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[54] **STANDARD OR POLE FOR SUPPORTING LIGHT FITTINGS**

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[51] **Int. Cl.** **E02d 27/42**

[58] **Field of Search** 248/188.7, 163, 158, 159; 256/13.1; 52/98, 99, 100, 28, 296

[56] **References Cited**

UNITED STATES PATENTS

709,835	9/1902	Warner	256/13.1
931,425	8/1909	Hile	52/296
1,116,208	11/1914	Barber	52/296
1,189,596	7/1916	McFadden	248/163
1,473,118	11/1923	Miller-Masury	256/13.1
1,568,777	1/1926	Smith	52/296
3,521,413	7/1970	Scott et al	52/98
3,623,286	11/1971	Parduhn	52/99
3,628,296	12/1971	Henry	52/98
3,630,474	12/1971	Minor	52/98

FOREIGN PATENTS OR APPLICATIONS

1,143,991	2/1969	Great Britain	248/163

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[57] **ABSTRACT**

A standard or pole for supporting light fittings is disclosed which is designed with a view to yielding when being hit by motor cars, so as to be less dangerous. The pole which is tubular substantially over its entire length is provided with a foot comprising downwardly diverging struts or tongues fastened to a ground base. Said tongues may be formed by splitting the lower end of a tubular pole section or they may be formed by separate rods welded to the outside of the lower end of the lowermost tubular pole section. Preferably the lower ends of said struts or tongues are attached to a circular foot plate secured to the ground base.

