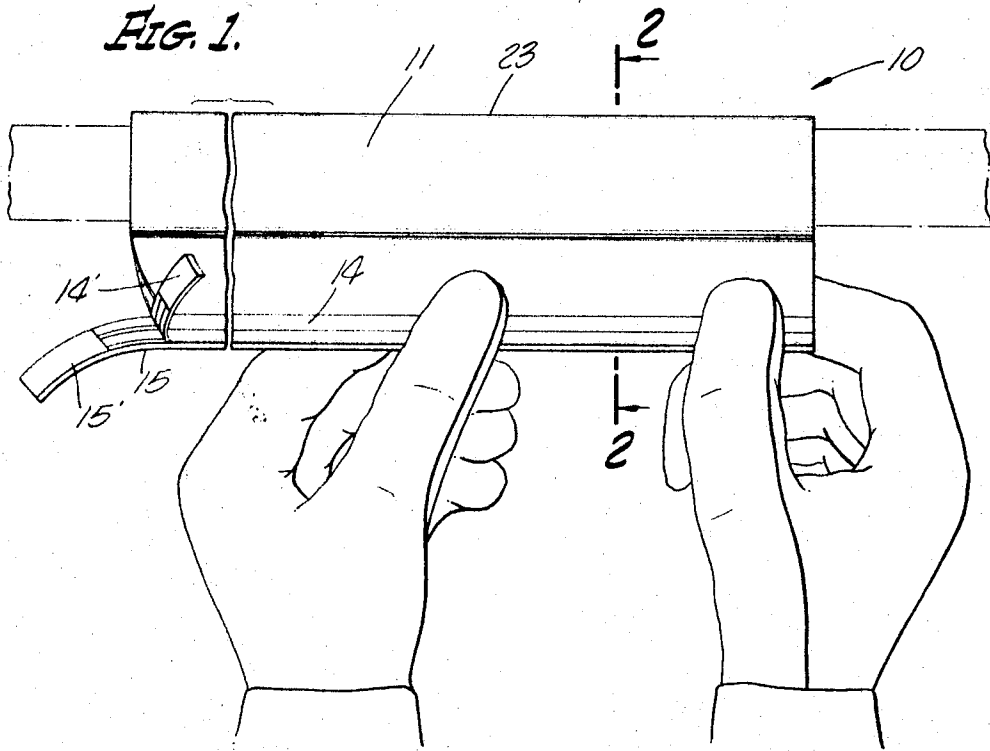
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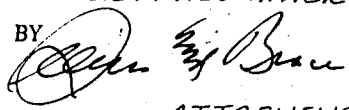
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HIGH DIELECTRIC PROTECTIVE JACKET FOR TEMPORARY  
ASSEMBLY ABOUT HIGH TENSION CONDUCTORS

