June 5, 1928.

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R. M. CLARK

METAL POLE CONSTRUCTION

Filed March 2, 1925

Fig. 1.

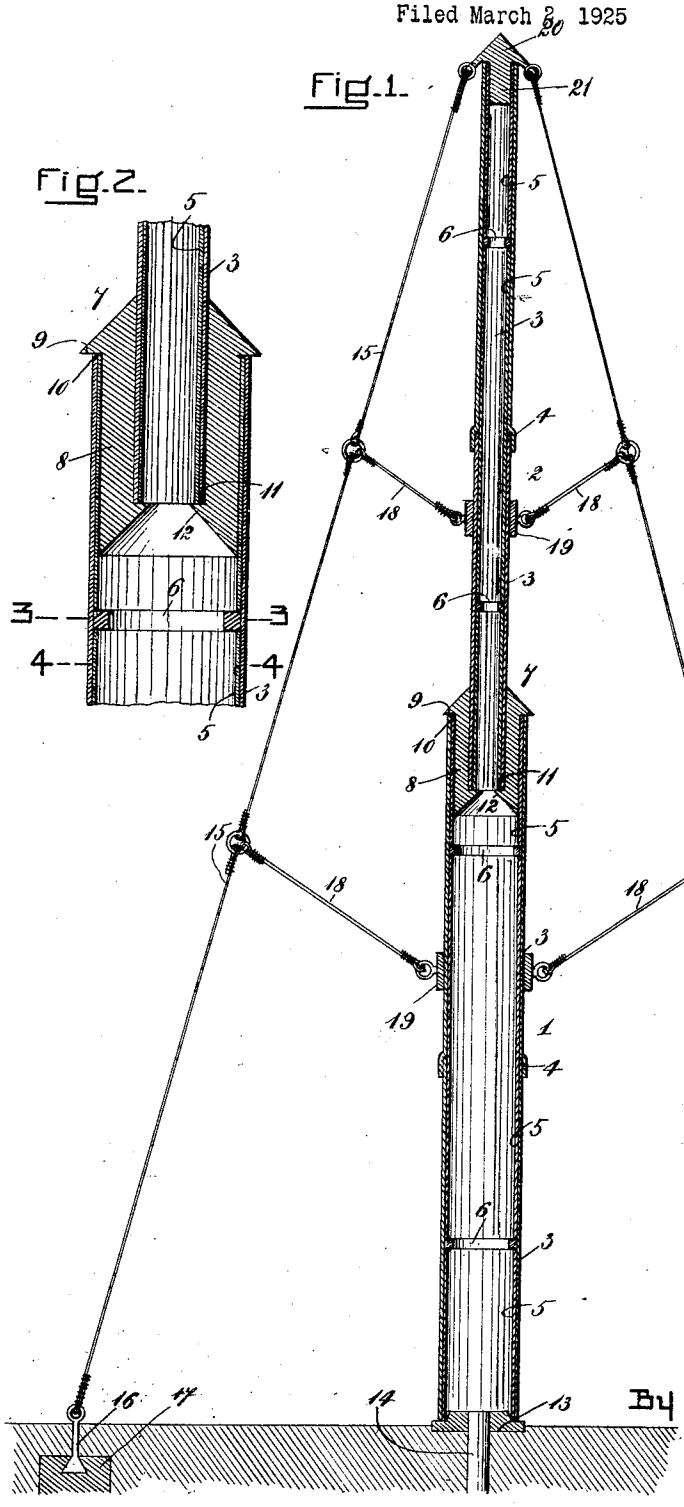


Fig. 2.

Fig. 3.

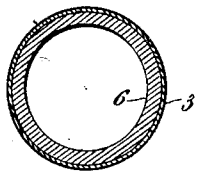
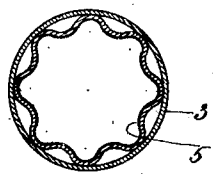


Fig. 4.



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METAL-POLE CONSTRUCTION.

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The invention relates to a pole especially designed to meet the need for a pole for radio antenna or other uses such as a flag staff.

The object of the invention is to provide a long light pole or mast of exceptional strength; a pole which may be used in temporary locations, for receiving or broadcasting or for other purposes; a pole which because of its design and its light weight may readily and quickly be assembled and raised into position or lowered and uncoupled for transportation; a pole or mast which may be used where heavy and expensive masts are out of the question.

The construction of the pole can best be seen and understood by reference to the drawings in which—

Figure 1 shows the pole and attached parts in elevation, the pole itself being shown in vertical cross section.

Fig. 2 is an enlarged detail of a portion of the pole shown in Fig. 1.

