

Dec. 1, 1931.

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1,834,535

TUBULAR POLE

Filed July 5, 1929

2 Sheets-Sheet 1

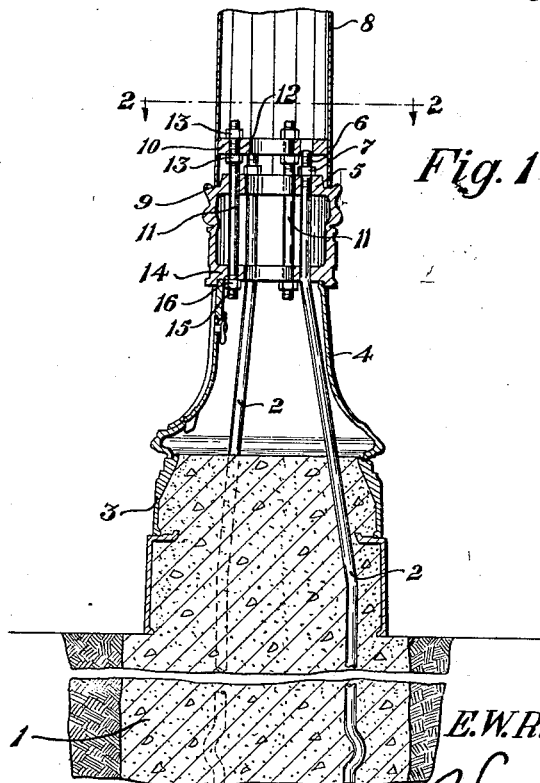
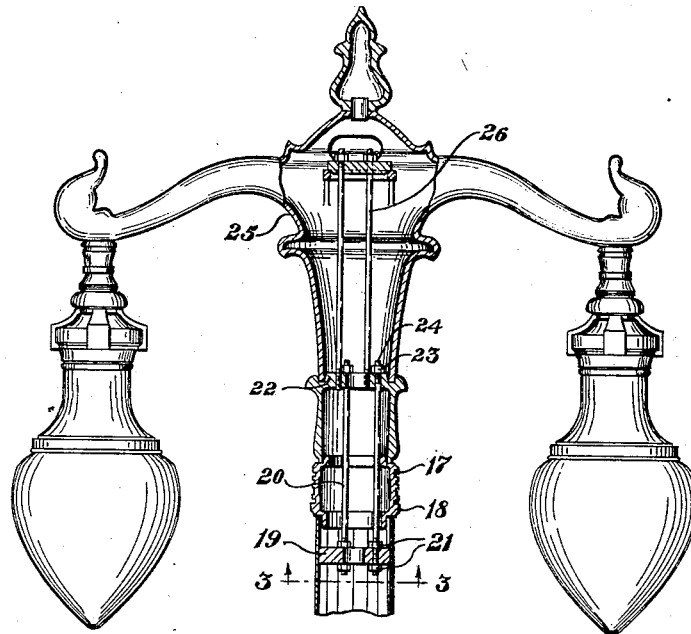


