

Sept. 14, 1954

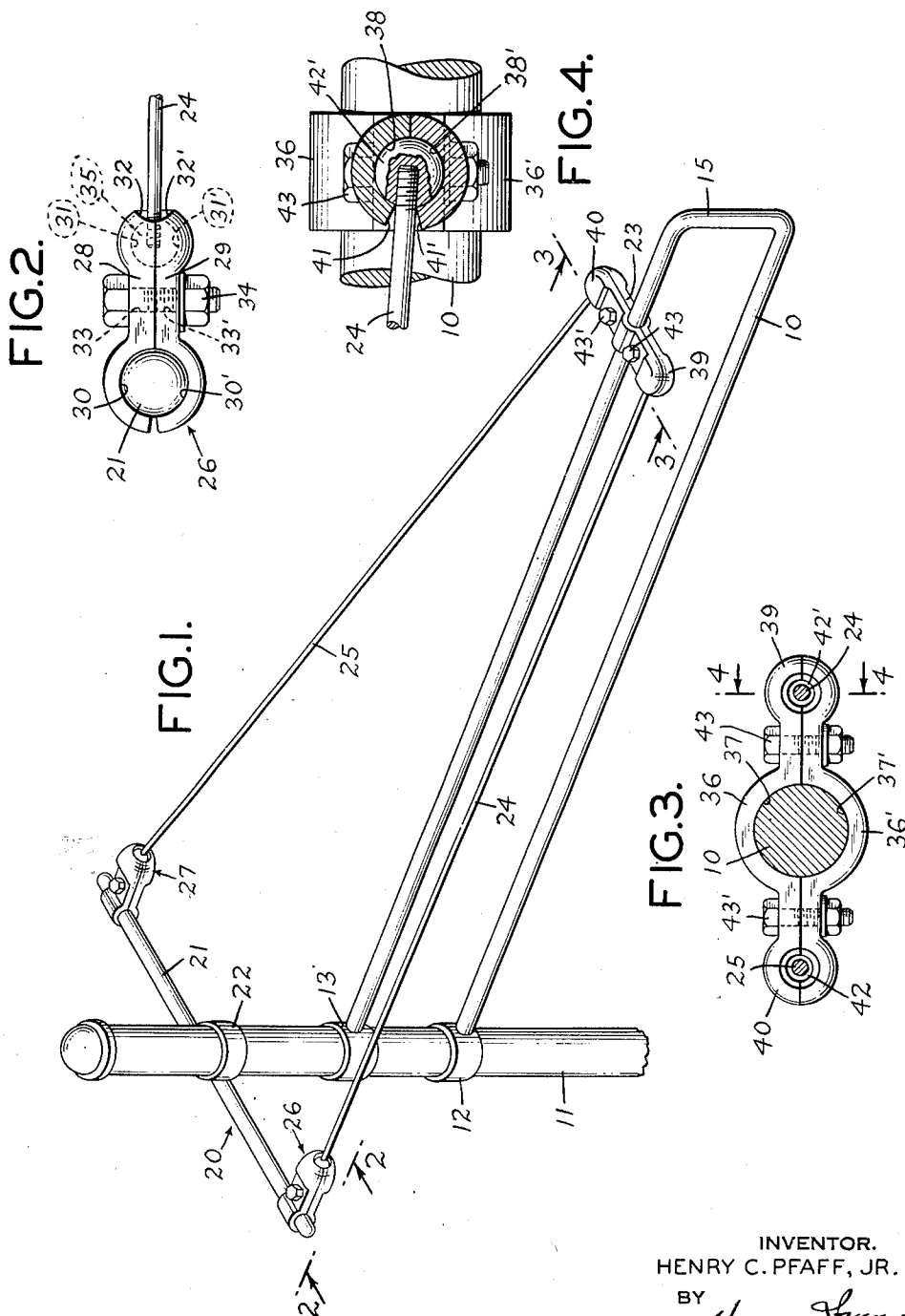
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STABILIZING UNIT FOR TRAFFIC LIGHT ARMS

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2 Sheets-Sheet 1



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FIG. 5.

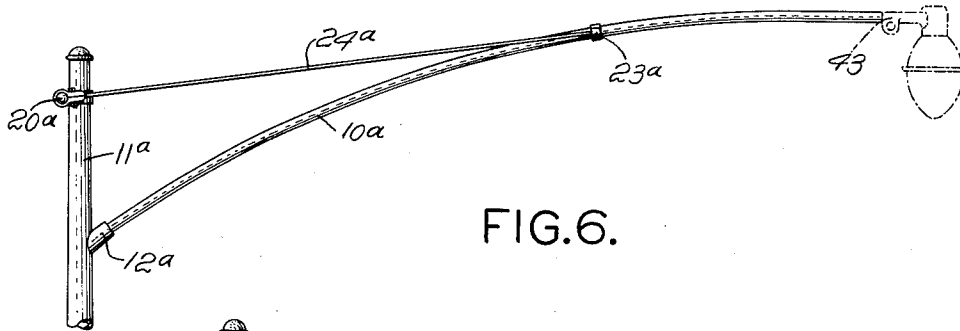


FIG. 6.