10 Claims, 7 Drawing Figures

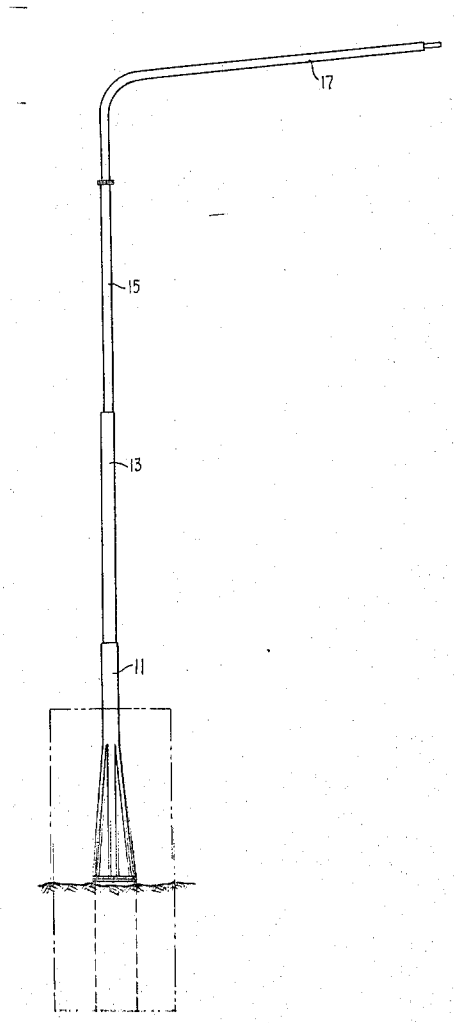


Fig. 1

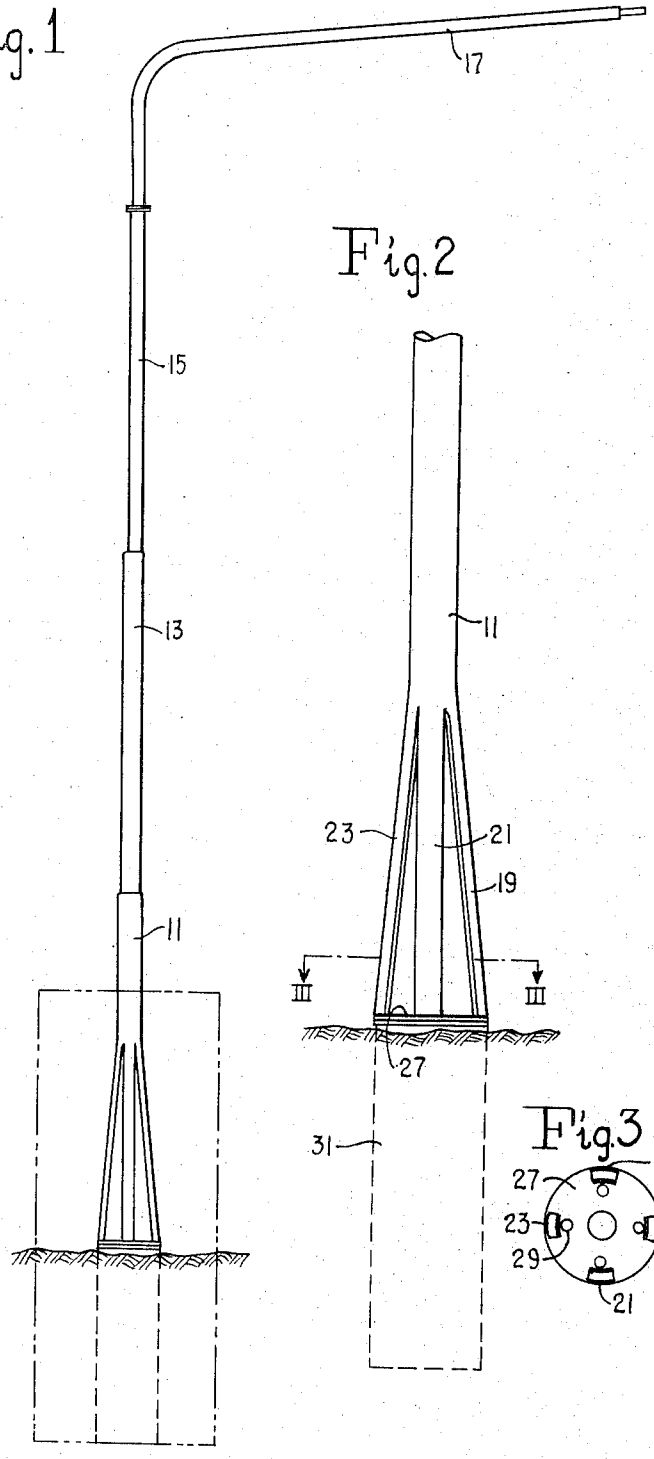


Fig. 2

Fig. 3

Fig. 4

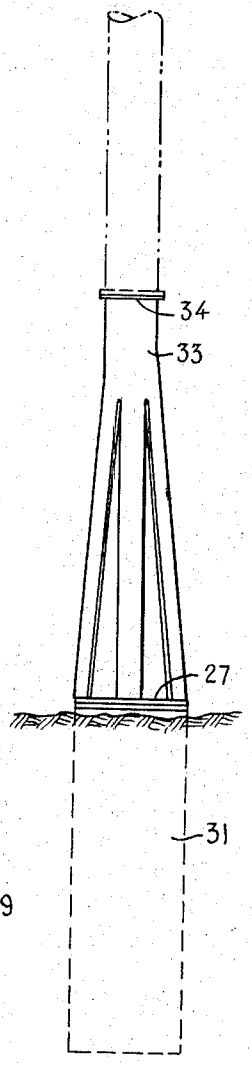


Fig. 5

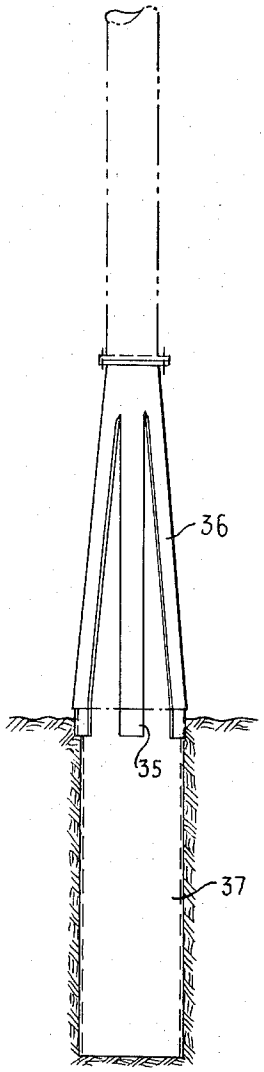


Fig. 6

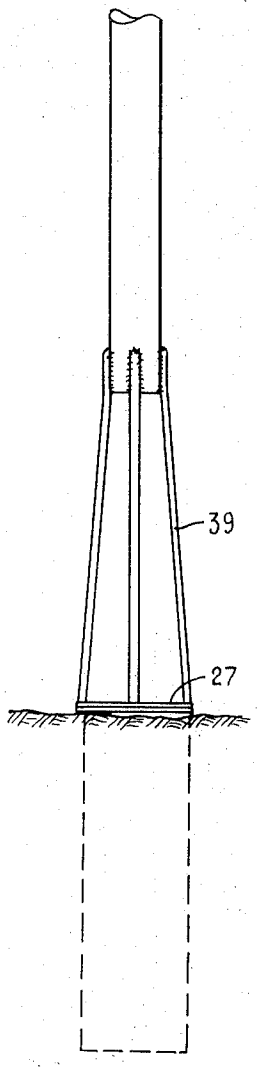
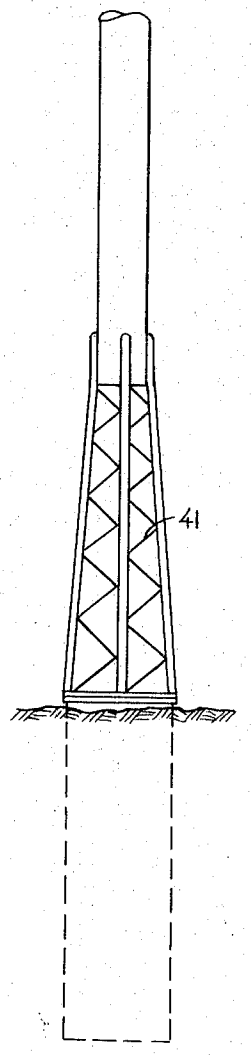


Fig. 7



STANDARD OR POLE FOR SUPPORTING LIGHT FITTINGS

Standards or poles for supporting light fittings are usually made of tubes. When placed closely to roads the risk of the poles being hit by motor cars is so great that it has been considered advisable to replace them by lattice masts that are more yielding under collision shocks and hence involve less danger to life, and damage to vehicles.

The object of the present invention is to provide a standard or pole which retains most of the good qualities of the tubular design but is yielding in a higher degree to horizontal forces applied near its base, so that the pole, instead of abruptly stopping a colliding car, is subjected to considerable deformation and hence offers a prolonged and gradually growing resistance, so that retardation of the colliding car is reduced.

According to the present invention there is provided a pole or standard for supporting light fittings which is tubular substantially over its entire length and comprises a foot formed by a plurality of tongues or struts the upper ends of which are united to the lower end of the tubular part of the pole the tongues or struts extending therefrom at an angle to the vertical in a downward and outward direction, and in a symmetrical arrangement.

