

Sept. 29, 1953

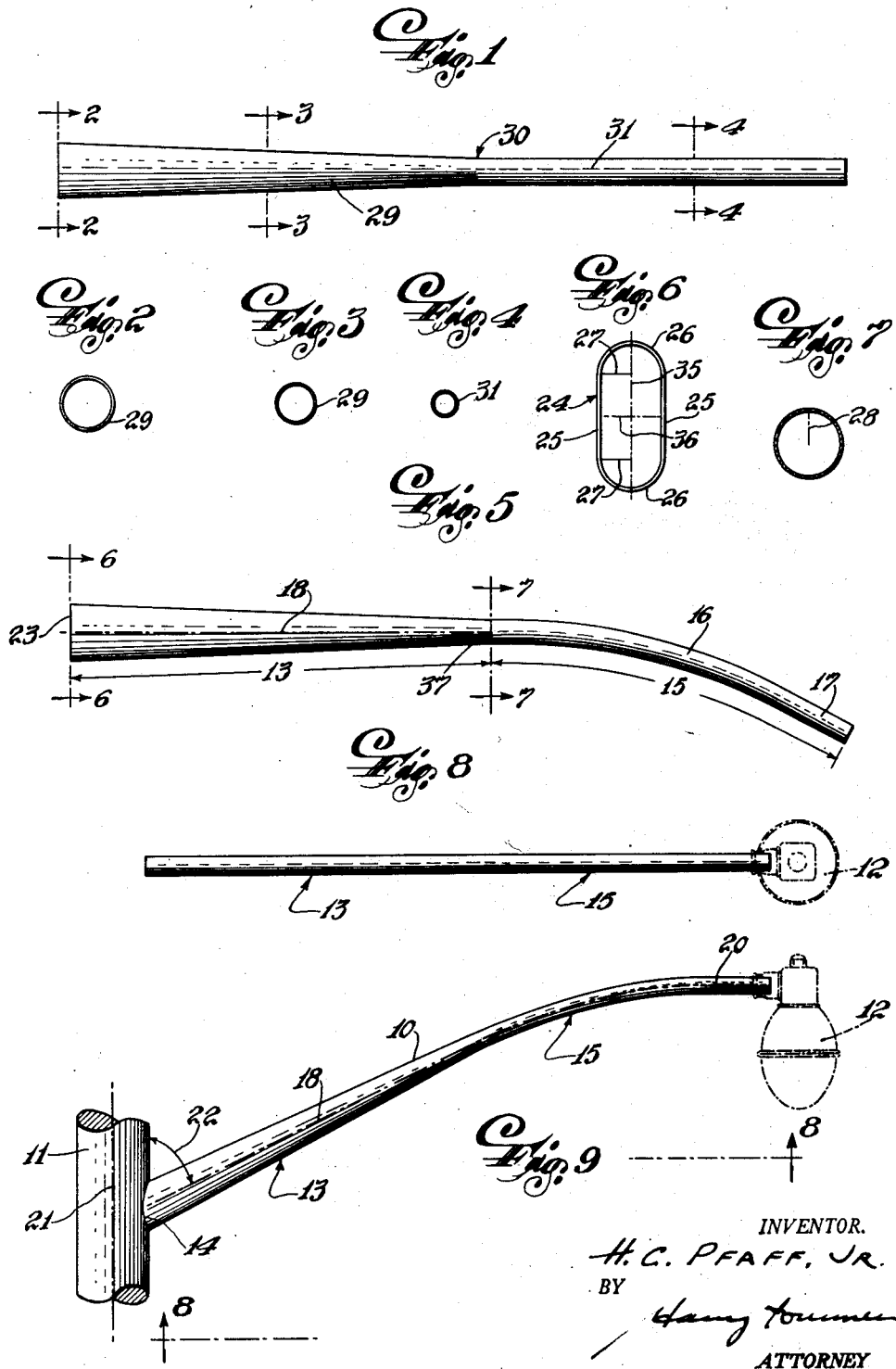
H. C. PFAFF, JR

2,653,782

HIGHWAY LIGHTING DEVICE AND METHOD OF MAKING SAME

Filed Feb. 25, 1950

2 Sheets-Sheet 1



INVENTOR.
H. C. PFAFF, JR.
BY
Harry Townsend
ATTORNEY

Sept. 29, 1953

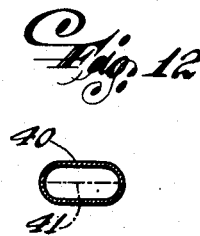
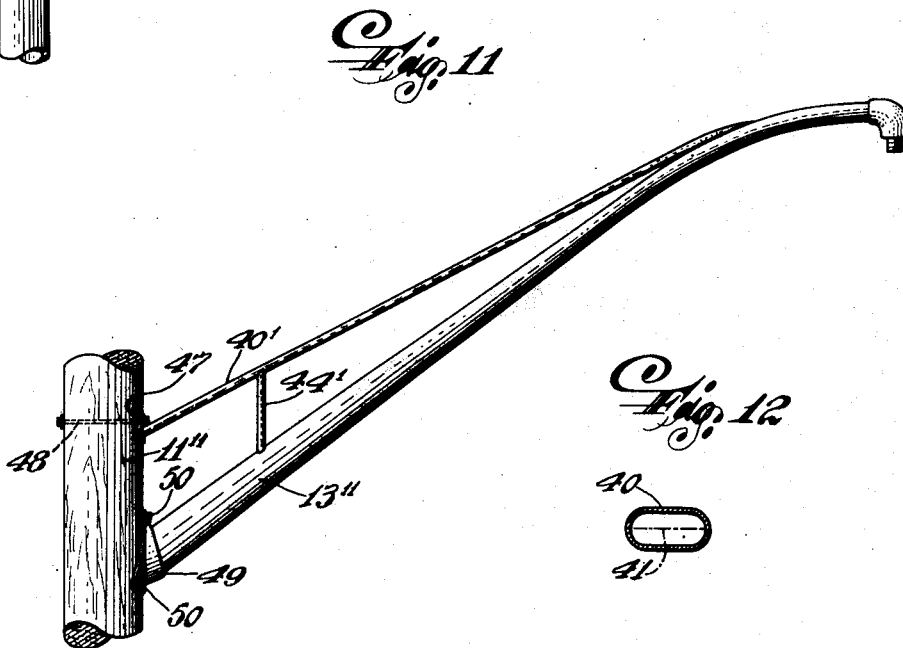
