

Oct. 27, 1931.

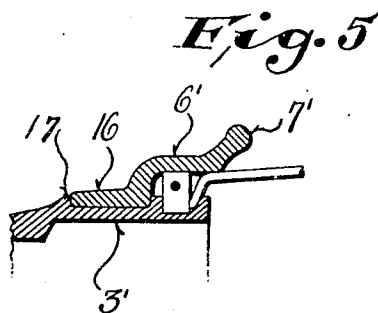
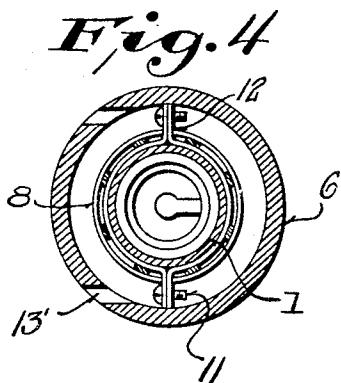
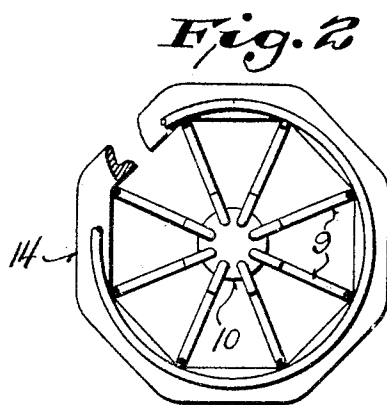
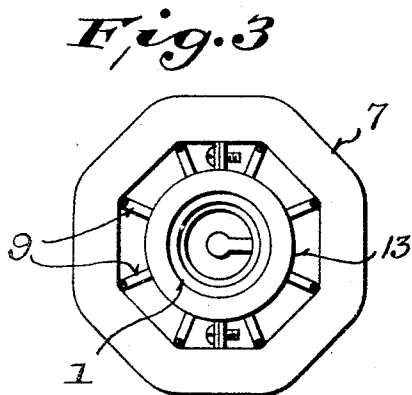
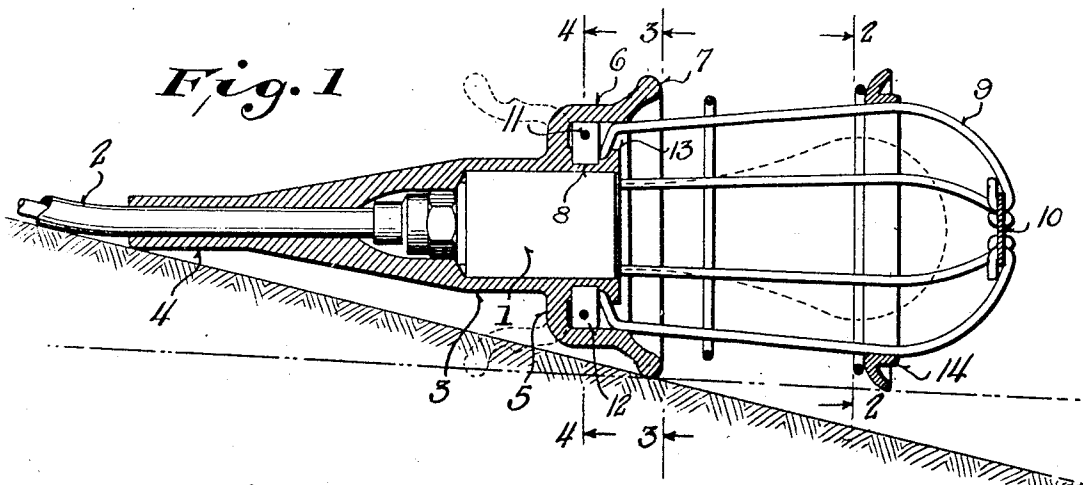
J. P. EASTMAN

1,829,345

BUMPER FOR ELECTRIC LAMPS

Filed June 3, 1929

2 Sheets-Sheet 1



Inventor
Joseph P. Eastman

By *Arthur R. Woolfolk,*

Attorney

Oct. 27, 1931.