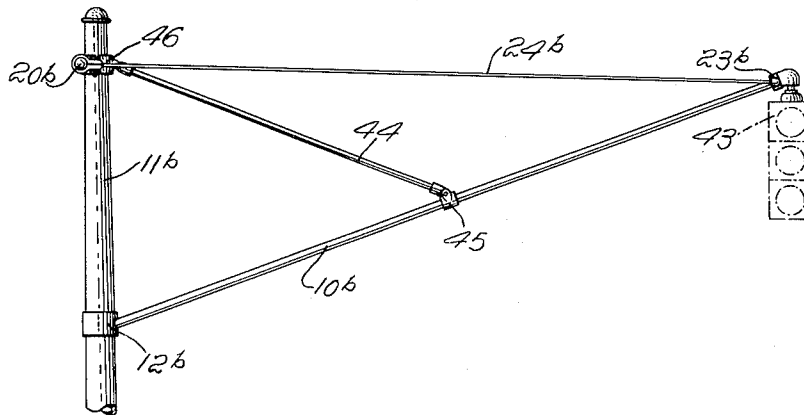
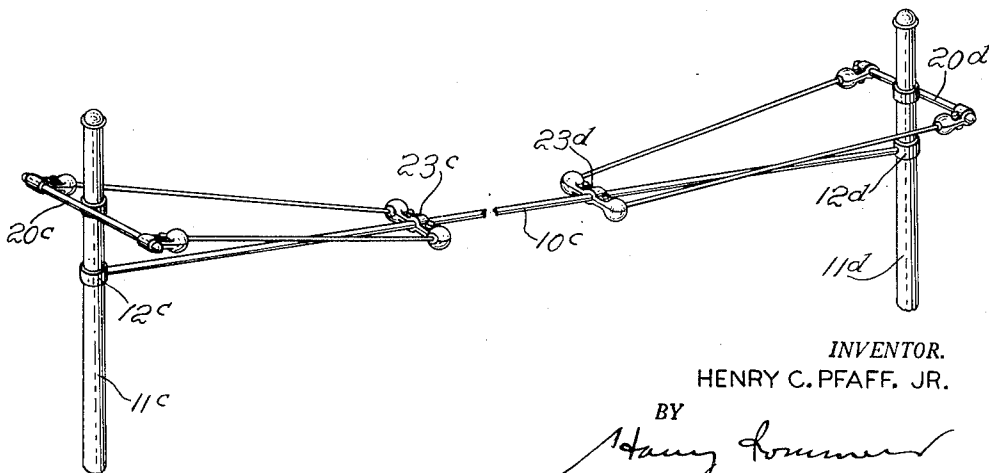


FIG. 7.



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STABILIZING UNIT FOR TRAFFIC
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This invention relates to traffic light units and more particularly to such unit including a light arm pendantly secured to a pole and extending horizontally therefrom. Traffic poles are conventionally located at the margins of highways or at some distance therefrom with the light arms extended pendantly, directly and over the highways. In many cases, these arms extend for some distance from the pole, and being pendant, the point of connection of the arm to the pole is subjected to considerable stress and strain incident to normal weather conditions.

The present invention is designed to stabilize light unit arms pendantly secured to poles and preferably comprises a cross arm secured to the pole at a point higher than that at which the traffic light arm is secured to the pole, and means extending from the cross arm and connected to the traffic light unit adjacent the end thereof remote from the pole, to stabilize the same.

The invention is designed to be fabricated initially in standard sizes and is provided with means whereby the angles required for connection of a light unit arm to the cross arm pursuant to the invention may be readily adjusted by the worker in the field.

The invention may be used in connection with original equipment or with existing traffic light unit arms. It may be provided as auxiliary or supplemental equipment or installed at the same time as the traffic light unit arms are initially installed on the pole.

These and other advantageous objects, which will appear from the drawings and from the description hereinafter, are accomplished by 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; such other forms as come within the scope of the appended claims shall be considered to be within the scope and purview of the instant invention.