Filed April 10, 1967

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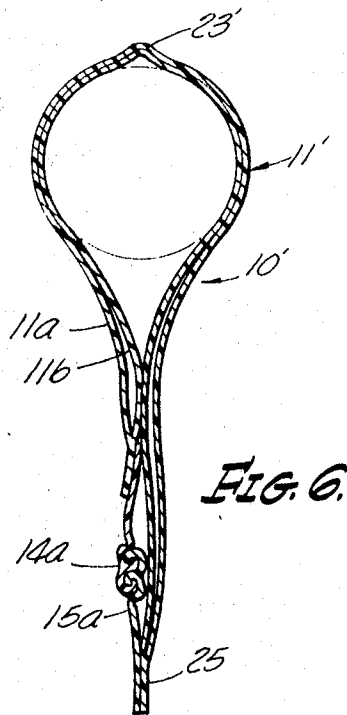
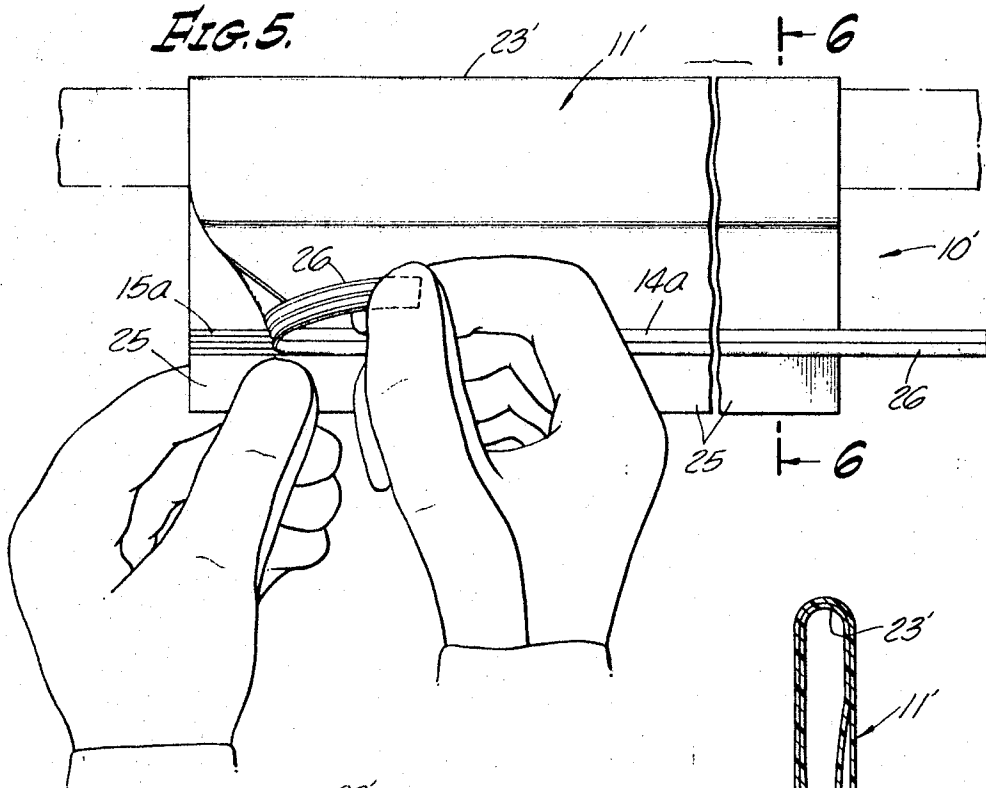
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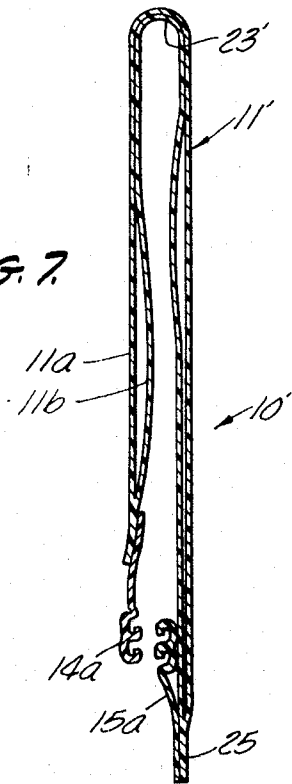
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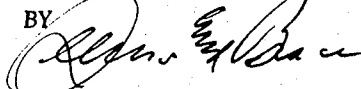
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**FIG. 7.**



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**HIGH DIELECTRIC PROTECTIVE JACKET FOR TEMPORARY ASSEMBLY ABOUT HIGH TENSION CONDUCTORS**

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3 Claims

**ABSTRACT OF THE DISCLOSURE**

A lineman's protector designed for assembly about and removable from a live power conductor by a lineman wearing thick, protective gloves. The protector is formed of high dielectric strength supple sheet material formed with a permanent longitudinal fold to aid in supporting the protector astride a power conductor during closure of its seam which includes interlocking tongues and grooves held in mating position by the permanent fold. Straggered pull tabs installed at one end facilitate opening the seam by a gloved lineman.

This invention relates to protective devices and more particularly to an inexpensive, easily-assembled and disassembled protector jacket adapted to be assembled about high tension lines to safeguard workmen against electrocution while performing service operations on or in the vicinity of such conductors.

