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E. I. CLEMENCE

2,123,231

SUPPORT CLIP ATTACHMENT FOR MINIATURE ELECTRIC LAMPS

Filed March 5, 1937

Fig. 2.

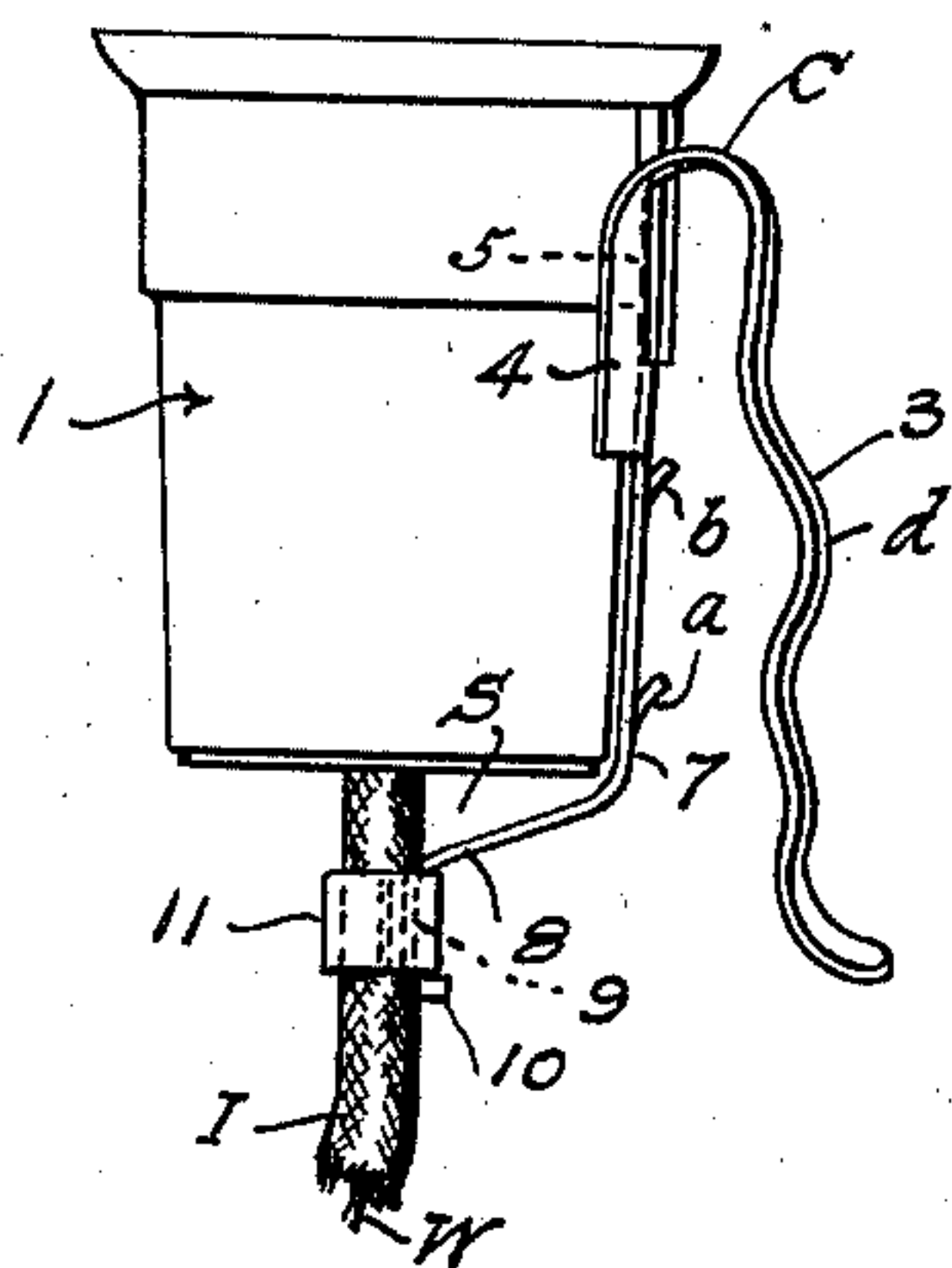


Fig. 1.