In the drawings:

Fig. 1 is a perspective view of a traffic light unit arm pendantly secured to a pole and showing the stabilizing unit of the present invention engaging the traffic light unit arm and pole,

Fig. 2 is an enlarged horizontal elevational view, partly fragmentary, taken on line 2—2 of Fig. 1,

Fig. 3 is an enlarged horizontal transverse elevational view, partly sectional, taken on line 3—3 of Fig. 1, and

Fig. 4 is an enlarged longitudinal elevational

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view, partly fragmentary, taken on line 4—4 of Fig. 3,

Fig. 5 is a fragmentary elevational view of the upper portion of a pole, showing the application of my invention thereto,

Fig. 6 is a similar view of the upper portion of another type of pole, showing the application of my invention thereto, and

Fig. 7 is a fragmentary perspective view of the upper ends of a pair of poles having units embodying the invention secured thereto.

As shown in the drawings, the invention is adapted for application to the light unit arm 10 pendantly secured to the pole 11, as at 12, 13; the last mentioned reference characters indicate any desired or conventional means to that end. The light unit arm 10 conventionally has secured thereto at the end 15 remote from the pole 11 the traffic light unit. The traffic light unit as shown in patent applications filed by me, bearing Serial Nos. 251,475 and 185,184, is secured intermediate the horizontal bars of the light unit 10 at said end 15. As will be readily appreciated, this arrangement of the parts places the weight of the traffic light unit secured to the arm 10 at the end of the latter remote from the pole; the present invention provides a highly efficient means for stabilizing the light unit arm.

As shown in the drawings, the stabilizing unit 20 comprises a cross bar 21 which is medially secured to pole 11 as by means of any suitable bracket or other securing means 22. A stabilizing bracket 23 is secured to the arm 10 at the end 15 thereof remote from the pole; and tie rods 24, 25 are secured to the ends of stabilizing bracket 23 and cross arm 21, respectively, to thereby connect the light unit arm 10 to pole 11 in stabilizing relation. In the forms shown in the drawings, the cross bar 21 is provided with fittings 26, 27 to which the ends of the tie rods 24, 25 are secured.

Each of the fittings 26, 27 comprises (Figs. 1 and 2) like halves 28, 29 having first complementary recessed portions 30, 30' at one end to receive the cross arm 21 therebetween (Fig. 2) and having second complementary recessed portions 31, 31' and complementary aperture portions 32, 32' opening into the recessed portions. The fitting is provided with registering apertures 33, 33' through which bolt means or the like 34 may be passed to clamp the fitting halves 28, 29 together and onto the cross bar 21. A ball member 35 is adapted to be rotatably positioned in the complementary recessed portions 31, 31' of the fitting halves and is preferably threaded or

otherwise provided with means whereby the free end of the rod 24 may be secured thereto. The single bolt means 34 thus clamps the fitting onto cross arm 21 and ball 35 within the fitting. The description with regard to the fitting 26 applies equally to the fitting 27 to secure the tie rod 25 to the other end of the cross arm 21. The opening defined by the apertures 32, 32' in the fitting will be predetermined to be of less diameter than ball member 35 so that the latter will be effectively secured within the fitting while permitting of the movement of the tie rod, and thus the ball member, in the initial adjustment of the parts, before fully tightening the bolt 34. Thus the workmen may secure the tie rod to the fitting at precisely the angles required to secure the parts together as shown in the drawings. This feature of adjustability is highly important and saves considerable time in application of the stabilizing unit to the traffic light unit arm and pole, at the point of installation. The flexibility of the device permits of the ready adjustment of the parts to their final position as shown in the drawings, without requiring any elaborate preliminary mathematical calculations, the devices automatically compensating for differences in tolerance of the parts and in their relative juxtapositioning. If desired, the ends of the halves 28, 29 of fitting 26 may be extended at the left-hand end of the fitting in the position shown in Fig. 2 and apertured to receive a bolt so that the bolt arrangement shown in Fig. 2 intermediate recessed portions 30, 30' will be duplicated at the other side of the arm 21, in carrying out the invention.

The opposite ends of the rods 24, 25 are secured to the stabilizing bracket 23, shown in its preferred form in Figs. 1 and 3, and comprising a pair of like complementary bracket halves 36, 36' having first recessed portions 37, 37' to receive therebetween the light unit arm 10 and having bearing ends 39, 40 located at each side of the first recessed portions 37, 37'. Second recessed portions 38, 38' are located in each of the bearing ends 39, 40; a description of one will suffice for both. Likewise, each of the bearing ends 39, 40 of bracket 23 has apertures 41, 41' opening into and of less diameter than the recessed portions 38, 38'. Ball members 42, 42' (Fig. 3) are rotatably received in the recessed portions of the bearings 39, 40, so that the free ends of rods 24, 25 may be secured to said ball members by threading the same thereto, as shown in Fig. 4, or otherwise as desired. It will be apparent that the parts may be packaged or transported in knock-down condition and assembled on the job. The halves 36, 36' of bracket 23 are preferably clamped together by bolt means 43, 43', or the like passed through apertures in said bracket halves or by other means adapted to that end.