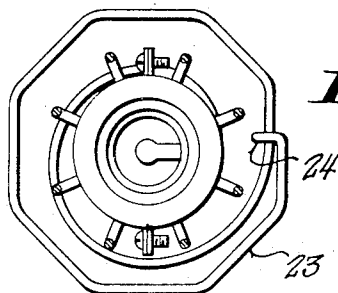
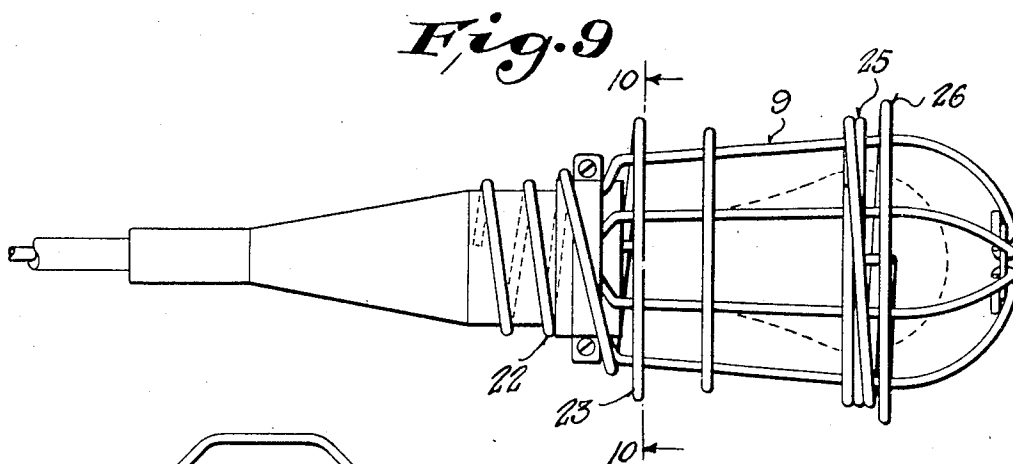
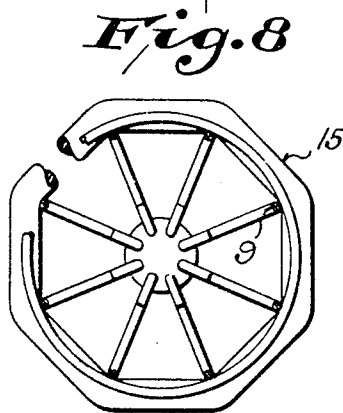
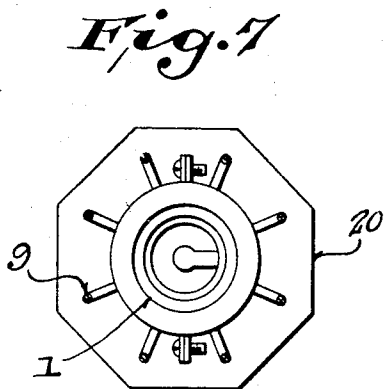
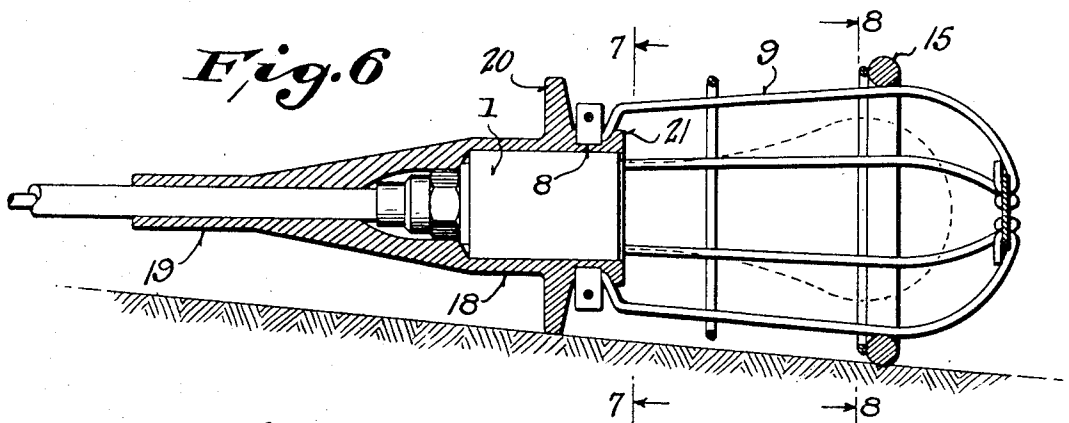
J. P. EASTMAN

