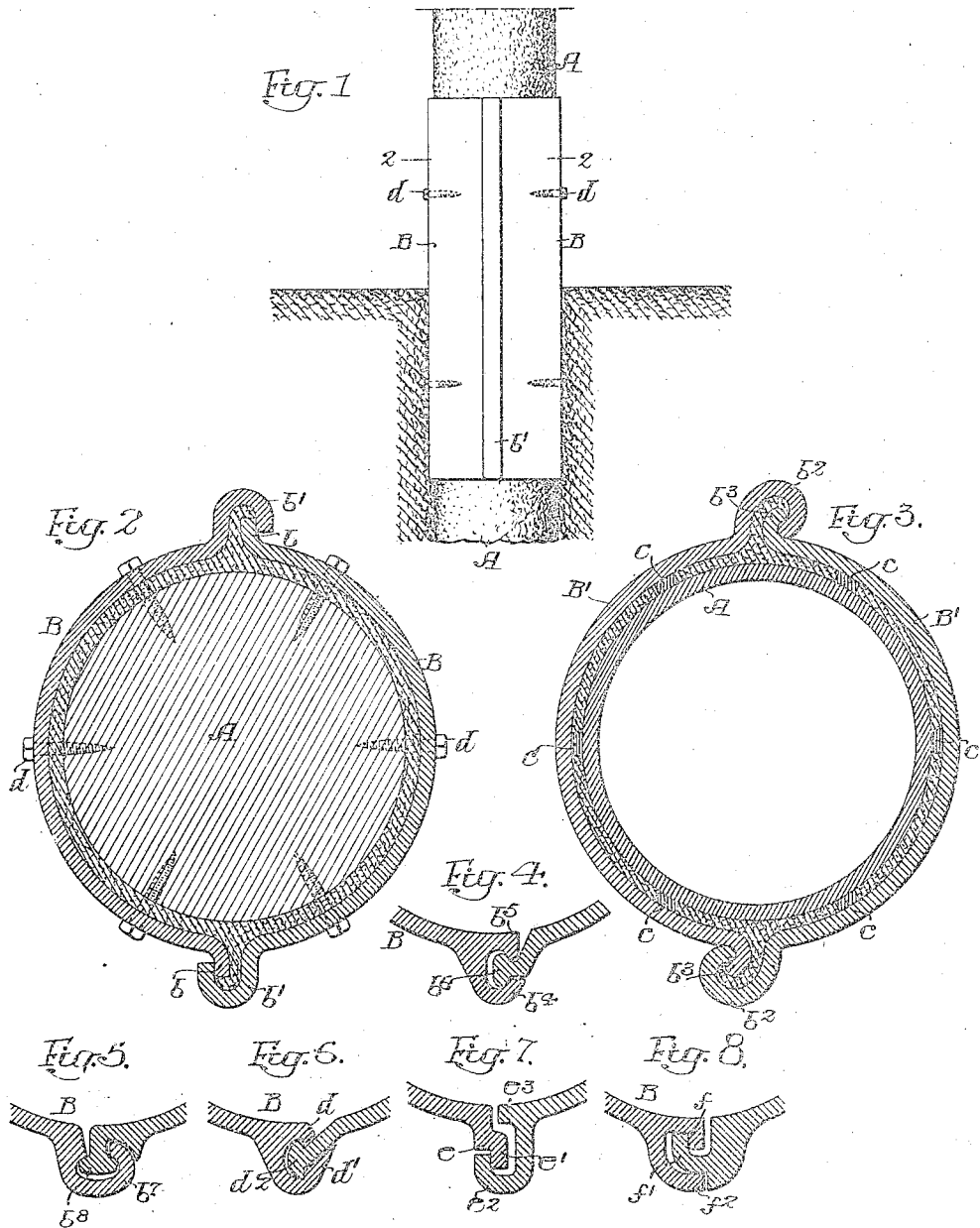


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POLE SLEEVE.  
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942,761.

Patented Dec. 7, 1909.



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# UNITED STATES PATENT OFFICE.

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## POLE-SLEEVE.

942,761.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, CONSTANTINE B. VOYNOW, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Pole-Sleeves, of which the following is a specification.

One object of my invention is to provide a sleeve of novel construction particularly designed for protecting and reinforcing metal or wooden posts at and adjacent to the ground line; it being particularly desired that the sleeve shall be of a construction such as to be quickly and conveniently applied to a pole and permanently held in any desired position thereon.