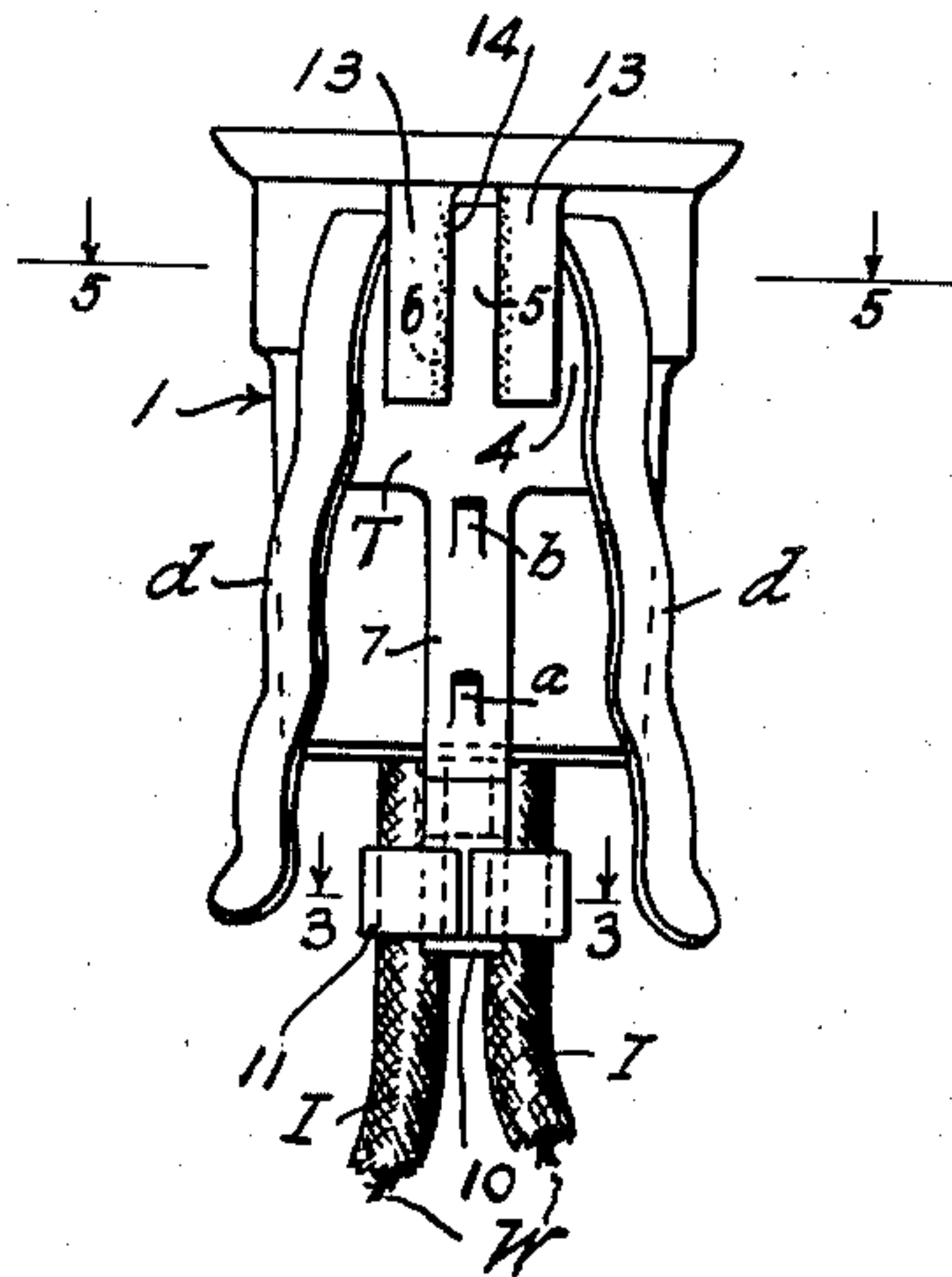


Fig. 4.