The invention device features either single or multiple layers of supple sheet material having high dielectric properties having readily mateable tongue and groove seam means along its lateral edges the grooves and tongues of which open outwardly from the same face of the sheet material when lying outstretched against a flat surface. By reason of this feature a sleeve of substantially greater girth than a power conductor can be draped about the conductor and the inner surfaces of the seamed edges can be brought together by pressure applied to the exterior surfaces by a workman's thumb and index finger without need for placing the finger inside the sleeve thereby risking electrocution from the live conductor. The invention sleeve also includes unique pull-tab means so positioned that they can be safely grasped to open the sleeve seam preliminary to removing the latter from a live conductor at the end of a servicing operation.

The present invention is provided to protect electricians and servicemen against electrocution while servicing high tension equipment. It is, of course, conventional practice to provide protective clothing and high dielectric gloves to be worn by servicemen while performing service operations in the vicinity of high tension equipment. However, such safeguards as have been proposed heretofore are oftentimes inadequate and leave much to be desired.

There is provided by the present invention a simple inexpensive accessory comprising a flexible sheet of high dielectric material adapted to be wrapped about live high tension components, such as power conductors, and to be locked in assembled position thereabouts by means of interlocking tongue and groove seam means integral with the protective jacket. The readily closed and reopened seam means comprises interlocking tongue and grooves so constructed and so disposed along the juxtaposed lateral edges of the jacket as to be readily closed together by a workman while wearing thick protective gloves. The jacket itself is precreased along its longitudinal center line and the interlocking tongues and grooves are so disposed relative to this crease as to lie in juxtaposition while the preformed crease cooperates with the cable in holding the seam components draped closely adjacent one

another. In consequence the serviceman need but wrap the jacket about the conductor and then apply pressure to the remote exterior sides of the seam means thereby to lock the seams in assembled position. The workmen may then proceed with appropriate servicing operations with assurance that the high dielectric protector will protect any part of his body from electrical shock or injury.

It is therefore a primary purpose of the present invention to provide a simple and inexpensive high tension protective jacket so constructed as to be quickly and positively locked in assembled position about a live high voltage component.

Another object of the invention is the provision of a simple unitary protective jacket of flexible high-dielectric material provided with interlocking seal means along its lateral edges arranged as to interlock with another as pressure is applied to the remote exterior surfaces of the seam means.

Another object of the invention is the provision of a high dielectric protective jacket having a semi-permanent crease formed along longitudinal center and cooperating to hold the interlocking seam means of the jacket in juxtaposition to one another while being pressed closed.

Another object of the invention is the provision of a protector sleeve for a live high tension conductor formed of a plurality of layers of high dielectric material secured together at least along their adjacent lateral edges and having at least one pair of end corners provided with pull tabs to facilitate separation of interlocking seam means carried by the lateral edges of said sleeve.

Another object of the invention is the provision of a protector sleeve temporarily installable about a live high potential conductor and having easily mated holding means manipulatable by the lineman wearing gloves and while his fingers are confined to the exterior of the sleeve and separated from the conductor by the material of the sleeve.

These and other more specific objects will appear upon reading the following specification and claims and upon considering in connection therewith the attached drawing to which they relate.

Referring now to the drawings in which preferred embodiments of the invention are illustrated.

FIGURE 1 is an elevational view showing a preferred embodiment of the invention jacket in the process of being locked in assembled position about a power conductor;

FIGURE 2 is a cross-sectional view taken along line 2—2 of FIGURE 1;

FIGURE 3 is a cross-sectional view through the jacket as manufactured and with the seam components disposed opposite one another;

FIGURE 4 is an enlarged cross-sectional view through the seam itself;

FIGURE 5 is a side elevational view of a second preferred embodiment installed about a live conductor and showing the seam means in the process of being opened for detachment of the sleeve from the conductor;

FIGURE 6 is a cross-section on an enlarged scale taken along line 6—6 on FIGURE 5; and

FIGURE 7 is a sectional view similar to FIGURE 6 but showing the sleeve detached and the seam open.