I also desire to provide a pole sleeve which shall for convenience of application be made in a plurality of parts or sections of segmental form and relatively simple structure, with a view to facilitate their application to a pole to be protected or reinforced; it being also desired to provide such a sleeve in combination with novel means for effectually connecting it to a pole and at the same time forming an air and water tight joint between it and the pole.

These objects and other advantageous ends I secure as hereinafter set forth, reference being had to the accompanying drawings, in which:—

Figure 1, is a vertical section of a wooden pole showing a form of my pole sleeve applied thereto; Fig. 2, is a horizontal section on the line 2—2 of Fig. 1, on an enlarged scale, further illustrating my invention; Fig. 3, is a horizontal section illustrating a slightly modified form of my sleeve applied to a metallic pole; and Figs. 4 to 8 inclusive are fragmentary horizontal sections illustrating the construction of slightly modified forms of my invention.

Referring to Figs. 1 and 2 of the above drawings, A represents a pole which it is desired to protect and reinforce at and for some distance above and below the level at which it enters the ground or other foundation or supporting structure. For this purpose I provide an elongated, substantially cylindrical sleeve made in two similar semi-cylindrical sections B having their longitudinal edges so constructed as to be complementary;—i. e., one longitudinal edge of each of the sections B is provided with an outwardly projecting flange *b* while the other edge has a semi-cylindrical or U-shaped outwardly projecting flange *b'* de-

signed to receive the flange *b*. These flanges are so proportioned that in order to connect the two segmental sleeve sections, it is necessary that they be applied to opposite sides of the pole some distance apart and then one of them be moved longitudinally of the pole toward the other so that the flanges *b* enter and slide in the hollow interior of the flanges *b'* until the two parts of the sleeve assume the positions shown in Fig. 1, directly opposite each other. By any suitable means, such as a series of spacing blocks *c*, shown in Fig. 3, the sleeve sections are properly spaced at a uniform distance from the body of the pole, these blocks being preferably in the shape of wedges inserted at the top and bottom of the sleeve. Suitable material, such as and preferably, a mixture of melted sulfur and sand, is then poured into the spaces between the pole and the sleeve, which it fills.

In the case of repairing or strengthening wooden poles, which become rotted especially at the ground level, the rotten portions are cleaned, the sleeve is put in place over the same, and lag screws or spikes are driven through the top and bottom ends of the sleeve into the pole. The sleeve then forms a connection or reinforcement between the solid portions of the pole and incloses the rotted portions. When the mixture of sand and sulfur in a hot state is poured between the sleeve and the pole, it fills up all the spaces and in cooling, the sleeve shrinks onto the filler and the pole, thus forming a complete and solid unit; the repaired pole being stronger than when it was new. I have found the above noted mixture particularly adapted for filling the spaces between the sleeve and the pole, since especially when the sleeve is made in sections, it enters the spaces between the flanges and co-acts with the metal of the sleeve while cooling to maintain a water tight as well as an air tight connection between all parts of the interior of said sleeve and pole.

In Fig. 3, I have shown a sleeve as applied to a hollow metallic pole A', though in this case the two sections B' of the sleeve have their flanges slightly different from those previously described. This sleeve has the outer flange *b<sup>2</sup>* of each section curled inwardly at the extreme edge, while the inner flange *b<sup>2</sup>* is curled or bent over so as to receive the curled-in edge of the flange *b<sup>2</sup>*.

In Figs. 4 to 8 inclusive I have shown

various modifications of my invention, all of which possess the common characteristic of having a protective sleeve formed in two segmental sections, one longitudinal edge of each being recessed, while the other is so formed as to fit into it. Moreover, the construction is such that in order to couple the two sections, it is necessary that they be placed upon the pole one above the other, after which one of them is moved longitudinally of the pole so that when it comes directly opposite the other section its recessed edge contains the flanged or projecting edge of the second member, whose recessed edge in turn contains the flanged edge of the other member. Thus, in Fig. 4, one edge of each section, in addition to having a turned over, inwardly extending flange  $b^4$  of U-shaped section, has an outwardly turned flange  $b^5$ , while the other edge of each section has an outwardly turned and headed flange  $b^6$  designed to fit into the space between the flanges  $b^4$  and  $b^5$ .

