Aug. 31, 1926. 1,598,155

M. B. SALISBURY

DEVICE FOR PROTECTING LINEMEN

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Fig. 1.

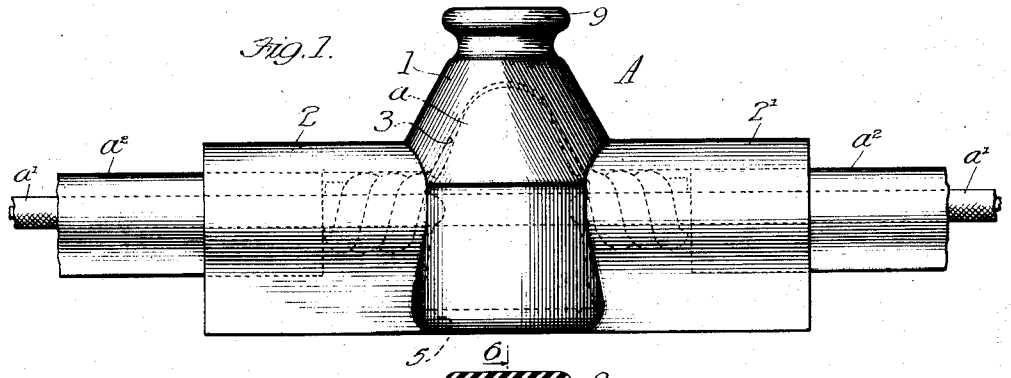


Fig. 2.

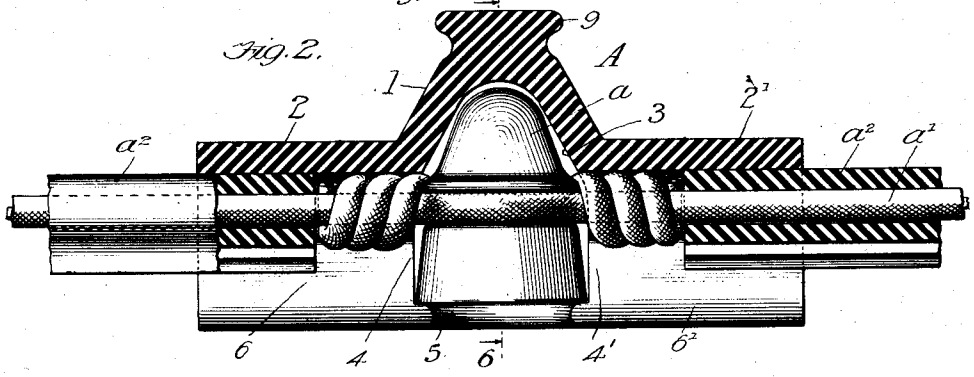


Fig. 3.

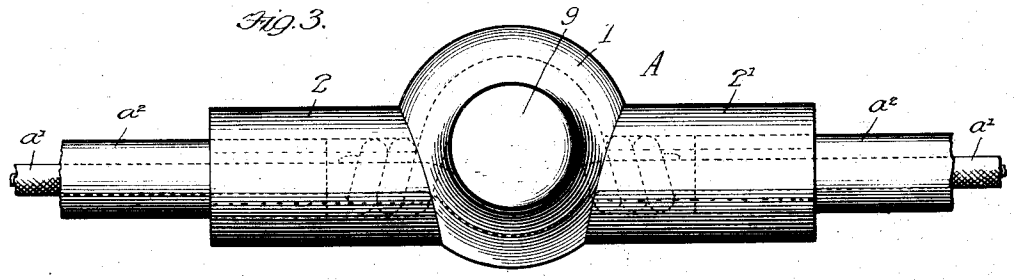
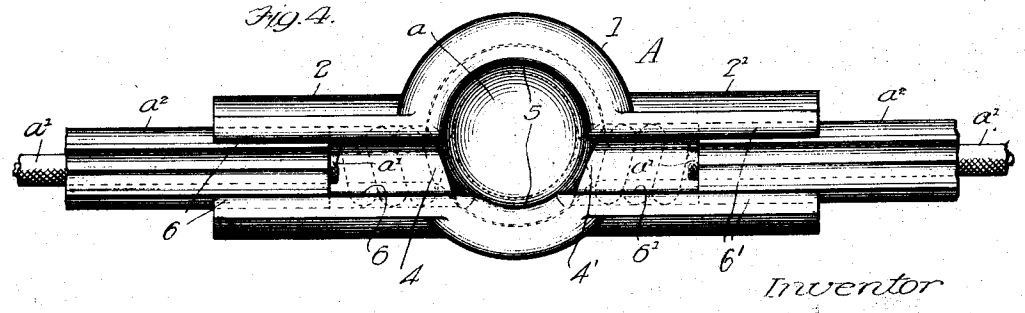


Fig. 4.