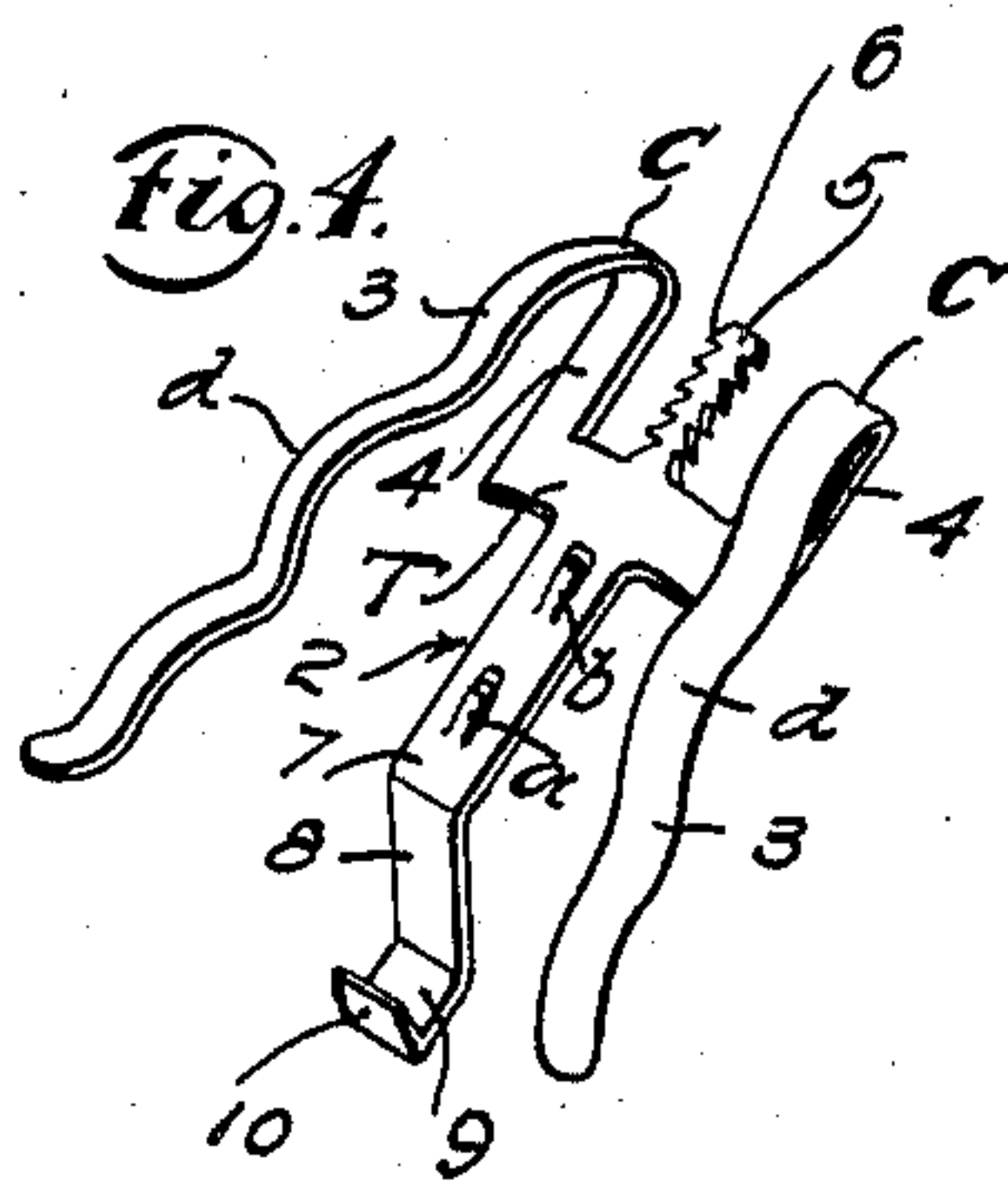


Fig. 3.

