

T. VARNEY & E. E. ROSE.
STRAIN INSULATOR.
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937,896.

Patented Oct. 26, 1909.

Fig. 1.

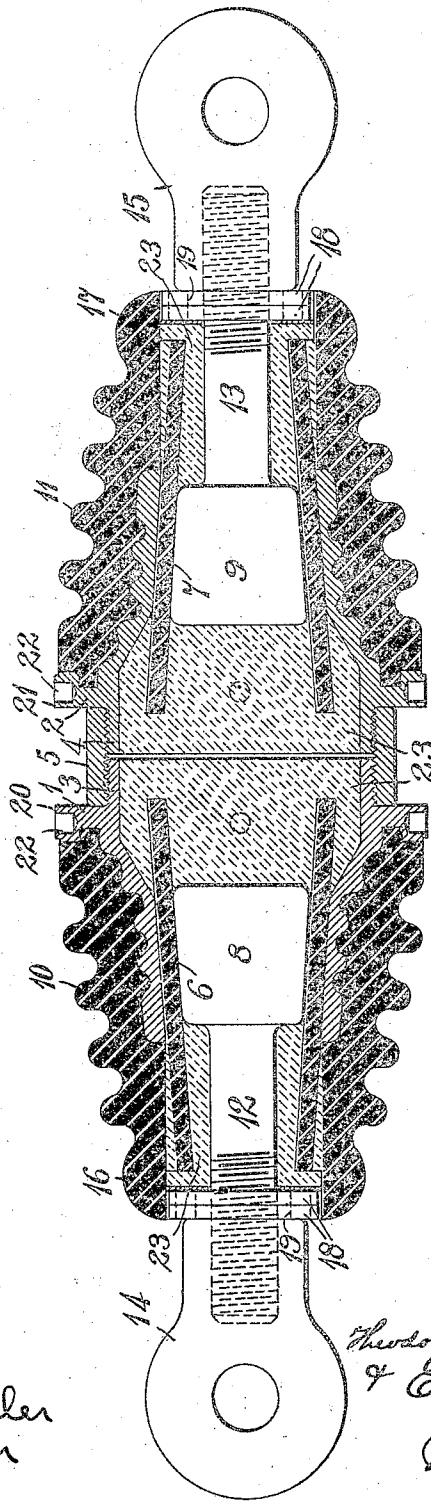
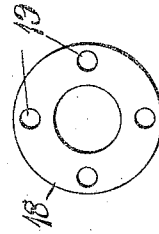


Fig. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THEODORE VARNEY, OF PITTSBURG, AND EDWARD ERNEST ROSE, OF SWISSVALE, PENNSYLVANIA, ASSIGNORS, BY MESNE ASSIGNMENTS, TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, OF EAST PITTSBURG, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

STRAIN-INSULATOR.

937,896.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, THEODORE VARNEY and EDWARD ERNEST ROSE, citizens of the United States, and residents, respectively, of Pittsburg and Swissvale, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Strain-Insulators, of which the following is a specification.

Our invention relates to strain insulators for electric lines, and it has for its object to provide a device of this character that shall be compact and durable in construction, easy to assemble and capable of withstanding strains incident to the use of high voltages.

Figure 1 of the accompanying drawings is a sectional elevation of a device constructed in accordance with our invention, and Fig. 2 is a detail view of one of the parts shown in Fig. 1.

Referring to the drawings, the device here illustrated comprises a pair of similar frusto-conical metal tubes 1 and 2 having corresponding screw-threaded cylindrical projections 3 and 4, a common sleeve 5 into which the projections 3 and 4 are screwed, insulating tubes 6 and 7 seated in the first-named frusto-conical tubes, tapered plugs 8 and 9 seated in the insulating tubes, and molded insulating jackets 10 and 11 on the metal tubes 1 and 2. The outer surfaces of the metal tubes 1 and 2 are preferably corrugated in order that the molded insulating material of which the jackets are composed may more readily adhere thereto, and the outer surfaces of the jackets are corrugated in order to increase the surface or current creepage distances between the parts which are electrically separated.

The plugs 8 and 9 are provided with projections 12 and 13 which extend outwardly and are preferably in the form of bolts, their outer extremities being screw-threaded to receive strain-loops 14 and 15.

In assembling the device, the metal tubes 1 and 2 are first provided with the insulating jackets 10 and 11 which are formed by a well known molding process under the action of high pressures. In the device illustrated, the insulating jackets project for material distances beyond the extremities of the metal tubes and constitute sleeves 16 and 17.

The next step in the assembling process is to seat the insulating tubes 6 and 7, after which the plugs 8 and 9 are placed in position, the metal tubes 1 and 2 are then screwed into the collar 5, and considerable tension is exerted between the extremities of the bolt projections 12 and 13 in order to firmly set the strain parts in position. The tubes 1 and 2 are then disconnected from the collar 5 and insulating gum or cement 23 is forced into the openings at the ends of the insulating tubes 6 and 7 and around the plugs 8 and 9, set-nuts 18 being employed to close the outer ends of the sleeves 16 and 17. In this way, the insulating tubes 6 and 7, which are largely depended upon for maintaining adequate electrical separation between the loops 14 and 15, are sealed and protected from the weather. The nuts 18 are provided with cylindrical outer surfaces so they may fit into the sleeves 16 and 17 and are provided with holes 19 to receive a spanner wrench. The metal sleeves 1 and 2 are provided with annular projections 20 and 21 having radial holes 22 suitably located to receive a spanner wrench in order that the two halves of the device may be easily joined together and separated from each other.

We desire that our invention shall be construed to cover various structural modifications and that only such limitations shall be imposed as are indicated in the appended claims.

We claim as our invention:

1. A strain insulator comprising two duplicate members the adjacent inner ends of which abut against each other and are provided with external screw-threads, and a coupling sleeve into which the said ends are screwed.

2. A strain insulator comprising two duplicate metal tapered tubes the inner adjacent ends of which abut against each other and are provided with external screw-threads, a coupling sleeve into which said ends are screwed, and tapered plugs seated in and insulated from the tubes.

3. A strain insulator comprising two duplicate frusto-conical metal tubes having cylindrical abutting projections provided with external screw-threads, a coupling sleeve into which said parts are screwed, tapered

tubes of insulating material seated in the metal tubes, and tapered plugs seated in the insulating tubes, said plugs having bolt projections extending outwardly therefrom.

- 5 4. A strain insulator comprising a pair of duplicate metal tubes having tapered ends and cylindrical abutting projections provided with external screw-threads, a coupling sleeve into which said parts are screwed.
- 10 tapered tubes of insulating material seated in the metal tubes, tapered plugs seated in the tapered tubes and having stems extend-

ing outwardly therefrom, and molded insulating casings or jackets which seal the insulating tubes.

In testimony whereof, we have hereunto subscribed our names this 20th day of Dec., 1907.

THEODORE VARNEY.
EDWARD ERNEST ROSE.

Witnesses:

WILLIAM COOPER,
BIRNEY HINES.