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Fig. 5.

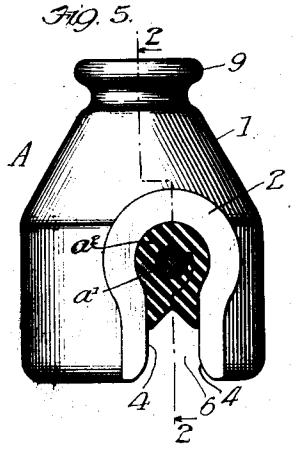


Fig. 6.

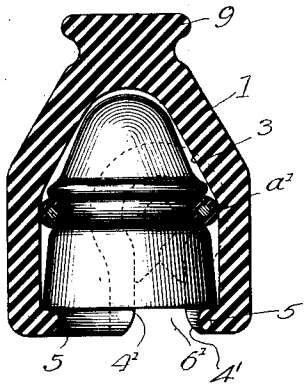


Fig. 7.

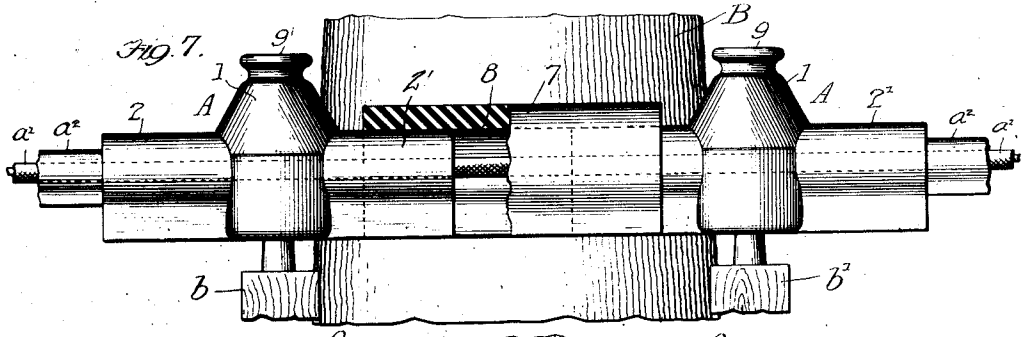
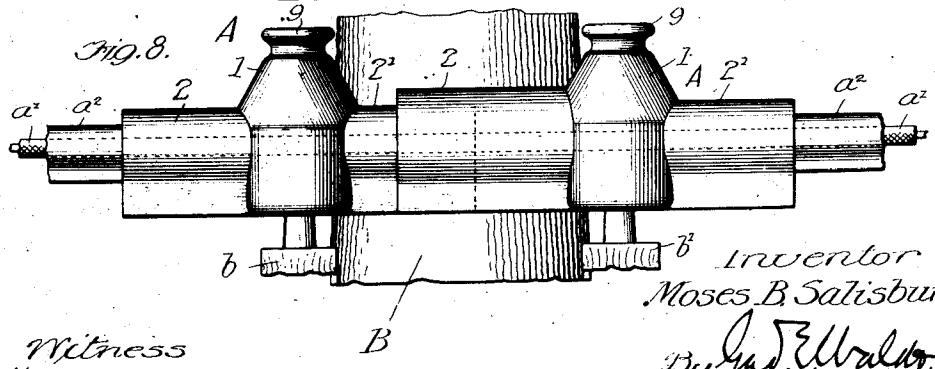


Fig. 8.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR PROTECTING LINEMEN.

Application filed October 15, 1923. Serial No. 668,705.

This invention relates to devices for protecting linemen from shock and injury when working on or around high voltage electrical conductors.

The object of the invention is to provide a new and novel device for the purpose specified, which is particularly designed and adapted for use in connection with protective insulating sleeves or line hose of the general type which forms the subject-matter of United States Letters Patent No. 1,485,994, issued to me on March 4, 1924, which is simple in construction, may quickly and conveniently be adjusted for use and removed, is effective for its designed purpose and which will retain its position on the conductor insulator without separate securing means.

To effect the foregoing objects, my improved device is made of suitable resilient insulating material, preferably rubber, and comprises a hood section adapted to be removably adjusted to the insulators which support electrical conductors so as to encase said insulators and sections of the conductors adjacent to said insulators and the tie wires which secure said conductor wires to the insulators, and which is provided with openings which cut out at the lower edges thereof adapted to receive the electrical conductors.

