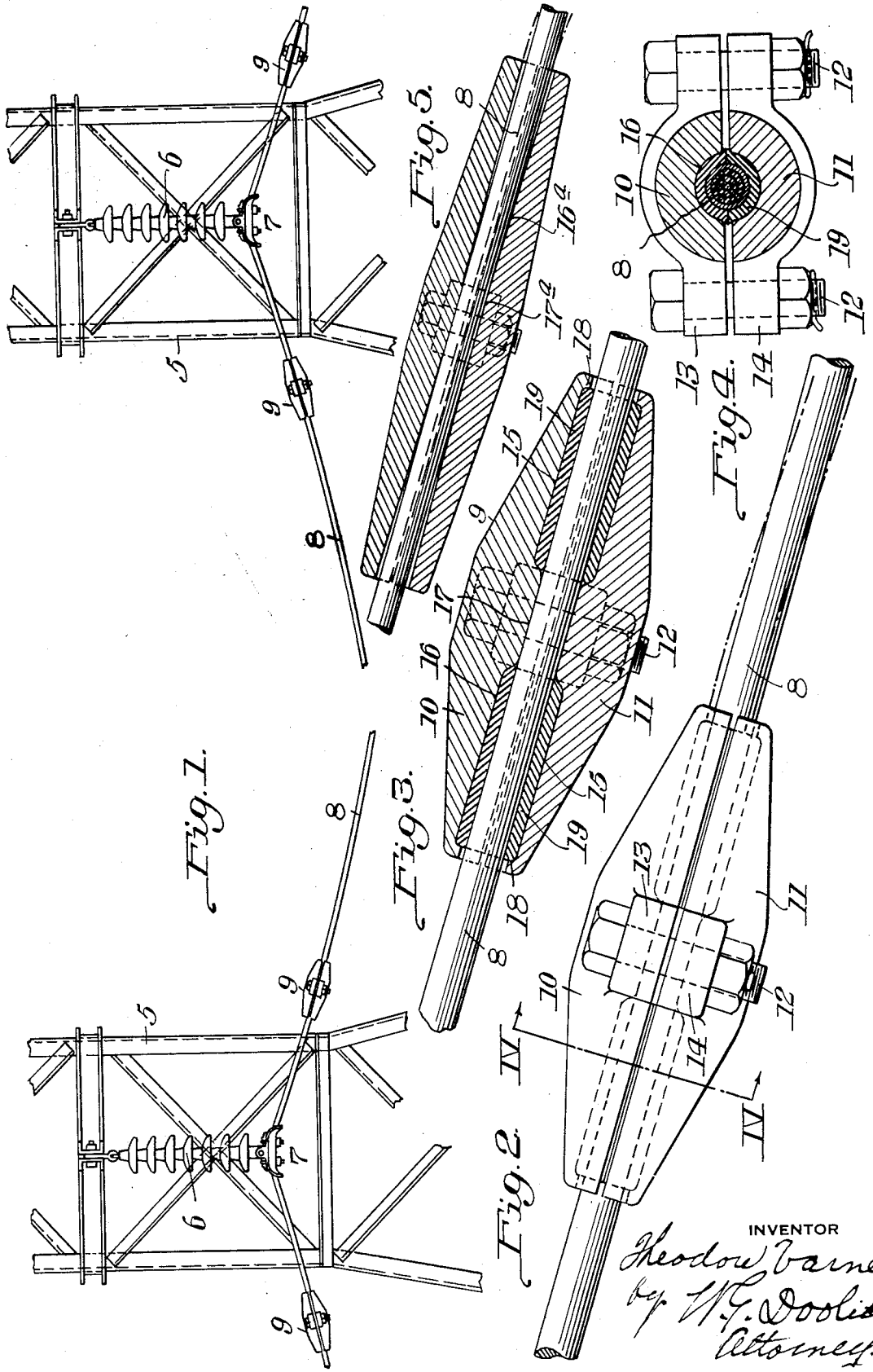
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MEANS FOR PROTECTING AERIAL CABLES

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MEANS FOR PROTECTING AERIAL CABLES.

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This invention relates to new and improved means for protecting aerial cables from the bad effects they are subjected to due to vibrations set up thereon. The present invention is particularly designed for use in connection with transmission line conductors, and contemplates the employment of efficient means for damping out said vibrations before they reach the conductor supporting means, as for example, a conductor supporting clamp device suspended from a string insulator hung from a transmission tower.

The vibrations in the spans of transmission line conductors occur practically entirely in a vertical plane, and are continuous in character when the tension of the conductor wire or cable, the velocity of the wind, and the particular weight of the conductor are all of a certain value. That is to say, under the conditions mentioned, the conductor wire or cable is "tuned" and will persist in continuous resonant vibrations, having nodes and loops throughout the conductor span.

