Dec. 4, 1945. E. E. POOLER 2,390,385

MOUNTING FOR LIGHTING TUBES

Filed July 8, 1944

Fig. 1.

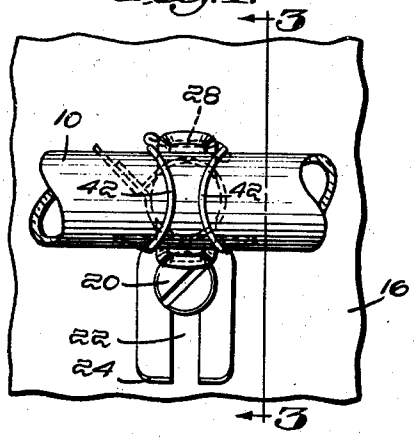


Fig. 2.

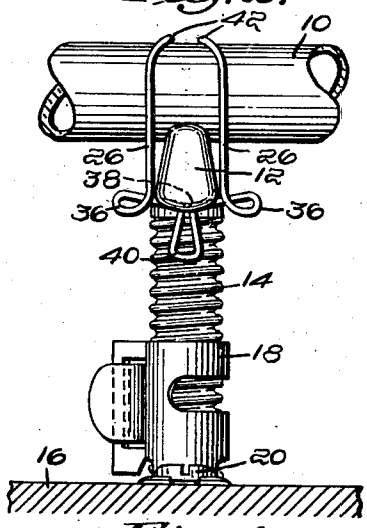


Fig. 3.

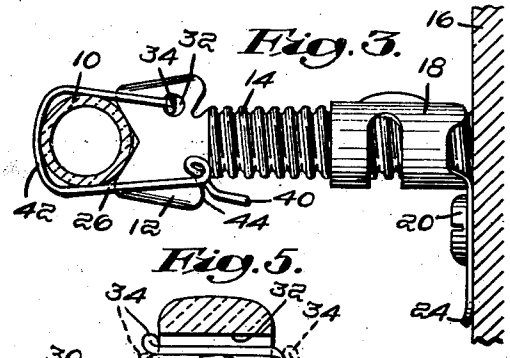


Fig. 4.

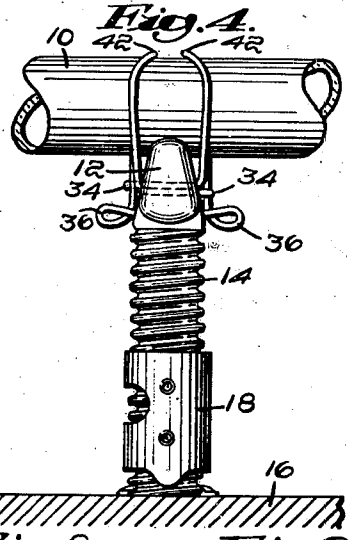


Fig. 5.

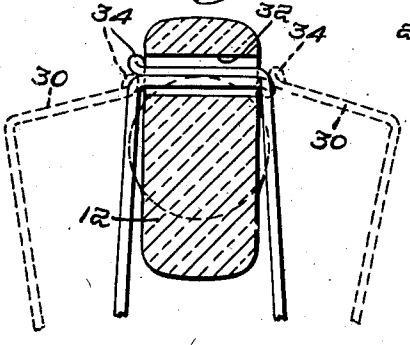


Fig. 6.

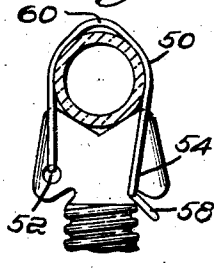


Fig. 7.

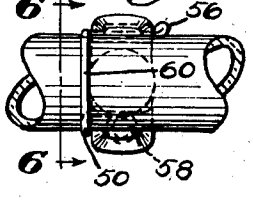


Fig. 8.

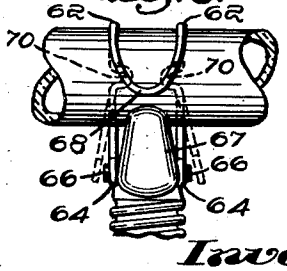
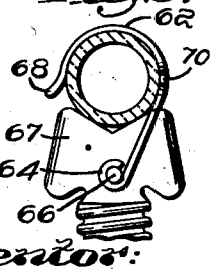


Fig. 9.