1,829,345

BUMPER FOR ELECTRIC LAMPS

Filed June 3, 1929

2 Sheets-Sheet 2



Inventor
Joseph P. Eastman

By Arthur R. Woolfolk

Attorney

UNITED STATES PATENT OFFICE

JOSEPH P. EASTMAN, OF MANITOWOC, WISCONSIN

BUMPER FOR ELECTRIC LAMPS

Application filed June 3, 1929. Serial No. 367,912.

This invention relates to bumpers for electric lamps.

Where electric lamps are used on cable extensions, as in garages, machine shops, and similar places, they are often dragged along the floor and occasionally accidentally dropped. The metal cages provided for the lamps partly protect the glass, but they fail wholly to protect the filament against sudden shocks, with the consequence that the filaments are very often broken, and the glass is also occasionally broken.

This invention is designed to overcome the defects noted above, and objects of such invention are to provide a novel form of bumper for electric lamps which cooperates with the lamp and the cage, and provides a cushioned bumper structure which absorbs or cushions the shocks and greatly lengthens the life of the lamp, both as regards the filament and the glass.

Further objects are to provide a construction of bumper for electric lamps which is so made that it will not catch upon projections, but will slide freely thereover, which affords an insulating or nonconducting safety handle, such handle surrounding the socket and the portion of the cable adjacent the socket, and which is so constructed that it keeps water out of these parts and protects the user against electric shocks.

It is frequently necessary to insert the lamp and cage in a relatively confined space, and this invention contemplates, as further objects, the provision of cushioning means or bumpers which are so constructed that they may be either crushed or folded to permit the free insertion of the lamp and cage in a confined space, or may be removed, as occasion demands.

Further objects are to provide a novel form of protecting means for electric lamps which is so made that a cushioning effect is produced adjacent the base of the lamp and also adjacent the outer end thereof, and in which the construction provides a cushioning support for the lamp so that it may be placed upon any desired object and will yet provide the yielding support which completely cushions the lamp and cage from actual contact

with the support itself, thereby minimizing the transmission of vibrations to the filament of the lamp. This construction, therefore, permits the placing of the cushioned lamp upon a vibrating support with the assurance that the jars will not be transmitted to the filament with an intensity sufficient to damage the filament. When it is considered that these lamps are frequently placed upon running engines, as in garage work, for instance, it will immediately be seen that the danger of a rapid deterioration or breaking of the filament from continued jarring will not take place.

A further object is to provide a bumper construction for electric lamps which is so made that it will prevent the lamp from rolling and will provide a plurality of faces, any of which may contact with the support.

Further objects are to provide a construction of bumper in which provision is made for the ready attachment of the cage so that access may be freely had to the screws, bolts or other means by which the cage is secured, in which protection is afforded for the cable adjacent the lamp socket, and in which a compact and easily handled construction is produced.

Further objects are to provide a bumper construction for electric lamps which is very cheap in manufacturing cost, which is easy to apply, and which is relatively simple.

Embodiments of the invention are shown in the accompanying drawings, in which:—

Figure 1 is a longitudinal sectional view through the device showing one form of the invention.

Figure 2 is a transverse sectional view on the line 2—2 of Figure 1.

Figure 3 is a transverse sectional view on the line 3—3 of Figure 1.

Figure 4 is a transverse sectional view on the line 4—4 of Figure 1.

Figure 5 is a fragmentary sectional detail showing a modified form of the invention.

Figure 6 is a view corresponding to Figure 1 showing a further form of the invention.

Figure 7 is a transverse sectional view on the line 7—7 of Figure 6.