The construction shown in Fig. 5 is very similar to that shown in Fig. 4, except that one edge of each section has the opening into its turned over or flanged end  $b^7$  directed toward the pole, while the outwardly flanged second edge of each section extends practically at right angles to the part thereof to which it is fixed and is headed as indicated at  $b^8$ .

In Fig. 6, one edge of each section is enlarged and made hollow, having both an outwardly and an inwardly extending flange, indicated respectively at  $d$  and  $d'$ , co-acting to form an opening for the reception of the headed flange  $d^2$  which extends outwardly at an angle to the adjacent portion of the section to which it is connected.

One of the edges of each section shown in Fig. 7 is provided with an outwardly extending flange  $e$  having an offset portion  $e'$  designed to enter the recess formed in the adjacent edge of the other section, which is outwardly flanged and turned over as indicated at  $e^2$  and also has an inwardly projecting rib  $e^3$ .

The form of connection shown in Fig. 8, involves an outwardly extending flange  $f$  on one section co-acting with an inwardly turned flange  $f'$  on the other section, the first section in addition having a second flange  $f^2$  bent out and over so as to form a recess for the reception of the inwardly turned flange  $f'$ .

It is obvious that my invention may be applied to poles or other structures to be protected or reinforced at points other than the ground line, if this should be desirable.

I claim:—

1. The combination of a pole with protective means therefor consisting of a sleeve made in a plurality of interlocking segmental

sections, of which one is movable longitudinally of the pole to bring said sections into interlocking engagement.

2. The combination of a pole with protective means therefor consisting of a sleeve made in a plurality of interlocking segmental sections, of which one is movable longitudinally of the pole to bring said sections into interlocking engagement, said sleeve being spaced away from the pole and having filling material run into the space between it and said pole.

3. The combination of a pole, with protective means therefor consisting of a sleeve spaced away from said pole, and filling material consisting of a mixture of sulfur and sand between the sleeve and the pole.

4. The combination with a pole, of protective means therefor consisting of a sleeve made in a plurality of segmental sections having their edges interlocked and of an interior diameter greater than the exterior diameter of the pole, spacing means for holding said sleeve at a uniform distance from the pole, and filling material between the pole and the sleeve.

5. The combination with a pole, of protective means therefor consisting of a sleeve made in a plurality of segmental sections, each section having one of its longitudinal edges flanged outwardly and its other longitudinal edge flanged outwardly and turned over, said edges of the sections interlocking with each other.

6. The combination with a pole, of protective means therefor consisting of a sleeve made in a plurality of sections, each section having one of its longitudinal edges flanged outwardly and its other longitudinal edge flanged outwardly and turned over, the edges of the sections interlocking with each other, said sleeve being spaced away from the pole and having between it and said pole a filling consisting of a mixture of sulfur and sand.

7. The combination with a pole, of a sleeve made in a plurality of segmental sections having their edges interlocked, holding means passing through the sleeve sections into the pole, and a body of filling material placed within the space between the sleeve and the exterior of the pole.

8. The combination of a pole with a protective sleeve therefor, said sleeve consisting of a plurality of segmental sections each having one of its longitudinal edges flanged and turned over outwardly, and its other longitudinal edge flanged outwardly and then turned in, the edges of adjacent sections interlocking with each other.

9. The combination of a pole, with protective means therefor consisting of a sleeve made in a plurality of segmental sections, each section having its edges formed to interlock with the adjacent edges of another

section, with filling material between the sleeve and the pole.

10. The combination with a pole, of protective means therefor consisting of a sleeve 5 made in a plurality of segmental sections spaced away from the pole, each of the sections having interlocking flanges constructed with appreciable spaces between them, with filling material in the space between the pole 10 and the sleeve and extending also between the interlocking portions of the flanges.

11. The combination of a pole, with protective means therefor consisting of a sleeve 15 spaced away from the pole, and filling material consisting of a mixture of a fusible

and an infusible material between the sleeve and the pole.

12. The combination of a pole, with protective means therefor consisting of a sleeve 20 spaced away from said pole, and filling material consisting of a mixture of sulfur and a granular material between the sleeve and the pole.

In testimony whereof, I have signed my name to this specification, in the presence of 25 two subscribing witnesses.

CONSTANTINE B. VOYNOW.

Witnesses:

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