Referring more particularly to FIGURES 1 and 3, there is shown a preferred embodiment of the invention protective jacket designated generally 10 formed from flexible sheet plastic material of a type having unusually high dielectric properties. The jacket is prepared from an elongated strip 11 of such sheet material. The width of the strip material may vary as necessary to accommodate conductors of different diameters.

Normally the width of the strip and the seam means to be described presently is substantially greater than

the circumference of the components to be enclosed thereby in order that the protector may be draped about these components and the excess material gathered along the opposite sides thereof while the seam components are being pressed into interlocking engagement. In the great majority of cases, the conductors are disposed generally horizontally and the jacket is simply draped over the top side of the conductor to dispose the excess along the sides and the seam on the underside thereof.

The opposite lateral edges of main body strip 11 are equipped with a pair of seam-forming tapes 14, 15 shaped along one face of their free edges with interlocking tongues and grooves so designed that they can be easily forced into mating relationship by the application of pressure to their outer faces. A particularly suitable and satisfactory design of the tongue and groove is that shown in FIGURE 4. Each of the sets of tongues and grooves is of complementary shape and, as here shown, includes a plurality of deep grooves 16, 16 provided with an inwardly projecting locking shoulder 17 along one side wall of each groove. It will therefore be appreciated that these grooves seat the tongue portions 18, 18 of the other tape member. As is clearly shown in FIGURE 1, the tongue and groove portions of tapes 14 and 15 project beyond the ends of the sleeve at least at one pair of end corners by different amounts to provide easily grasped pull tabs. End portions 14', 15', are preferably flattened by heat or other appropriate means to prevent these portions from locking together.

It will be observed that the tongue and groove section of tape 15 includes a connecting web 19 lying at right angles to the mounting web of the tape as well as at right angles to the tongue and groove portion of this same tape. The opposite lateral edges of connecting web 19 include relief grooves 20, 20 lying in closely spaced parallel relation to one another along the interior side of the seam. In consequence, tape 15 has the normal permanent configuration shown in FIGURES 3 and 4 with its groove portions 16 facing to the left as viewed in these figures. Likewise, if the main body strip 11 is unfolded to lie in a single plane, it will be observed that grooves 16 in tapes 14 and 15 both face outwardly from the same surface of the main body member. In other words, if the left hand half of the jacket as viewed in FIGURE 3 is folded clockwise, through an arc of 180 degrees, then the grooves in both tapes would face outwardly to the left.

The feature just described is of considerable importance. Thus as the jacket is folded upon itself and about its longitudinal center line the tongues of tape 14 are disposed directly opposite the mating grooves 16 in tape 15. This important mode of positioning the tongues and grooves for engagement is further assured and facilitated by a semi-permanent preformed crease 23 extending along the longitudinal center line of the jacket and suitably formed in various ways, as by holding the material folded in this position while cooling from a heated condition. This has the important additional advantage of causing the jacket to lie normally flat with its two halves against one another for compact packaging and storage.

Additionally and importantly, when the jacket is placed about a conductor its two halves tend to drape uniformly along the opposite sides of the conductor with crease 23 lying along the top of the conductor. This expedient serves to align the tongues and grooves of the two tapes with one another on the underside of the conductor. Accordingly, all that remains is for the serviceman to grasp the seamed portion of the jacket between the thumb and index finger of his thickly gloved hand and to press the tongues and grooves firmly into interlocking engagement in the manner illustrated in FIGURES 1 and 2. The relatively heavy seamed portion of the jacket then acts as a pendant cooperating with the crease 23 in holding the jacket draped about the conductor. The serviceman places as many jackets in end-to-end relation as may be

necessary along all conductors adjacent the area to be serviced and proceeds to carry out his servicing operations with confidence and with full protection against risk of electrocution.