The invention will now be described with reference to the accompanying drawings which show embodiments of the invention.

In the drawings:

FIG. **1** is a side view of a first embodiment of a pole,

FIG. **2** shows the part of FIG. **1** framed chain-dotted, on an enlarged scale,

FIG. **3** is a cross-sectional view taken from the line III—III of FIG. **2**,

FIGS. **4, 5, 6** and **7** are side views of four further embodiments of the pole foot.

The pole shown in FIG. **1** is composed of three cylindrical tubes **11, 13, 15** of lessening diameter, and an arm **17** for supporting a light fitting (not shown). However, the invention is also applicable to other known kinds of tubular poles, e.g., those comprising a single cylindrical or tapering tube with or without a hanger arm. usually the tubes are of a circular cross-section, but other, e.g., polygonal cross-sections are possible.

The lower end of the lowermost pole section **11** is slit along axially extending lines to form four equal tongues **19, 21, 23, 25,** having the same width over their entire lengths. These tongues are spread apart by introducing a conical mandrel into the end of the pole tube. At the same time the tongues may be shaped, their arcuate cross-sections being flattened to a curvature of a greater radius. At their lower ends the tongues are welded to the circumference of a circular foot plate **27.** Holes **29** are provided therein for the insertion of bolts, by which the pole may be secured to a ground base **31** of known kind.