Figure 8 is a transverse sectional view on the line 8—8 of Figure 6.

Figure 9 is a side elevation of another form of the invention.

Figure 10 is a sectional view on the line 10—10 of Figure 9.

Referring to Figures 1 to 4 showing the first form of the invention, it will be seen that a lamp socket indicated generally by the reference character 1 has been shown as securely attached to a cable 2. This lamp socket may be of the form shown in my copending application for United States Letters Patent S. N. 352,082 filed April 3, 1929 for lamp sockets, or it may be of any desired type.

The lamp socket and the adjacent portion of the cable 2 are covered by a rubber sleeve 3, which has a rearwardly extending portion 4 of lesser diameter than the main body portion of the sleeve. This sleeve fits tightly over the lamp socket and over the adjacent portion of the cable, and completely houses the lamp socket. It is provided with an outwardly projecting flange or portion 5 which continues in the form of a forwardly projecting overhanging lip 6. This lip preferably terminates in a forwardly and outwardly flaring beaded lip 7. The forwardly overhanging portion 6 is spaced from the portion 3, as is apparent from Figure 1, and provides an annular space for the reception of the end clamp 8 of the wire cage 9 for the electric lamp, (the electric lamp being dotted for the sake of clearness). This cage may be of any standard type. For instance, it may have a plurality of spaced wires, in the form shown eight in number, which are loosely clamped to an outer perforated end plate 10. Preferably this cage is formed in half sections, so that it may be opened out slightly at its rear end to receive the lamp, in accordance with the usual practice. After the cage is positioned, the clamping ring 8 is drawn together by means of screws or bolts 11, these screws or bolts passing through outwardly turned ears 12 of the ring 8, as shown in Figures 1 and 4. The ring 8 is therefore clamped upon the forward part of the portion 3 of the bumper or protecting sleeve. The extreme outer end of the portion 3 is preferably provided with an outwardly projecting flange 13, which may be provided with small notches for the reception of the curved or inwardly turned portions of the wires of the cage.

The forwardly projecting annular lip 6 may be turned rearwardly into the dotted line position shown in Figure 1 to give access to the screws 11. If desired, this lip 6 may be provided with apertures 13', through which a screw driver may be inserted for engagement with the screws 12.

The invention contemplates the use of a forward bumper as well as the rear bumper described in detail above. This forward

bumper may take the form of an annular member or ring of rubber. It may have any of several different cross-sectional contours, for instance, it may be formed V-shaped or U-shaped, as shown in Figure 1 and indicated by the reference character 14, or it may be of circular shape as indicated by the reference character 15 in Figure 6. Obviously other shapes could be employed without departing from the spirit of this invention. This forward bumper provides a cushioning or yielding support for the forward portion of the cage, and consequently provides a yielding support which cushions any shocks which would otherwise be transmitted to the electric lamp.

From a consideration of Figure 1, it is clear that the device normally rests upon the rear bumper when it is laid upon a support. Obviously, when the device is dragged along the floor, it rides upon the lip 7 of the rear bumper and sometimes, also upon the outwardly projecting lip of the forward bumper, as shown in Figure 1. This provides a cushioning for the lamp and prevents shattering of the filament. It is also clear that if the device should be inadvertently dropped, it will be cushioned by the forward and rearward bumpers, and the shock will be greatly lessened.

It is preferable to form the lip 7 of the rear bumper of polygonal shape, such, for example, as indicated in Figure 3. In the form of cage shown in the drawings, an eight-wire cage is illustrated and the shape of the lip 7 may therefore conveniently be octagonal. Obviously, when the forward bumper is stretched over the forward end of the cage, it will also take an octagonal shape, as shown in Figure 2.

This construction, therefore, provides bumpers which have polygonal outer outlines, and thus provide aligned faces, any of which may rest upon a support. This construction guards against rolling of the lamp sidewise.

It is also to be noted that these lamps are frequently used in confined spaces. Under these conditions it may be desirable to remove the front bumper, which can readily be done by merely slipping or rolling it forwardly over the end of the wire cage. The rear bumper may be turned backwardly, as shown in dotted lines in Figure 1. The device then presents no projecting portion of greater diameter than that of the cage, and consequently the device may be inserted in a very restricted space.