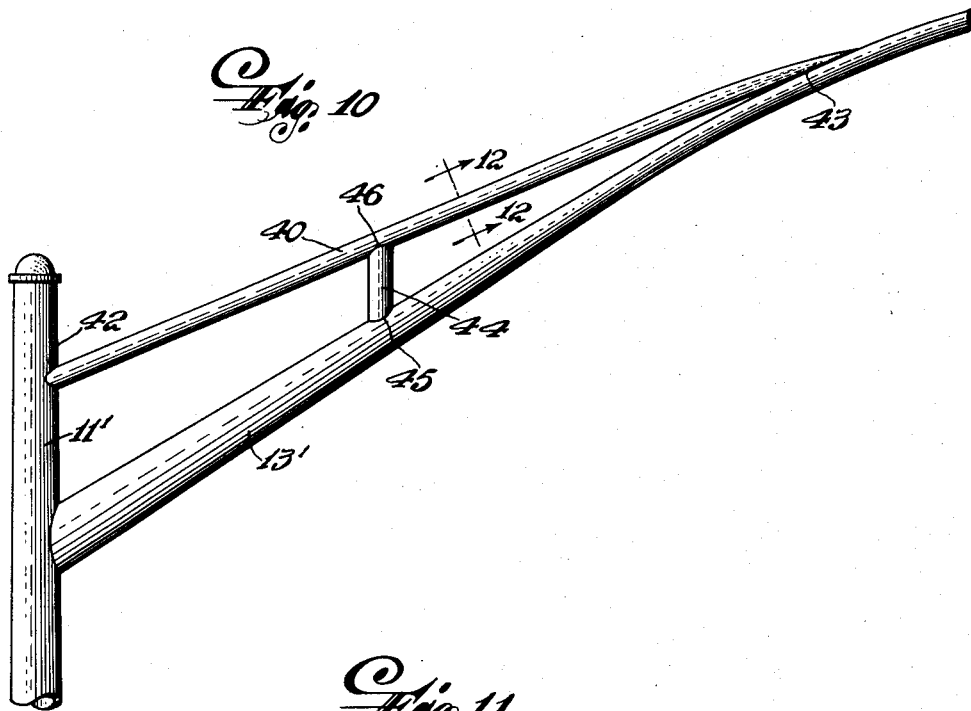
H. C. PFAFF, JR

2,653,782

HIGHWAY LIGHTING DEVICE AND METHOD OF MAKING SAME

Filed Feb. 25, 1950

2 Sheets-Sheet 2



INVENTOR.
H. C. PFAFF, JR.
BY *Harry Sommer*
ATTORNEY

UNITED STATES PATENT OFFICE

2,653,782

HIGHWAY LIGHTING DEVICE AND METHOD OF MAKING SAME

Henry C. Pfaff, Jr., Summit, N. J.