The hood section of my improved protective device preferably conforms substantially to the shape of the insulators on which it is to be used and is proportioned to fit the same quite closely. Also, said hood portion is made of such height that it will extend below the insulator when adjusted thereto, and is provided with an interior shoulder adapted to interlock with part of an insulator to which it is applied, said shoulder being preferably formed by a bead on the inner surface of said hood portion at its lower end adapted to interlock with the lower end of the insulator.

A protective device of my invention also comprises laterally extending union sections provided with openings in their under sides in line with the openings formed in the hood section to receive an electrical conductor, said openings being proportioned to receive the proximate ends of protective members used in associaton therewith, as for example the protective insulating sleeves of my said prior Patent No. 1,485,994. Preferably, also, the openings in the under sides of the union sections of said protective device are proportioned to receive a protective sleeve or other protective member used in association therewith, to provide a connection of sufficient strength to prevent accidental disengagement of said protective sleeve or other protective member from the union sections of said protective device, under usual conditions of use.

Also, to adapt my improved portective device for use on insulators which are installed closely adjacent to each other, as where an electrical conductor is supported at a pole by two insulators mounted on separate cross arms secured to opposite sides thereof, a protective equipment embodying my invention and improvements preferably comprises devices, the union sections of which are of standard size—that is of proper size to receive the line hose or other protective member designed to be used in association with said protective device—and other protective devices, one or both of the union sections of which are proportioned to receive the standard size union sections of another protective device.

Also, to meet a condition in which two insulators are installed closely adjacent to each other, but in such relation that the proximate ends of the union sections of protective devices applied thereto will be separated by a short space, my improved protective equipment preferably comprises a separate protective member adapted to be adjusted over the proximate ends of the union sections of said protective devices so as to extend across the space separating them and to enclose the electrical conductor exposed between said union sections. Such separate member preferably conforms substantially to the shape of the union sections of said protective devices and is provided in its under side with an opening which likewise conforms to the shape of said union sections and is proportioned to closely embrace the same.

My invention also comprises the various other features, combinations of features and details of construction hereinafter described and claimed.

In the accompanying drawings in which my invention is fully illustrated,

Figure 1 is a side view of a protective device of my invention, shown as applied in use to an electrical insulator and to an electrical conductor connected thereto.

Figure 2 is a sectional elevation on the line 2—2 of Fig. 5.

Figures 3 and 4 are, respectively, top and bottom plan views thereof.

Figure 5 is a view from the left side of Fig. 1.

Figure 6 is a sectional view on the line 6—6 of Fig. 2.

Figure 7 is a side view showing protective equipment comprising two protective devices embodying my invention applied to insulators which are mounted closely adjacent to each other, in which a short length of the electrical conductor is exposed between the adjacent ends of the union sections of said protective devices; and

Figure 8 is a view substantially similar to Fig. 7 illustrating protective equipment in which the insulators to which the protective devices are applied are mounted at such short distance from each other that the adjacent union sections thereof overlap.

Referring now to the drawings, A designates a protective device of my invention shown as applied in use to an insulator *a* so as to encase an electrical conductor *a'* supported by said insulator and the tie wire for securing said conductor to the insulator, to protect linemen working about said conductor and others from shock through contact with the conductor *a'* at points at and closely adjacent to said insulator. My improved protective device is designed and adapted for use in connection with other protective members, indicated at a^2, adapted to cover the conductor *a'* for any desired distance on either or both sides of the insulator *a*, a preferable form of protective member a^2 being the protective insulating sleeve which forms the subject-matter of my said prior Patent No. 1,485,994. However, I do not desire nor intend to limit my improved protective device to use with the particular form of protective sleeve or member specified or with any particular form of protective member.

The protective device A comprises a hood section 1 and union sections 2, 2', said hood and union sections forming a unitary structure, being preferably made integral with each other.

The hood section 1 conforms substantially, both inside and outside, to the shape of the insulator *a* and the interior 3 thereof is proportioned to fit over said insulator quite closely, and said hood section is provided with openings 4, 4' in its sides which cut out at its lower end and are adapted to receive the conductor *a'*.

In the preferable construction shown, also, the hood section 1 is made of greater height than the insulator, so that it will extend below the same, and formed at the lower end of its inner surface is a bead 5 which normally extends inwardly beyond the lower end of the insulator *a*, so as to interlock therewith, thus securing the device A to the insulator *a* against accidental displacement.

