Sept. 20, 1932. J. F. NE PAGE 1,878,799

METAL LAMP POST

Filed Aug. 20, 1928

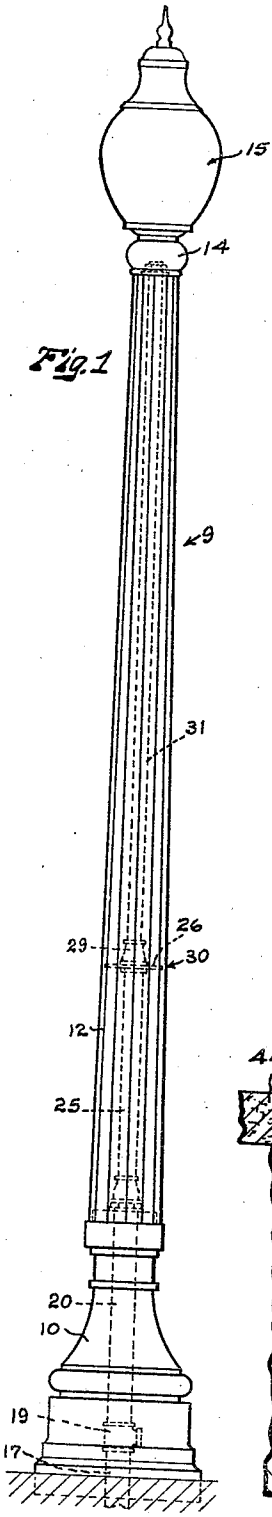


Fig. 1

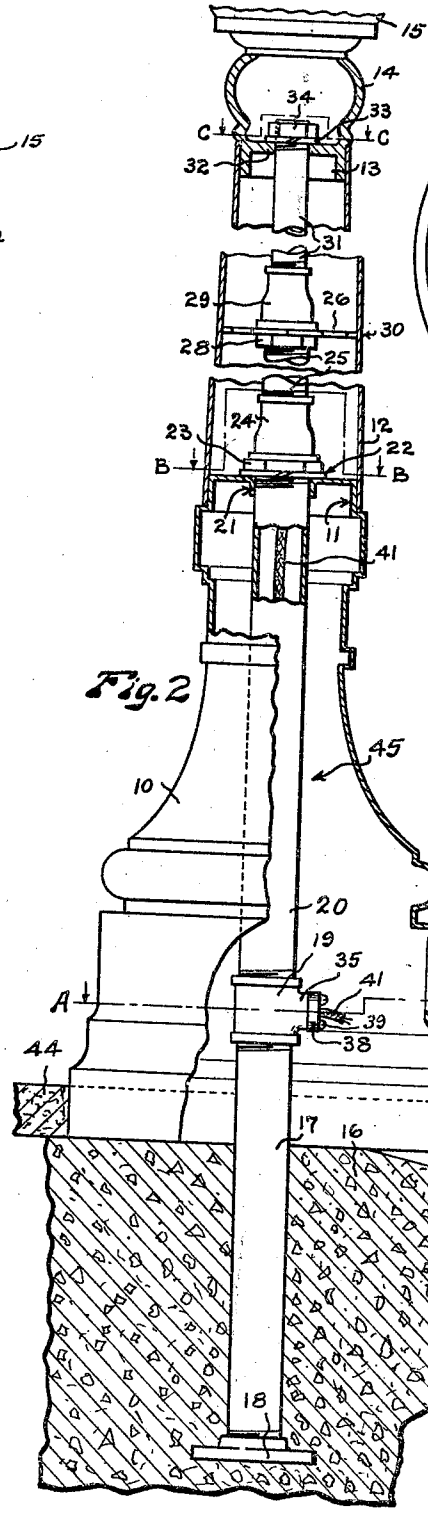


Fig. 2

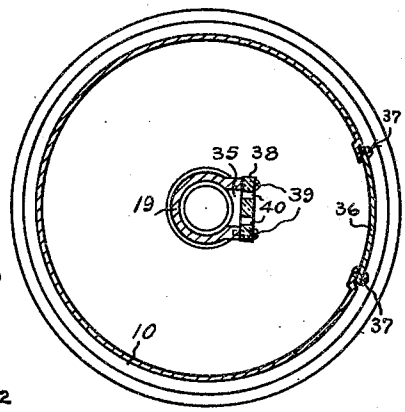


Fig. 3

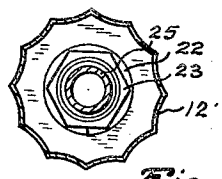


Fig. 4

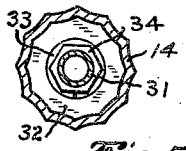


Fig. 5

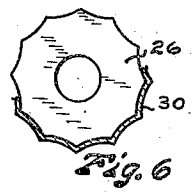


Fig. 6

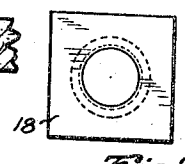


Fig. 7

INVENTOR
BY Justus F. Ne Page
Fred C. Matheny
ATTORNEY

Patented Sept. 20, 1932 1,878,799

UNITED STATES PATENT OFFICE

JUSTUS F. NE PAGE, OF SEATTLE, WASHINGTON, ASSIGNOR TO NE PAGE McKENNY CO., OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON

METAL LAMP POST

Application filed August 20, 1928. Serial No. 300,753.

My invention relates to improvements in metal poles and posts in general, and particularly to metal posts used as ornamental street lighting standards where it is desirable to make the posts in several sections which may be readily assembled on the job after the concrete foundation has been poured and set.

It has been the practice in the past to use numerous bolts anchored in, and projecting above, the concrete foundation to serve as means for fastening the base of the post to the foundation. These foundation bolts must be carefully located, by means of forms or templates, and accurately trued with the work in order to assure the correct positioning of the post after the concrete has set.

In some instances the post is erected on the concrete foundation as a single unit; in others it is erected complete except for the brackets used to support the light units; and in still other instances the post is delivered to the point of erection in sections where the several parts are assembled during the process of erection. The third method is obviously advantageous to the manufacturer and often to the contractor as well, especially where the post is of considerable length.

