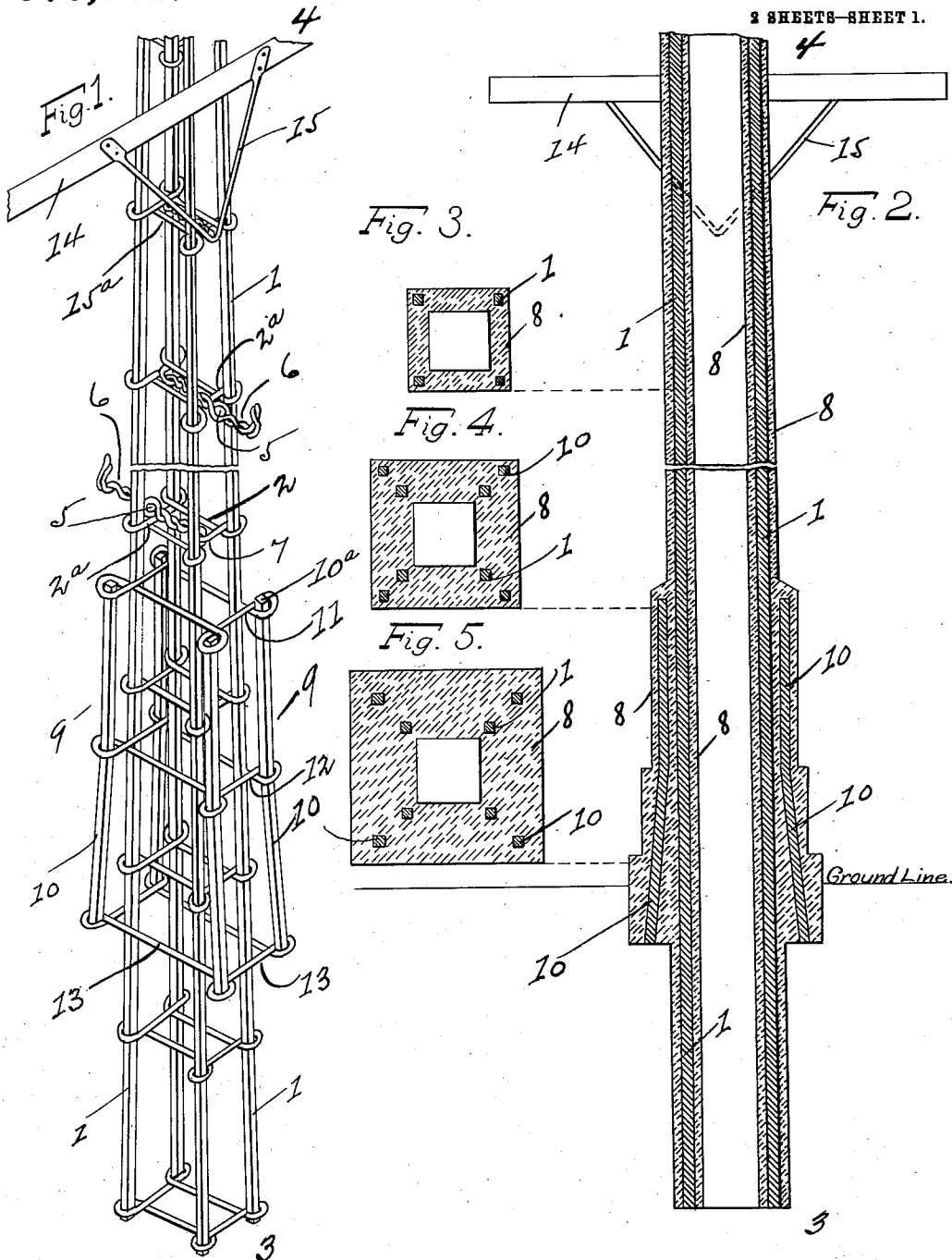


POLE.

Patented Dec. 20, 1910.

2 SHEETS—SHEET 1.

978,932.



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POLE.

978,932.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JENS PETER PETERSEN, a subject of the King of Denmark, residing at Cape Girardeau, in the county of Cape Girardeau, State of Missouri, have invented certain new and useful Improvements in Poles, of which the following is a sufficiently full, clear, and exact description, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to improvements in those poles which are particularly adaptable in the suspension of transmission cables or wires.

The objects of my invention are to provide a pole for such usage constructed of metal incased in cement or concrete, which will weigh uniformly only 1,000 pounds to the 30 feet of its usual height, or, proportionately, $33\frac{1}{3}$ pounds per linear foot; which from its comparatively light weight and because of special contrivances hereinafter pointed out, can be erected without the aid of derricks or other cumbersome mechanical agencies and with as much ease as are the customary wooden poles; and which presents foot-rests and cross-arm standards whose stability is fixed quite independently of the incasing cement or concrete.

Further desiderata will hereinafter be mentioned.

Figure 1 depicts the metal frame which is subsequently incased in cement; Fig. 2 a cross-section through the longitudinal extent of my pole, illustrating the relation of the concrete sheath to the longitudinal rods of the principal frame and the prolongations of said binders being eliminated; Figs. 3, 4, and 5 are cross-sections of the completed pole taken at the point opposite which they are disposed relative to Fig. 2; Fig. 6 depicts, on slightly enlarged scale, the manner of forming the foot-rests with which, in certain instances, are provided a means for erecting the pole; Fig. 7 illustrates, in enlarged detail, the construction of the cross-arm standards; and Fig. 8 a slight modification relative to the formation of the foot-rests.