The parts are thus locked in final position at exactly the correct disposition of the tie rods 24, 25 relative to each other and to arm 10 required for the particular installation involved.

The invention is adapted for use in connection with various types of poles and light unit arms associated therewith. For example, in Fig. 5, the pole 11a is shown, to which the light unit arm 10a is secured by means of brackets 12a or the like. This type of construction is particularly suited where it is desired to extend the light unit over a highway at some distance from the pole proper 11a. Bracket 23a of Fig. 5 in such case would be secured to the light unit arm 10a at a

point intermediate the length of the latter; said bracket 23a of Fig. 5 corresponds generally with the bracket 23 of Fig. 1, and utilizes a unit 20a corresponding with unit 20 of Fig. 1. The tie rods 24a of Fig. 5 corresponding with 24, 25 of Fig. 1, the single tie rod 24a being visible in Fig. 5 because it is an elevational view. Fig. 6 shows the adaptation of the invention to a unit arm 10b for suspending a vertical signal 43 over the roadway, the light unit arm 10b being secured to pole 11b by bracket 12b or the like. The parts in Fig. 6 designated by reference characters 20b, 24b and 23b, correspond with those indicated by reference character 20, 24 and 23, respectively, in Fig. 1. In the Fig. 6 construction, a brace 44 is shown connected at 45, 46 to the pole 11b and light unit arm 10b, respectively. This construction, like the construction shown in Fig. 5, is well suited to an installation wherein it is desired that the light be disposed at a point remote from the point of disposition of the pole. In Fig. 7 construction, a pair of stabilizing units 20c, 20d are shown, corresponding with the unit 20 of Fig. 1, secured respectively to the spaced poles 11c, 11d, to which light unit 10c is connected as at 12c, 12d. The construction shown in Fig. 7 is particularly suited for bridges and other situations wherein a very long arm 10c is required. Essentially, the construction of Fig. 7 duplicates Fig. 1 at pole 11c with a mirror image arrangement at the pole 11d with the straight, continuous elongated arm 10c connecting poles 11c, 11d. The same arrangement may be used in connection with any other type of member, such as arm 10c to be secured relative to a pair of spaced poles 11c, 11d. The parts 23c, 23d of Fig. 7 correspond generally with stabilizing bracket 23 of Fig. 1, and said members 23c, 23d are connected to member 20c, 20d in an arrangement corresponding with that of the members 20, 23 respectively at Fig. 1.

It will be appreciated that the relative proportions of the parts shown in Fig. 7 would be varied in practice; for example, tube 10c might be much longer in most cases than its relative length indicated in Fig. 7. Likewise, the poles 11c, 11d might be materially further apart so as to present between the units 23c, 23d more space than indicated in Fig. 7. That, however, is a matter purely of adaptation to a particular installation.

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

1. A stabilizing unit for a traffic light arm projecting laterally from a vertical pole, comprising a cross bar, means for securing the bar intermediate its ends to said pole in vertically spaced relation to said arm, a fitting removably secured to each end of said cross bar, an elongated stabilizing bracket having means intermediate its ends for removably securing the same to said arm in transverse relation thereto and parallel with said cross arm, a pair of tie rods for disposal at opposite sides of said arms, and means within said fittings and said stabilizing bracket for providing universal connections between said rods and said fittings and stabilizing bracket.

2. The structure according to claim 1 wherein each said fitting comprises a pair of like members, said members having plane abutting faces, said members having cooperating semi-cylindrical recesses at corresponding ends thereof for reception of said cross bars, said members further having cooperating semi-spherical recesses

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in their opposite ends and said members further having outwardly flared apertures communicating with said semi-spherical recesses, a ball member disposed within said semi-spherical recesses, said members having aligned apertures intermediate their opposite ends for receiving bolts to draw said members together into frictional contact with said cross bar and said ball member.

3. The structure according to claim 1, wherein said stabilizing bracket comprises a pair of like members having plane abutting faces, said members in their abutted operative position having a cylindrical opening intermediate their ends for receiving said arm, said members in their abutted operative position having spherical recesses at opposite ends thereof and outwardly flared openings communicating with the recesses, a ball member in each said recess, said members having aligned apertures intermediate said cylindrical

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opening and said recesses for receiving bolts to draw said members into frictional engagement with said arm and said ball members.

4. The structure according to claim 3, wherein said tie rods have their opposite ends disposed within the outwardly flared openings in said fittings and said stabilizing bracket and threadedly engaged with said ball members, said ball members providing said universal connection when said first and said second bolts are in a loosened condition.

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