Various methods have been employed to fasten together the principal parts of a sectionalized post as it is erected, but heretofore the methods used have been more or less complicated, and the work exacting and tedious. When such posts are finally erected they lack in rigidity and ability to resist impact from vehicular collisions largely because of the fastening methods employed.

The chief object of my invention is to provide improved means of removably anchoring the base members of sectionalized lamp posts to the concrete foundations used to support them.

Another object is to provide an improved means of securing the shaft and capital, or bracket, sections of sectionalized lamp posts to the firmly anchored base members.

A further object is to provide stiffening means coacting with the fastening elements of sectionalized lamp posts, whereby the shafts of said posts are strengthened against failure at their critical sections.

An additional object of the invention is to provide means for using these improved tubular fastening elements of sectionalized lamp posts as conduits for the electric conductors required to supply current to the electric lamps.

Other objects of the invention will be apparent from the following detailed description of a preferred form of the invention which is clearly illustrated in the accompanying drawing, in which—

Figure 1 is an elevation of a lamp post embodying the invention.

Fig. 2 is a sectional elevation of the device drawn to a larger scale.

Figs. 3, 4 and 5 are sectional views taken at A—A, B—B, and C—C respectively.

Fig. 6 is a detached plan view of the column-section stiffening plate.

Fig. 7 is a bottom view of the anchor flange.

Like reference numerals are used to indicate like parts throughout the drawing, in which 9 is an ornamental lamp post having a base section 10 which is preferably a metal casting.

The upper end projection 11 of base casting 10 is so shaped as to fit snugly into the interior space section of the bottom of tubular metal shaft 12, the upper end of which fits over a similar projection 13 at the bottom of top casting 14. This in turn supports the glass lamp-canopy 15 in the usual way.