Together the tongues form a foot integral with the lowermost pole tube **11** and widening downwardly. In spite of the slits it offers about the same resistance to bending forces as the upper part of tube **11** in respect of horizontally directed forces. However, the separate tongues the cross-section of each of which is very small in comparison to their length, are weak and are easily bent inwardly, if they are hit by a horizontally moving

object between their ends. A colliding car first hits one of them and then more, so that the resistance grows as the deformation proceeds in dependence on the violence of the shock.

With regard to the probable impact point, the tongues should be of a length of between **1** and **2** metres. Their inclination to the vertical is preferably not more than 10°, and the diameter of the foot plate is chosen to be **2** to **3** times as great as the diameter of the tube **11.**

In the embodiment shown in FIG. **4** the pole foot **33** forms a separate unit and consists of a tube which is split over the greater part of its length and the upper end of which carries an annular flange **34,** by means of which the foot can be attached to the lower end of a tubular pole of a known design. The tongues of the pole foot forming diverging struts have their lower ends attached to a circular foot plate **27** which may be bolted to a ground base **31.**

FIG. **5** shows a pole foot similar to that of FIG. **4,** but the foot plate is omitted and instead, the lower ends **35** of the tongues are welded or screwed to the outside of the upper portion of a cylindrical tubular base **37.**

In a modification (not shown) of the last-mentioned embodiment the tongues **36** are made integral with the base **37.** In this case the base consists of a steel tube of a considerably greater diameter than that of the pole above the foot, and broad slits are cut out between the tongues, which are then bent together and attached to the outside of the tubular pole, e.g. by welding.

In the embodiment of FIG. **6** the tongues are made of separate rods **39,** the upper ends of which are welded to the outside of the tubular pole and their lower ends to a foot plate.

According to the embodiment shown in FIG. **7,** the form of FIG. **6** is modified by connecting the tongues by a lattice-work of cross stays **41** which should be so constructed that it increases the resistance of the props to buckling caused by longitudinal forces, without greatly increasing their resistance to horizontal shocks.

The embodiments shown may be modified in other respects, particularly as to the number of tongues or struts of the pole foot. This number may be as low as two or three, and as high as five or six.

We claim:

1. A pole or standard for supporting light fittings comprising an upper structure forming a major portion of the length of the pole or standard, said upper structure including a central vertical tubular structure, and a foot formed of a plurality of spaced apart tongues or struts having upper ends terminating at and united to the lower end of said tubular structure and having lower ends connected to a common base which is of greater horizontal dimension than said tubular structure, said tongues or struts being arranged symmetrically with respect to the axis of said tubular structure and extending downwardly beyond the lower end of the latter and outwardly, whereby said tongues or struts support said tubular structure from said base and provide an assembly which is yieldable to horizontal forces occurring on collision of a vehicle with said tongues or struts.

2. A pole or standard as in claim **1** wherein said tongues or struts are of a length of between 3 and 6 feet and are inclined to the vertical at an angle of not more than 10°.

3. A pole or standard as in claim 1 wherein the circle circumscribed round the lower ends of said tongues or struts is of a diameter between two and three times as great as that of the circle circumscribed round their upper ends.

4. A pole or standard as in claim 1 wherein the foot is a tube the lower end of which is split to form said tongues or struts.

5. A pole or standard as in claim 1 wherein said foot is integral with said tubular structure.

6. A pole or standard as in claim 1 wherein said foot is a separate tube which is slit over the greater part of its length and which is attached by flanges to the lower

end of said tubular structure.

7. A pole or standard as in claim 1 wherein said base is a plate.

8. A pole or standard as in claim 1 wherein said base is an upright tubular structure.

9. A pole or standard as in claim 1 wherein the upper ends of said tongues or struts are welded to the outside of the lower end portion of said central tubular structure.

10. A pole or standard as in claim 1 wherein said tongues or struts are made from rods.

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