Application February 25, 1950, Serial No. 146,324

3 Claims. (Cl. 248—221)

1

This invention relates to improvements in highway lighting devices and has particular reference to the provision of an arm member adapted to be secured at one end to a highway light standard or pole located at the margin of the highway and having pendantly affixed to the other, free, end thereof, the lighting unit. The arm embodies novel features of manufacture and structure hereinafter more particularly described.

These and other advantageous objects, which will appear from the drawings, and from the description hereinafter, are accomplished by the structure of my invention, of which an embodiment is illustrated in the drawings. It will be apparent, from a consideration of said drawings, and the following description, that the invention may be embodied in other forms suggested thereby, and such other forms as come within the scope of the appended claims are to be considered within the scope and purview of the instant invention.

In the drawings:

Fig. 1 is an elevational view of a tube in an initial step in the manufacture of the arm of the invention,

Figs. 2, 3 and 4 are transverse, sectional views thereof, taken on lines 2—2, 3—3 and 4—4, respectively, of Fig. 1,

Fig. 5 is an elevational view of the tube showing the form thereof in the final step of manufacture,

Figs. 6 and 7 are enlarged, transverse sectional views thereof, taken on lines 6—6 and 7—7 of Fig. 5.

Fig. 8 is a bottom plan view, taken on line 8—8 of Fig. 9,

Fig. 9 is an elevational view of the arm embodying the invention, shown secured to a highway standard or pole,

Fig. 10 is a fragmentary elevational view of another form of the invention,

Fig. 11 is a similar view of another form of the invention, and

Fig. 12 is a transverse sectional view taken on line 12—12 of Fig. 10.

The arm member of my invention is formed from a single, straight section of seamless tubing of uniform diameter subjected to deforming operations to initially form the same to the outline shown in Fig. 1 and finally from the same to the outline shown in Figs. 5—9.

The straight section of seamless tube of uniform diameter throughout its length is initially deformed by the use of suitable drawing, reducing or other deforming equipment to define (Fig.

2

1) a first section 29 of conical shape and of circular diameter (Figs. 2 and 3) throughout, the smallest diameter 30 at the end of section 29 being maintained throughout the length of the second section 31 of the tube.

The first section 29 is further deformed by any desired or convenient apparatus to define (Fig. 6) a generally elliptical cross section 24 with parallel, straight side portions 25 and rounded ends 26. The second section is bent in the main into an arc 16 tangential to the axial line 18 of the section 13 and terminating at the free end thereof in a short straight portion 17. The end 14 of the first section 13 is secured to the highway standard or post 11 by any desired or convenient means, as, for example, by welding or bolting the same thereto at an acute angle 22, which, added to the angle defined by the second section 15 to the straight free end 17, will aggregate 90 degrees to axis 21, providing the desired horizontal disposition of portion 17 for suspension of light unit 12.

The first section 13 is finally deformed, as above noted, throughout its length, so that, in cross-section, it will be (Fig. 6) in the general form of an ellipse 24 with flattened sides 25 and arcuate ends 26, the major axis 35 of the ellipse being, at the base 23 (Fig. 5) about double the minor axis 36 thereof, the latter equalling the diameter of the second section 15 and remaining constant throughout the first section. Each of the radii 27 of the arcuate ends 26 of the ellipse 24 equals the cross-sectional radius 28 of the second section 15, said radius being maintained uniform throughout said second section, as above noted.

From the foregoing, it will be noted that the bracket arm 10 of my invention serves as a cantilever arm member, the first section of which defines, viewed from the sides, that is, in a vertical plane (Fig. 5) a frusto-conical outline. The major axis 35 diminishes progressively from the base 23 of the section 13 to the end 37 of the frusto-conical first section 13; at the end point, it is equal to the diameter of the second section 15.

