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DEVICE FOR ATTACHING LAMP SHADES TO ELECTRIC SOCKETS

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Fig. 1

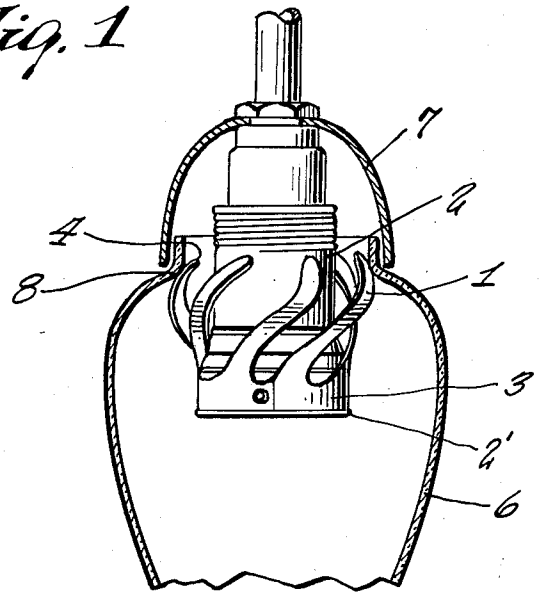
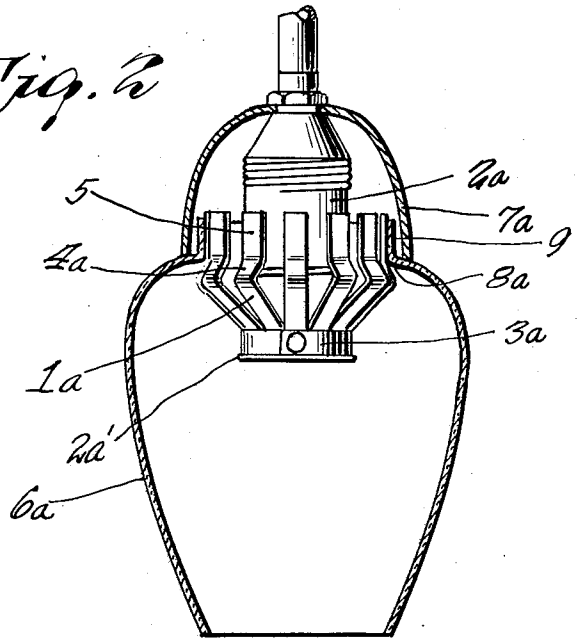



Fig. 2




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# DEVICE FOR ATTACHING LAMP SHADES TO ELECTRIC SOCKETS

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The invention relates to a device for attaching shades, globes, diffusers or similar enveloping accessories with generally circular necks to sockets of electric lamps or illuminating fixtures coaxially receivable in such necks.

Shades and the like are generally attached by means of holders to be screwed over an exteriorly threaded socket, the holder comprising a flat supporting ring provided with an interiorly threaded collar whose threads engage those of the sockets.

Making the screw connection of such shade holders to the socket is quite difficult and time-consuming. Attachment by means of such shade holders is not possible in the case of modern shades or globes with small outside openings.

Various attempts have been made to find a satisfactory solution of this attachment problem, but all have been more or less unsuccessful, the means adapted being deficient or makeshift in character.

The object of the present invention is to provide a universal device for attaching shades, globes and the like, in particular with small direct-lighting aperture.

This problem is solved essentially by means of a plurality of springs arranged crown-fashion around the socket and forming curves directed outward and returning inward, to serve as supporting clip members.

In a preferred embodiment, the springs have outwardly bent lower portions, adjoined by short upper portions directed inward.

Advantageously, the springs are cut out of one strip of spring metal and have a common web forming a closed ring by means of which they may be placed directly on the socket, or on a ring to be screwed over the socket.

In a variant, the clip members are formed by projections cut out of the socket casing or out of a shade holder ring to be screwed over the socket.

The object of the invention is thereby substantially achieved, since the attachment opening of a shade, globe or the like may readily be thrust upon the clip members over the socket against the base or cup, thus first compressing the clip members which, after the widest portion of the springs has been passed, will spread out again and thereby center and retain the shade.

Effectively as the problem may be solved by this procedure according to the invention, the solution falls short of perfection and may give trouble in practice if, for example, the setting of the clip members is not correctly adapted to the base or cup.

In the case of crown springs to be screwed over the socket, this adjustment is easily made, but may no less easily be disturbed. In the case of crown springs integral with the socket, there is no way to correct any maladjustment.

In the event of such maladjustment, namely when the space between the crown spring and the base is too great, the opening of the shade will slip too far over the spring, so that the spring gets out of the opening and spreads out inside the shade. In this position, the shade fails to be centered on the socket.

Nor can the shade now be removed without damaging the springs or the shade, the ends of the springs being spread beyond the opening of the shade and caught behind its adjoining wall portions.