Fig. 1

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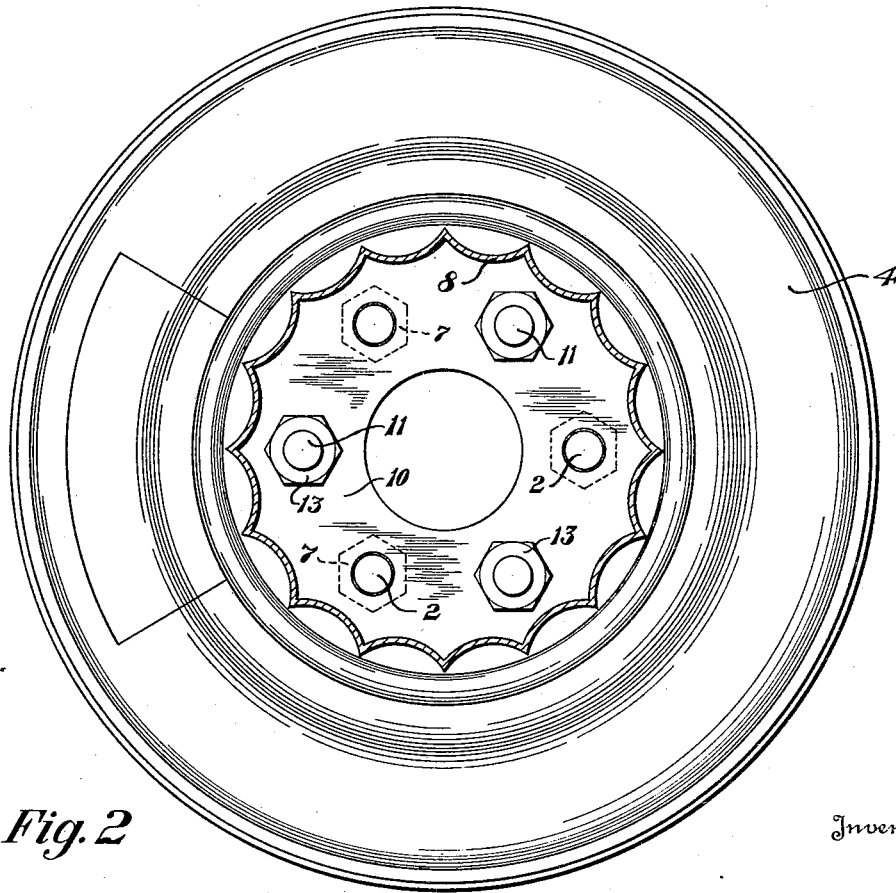
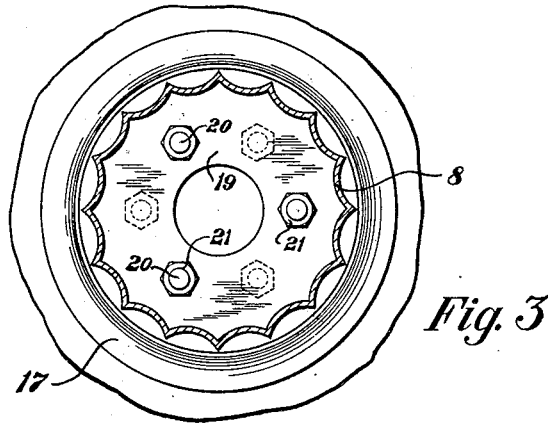


Fig. 2

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UNITED STATES PATENT OFFICE

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TUBULAR POLE

Application filed July 5, 1928. Serial No. 290,367.

The invention relates to tubular poles comprising a sheet metal shaft mounted upon a base and supporting a capital or the like. Such poles may be used for various purposes and the invention is illustrated as applied to lighting standards and the like.

Such poles are commonly erected or installed upon a concrete foundation and it has been common practice to provide anchor bolts imbedded in the concrete and extended through the base, being connected to the upper portion thereof.

For the purpose of assembling the shaft and capital upon the base, tie rods have been commonly used connected at their lower ends to the base and at their upper ends to the capital, clamping the tubular shaft between the base and capital.

Such tubular shafts are ordinarily tapered toward the top and this necessitates the use of tie rods of small diameter in order to accommodate the tie rods in the upper portion of the shaft together with the usual wires or cables which are placed therein.

It has thus been found that these tie rods of considerable length and small diameter stretch or elongate due to wind pressure and the like, causing more or less deflection of the shaft.

The object of the present improvement is to provide a pole comprising a tubular shaft connected at its lower end to a base as by short tie bolts located through a reinforcing flange within the lower end portion of the shaft; and a capital connected to the upper end of the shaft as by short tie bolts located through a reinforcing flange within the upper end of the shaft.

The improved construction overcomes the deflection of the shaft common in the ordinary type of poles above referred to because the tie bolts are considerably shorter than the usual tie rods and thus the elongation or stretch in these tie bolts will be inappreciable.

The tie bolts connecting the lower end of the shaft to the base may be of larger diameter than is required for the tie bolts in the upper end of the shaft, thus strengthening the structure at the point where it is sub-

ject to the greatest strain and lightening the weight at the point where there is very little strain.

The reinforcing flanges provided in the upper and lower ends of the shaft for connection to the tie bolts reinforce the shaft at the end portions where it is naturally weak, giving the greatest resistance to compression strains as well as to impact.