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UNITED STATES PATENT OFFICE

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MOUNTING FOR LIGHTING TUBES

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Application July 8, 1944, Serial No. 544,086

12 Claims. (Cl. 248—50)

This invention relates to mountings for lighting tubes of the nature employed in "neon" signs. These tubes in the form of alphabetical letters and various designs are supported in predetermined position on carrying saddles mounted on a supporting base. The tubes are commonly secured to the saddle by wires wrapped about the tube and saddle and having their ends twisted together. This procedure not only involves considerable labor in installing the signs but also a repetition thereof when repairs require the removing and replacing of tubes. The primary object of my invention resides in the production of an improved clip adapted very conveniently to be pivotally attached to the saddle and to be pivotally movable thereon from an open position to a closed position in encompassing and holding engagement with the tube.

My improved clip is of resilient material and preferably embodies two relatively spaced U-shaped wire elements having means integral with one end thereof providing a supporting pivot for the clip and means at its other end providing a latching bridge for holding the clip in closed position and in which position the tube is enclosed within said elements and held tightly in position on the saddle. In its preferred form the clip is constructed from a single piece of wire having the two ends thereof located at one side of the clip and adapted to be spread apart for insertion into a pivot opening in the saddle and having its intermediate portion at the other side formed into a bridge for latching engagement with the saddle, the bridge portion also preferably incorporating a plurality of ears for conveniently engaging and disengaging the clip.

Other features of the invention relate more specifically to the shape of the tube engaging U-portion of the clip and the convenient mounting of the saddle on the base. The two U-shaped wire elements are of a resilient nature and I preferably dispose the U-end portions thereof, remote from the leg portions, out of the normal U-path of the elements, thereby adding resiliency to the tube engaging action of the clip and giving it a greater compensating latitude of engagement. The saddles are supported on the base by screw-secured brackets and a further feature of the invention resides in the provision of brackets with open-ended slots permitting the placing of the brackets after the screws have been placed and driven to their approximate final position. The production of an improved mounting embodying these novel features comprises a further object of the invention.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawing in which,

Fig. 1 is a plan view of a mounting comprising my invention,

Fig. 2 is a front elevation thereof,

Fig. 3 is a view taken on line 3—3 of Fig. 1,

Fig. 4 is a rear elevation,

Fig. 5 is an enlarged sectional view illustrating the mounting of the tube holding clip in the saddle,

Fig. 6 is a side elevation of a modified construction,

Fig. 7 is a plan view thereof,

Fig. 8 is a front elevation of a further modified construction, and

Fig. 9 is a side elevation thereof.

In Figs. 1-5 of the drawing I have illustrated a lighting tube 10 as supported on a saddle 12 forming the free outer end of a post 14 mounted on a base 16. Each tube is usually supported on a plurality of saddles disposed in spaced relation along the tube. Each post is supported by a bracket 18 formed of sheet material and secured to the base by a screw 20 extending through a slot 22. The slot is open at its outer end which end is also preferably turned slightly upward at 24 as illustrated, all for reasons hereinafter described. The post is ordinarily molded in one solid piece from vitreous material such as porcelain or glass as illustrated in Fig. 5.

The tube rests in a depressed seat at the outer end of the saddle and my improved clip is adapted to hold it secured in position on the seat. In its preferred form the clip is constructed from a single piece of wire bent to the shape illustrated and comprising two U-shaped elements 26. The clip is pivoted at one end 28 to one end of the saddle and its other end is adapted to latch into engagement with a shoulder on the other end of the saddle and hold the clip tightly engaged with the tube.

The two legs at one side of the clip have their end portions 30 bent toward each other in substantial parallelism to provide a supporting pivot for the clip, and the legs can be spread apart to insert these portions into a pivot hole 32 in the saddle. The extreme ends of these portions are bent to provide shoulders 34 for engaging the saddle shoulders at the ends of the hole 32 to secure the clip against disengagement from the saddle. The intermediate portion of the wire at the other end of the clip is bent outwardly to

form two lateral ears 36 and from thence inwardly to provide a latching bridge 38. The bridge portion is furthermore bent outwardly to U shape to provide an engaging and disengaging lip 40. Portions of the U-ends of the two elements 26, remote from the leg portions, are preferably disposed out of the normal U-path of the elements, as by being bent toward each other at 42, thereby adding resiliency to the tube engaging action of the clip and giving it a greater compensating latitude of engagement with the tube.