It is within the province of this invention to make both of the bumper portions removable, if desired. The front bumper, as previously described, is readily removable, although it may not inadvertently be detached from the cage, as it is drawn tightly over, and clings to the cage. The rear bumper may be made removable by constructing it

as shown in Figure 5. In this form of the invention the rear bumper is provided with the overhanging lip 6' and may be provided with a forwardly and outwardly flaring beaded edge 7'. It is provided with a rear gripping body portion 16, which fits over the body portion 3' of the main rubber sleeve, such body portion corresponding to the portion 3 previously described. Preferably the body portion 3' of the main sleeve is provided with a small outwardly projecting rib 17, against which the curved rear end of the portion 16 abuts.

It is apparent, in this last described form of the invention, that the rear bumper may be readily removed by slipping or rolling it rearwardly out of position. Under normal conditions, when in the assembled position shown in Figure 5, the removable bumper clings to and binds against the portion 3' of the main rubber sleeve.

If desired, each of the portions 3 or 3' may be provided with an annular groove for the reception of the clamping ring 8.

Referring to Figures 6, 7 and 8 showing a still further form of the invention, it will be seen that a rubber sleeve 18 has been shown as provided with a rear portion 19 similar to the portion 4, and with an outwardly projecting disc-like flange or bumper portion 20. This flange or bumper portion 20 is also preferably of polygonal contour, for instance, it may be octagonal, as previously described. Even if this forward bumper is made of ring-like contour, it nevertheless will be drawn into a polygonal shape by the wires of the cage.

The portion 18 completely houses the lamp socket 1, as previously described, and may be provided with an annular groove for the reception of the clamping ring 8 of the cage 9. Preferably this part of the device is provided with an outwardly projecting flange 21 which may be notched to provide room for the wires of the cage adjacent to the clamping ring. The forward bumper has been previously described and may take the form shown in Figure 6, that is to say, it may be of circular cross section. It is obvious, of course, that any form of outer bumper can be employed in connection with, or associated with any form of rear bumper without departing from the spirit of this invention.

The outer bumper in all forms clings tightly to the cage, and cannot be dragged off or dislodged in the ordinary use of the apparatus.

It is within the province of this invention to form either or both of the bumpers of other material than rubber, for example, as shown in Figures 9 and 10, the bumpers may be formed of spring wire.

Referring to Figures 9 and 10, it will be seen that the rear bumper comprises a coil

or helical body portion 22 which is formed integrally with a spaced outer loop 23 held outwardly from the body of the cage 9 by the resiliency of the spring wire. Preferably the outer end of the wire is provided with a small loop 24 (see Figure 10), which interlocks with the adjacent convolution of the inner bumper.

The rear bumper is positioned or removed by rotating it in either one or the other of the two directions. For instance, as shown in Figure 9, it is rotated like a right-handed screw in positioning it, so that it in reality screws itself into place.

The forward bumper is formed in a manner somewhat similar to the rear bumper. It is provided with a coiled inner portion 25 which surrounds the wire cage, and this coiled inner portion carries the outer ring 26, which is held spaced from the cage 9 and thus provides a yielding bumper construction. Both the forward and rear bumpers are preferably octagonal, or of other polygonal shapes.

The invention may be used with any type of lamp socket, but it is preferable to use the safety or insulated lamp socket referred to in my above noted copending application. As a matter of fact, the sleeve construction outlined in this invention constitutes in itself a safety sleeve, and guards against electric shocks for the operator.

It is to be noted that the outwardly projecting portion of each form of the bumper forms a balancing point for the device. The proportion of the parts may be such that the lamp balances approximately about this point, or else so that the rear portion of the lamp unit is the heavier, or, if desired, the forward portion may be made heavier than the rear portion as regards the balancing point. In the form shown in Figure 1, it is preferable to have the center of gravity rearwardly of the rear bumper, although in the form shown in Figure 6 the center of gravity may be forwardly of the rear bumper.