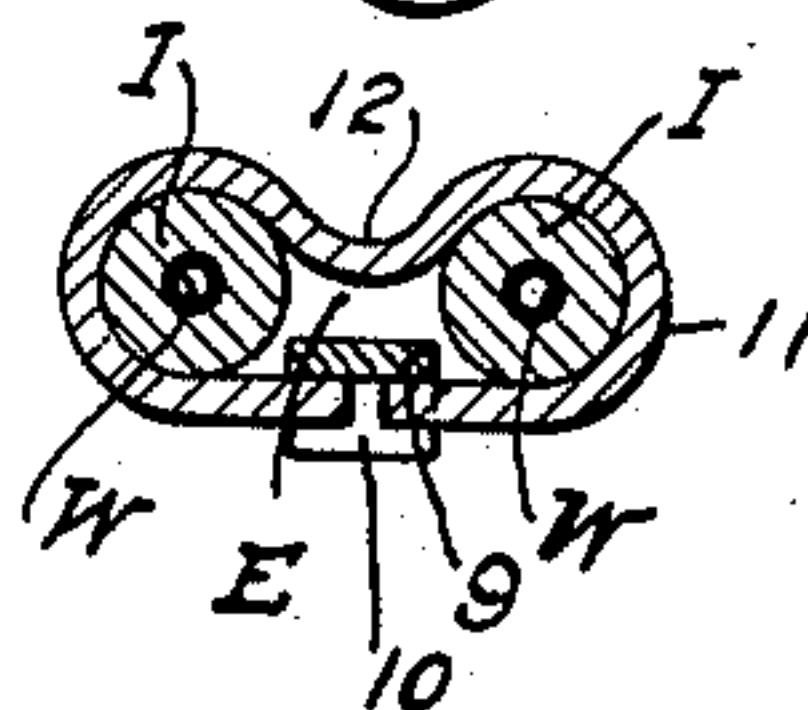
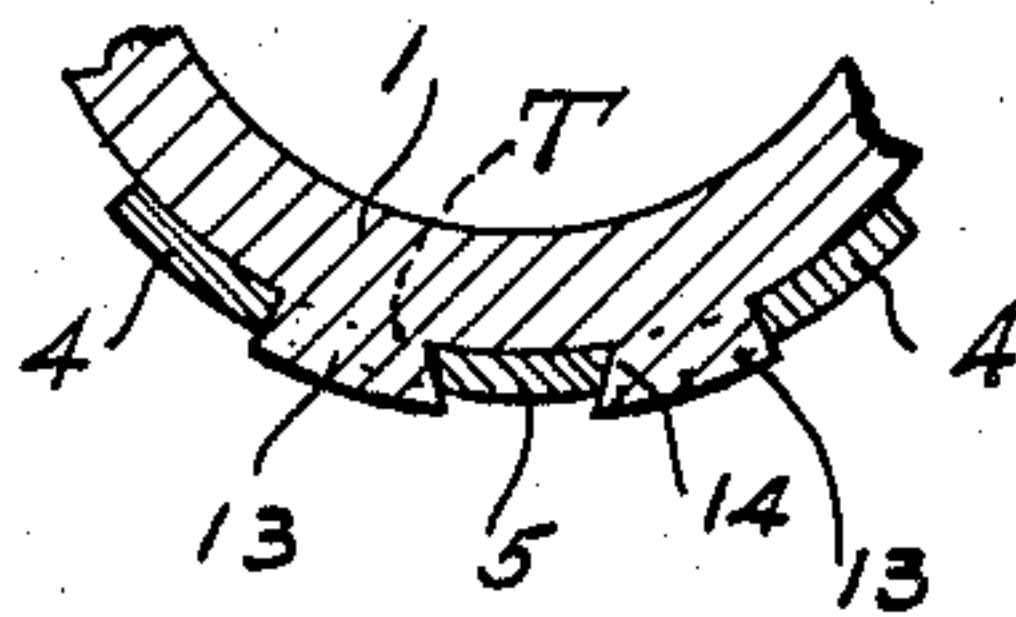


Fig. 5.