Like numerals refer to like parts throughout the several views, the main or principal frame comprising four rectangular stay-rods 1 which are corrugated and extend the entire length of the pole. Said stay-rods are maintained in their spaced relation, as

both diagrammatically and in detail illustrated, by a plurality of what shall hereinafter be referred to as metal bands or binders 2 which are disposed at regular intervals and firmly engage each of said stay-rods as the latter gradually converge from bottom 3 to top 4 of the pole.

Referring to Figs. 1 and 6 a peculiar feature of my device will be observed in the fact that integral with bands 2 are formed, simultaneously with their engagement with rods 1, erecting means 5 and foot-rests 6 by entwining the opposite extremities of bands 2 as the same meet at point 7 and prolonging them, with a loop, for a suitable distance beyond the vertical plane of rods 1. Said foot-rests are not only supported by the incasing cement sheath 8, but by resting squarely upon leg 2^a of bands 2, so that should the cement warp, crack, or chip away about the point of emergence of said foot-rests therethrough, they would still be held firmly supported in the desired horizontal position by legs 2^a. Reference being had to Fig. 8, it will be understood that the foot-rest prolongation of bands 2 may be coiled about leg 2^a rather than rest thereupon. In other constructions of concrete and steel poles the foot-rests depend entirely for their rigidity and horizontal maintenance upon the concrete in which they are simply embedded, and it is well known that frost or rapid and extreme changes of temperature attacking the slight annular apertures caused by the shrinkage of the plastic material about the passage of the shank of the foot-rests therethrough, it follows that many of the latter members are soon dislodged from their original position and become either useless or dangerous. In contradistinction, my foot-rests depend least of all upon the wall of concrete, and their support is primarily dependent upon the engagement of bands 2 with rods 1. Said rods being corrugated, as aforesaid, and said bands being seated tightly in these corrugations (Fig. 6) slippage of the foot-rests is rendered practically impossible. Thus at once I properly space and securely bind rods 1, and provide an erecting means and foot-rests integral with the binder, the latter being locked against movement despite future breakage of the cement.

Extending from a point approximately $3\frac{1}{2}$ feet below the ground line to a point approximately 5 feet thereabove, is a separate

and distinct, and separately constructed, jacket 9, comprising brace-rods 10 likewise corrugated and which may be round or rectangular. Between the situation of its binders 11 and 12 said rods of said jacket lie parallel to stay-rods 1, but below the latter binder they are sprung or molded sharply outward and continue to binder 13 at an oblique angle to said stay-rods. Preferably jacket 9 is not permanently engaged to rods 1 in order that it may be manufactured separately from the major metal frame, the process of construction simplified and the cost of the same reduced.

15 The cement or concrete sheath is applied to a depth sufficient to completely surround and cover stay-rods 1 throughout the greater extent of the pole, but at the point coincident with the extremity 10^a of brace-rods 10 it juts sharply outward and its thickness thereafter doubled until opposite jacket-binder or band 12 when it is tripled, the thickness sharply decreasing to that first specified after the clothing of jacket-binder 13.

Cross-arms 14 are held by standards 15 which are prolongations of the top series of binders 15^a, the latter members having, therefore, a double function like binders 2 and eliminating those obvious defects entailed where arm-holding devices are simply embedded in the cement and which have hereinbefore been mentioned. Regarding my provision for cross-arm standards it will be appreciated that the great and prolonged strain imposed upon the arms during a wind storm, or by reason of the weight of snow and ice, is only indirectly imparted to the cement walls of the pole, and the metal of said standards being suitably resilient the same are not liable to snap from suddenly imposed stress which they directly distribute to the comparatively heavy stay-rods 1.

I deem it proper to state that I am aware of prior patents comprising a metal frame spaced apart with binders, and incased in cement or concrete, but I am not aware of the use of corrugated metal serving to better retain the cement as it dries from its plastic condition and also serving to seat said binders, nor am I aware of any antici-

pation of certain other peculiar and desirable features hereinbefore described and now particularly covered in the following claims.

What I claim as new and desire to secure by Letters-Patent, is:—

1. A metal core for posts or poles, comprising a principal frame, a secondary frame surrounding a section of said principal frame, a series of binders spacing the members of said principal frame, and a second and separate series of binders spacing the members of said secondary frame, certain of said binders of said principal frame prolonged beyond the vertical plane thereof, the portion of said secondary frame adjacent the ground line being flared outwardly while its remaining portion is disposed substantially parallel said members of said principal frame, substantially as and for the purposes described.

2. A metal core for posts or poles, comprising a principal frame of corrugated rods, a secondary frame surrounding a section of said principal frame, a series of binders spacing said rods and seated in the corrugations thereof, and a second and separate series of binders spacing the members of said secondary frame, certain of said binders of said principal frame prolonged beyond the vertical plane thereof, the portion of said secondary frame adjacent the ground line being flared outwardly while its remaining portion is disposed substantially parallel said rods, substantially as and for the purposes described.

3. In a pole or post construction, a combination binder and foot-rest consisting of a length of suitable bar metal whose center portion is engaged with and spaces a plurality of rods and whose free ends are brought together, entwined, and directed between said rods and prolonged, with a loop, beyond the vertical plane thereof, a section of said binder spacing said rods supporting said prolongation, substantially as and for the purposes described.

JENS PETER PETERSEN.

Witnesses:

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