In erecting a lamp post embodying the invention, an excavation is first made where the post is to set and a concrete foundation 16 is then poured in the customary manner except that a suitable length of threaded pipe 17 having an anchoring flange 18 screwed or otherwise secured to its lower end, is imbedded in the concrete with its center line coinciding with the center line the lamp post is to have when erected, and with its upper threaded end 19 projecting above the top of the foundation. A simple template or other means may be employed to assure the proper positioning of pipe section 17 and attached flange 18.

After the concrete has set, a T 19 and suitable length of threaded pipe 20 are screwed

onto the projecting end of pipe section 17, following which the base casting 10 is positioned on the foundation with the upper end of pipe 20 protruding the proper distance through opening 21 of the base casting to provide for a spring washer 22 and a nut 23 which coact with flange 18, pipe sections 17 and 20, and T 19 to removably yet securely anchor base casting 10 to foundation 16, and resist lateral displacement, particularly in case of vehicular collisions.

A coupling 24 is next screwed onto the projecting end of pipe section 20 and a third length of threaded pipe 25 is added, which carries at its upper end a stiffening plate 26, held in position by means of nut 28 and coupling 29. Stiffening plate 26 is so fashioned and sized as to be a snug fit in the portion 30 of tubular shaft 12 when it is assembled onto base casting 10 as shown clearly in Figs. 1, 2 and 6.

The threaded pipe section 31 is made of sufficient length so it will project above the bottom 32 of top 14 when screwed into coupling 29. The tubular shaft 12 and top casting 14 are then securely fastened to foundation 16 and to base casting 10 by means of spring washer 33 and nut 34.

T 19 is preferably of special construction so as to provide a branch opening 35 made readily accessible by opening door 36 which is secured in position in base 10 by means of suitable screws 37. An insulating cover 38 may be used to close branch opening 35, screws 39 being used to secure it in position as shown in the drawings. Holes 40 are provided in insulating cover 38 to support the protruding ends of wires 41 used to connect the lamp socket, not shown, at the top of the post with the transformer or other electrical equipment, not shown, housed within base 10.

After assembling the several sections of the lamp post, as previously described, and with door 36 and cover 38 removed, wires 41 are drawn into position within the tubular fastening sections 17, 20, 25 and 31, after which they are anchored and connected to the lamp socket in the usual way.

Cover 38 may next be secured in position and the lower ends of wires 41 connected as provided for within base 10, after which door 36 may be closed and fastened by screws 37.

The interior of base 10 is effectively drained by means of a hole 42 provided for that purpose in foundation 16 and curb 43. It will be noted that the top of the foundation is below the level of the sloping sidewalk 44, thus assuring a neat and workmanlike joint between the lamp post base and sidewalk surface, and anchoring the skirt of the base against lateral displacement. The installation is completed by adding the lamp, not shown, and the desired glass lamp-canopy 15.

It will be noted that the central tubular fastening element 45 provides a simple, convenient, and inexpensive means of mounting and assembling the several sections of the lamp post.

A particular feature is the unusually effective method of anchoring base 10 to foundation 16 independent of the other sections. Obviously the stresses induced in the central tubular element in case of a collision with the base are transmitted directly to the top of the base and thence to the foundation. Only those stresses due to the displacement of shaft 12 and top 14 are transmitted through the shaft to the base, and in each case the tubular fastening element 45 is subjected only to tension stresses except those compression stresses incident to any bending of this element. In that case the fastening element itself tends to stiffen the whole structure of the lamp post which it is well able to do.

This stiffening feature of tubular fastening element 45 may be accentuated by increasing the size and thickness of the pipe sections employed. In the drawing the sections of fastening element 45 are made of smaller size toward the top, advantage being taken of the several couplings to do this effectively thus reducing the cost of the structure without sacrificing the stiffening effect of the larger lower pipe sections 17 and 20, of high bending strength where they are most helpful in resisting lateral displacement of the top of base 10.

