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J. H. MARQUARDT  
POLE STRENGTHENING MEANS

Filed Sept. 26, 1927

Fig. 1.

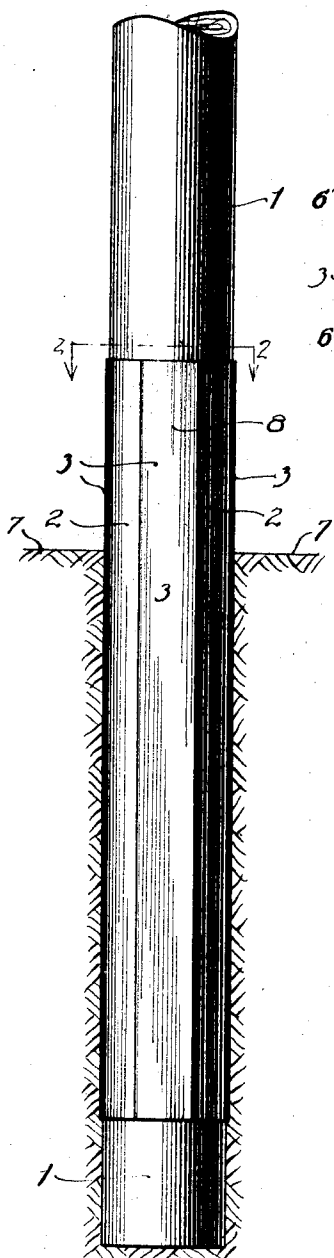


Fig. 2.

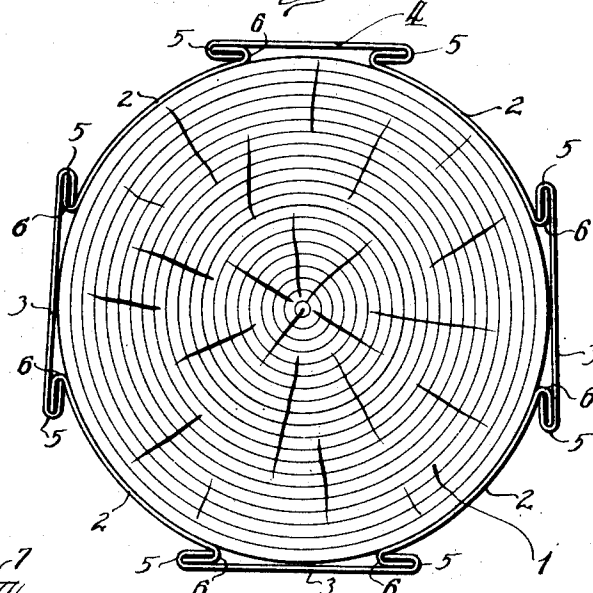


Fig. 3.

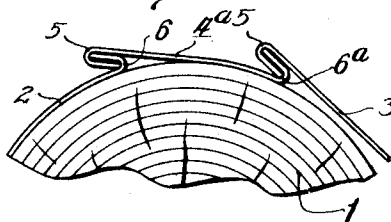
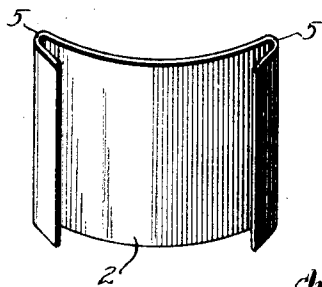


Fig. 4.



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## UNITED STATES PATENT OFFICE.

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## POLE-STRENGTHENING MEANS.

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This invention relates to means to strengthen a telegraph, telephone or yard pole, in the part thereof embedded and immediately adjacent to said embedded part, when said pole is erected.

Among the objects of the invention is to obtain means whereby a pole, already erected, can be strengthened, whatever may be the diameter of the pole, and however much, if at all, said pole may be decayed, by workmen, without the aid of a derrick or other lifting means. An additional object is to so strengthen a pole that in whatever direction a severe strain may be put on the pole, it will be able to withstand said strain.

I attain these and additional objects set forth herein, by means of the construction illustrated and described in the drawing and this specification.

In the drawing referred to Fig. 1 is an elevation of a portion of a pole with a construction embodying my invention applied thereto. Fig. 2 is a cross section of the pole illustrated in Fig. 1, on an enlarged scale, and a top plan view of the construction embodying the invention, said section being taken on line 2—2 of said Fig. 1, and viewed as indicated by arrows. Figure 3 is a cross section similar to Fig. 2, and showing an alternative form of finish member sometimes used with my construction. And Fig. 4 is a perspective of a plate forming a member of a construction embodying the invention.

A reference character applied to designate a given part indicates said part throughout the several figures of the drawing wherever the same appears.

1 represents a pole. 2 represents a sheet metal member forming an element of a construction embodying the invention. 3 represents an additional sheet metal member also forming an element of said construction. 4 represents a sheet metal member termed by me the finish member, forming an element of said construction. 4<sup>a</sup> represents a sheet metal finish member, which is, at times, substituted for member 4, in a construction embodying the invention, under conditions hereinafter recited. 5 and 6, respectively, represent bends adjacent to the edges of members 2, 3 and 4. These bends are made to obtain channels on the same side of said members, respectively. The member 4<sup>a</sup> is provided with bend 5, at one edge, and bend 6<sup>a</sup> at the other longitudinally extending edge.