Another object of the present invention, therefore, is to overcome these defects.

To achieve this object, the spring members, next to their terminal portions bent inward, are provided with extensions substantially parallel to the centerline, the circumscribed circle of these prolongations in spread condition being equal to or greater than the opening of the shade in diameter.

This arrangement effectively prevents further spreading of the spring members inside the shade, since their straight terminations always remain within the attachment opening. By the same means, the shade is kept centered.

According to a further feature, the spring parts extend helically from their points of attachment around the body of the socket.

In a preferred embodiment, the helix or pitch of such spring clamp parts is about 45°.

This provision, according to the invention, of spring members forming a crown or basket and attached to the socket affords extraordinary ease of mounting and removing shades, in particular of glass, because the springs, when compressed, can yield not only towards the socket but also laterally.

At the same time this effectively prevents the inward-directed extremities of the spring members from entering and getting caught in the threads of screw sockets when the crown of springs is compressed during mounting or removal of the shade, thus obviating the risk of damage to the shade or the supporting members which would otherwise exist if one should try to mount or remove the shade by force. Thus, the spring members will retract around the socket when compressed.

Furthermore, the helical form of the clip members will permit accommodation of a considerably larger number of different sizes of attachment openings of shades than would be the case with substantially axially extending spring members, with resulting substantial economy of fitting sizes and hence of inventory to be stocked.

These spring members may likewise be cut out of the socket casing or out of a collar to be pressed or screwed on the socket, or else out of a strip in which case two blanks with marginal webs left intact may conveniently be obtained out of one length of strip.

Individual springs would require two rivets each for attachment in fixed position, while spring units cut out of strip require only one rivet or equivalent fastening means.

The device according to the invention will now be more fully described with reference to the accompanying drawing, but it should be understood that the same is given solely by way of illustration and not of limitation and that many changes in the details may be made without departing from the spirit of the invention.

In the drawing:

FIG. 1 shows a view, in partial section, of one embodiment of the invention; and

FIG. 2 shows a similar view of another embodiment.

In both figures, the attachment device comprises spreading spring members or clips **1** and **1***a*, respectively, arranged crown- or basket-fashion and fastened to respective sockets **2** and **2***a*. In the embodiments shown, these clip members **1** and **1***a* are cut out of a single strip of spring metal whose uncut marginal portion is riveted into a ring **3** or **3***a* which is then fitted into an annular peripheral recess **2'** or **2***a'* on the lamp-receiving lower, open end of a lamp socket **2** or **2***a*. Clip members **1** and **1***a* are bent outward, and then provided with inturned portions **4** and **4***a*, respectively. In the embodiment of FIG. 2, this is followed by extensions **5** substantially parallel to the center line or axis of the socket, their circumscribed circle in spread condition having a

diameter equal to or greater than that of the attachment opening of the desired shade. A shade *6a* is thrust upon the clip members *1a* against the cup *7a*, the bends *4a* obtaining a purchase on the inside lower edge *8a* of the attachment opening of shade *6a*, while the straight terminations **5** rest within the mouth of the cup against the flange **9** of the shade opening for added support.

Now, without damage to any parts, the shade *6a* is securely centered since it is held by bends *4a* and cannot slip from the attachment device by its own weight.

The straight extensions **5** of clip members *1a* are preferably long enough to ensure contact with the inner edge *8a* of the attachment opening of a shade *6a* even in the case of screw-on crown springs. That is, if the ring *3a* is formed with a thread to be screwed on socket **2** this thread will not make engagement until the straight ends **5** of clip members **1** are safely within the attachment opening of the desired shade *6a*.

The attachment device according to the invention affords simple and convenient installation and replacement of shades, globes and similar parts on electric lamps and fixtures. This may easily be done by hand, without tools, for testing, demonstrating or cleaning purposes. The clip members gently and safely hold the shade, globe or the like against the base, cup or other backing parts attached to the socket.

Furthermore, this attachment device will serve to attach shades and globes of any shape, including flared, double-conical or spherical.

As shown in FIG. 1, the spring members **1** stand at an angle of about 45° to the centerline of the socket **2**, curving helically about its axis, and are likewise bent first outward as aforesaid, and then gently curved inward in a bend **4**. The outside diameter of the basket formed by the spring members **1** exceeds that of ring **3** and is greater than the inside diameter of the attachment opening of the desired shade. A shade **6** is thrust upon the spring basket **1**, **3** against the cup **7**, the bends **4** obtaining a purchase on the inside lower edge **8** of the attachment opening of the shade **6** within the mouth of the cup.

As a result of the helical form of the spring fingers **1**, these close around the socket when compressed. The bends **4** always extend into the attachment opening of the shade **6**, permitting both mounting and removal thereof.

Mounting and removal become specially easy if the shade **6** is rotated with the helix. The softness of the spring action reliably prevents damage to glass shades, while the plurality of springs ensures adequate holding and centering force.