It is the purpose of stiffening plate 26 to reduce the distortion of tubular shaft 12 when subjected to excessive strains, by preventing the collapse of the walls of the shaft, thus maintaining the effectiveness of the metal in the tubular shaft section with respect to the neutral axis. Best results are obtained when this plate is located at that height in the tubular shaft where the collapse of the shaft walls may be generally expected to occur. Where long shafts are to be used two or more stiffening plates, properly spaced, may be employed.

Any difference in the expansion of tubular fastening element 45 and lamp post sections 10, 12 and 14 due to changes in temperature and to the use of dissimilar materials, is provided for by the use of spring washers 22 and 33. These have sufficient strength and range of elongation to provide at all times the minimum stress required to keep the several lamp post sections properly assembled, and yet keep the stresses, under conditions of maximum temperature change, within permissible limits. This is an important feature of the invention as it makes possible the use of standard steel pipe sections in fastening element 45 in combination with bronze lamp

post sections 10, 12 and 14, or any other combination of materials found necessary to meet the varying conditions in practice.

My invention is not necessarily limited to the details of construction as shown and described in this specification, for it is obviously possible to make many changes in the design and construction of the several sections of the lamp post, and to modify the size and method of securing the central tubular fastening member sections in order to adapt the invention to posts and poles of various lengths and design, for instance base 10 may be made in several sections instead of a single casting. Also the tubular shaft may be made in several different thicknesses or may be made up of a plurality of nested tubular sections so as to provide the necessary strength.

Having thus described my invention what I claim and desire to have protected by Letters Patent is:

1. In a sectionalized metal lighting standard, adapted to resist lateral displacement, a base section having a top head with an axial aperture, a foundation for said standard, an axial tubular stiffening element of high bending strength secured in said foundation and engaging said head and protruding from said aperture and means on the protruding end of said element for tensioning the same to removably anchor said base to said foundation.

2. In a sectionalized metal lighting standard adapted to resist lateral displacement, a unit base section having a top head with an axial aperture and an expanding skirt imbedded in concrete, an axial tubular stiffening element of high bending strength secured in a foundation for said standard, engaging said head and protruding from said aperture, and means on the protruding end of said element for tensioning the same to removably anchor said base to said foundation.

3. In a sectional metal lighting standard, means for anchoring the base section of the same to a supporting foundation and strengthening the same to resist horizontal impact forces, comprising the combination of imbedding the skirt end of said base section in a layer of concrete above said foundation, a top head in said base section, an axial aperture in said head, a central tubular stiffening element of high bending strength imbedded in said foundation, engaging said head and protruding from said aperture, and means on the protruding end of said stiffening element for tensioning the same to removably anchor said base to said foundation.

4. In a sectionalized metal lighting standard adapted to resist lateral displacement, the combination of a concrete foundation, a unit base section having a top head with an axial aperture, an axial tubular stiffening element of high bending strength secured in said foundation, engaging said head and protruding from said aperture, means on the protruding end of said element for tensioning the same to removably anchor said base to said foundation, a unit tubular shaft mounted on said base, a top mounted on said shaft, an axial tubular fastening element in end connection with said stiffening element, and means at the upper end of said fastening element of tensioning said axial elements in said foundation to secure said shaft and cap to said base.

5. In a sectionalized metal lighting standard adapted to resist lateral displacement, the combination of a concrete foundation, a unit base section having a top head with an axial aperture, an axial tubular stiffening element of high bending strength secured in said foundation, engaging said head and protruding from said aperture, means on the protruding end of said element for tensioning the same to removably anchor said base to said foundation, a unit tubular shaft mounted on said base, a top mounted on said shaft, an axial tubular fastening element of reduced diameter in end connection with said stiffening element, a stiffening plate on said fastening element at substantially the critical section of said shaft and means at the upper end of said fastening element of tensioning said axial elements in said foundation to secure said shaft and cap to said base.

The foregoing specification signed at Seattle, Washington, this 11th day of Aug. 1928.

JUSTUS F. NE PAGE.