The post and saddle supporting brackets 18 are secured to the base 16 by screws 20 and such placing and securing of the brackets precedes the placing of the tube on the saddles. It is considerably more convenient to place and drive the screws independently of the bracket and I preferably provide brackets with open slots 22 to facilitate this operation. This construction permits the placing and driving of the screws independently to a position in which the heads are only slightly spaced from the base surface. The brackets are then slid into place beneath the screw heads and the screws are then driven home, the up-turned ends 24 facilitating the insertion of the brackets.

It will be apparent that my improved clip is attached pivotally to the saddle 12 merely by spreading its ends as illustrated in Fig. 5 and the shoulders 34 normally prevent disengagement of the ends from the saddle. The tube is placed on the saddle while the clip is in open position and the clip is then pivoted to closed position and the bridge 38 latched into engagement with the shoulder 44 of the saddle. Due to the resiliency of the clip, and especially to the resiliency of the distorted portion 42 and the bridge, the clip automatically grips the tube with a constant resilient pressure holding it tightly on the saddle. Pushing downwardly on the lip 40 springs the bridge downwardly and aids in its engagement with the shoulder 44. The clip can be disengaged from one side of the tube by pulling outwardly on the lip 40 or from the other side of the tube by pushing on the ears 36, thus permitting easy manipulation from either side. The distorted portion 42 furthermore serves the functions of limiting backward pivotal movement of the clip and permitting slight lengthening of the elements 26 by straightening these portions should occasion require.

While my improved clip preferably employs a plurality of U-shaped loops for engaging the tube, I desire it to be understood that the clip can be constructed with a single loop, for example, as illustrated in Figs. 6 and 7. In this construction a single piece of wire 50 is bent to U shape and one end portion 52 is disposed laterally to engage in a hole provided in the saddle and the other end 54 is formed to provide a bridge or latch for engaging the saddle and holding the clip in closed position. A shoulder 56 prevents disengagement of the pivot end from the saddle and a lip 58 is provided on the other end for engaging and disengaging the latch relative to the saddle. The U-portion of the loop is also distorted out of the normal U-path of the clip as at 60 for adding resiliency to the clip.

The U-shaped clip illustrated in Figs. 1–7 and above described is adapted positively to engage the saddle at both ends of the clip but I desire it to be understood that my invention is also applicable to a clip adapted to engage and hold the tube by resilient action. Such adaptation of the invention is illustrated in Figs. 8 and 9 of the drawing. The single piece of wire is bent to provide two U-shaped wire portions 62 embodying two pairs of legs respectively at opposite sides of the clip. The end portions of one pair of legs are formed into eyes 64 for engaging trunnions 66 on the saddle 67, the legs normally moving toward each other to hold the eyes in place on the trunnions. In both forms of the invention the resiliency of the clip serves to hold the pivot means engaged with the saddle and the clip can be instantly engaged with or disengaged from the saddle with great convenience. The intermediate portion of the wire at the other side of the clip provides a loop 68 connecting the two legs of the clip. The clip is adapted by its own resiliency to remain in the tube holding position shown in full lines in Figs. 8 and 9 and can be opened from that position merely by pushing on the loop end 68. The two legs are bent inwardly at 70 to provide means for engaging the post and limiting rearward pivotal movement of the clip.

Having now disclosed my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A clip for lighting tubes, comprising a single piece of wire bent to provide two U-shaped wire portions embodying two pairs of legs respectively at opposite sides of the clip, the end portions of the wire extending angularly from their legs in parallel relation at one side of the clip to form supporting pivot means for the clip and the intermediate portion of the wire at the other side of the clip providing a loop connecting the two legs of the clip, the resiliency of the clip normally moving said end portions toward each other and being adapted to hold the pivot means of the clip engaged with cooperating pivot means on which the clip is mounted.