Fig. 3 is a section on the line 3—3 of Fig. 2; and

Fig. 4 is a section on the line 4—4 of Fig. 2.

Referring to the drawings:—

The pole comprises parts 1 and 2, respectively, of which the part 1 is the lower part of the pole and 2 the upper part, the upper part being of less diameter than the lower part and in extension of it.

Each of the parts of the pole is made up of assembled pipe sections. 3 represents the outer pipe sections cylindrical in form and connected to one another telescopically by overlapping joints 4. 5 are the inner pipe sections which are pressed in to fit snugly within the outer sections. The inner pipe sections are so arranged that a considerable length of inner pipe section will overlap the joint between adjacent outer sections, while lesser lengths of inner pipe sections will be employed to complete the reinforcement of the outer sections, washers 6 being interposed between the inner pipe sections of the respective parts of the pole.

The size and arrangement of all the pipe sections may be varied. The particular arrangement shown is one in which in practice the outer pipe sections 3 are each ten feet in length. The inner pipe sections 5, which lap by the joint between adjacent outer sections, are also ten feet in length, while the remaining inner pipe sections are substantially five feet in length.

All of the pipe sections may be made of relatively light weight metal similar to that extensively used in rain conductors and such metal is preferably employed. The inner pipe sections are pressed forcibly within the outer pipe sections, the corrugations in the inner pipe sections permitting these sections to yield slightly as they are pressed or forced into place. Great strength is thus obtained even though relatively light metal is employed.

The washers 6 between the inner pipe sections prevent these sections as well as the outer sections from collapsing or pushing together inasmuch as the washers impart to the inner pole sections the effect of a continuous pipe and prevent the sections pushing together or telescoping by the down thrust brought to bear upon them by the pull of the guy wires which support the pole as explained below.

The respective parts of the pole 1 and 2 are joined together and the part 2 mounted upon the part 1 by means of an interposed butt 7. This butt, preferably made of cast metal, has a hollow body 8 which extends for an appreciable distance down into the top of the lower part 1 of the pole, the body fitting therein. 9 is a flange extending laterally from the butt at a point just above the top end 10 of the part 1 of the pole and against which flange the end 10 has bearing. The bottom of the upper part 2 of the pole extends downwardly to fit within the hollow of the butt and the bottom end 11 of this part bears against a flange 12 extending inwardly from the butt. The butt thus provided not only acts as a step for connecting different parts of the pole of different diameters, but effectually prevents any telescoping of these parts.

A pole of this kind consisting as it does of light metal cannot well be embedded in the earth or concrete without soon rusting, and accordingly it should be held in an upright position by some suitable extraneous means. To this end the pole is preferably mounted upon a base plate 13 fixed in the earth by a pin 14. The pole is held in an upright position by means of guy wires 15 connected at their bottom ends to anchor plates 16 suitably embedded in the earth or, as shown, in blocks 17 so embedded. Preferably con-

necting with the guy wires are lashings 18 fastened to collars 19 arranged on the pole.

At their top ends the guy wires are secured to a cap 20 mounted on the top of the pole, overlapping the adjacent pipe sections and forming a protective casing therefor. The cap is held in place by a shank 21 fitting downwardly within the adjacent pipe sections.

Where the pole is used as a flag staff any other suitable means may be provided for its support as is customary in the support of flag staffs.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. A metal pole of the character specified having a body built up of combined cylindrical and corrugated types of pipe each of relatively thin metal, one type of pipe jacketing and reinforcing the other and the corrugated type of pipe distorted to engage the cylindrical type of pipe under tension throughout its length.

2. A metal pole of the character specified having a body built up of combined cylindrical and corrugated types of pipe each of relatively thin metal, the corrugated type of pipe fitting within the cylindrical type of pipe and distorted to bear with tension throughout its length against the cylindrical type of pipe on combining the respective types of pipe.

3. A metal pole of the character specified having a sectional body, the several sections being composed of cylindrical and corrugated types of pipe each of relatively thin metal, one type of pipe jacketing and reinforcing the other, the corrugated type of pipe being distorted to have bearing with tension against the cylindrical type of pipe, and which sections are arranged in lapped relation to one another.

4. A metal pole of the character specified having a plurality of outer pipe sections, a plurality of inner pipe sections fitting snugly within the outer sections and arranged to lap by the joints between the outer sections, and washers inside the outer sections and interposed between the inner sections.

5. A metal pole of the character specified having a plurality of outer cylindrical pipe sections, a plurality of inner corrugated pipe sections fitting snugly within the outer sections and arranged to lap by the points between the outer sections, and washers inside the outer sections and interposed between the inner sections.

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