An embodiment of the invention is illustrated in the accompanying drawings, in which

Figure 1 is a vertical sectional view through the improved pole;

Fig. 2, an enlarged transverse section on the line 2—2, Fig. 1; and

Fig. 3, a similar view on the line 3—3, Fig. 1.

Similar numerals refer to similar parts throughout the drawings.

The concrete foundation is indicated at 1, provided with the usual anchor bolts 2 imbedded therein and extended up above the upper surface thereof. If desired, this concrete foundation may extend up above the ground level and within the sub-base 3 formed of one or more sections of cast iron or the like.

The base 4 which may be formed in one or more pieces is mounted upon the foundation or sub-base and provided in its upper portion with an internal flange 5 through which the upper screw threaded ends 6 of the anchor bolts are located, nuts 7 being placed thereon for rigidly securing the base in position.

The tubular shaft 8 may be a tapered fluted shaft as illustrated, the lower end of which is adapted to be received within the annular seat 9 at the top of the base. A reinforcing flange 10 may be welded or otherwise secured at or near the lower end of the shaft.

Tie bolts 11 may be located through suitable apertures 12 in said flange and secured therein as by means of nuts 13 located upon each side of the flange. These tie bolts extend down through an internal flange 14 formed in the upper portion of the base and are provided with the threaded lower extremities 15 upon which the nuts 16 may be placed for drawing the shaft tightly down upon the annular seat 9 of the base.

The capital 17 may be made of one or more sections as desired and is provided with the shoulder 18 adapted to seat upon the upper reduced end of the shaft.

5 An internal annular flange 19, similar to the flange 10, is welded or otherwise secured at or near the upper portion of the shaft and tie bolts 20 are secured, at their lower ends, to this flange as by the nuts 21.

10 These tie bolts extend up through a flange 22 in the capital, nuts 23 being mounted upon the threaded extremities 24 thereof for drawing the capital tightly down upon the shaft.

Any suitable device may be mounted upon the capital such as the lighting fixture shown generally at 25 which may be connected thereto as by the bolts 26.

From the above it will be seen that with this construction the tie bolts being of considerably less length than the usual tie rods, the elongation or stretch thereof will be less, resulting in considerably less deflection.

It will also be seen that bolts of larger diameter than the usual tie rods can be used for attaching the lower portion of the shaft to the base.

This results in a saving of material as bolts of smaller diameter may be used for connecting the capital to the upper end of the shaft where there is very little strain while the larger bolts are provided at the point where there is greater strain.

This results in less weight and a reduction in the cost of the structure.

It will also be seen that the flanges 10 and 19 act as reinforcements to stiffen the shaft at its ends where it is naturally weak, thus giving greater resistance to compression strains and impact.

I claim:

1. A pole comprising a base, a tubular shaft mounted on the base, a capital mounted on the shaft, reinforcing flanges on the end portions of the tubular shaft and extending inward therefrom, an annular seat on the base, an annular seat on the capital, connecting means between the upper portion of the base and the lower flange of the shaft for drawing the lower end of the shaft tightly down upon the base annular seat, and connecting means between the capital and upper flange of the shaft for drawing the capital annular seat tightly down on the upper end of the shaft.

2. A pole comprising a base, a tubular shaft mounted on the base, a capital mounted on the shaft, reinforcing flanges on the end portions of the tubular shaft and extending inward therefrom, an annular seat on the base, an annular seat on the capital, tie bolts between the upper portion of the base and lower flange of the shaft for drawing the lower end of the shaft tightly down upon the base annular seat, and tie bolts between the capital and upper flange of the shaft for drawing the

capital annular seat tightly down on the upper end of the shaft.

3. A pole comprising a base, a tubular shaft mounted on the base, a capital mounted on the shaft, a reinforcing flange on the lower end portion of the tubular shaft, an annular seat on the base, and tie bolts between the upper portion of the base and the flange upon the shaft for drawing the lower end of the shaft tightly down upon the base annular seat.

In testimony that I claim the above, I have hereunto subscribed my name.

EDMUND W. RIEMENSCHNEIDER.

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