2. The clip defined in claim 1 in which intermediate portions of the two legs are bent inwardly toward each other to provide a stop bridge between the legs.

3. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, a bracket on the post remote from said end for supporting the post on a base with said end projecting outwardly and in spaced relation therefrom, the saddle having pivot means integral therewith and a shoulder spaced from said means, and a clip embodying a single piece of wire bent to U-shape and having one end pivoted directly to said pivot means and disengageable latch means at its other end for engaging the shoulder to hold the clip in closed position, the latch means being engageable with and disengageable from the shoulder independently of the pivot means and the clip being pivotally movable to open and closed positions about the pivot means and supported thereby on the saddle in all pivotal positions thereof.

4. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, a bracket on the post remote from said end for supporting the post on a base with said end projecting outwardly and in spaced relation therefrom, the saddle having pivot means integral therewith and a shoulder spaced from said means, and a U-shaped member embodying two resilient U-shaped elements in spaced relation and having one end pivoted directly to said pivot means and means at its other end for engaging the shoulder to hold the clip in closed position.

5. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, the saddle having a hole

therethrough at one side and an integral shoulder at its other side, and a clip comprising two U-shaped wire portions embodying two pairs of legs respectively at opposite sides of the clip, the end portions of one pair of legs extending angularly from their legs and in parallel relation toward each other within said hole and forming a supporting pivot for the clip, and the end portions of the other pair of legs extending angularly from their legs toward each other and forming a bridge between and connecting the legs, the bridge being adapted to engage said shoulder to hold the clip in closed position on the saddle.

6. The mounting defined in claim 5 in which the first named two end portions have free ends permitting the spreading of the legs thereof for inserting and removing said ends relative to said hole.

7. The mounting defined in claim 5 in which the second named two end portions comprise a single piece of wire having its intermediate portion between the legs bent laterally outward to U shape to provide a releasing lip for the clip.

8. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end and having a shoulder at one side, a U-shaped clip of resilient material pivoted at one leg end thereof to the saddle and pivotally movable thereabout from an open position to a closed position in encompassing engagement with a tube on the saddle, and means at the other leg end for engaging the saddle to hold the clip in closed position, said other leg end extending outwardly beyond the clip at both sides to provide disengaging ears and being provided with a bridge therebetween for latching engagement with said shoulder.

9. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, a bracket on the post remote from said end for supporting the post on a base with said end projecting outwardly and in spaced relation therefrom, and a U-shaped member embodying two resilient and integrally connected U-shaped legs in spaced relation and having end portions directly engaging the saddle and pivotally mounting the member on the saddle for movement into holding engagement with a lighting tube thereon, said end portions of the member being spreadable apart to assemble the member in said pivotal relation on the saddle.

10. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, a bracket on the post remote from said end for supporting the post on a base with said end projecting outwardly and in spaced relation therefrom, the saddle having two trunnions integral therewith and projecting outwardly in opposite directions from opposite sides thereof, and a tube clamping member embodying two resilient and integrally connected U-shaped elements in spaced relation and having eyes at one end of the member engaging the trunnions for pivotally mounting the member on the saddle, said eyes being of a size to detachably engage over the ends of the trunnions when the elements are spread apart.

11. A mounting for lighting tubes, comprising a post including a tube supporting saddle on and integral with one end, a bracket on the post remote from said end for supporting the post on a base with said end projecting outwardly and in spaced relation therefrom, the saddle having a V-shaped tube-supporting socket on its outer face and a hole therethrough at one side of the socket and an integral shoulder at the other side, a clip comprising a wire having its intermediate portion bent to U-shape to engage and hold a tube in the socket on the saddle, one end portion of the wire extending into said hole and providing a pivotal mounting of the clip on the saddle and another portion of the wire being formed into a disengageable latch for engaging the shoulder and holding the clip in closed and tube-securing position on the saddle, and a shoulder on the free end of said one end portion of the wire for retaining the clip in the saddle.

12. The mounting defined in claim 4 in which said U-shaped elements have offset tube engaging loops intermediate their ends to provide tube holding resiliency and serve as a post engaging stop limiting backward pivotal movement of the member.

EARLE E. POOLER.