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SUPPORT CLIP ATTACHMENT FOR MINIA-
TURE ELECTRIC LAMPS

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3 Claims. (Cl. 240—10)

The present invention relates to an improvement in electric lamp sockets and clips therefor, and is, more especially, related to sockets for use with miniature electric lamps, such as are used in Christmas tree lighting outfits and the like.

Heretofore, these miniature sockets, which are comparatively simple and low in cost, have been so made as to render them hazardous in their normal use, the tendency being that parts of the assembly, such as the wiring on the sockets or husks is sometimes pulled away from their assembled connection to the terminals of the socket, thus either breaking the series circuit into which many lamps are connected, causing all of them to go out, and in some instances adding the danger of short circuiting the lamp line and causing fire to ensue.

The short circuiting has been mainly due to the fact that the conducting wires of the socket normally lie very close together at the wire entrant position of the socket, and when a wire, or wires, were accidentally pulled out the bare ends of the wires would touch and a short circuit ensues.

A further disadvantage, is that sometimes the insulation and braiding about the wires is loosened, in handling, at or near the wire entrant portion of the socket, and the insulation and braiding is slipped on the conductor wires, baring the same, thus exposing the bare wires to the hazard of contacting and thus also cause a short circuit.

The present improvement is developed to prevent the above noted failures, the accomplishment of these factors of safety being done with reasonable cost, and eliminating the hazards pointed out.

There are, in addition, other features of improvement in the clip structure, whereby the miniature lighting circuit is attached to the branches of the trees upon which they are mounted to prevent accidental slippage from the engaged branch, and to increase the grip of the clip to its engaged operative position.

All of the foregoing improved features are embraced in the clip itself, and the clip, when engaged to the lamp husk in assembling the structure, cooperates to combine all of the socket improving features and functions in substantially a single assembly, and to anchor the wires to an extension of the clip, to prevent their withdrawal from the socket.

The foregoing and other features of advantage will be apprehended as the herein description proceeds, and it will be obvious that mod-

fications may be made in the structures shown, without departing from the spirit hereof or the scope of the appended claims.

In the drawing,

Fig. 1 is a front, enlarged view in elevation of the improved clip and socket;

Fig. 2 is a side view thereof in elevation;

Fig. 3 is an enlarged sectional view, taken on the line 3—3, Fig. 1 looking in the direction of the arrows;

Fig. 4 is a perspective view of the clip alone; and

Fig. 5 is an enlarged fragmentary sectional view of the husk and clip taken at about the line 5—5, looking in the direction of the arrows.

The clip, generally denoted by 2, Fig. 4, preferably stamped out of flat semi-spring steel, in one piece, comprises a central stem portion having an upper head T, from the center and extremities of which is extended three trident-like extensions 4—4 and 5. Central extension 5 is provided along its upper, opposed edges with downwardly extended sharp triangular teeth 6. The outer extensions 4—4 are elongated and curved downwardly at C, so as to form outwardly flared, convoluted, and downwardly directed tree branch clamping extensions 3—3. The extensions 3—3 are flared away from central extension 5, and are flared away from one another. It will be noted that one of the central convolutions of each extension 3—3 are in opposite registration with each other and these in turn are located centrally of two small spurs a—b, which are stamped upwardly out the central stem 5, Figs. 1 and 4, and these all co-act to clasp a branch of the tree between them, the sharpened ends of the spurs a—b tending to grip the tree branch upon which the clip is engaged and thereby prevent the clip from turning or rotating on the branch, or from becoming loosened from said branch, and thus, if the clip is properly set upon a branch to hold the husk 1 properly upright, the whole fixture will remain upright against accidental displacement.