It will be observed that members 2 are curved, in the body portion thereof to fit approximately close to the pole to which they are intended to be applied when the device is assembled.

By the several bends in members 2 channels are obtained on one side of the body of said plates; and by the bends in members 3 and 4, channels are obtained on the side of said members opposite to the channels on members 2, and said members may thus be interlocked, when the members are assembled on the pole, as is illustrated in Fig. 2. By the bends in member 4<sup>a</sup> a channel is obtained at one edge thereof on one side of the body of the member, and a channel is obtained on the opposite side of said member on the opposite edge.

The several members 2, 3, 4 and 4<sup>a</sup> are made of varying widths, so that selections thereof may be made in applying the device to a given pole.

In applying the device to a pole which is already erected, a sufficient number of said members 2 and 3, of selected width, are assembled, usually not less than seven, with the channels on the members interlocked, and wrapped around the pole, as is illustrated in Fig. 2, and the channels of the finish member, (4 or 4<sup>a</sup>), as required, are interlocked with the channels of the first and last member, wrapped around the pole as described, and said finish member is then driven, or otherwise forced, longitudinally into place until the upper and lower edges thereof are in the same planes as the upper and lower edges of the remaining members.

The one of the finish members 4, 4<sup>a</sup>, which is selected depends on the number of members 2 and 3 which are used. For instance, if the first of said members is member 2 and the last of said members is member 3, as is illustrated in Fig. 3, the finish member 4<sup>a</sup> must be used; while if the first of said members is member 2 and the last of said members is also member 2, the finish member 4 must be used. As this device is often applied in the field, to poles already erected, and as said poles vary largely in diameter, in order to obtain the fit of the device to the pole which is desired, it is sometimes necessary to have an even number of said plate members, 2 and 3, and sometimes an odd number of them, or an odd and an even number of them, notwithstanding a variation in the width of said members; and for

that reason I supply the members 4 and 4<sup>a</sup>, to meet any and all demands and obtain a substantially close fit in all cases.

It will be observed, that at each joining of the members I obtain four thickness of the metal forming said members; by the bends and interlocking illustrated and described, and by using a comparatively large number of the members, say not less than eight, with members 2 curved in the body part thereof as illustrated, I obtain a sufficient number of said interlockings, and a sufficiently close fit of the device to the pole, so that in whatever direction the strain on the pole may occur, and however severe the strain may be, the pole is so strengthened by this construction, that said strain will be withstood, without injury to the pole or to the construction embodying the invention.

Also it will be observed, by the large number of members used I am able to make the members 2, 3, 4 and 4<sup>a</sup>, of sheet metal of considerable thickness, say not less than 10 gauge, and the weight of each member will not be so great as to preclude the required handling thereof by workmen without the aid of special tools or lifting devices.

It is evident the several members may be made of sheet steel, wilder metal, duraloy or monel, as preferred, and depending on the location of the pole to which the construction is applied.

I claim:

1. Pole strengthening means consisting of a plurality of members, said members varying in width and each of said members provided with bends adjacent to the sides thereof, arranged to obtain channels on said sides, and the body part of each of said members curved to substantially fit said pole, and additional plurality of members, said additional members varying in width, and each of said members provided with bends adjacent to the sides thereof, arranged to obtain channels on said sides adapted to interlock with the channels on said first named members, in combination with a finish member also provided with bends adjacent to the sides thereof arranged to obtain channels

adapted to interlock with a channel of the first and last of said plurality of members when said plurality of members are wrapped around a pole.

2. A pole reinforcement sleeve comprising; a series of circumferentially separated, elongated metallic members, curved in cross section and each relatively narrow compared to the circumference of the pole to be encased, each of said members being provided with a locking channel extending continuously along each edge; a second series of circumferentially separated, elongated members, and each relatively narrow compared to the circumference of the pole, and each also provided along its edges with locking channels complementary to those of the first series, the members of the two series alternating circumferentially of the pole; and a finish member having locking channels along its edges co-operable with the two locking channels at the ends of the sleeve composed of the said members of said two series.

3. A reinforcing sleeve for a pole or the like, comprising; a plurality of elongated metallic members, each relatively narrow and of appreciably less width than the diameter of the pole to be encased, adjacent edges of said members having co-operable, integrally formed continuously extending longitudinal interlocking formations, said plurality of members being of such number and extent as to form a band encircling the pole except for a relatively narrow strip and thereby leaving the two ends of the band spaced apart, each of said ends having a lock forming edge; and a finish member corresponding in width to the distance between said spaced ends, said finish member having its edges formed with continuous lock formations complementary to and co-operable with said respective lock-formed ends of the band, whereby a plurality of the interlocking joints necessarily occurs within any 180 degree arc of the surface of the pole, said interlocking joints thereby bracing the pole against bending and breaking regardless of the direction of strain on the pole.

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