These loops in the main body of the span do no harm because they are balanced against one another, and do not produce any undue stresses in the conductor. However, at the point of support of the span, the vibrating loop sometimes produces destructive effects, and it is necessary to cushion the cable at these points or at points adjacent thereto, so that the vibrations will be absorbed without shock.

The prime object of the present invention is to provide simple and efficient means for damping vibrations of the character stated above, at or adjacent to the point of support of the conductor line.

In the accompanying drawings, which illustrate applications of my invention:

Fig. 1 is a diagrammatic view showing portions of two transmission line towers and spans of cables, showing my invention applied to the conductor at points adjacent to its support;

Fig. 2, an enlarged side elevational view of the conductor protector embodying my invention applied to a portion of the conductor cable;

Fig. 3, a longitudinal sectional view thereof;

Fig. 4, a part elevational view and a part sectional view taken on line IV—IV of Fig. 2; and

Fig. 5, a view similar to Fig. 3, showing a modified form.

Referring to the drawings, 5—5 designate portions of two transmission towers; 6—6 string insulators suspended from the towers and carrying cable clamps 7—7. The conductor wire or cable is designated by the numeral 8.

The protector, designated generally by 9, includes a clamp or sleeve structure of considerable mass, having an elongated longitudinally divided body formed by two members 10 and 11. These members are designed to be secured together by bolts 12 passed through registering openings formed in projecting lugs 13 and 14, the latter being respectively formed on the parts or members 10 and 11.

Each member 10 and 11 is provided with a corresponding longitudinally extending groove 15. These grooves, when the members 10 and 11 are assembled, form a continuous bore or opening 16 throughout the length of the clamp structure. The grooves 15 are of less depth at their longitudinal centers than at other points throughout their lengths, thus providing, when the members are assembled, a central cable gripping portion 17, and bores of larger diameter than the opening through the portion 17, arranged at opposite ends of portion 17. The grooves 15 are also formed in such a manner as to provide annular shoulders 18 near the ends of the clamp.

Those portions of the bore of the clamp extending from the ends of the contracted central or gripping portion 17 to the ends of the clamp are designed to be filled with a suitable cushioning material 19, such as rubber, hemp fibre, or material of a similar nature.

In the form of Fig. 5, I omit the cushioning material and form the bore or opening 16^a with a gradually increasing taper extending outwardly from opposite ends of a contracted cable clamping portion 17^a.

In this modified form of mv invention, it will be seen that the cable gripping portion 17^a and the enlargements to the bore at opposite ends of the said gripping portions are included.

The protector may be readily applied to the conductor wire or cable at the desired points in a cable span, preferably a short distance from the cable support.

It is very important that the protector as a whole should possess considerable mass relative to that of the cable, in order to present a point of reflection to the incoming waves. A protector of this character is shown and described herein and, when employed in the manner illustrated, will function to absorb or suppress the incoming waves on the conductor wire or cable before the waves reach the main point of support of the conductor.

In each form of my invention as shown, I have provided a protector having a centrally disposed gripping portion and cable receiving bores adjacent the opposite ends of the said gripping portion, said bores having an area or a size to permit movement of the cable or conductor wire therein.

The purpose of the enlarged ends of the protector is not to present a rigid point of reflection at the end of the protector (as in that case it would behave in the same manner as the suspension clamp itself, as usually employed), but to afford a certain restricted amount of motion at that point, so that an incoming wave would be damped out by gradually absorbing its energy.

The resilient material is used in an alternative construction to prevent any possibility of wear on the cable, due to occasional bumping of the cable against the protector.

What I claim is:

1. A protector of the character described comprising an elongated body having a continuous bore therethrough and having a cable gripping portion disposed centrally thereof, said bore at opposite ends of the gripping portion being enlarged to permit movement of the cable within the enlarged portions thereof.

2. A protector of the character described comprising an elongated two-part longitudinally divided body having a continuous bore therethrough and having a cable gripping portion disposed centrally thereof, said bore at opposite ends of the gripping portion being enlarged to permit movement of the cable within the enlarged portions thereof, and means for clamping the body parts together.

3. A protector of the character described comprising an elongated body having a continuous bore therethrough and having a cable gripping portion disposed centrally thereof, said bore at opposite ends of the gripping portion being enlarged, and cushioning means for the cable disposed in the said enlarged portions of the bore.

4. A protector of the character described comprising an elongated two-part longitudinally divided body having a continuous bore therethrough and having a cable gripping portion disposed centrally thereof, said bore at opposite ends of the gripping portion being enlarged, cushioning means for the cable disposed in the said enlarged portion, and means for clamping the body parts together.

5. A protector of the character described comprising a clamp having an elongated body adapted to be applied to a conductor wire or cable, said clamp having a continuous bore throughout its length, said bore being contracted for a portion of its length to provide a conduct[illegible] gripping portion and having its remaining portion of greater cross section than the diameter of the conductor to permit movement of the conductor therein.

In testimony whereof I affix my signature.

THEODORE VARNEY.