Since the minor axis 36 of the first section is constant and uniform and equals the diameter of the second section 15, the arm member, when viewed from a point therebelow (as in Fig. 8) will appear to be a straight member of uniform thickness. However, when viewed from the side, the outline thereof is that seen in Fig. 5.

The major axis 35 of the first section has, as above noted, its greatest length at the end of

3

the first section where the same is secured to the post 11, and diminishes progressively therefrom toward the point 37 at which the second section 15 commences. The first section is secured to the post at an acute angle 22 to dispose the same generally upwardly to locate the lighting unit 12 at a point well above the point at which the arm is secured to the post 11. This arrangement elevates the light unit substantially above the point at which the arm is secured to the post and not only utilizes the full height of the post to that end, but also provides an effective degree of elevation extension thereabove—a very valuable and practical feature.

The arm embodying my invention has been found, under extensive tests, to have substantially more strength than arms made by conventional methods and of ordinary cross-section and outline. It is believed to represent a substantial advance in the art.

In Fig. 10, there is shown a form of the invention wherein the arm 13' (which corresponds in cross-sectional and other features identically with arm 13—Figs. 1-9) is provided with a brace 40 for stabilizing the arm on the pole or standard 11'. Said brace comprises a straight, hollow member of generally elliptical cross-section, as shown in Fig. 12, the major axis 41 of said elliptical member being disposed in a plane at right angles to the major axis of the arm 13'; the latter corresponds to major axis 35 of the arm as shown in Fig. 6. The brace 40 is secured at one end 42 by welding or similar means to the post or standard 11' and is secured at the other end 43 to the arm 13' as by welding the same thereto. Thus, the arm is strengthened in a vertical plane by major axis thereof disposed in said plane and in a horizontal plane by the brace 40 disposed so that the major axis 41 thereof is in a horizontal plane. A torsion link 44 vertically connects the brace 40 and arm 13'. Said link is disposed in a plane generally corresponding to that of the pole 11', and is connected to said brace 40 and arm 13' intermediate their ends by welding the same thereto, as at 45, 46, or by similar expedient.

The pole 11' shown in Fig. 10 is a metal pole. A similar arrangement is shown in Fig. 11 for securing the arm 13'' to the pole 11''. The pole 11'' is a wooden pole; the brace 40' is welded or otherwise secured to a plate 47 through which bolt 48 may be passed, the bolt 48 also passing through the pole. A similar plate 49 may be secured to the arm 13'' to facilitate application of the latter to the pole 11 by lag screws 50 passed through said plate and into the pole 11'' to secure the plate to the pole. Link 44' is connected to the brace and arm intermediate their ends.

4

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. An arm for securing a highway lighting unit to a vertically disposed highway pole, said arm comprising a first section having an inner end to be secured to said pole so that said arm will extend laterally from said pole, said first section being substantially circular in cross section and being continuously tapered towards its outer end with uniformly spaced parallel sides throughout the length thereof, said parallel sides being connected by rounded opposed ends and terminating in an outer end portion that is substantially circular in cross section, said arm further comprising a second section integrally connected to the outer end of the first section, said second section being substantially circular in cross section and of the same diameter as that of the circular outer end portion of the first section, said second section having a free outer end to which the lighting unit may be pendantly secured.

2. In an arm for securing a highway lighting unit to a vertically disposed highway pole of the character described in claim 1, a brace member for stabilizing the arm comprising a tubular member having its outer end secured to the arm intermediate its length, said brace member being disposed in the same vertical plane as the arm, the inner end of the brace member adapted to be secured to the highway pole in spaced relation to the inner end portion of the arm, said brace member being substantially elliptical in cross section and having its cross sectional major axis disposed in a plane at right angles to the cross sectional major axis of said arm.

3. In an arm for securing a highway lighting unit to a vertically disposed highway pole of the character described in claim 1, said second section being of arcuate longitudinal axis.

HENRY C. PFAFF, JR.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
924,005	Schwieger	June 8, 1909
956,245	White et al.	Apr. 10, 1910
1,662,334	Reberg	Mar. 13, 1928
1,754,082	Chase	Apr. 8, 1930
1,892,382	Carlstedt	Dec. 27, 1932
2,400,031	Stewart et al.	May 7, 1946

FOREIGN PATENTS

Number	Country	Date
263,116	Great Britain	Sept. 1, 1927
572,646	Great Britain	Oct. 17, 1945