After the servicing operation has been completed the final operation involves removal of the jackets. The lineman grasps the longer pull tab 15' between the thumb and finger of one hand and pulls it away from tab 14' so that the latter is in the clear and easily grasped by the thumb and finger of his other gloved hand. The two tabs are then pulled in opposite directions to peel the interlocked tongues and grooves apart in well known manner and without getting any part of either hand inside the sleeve or close to the live conductor. The detached sleeve now resumes its former compactly folded position and in readiness for repeated reuse.

A second preferred embodiment 10' shown in FIGURES 5-7 is generally similar to the first described embodiment and the same or similar portions are identified by the same reference characters but distinguished by a prime or a letter. One of the differences is that the main body of the jacket 11' comprises two or more strips or layers 11a, 11b of supple flexible high-dielectric material such as thermoplastic sheeting readily heat fusible to one another or to the interlocking tapes 14a, 15a. Layers 11a, 11b need not be laminated together and are found to provide even greater protection if separated by an intervening layer of air which normally has good dielectric properties.

The manufacturing proceeding for sleeve 10' includes securing the lateral edges of strips 11a, 11b together and to the mounting webs of tapes 14a, 15a with their tongue and groove portions positioned as clearly depicted in FIGURES 6 and 7. The mounting web of tape 15a will be observed as positioned entirely inside the lateral edge of the sleeve body whereas a portion of the mounting web and all of the tongue and groove portion of tape 14a projects laterally beyond the other lateral edge of the sleeve body. In this manner, one lateral edge of the completed sleeve has a pull tab 25 extending the full length of the sleeve for convenience in the closure of the seam as well as its separation.

To further facilitate separation of the engaged tapes, the ends 26 of tape 14a preferably project longitudinally beyond the one or both ends of the sleeve body to provide a pull tab. This is used in the manner shown in FIGURE 5 to aid opening of the seam and removal of the sleeve from a live conductor. The operation is initiated by grasping pull tab 25 with one hand and the adjacent pull tab 26 in the other and then pulling outwardly on tab 26 as tab 25 is forced at right angles away from tape 14a.

It is also to be understood that in the FIGURE 5-7 embodiment the main body of the sleeve is preformed with a return bend or crease 23' which is displaced to one side and parallel to the medial axis of the sleeve so that, when folded in its normal collapsed condition the tongues and grooves of the seam forming tapes 14a, 15a are properly positioned to be pressed together. This condition is readily checked by the lineman when installing the jacket about a high tension conductor because the preform or crease 23' will line directly along the top side of the conductor as is illustrated in FIGURE 6. The lineman now proceeds to apply pressure to the exterior surfaces of the tapes with assurance that they are properly aligned for interlocking engagement.

I claim:

1. A unitary one-piece protector sleeve adapted to be assembled about live high voltage conductors to safeguard repairmen against electrocution while servicing such conductors, said protector sleeve comprising an elongated strip of supple flexible sheet material having high dielectric properties, said strip being formed generally along the mid-length thereof with a permanently pre-set return bend of relatively short radius so that the two

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halves are normally storable in folded compact condition and whereby, in use, the return bend acts to hold the protector astride a power conductor with the opposite halves of the supple protector draped along the opposite sides of the power conductor with their lower edges spaced very substantially beneath, and parallel to the lower side of the conductor, the opposite ends of said strip being fully open and free of fasteners and enlargements, complementally shaped straight tongue and groove means extending along the lower free edges of said halves facing toward one another and so spaced from said return bend as to be in mating alignment when the draping halves of said protector strip are pressed together by the thickly gloved fingers and thumb of a lineman from the exterior longitudinal edges of said protector and with his hands and arms properly spaced well below and distantly from a live power conductor.

2. A protector sleeve as defined in claim 1 characterized in that said protective sleeve is provided with a pair of pull tab means projecting longitudinally from the corners at one end of said sleeve and wherein one pull tab is longer than the other to facilitate grasping the same by a workman wearing high dielectric protective gloves.

3. A protector sleeve as defined in claim 2 character-

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ized in that said pull tab means comprise the ends of said tongue and groove means which ends project different distances from the associated corners of said sleeve and have the juxtaposed end portions of their tongues and grooves modified sufficiently as not to interlock with one another.

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