It is clear that the bumper construction may take any one of several different forms, provided a cushioning support is afforded for the wire cage and lamp. The forms of invention illustrated in the drawings are eminently practical and may be used with the same freedom that the ordinary cage now possesses. In fact, a lamp equipped with the bumpers described in this invention will withstand more severe abuse than has heretofore been possible with the ordinary types of construction.

It will be seen, therefore, that a very serviceable, simple and reliable type of bumper has been provided which fully cushions the lamp and prevents breaking of either the filament or the glass of the lamp, which is easy to apply, and which is relatively inexpensive.

Although the invention has been described in considerable detail, it is to be understood

that the description is not intended as limiting but is intended as illustrative, as the invention may be variously embodied and is to be interpreted as claimed.

5 I claim:

1. An electric lamp unit comprising a socket, a lamp, a safety sleeve surrounding said socket, a rear bumper of resilient material surrounding said sleeve and constituting
10 a balancing point, a cage surrounding said lamp, and a forward bumper of resilient material surrounding said cage and located forwardly of said balancing point.

2. An electric lamp unit comprising a socket, a lamp, a safety sleeve surrounding said
15 socket, a rear bumper of resilient material surrounding said sleeve and constituting a balancing point, a cage surrounding said lamp, and a forward bumper of resilient material surrounding said cage and located forwardly of said balancing point, said forward
20 bumper being of polygonal contour, whereby the tendency of the unit to roll is reduced.

3. An electric lamp unit comprising a socket, a lamp, a safety sleeve surrounding said
25 socket, a rear bumper of resilient material surrounding said sleeve and constituting a balancing point, a cage surrounding said lamp, and a forward bumper of resilient material surrounding said cage and located forwardly of said balancing point, said forward
30 bumper being detachable from said cage.

4. An electric lamp unit comprising a socket, a lamp, a safety sleeve surrounding said
35 socket, a rear bumper of resilient material surrounding said sleeve and constituting a balancing point, a cage surrounding said lamp, and a forward bumper of resilient material surrounding said cage and located forwardly of said balancing point, said forward
40 bumper being in the form of a collar of substantially V-section, a side of the V lying against said cage.

5. An electric lamp unit comprising a socket, a lamp, a safety sleeve surrounding said
45 socket and having an annular depression, and a separate and detachable resilient bumper surrounding said sleeve and seated in said annular depression.

6. An electric lamp unit comprising a lamp, a lamp socket, a cage, and a resilient bumper, said cage surrounding the lamp as a guard and having its rear end attached around said
50 socket, said bumper being substantially funnel shaped and having its small end surrounding the socket in the rear of said cage and being rigid with said socket, said bumper having its intermediate portion extending a
55 substantial distance forward of the small end of said bumper and around said cage, and having its large end constituting a forward rim, said forward rim being of such major prominence relative to said intermediate portion that it prevents said intermediate portion from touching the ground when said unit
60 65

is laid on the ground, whereby said forward rim is adapted to act as a tilting fulcrum for said unit, such fulcrum being located a substantial distance forward of the rear of said cage.

7. An electric lamp unit comprising a lamp, a lamp socket, a cage, and a resilient bumper, said cage surrounding the lamp as a guard and having its rear end attached around said socket, said bumper being substantially funnel shaped and having its small end surrounding the socket in the rear of said cage and being rigid with said socket, said bumper having its intermediate portion extending a substantial distance forward of the small end of said bumper and around said cage, and having its large end constituting a forward rim, said forward rim being of such major prominence relative to said intermediate portion that it prevents said intermediate portion from touching the ground when said unit is laid on the ground, a part of said intermediate portion being in contact with the outside of said cage and having an annular clearance space between said forward rim and said cage, whereby support is given to said forward rim from said cage and the resiliency of said forward rim is maintained due to said clearance space, said forward rim acting as a tilting fulcrum for said unit and being located a substantial distance forwardly of the rear of said cage.

In testimony whereof, the signature of the inventor is affixed hereto.

JOSEPH P. EASTMAN.