The closing of clip members **1** around the socket when compressed renders it possible to make the bends large enough to accommodate a wide range of sizes of attachment openings of shades **6**, while the distribution of forces of clip members **1** as a result of the helical form is particularly advantageous in that the springs need not be too stiff in their action as the shade **6** is mounted or removed.

What I claim is:

1. A device for securing an enveloping accessory with a substantially circular neck to a lamp, comprising a socket with a lamp-receiving end, a generally cup-shaped element fastened to the other end of said socket and surrounding with clearance a portion of said socket adjacent said other end, said element having a mouth open toward said lamp-receiving end, a ring of smaller diameter than said mouth engaging said lamp-receiving end at a location external of said element and axially spaced from said mouth, and a set of elongated resilient clip members extending from said ring toward said mouth while having corresponding fixed extremities rigid with said ring, said members having outwardly bent portions ahead of said mouth lying on a circle greater than said ring and free extremities beyond said portions extending with clearance into said mouth, thereby forming a seat for the neck of said accessory within said mouth, said fixed extremities lying on a circle having a diameter less than that of said neck, said members diverging outwardly from said fixed extremities to said outwardly bent portions whereby the neck of said accessory can be thrust axially over said ring and past said outwardly bent portions toward said seat, said neck camming said outwardly bent portions inwardly to permit its passage past the latter.

2. A device according to claim 1 wherein said members spacedly extend along substantially helical lines around said socket, whereby the distance along said members between their extremities is greater than the axial distance between said ring and said free extremities.

3. A device according to claim 1 wherein said free extremities extend substantially axially within said mouth.

4. A device for securing an enveloping accessory with a substantially circular neck to a lamp, comprising a socket with a lamp-receiving lower end, said socket being formed with a peripheral annular recess surrounding said lower end, a generally cup-shaped element fastened to the upper end of said socket and surrounding with clearance a portion of said socket adjacent said upper end, said element having a mouth open toward said lower end, a ring of smaller diameter than said mouth engaging said recess at a location external of said element and below said mouth, and a set of elongated resilient clip members extending from said ring toward said mouth while having corresponding fixed extremities rigid with said ring, said members having outwardly bent portions below said mouth lying on a circle greater than said ring and free extremities above said portions extending said clearance into said mouth, thereby forming a seat for the neck of said accessory within said mouth, said fixed extremities lying on a circle having a diameter less than that of said neck, said members diverging outwardly from said fixed extremities to said outwardly bent portions whereby the neck of said accessory can be thrust axially over said ring and past said outwardly bent portions toward said seat, said neck camming said outwardly bent portions inwardly to permit its passage past the latter.

5. In an illuminating fixture, in combination, a socket with a lamp-receiving end, a generally cup-shaped element fastened to the other end of said socket and surrounding with clearance a portion of said socket adjacent said other end, said element having a mouth open toward said lamp-receiving end, a ring of smaller diameter than said mouth engaging said lamp-receiving end at a location external of said element and axially spaced from said mouth, a set of elongated resilient clip members extending from said ring toward said mouth while having corresponding fixed extremities rigid with said ring, said members having outwardly bent portions ahead of said mouth lying on a circle greater than said ring and free extremities beyond said portions extending with clearance into said mouth, and a lamp-enveloping accessory supported on said members, said accessory having a substantially circular neck of a diameter intermediate those of said ring and said mouth said members diverging outwardly from said fixed extremities to said outwardly bent portions whereby the neck of said accessory can be thrust axially over said ring and past said outwardly bent portions toward said seat, said neck camming said outwardly bent portions inwardly to permit its passage past the latter, said neck extending into said mouth and bearing on said outwardly bent portions.

6. In an illuminating fixture, in combination, a socket with a lamp-receiving lower end, said socket being formed with a peripheral annular recess surrounding said lower end, a generally cup-shaped element fastened to the upper end of said socket and surrounding with clearance a portion of said socket adjacent said upper end, said element having a mouth open toward said lower end, a ring of

smaller diameter than said mouth engaging said recess at a location external of said element and below said mouth, a set of elongated resilient clip members extending from said ring toward said mouth while having corresponding fixed extremities rigid with said ring, said members having outwardly bent portions below said mouth lying on a circle greater than said ring and free extremities above said portions extending with clearance into said mouth, and a lamp-enveloping accessory depending from said members, said accessory having a substantially circular neck of a diameter intermediate those of said ring and said mouth said members diverging outwardly from said fixed extremities to said outwardly bent portions whereby the neck of said accessory can be thrust axially over said ring and past said outwardly bent portions toward said seat, said neck camming said outwardly bent portions inwardly to permit its passage past the latter, said neck extending from below into said mouth and resting on said outwardly bent portions, said free extremities extending upwardly within said mouth in contact with the inner surface of said neck.



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