The central stem 7 of the clip is extended downwardly centrally of the spring branch clamping extensions 3—3 and extends centrally, in alinement with central extension 5, Figs. 1 and 4, and near its lower end, is angularly inbent at an angle to form a step 8, and is then bent parallel to stem 7 to form an inbent extension 9, and the end of 9 is bent outwardly at an angle to form step 10. The bending of the lower end of stem 7 into portions 8, 9 and 10 is so located that step 8, clears the bottom of the husk, leav-

ing a suitable space S therebetween, as fully shown in Fig. 2.

The inbent portion 9 is so located as to be parallel to the conductor wires I—W, I—W, as in Fig. 2 and to be in parallel contact with one side of the paired wires.

The husk, or socket piece 1, usually moulded of a suitable dielectric plastic, has two spaced apart outstanding lugs 13—13 moulded upon its exterior, near the upper edge thereof, and the inner faces thereof are tapered inwardly, as shown in Fig. 5, thus to form a gib-way 14, into which the serrated, toothed central stem is firmly seated, by pushing upwardly until the cross piece T, Fig. 1, strikes the bottom ends of lugs 13—13. The downward inclination of the serrated teeth 6, dig into the angular sides of the gib-way 14, and prevent easy withdrawal of the holding stem 5.

As shown in Fig. 5 the two outer extensions 4—4 snugly span and engage the outer edges of lugs 13—13, and thus the clip is firmly held in desired assembled position to the husk.

It will be noted that the husk is substantially circular in cross section, as in Fig. 5, and that the cross piece T and the extensions 4—4 and 5, where they engage against the surface of the husk are curved to partake of the cylindrical or curved husk surface. This curving of these elements causes the out-flare in part of the convoluted branch engaging portions 3—3 on extensions 4—4.

After the assembly of the husk, the clip and the wiring to the socket, as above described, a conductor wire holding ferrule, made from a flat strip of semi-spring metal is tightly clamped around the two wires I—W, Figs. 1, 2 and 3, to form an embracing ferrule clamp 11, Fig. 3, whereby to compressively clamp the wires and the seat 9 of extension 7 in a firm, compressive embrace, the ends of the clamped ferrule resting upon the face of seat 9 Fig. 3. To further insure against the accidental withdrawing of the wires from their assembled operative position in the socket, the ferrule, Fig. 3, is indented as at 12, to increase the ferrule grip about the wires. As the wiring I—I is encased in an insulated and

braided covering W, and this structure is firmly adhered to the extension 7, by the ferrule 11, it is obvious that more than ordinary force is required to pull the wires from the socket.

The structure of the clip and its embedding in the lugs 13—13 not only takes all of the undesired pull on the wires I—W, but the extension 7 is somewhat resilient and acts, with the ferrule, to become a resilient armor for said wires and serves to prevent breaking of the wires at the entrant socket portion from too frequent bending thereat.

The ferrule 11, Fig. 3, by its indent 12, also serves to space the wires apart as shown at e, thus to fix the insulation spacing at the required maximum at this point.

Having thus described the invention what is claimed is:

1. An electric lamp socket, comprising a husk of insulating material having wiring connected thereto, a pair of integral, spaced apart lugs on one side of said husk, a tree limb embracing clip having elongate, spaced apart and backwardly curved clip members, with a central, serrated toothed stem therebetween, said clip being seated between said lugs with the toothed stem in frictional engagement with the inside edges of said lugs, said clip having an extension coaxial with said toothed stem, the outer end of said extension being bent at an angle towards the axis of said husk, a ferrule seat located at the outer extremity of said extension and in parallel contact with said wiring externally of said husk and a wire clamping ferrule clamped about said wiring and said ferrule seat.

2. An electric lamp socket as described in claim 1, in which the wire clamping ferrule is indented on one side to compressively embrace and partially surround said wiring and to hold said wiring spaced apart.

3. An electric lamp socket as set forth in claim 1, in which the wire clamping ferrule is spaced a distance away from the wire entrant portion of the husk and the coaxial extension upon which the ferrule is mounted is resilient.

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