The union sections 2, 2' of the protective device are provided with openings 6, 6' in their under sides which form extensions of the openings 4, 4' in the sides of the hood section 1 of said device, said openings 6, 6' preferably conforming substantially to the shape of the protective members a^2 designed to be used in connection with the protective device A, and are proportioned to closely embrace the members a^2 when inserted therein, to prevent accidental disengagement of said protective members a^2 from the union sections 2, 2' under usual conditions of use.

Where insulators are mounted at such short distances from each other that the proximate ends of adjacent union sections 2, 2' thereof would normally overlap one of said union sections, as shown in Fig. 8, the section 2, is made relatively large and is provided with an opening 6 which is proportioned to receive and closely embrace the outer end of one of the union sections of the other protective device A, thus encasing the conductor *a'* between the insulators to which said protective devices are applied.

On the other hand, where the insulators *a* to which the protective devices A are applied are spaced such a distance apart that the conductor *a'* will be exposed between the ends of adjacent union sections, the portion of the conductor thus exposed is adapted to be encased by means of a separate protective member 7, as shown in Fig. 7, which is provided in its under side with an opening 8, adapted to receive and to closely embrace union sections 2, 2' of standard size.

The conditions last referred to are met with frequently in cases where the conductor wire is supported by two insulators at each pole, which are mounted on separate cross arms secured to opposite sides of said pole, the spaces between the insulators varying somewhat with the diameter of the poles.

In like manner I have, in Fig. 7, illustrated the condition above referred to, in which the insulators are separated by such a short space that the outer ends of adjacent union sections 2, 2' of said protective devices will overlap, showing the union section 2 of relatively large size and the end of the union section 2' of the other protector extending into the opening 6 in the under side thereof, the insulators *a* being shown as mounted on separate cross arms *b*, *b'* secured to the opposite sides of a pole indicated at B.

In like manner I have, in Fig. 7, illustrated a condition in which the insulators are spaced such a distance apart that a short section of the conductor *a'* will be exposed between the ends of adjacent union sections 2, 2' thereof and is covered by means of a separate protective member 7, which conforms substantially to the shape of the union

sections 2, 2′ of standard size, and is proportioned so that the opening 8 therein will receive and closely embrace the ends of adjacent union sections.

In this construction, also, the insulators *a* are mounted on cross arms *b*, *b′* secured to opposite sides of a pole indicated at B.

For convenience in handling my improved protective device, when adjusting it to and removing it from an insulator, said device is preferably provided with a suitable hand grip consisting preferably of a knob 9 formed on the upper end of the hood section 1 of said device.

My improved protective device is designed for use both with insulated and uninsulated conductors.

As previously stated, the protective device A will preferably be made of vulcanized rubber of sufficient thickness to impart desired strength, stiffness and resilience thereto and to effectively insulate the conductor *a′*, whereby persons who may come into contact with or grasp a part of said device with their hands, will be protected from shock and injury.

I claim:—

1. A device for protecting linemen made of resilient insulating material, comprising a hood section adapted to be removably adjusted to an insulator so as to encase the same and a section of an electrical conductor supported thereby, said hood section conforming substantially to the shape of the insulators on which it is designed for use and being constructed and proportioned to engage said insulators with sufficient tenacity to retain its position thereon under contemplated conditions of use without other securing means, said hood section being provided with openings adapted to receive an electrical conductor when adjusted to an insulator.

2. A device for protecting linemen as specified in claim 1, in which the hood section is provided with an interior shoulder adapted to interlock with a part of an insulator to which it is adjusted.

3. A device for protecting linemen as specified in claim 1, in which the hood section comprises a bead formed on its inner surface adapted to interlock with the lower end of an insulator to which it is adjusted.

4. A device for protecting linemen made of resilient insulating material, comprising a hood section and union sections adapted to be removably adjusted to an insulator so as to encase said insulator and a section of an electrical conductor supported thereby, said hood section conforming substantially to the shape of the insulators on which it is designed for use and being constructed and proportioned to engage said insulators with sufficient tenacity to retain its position thereon under contemplated conditions of use without other securing means, said protective device being provided with openings adapted to receive an electrical conductor when adjusted to an insulator and the ends of other protective members used in association with said protective device.

5. A protective device for linemen as specified in claim 4, comprising a union section proportioned to receive a union section of another device of different size.

In witness that I claim the foregoing as my invention, I affix my signature this 5th day of October, A. D., 1923.

MOSES B. SALISBURY.