Sept. 5, 1939. C. H. RIBBLE 2,172,223

SAFETY LAMP GUARD

Filed June 2, 1937

Fig. 1.

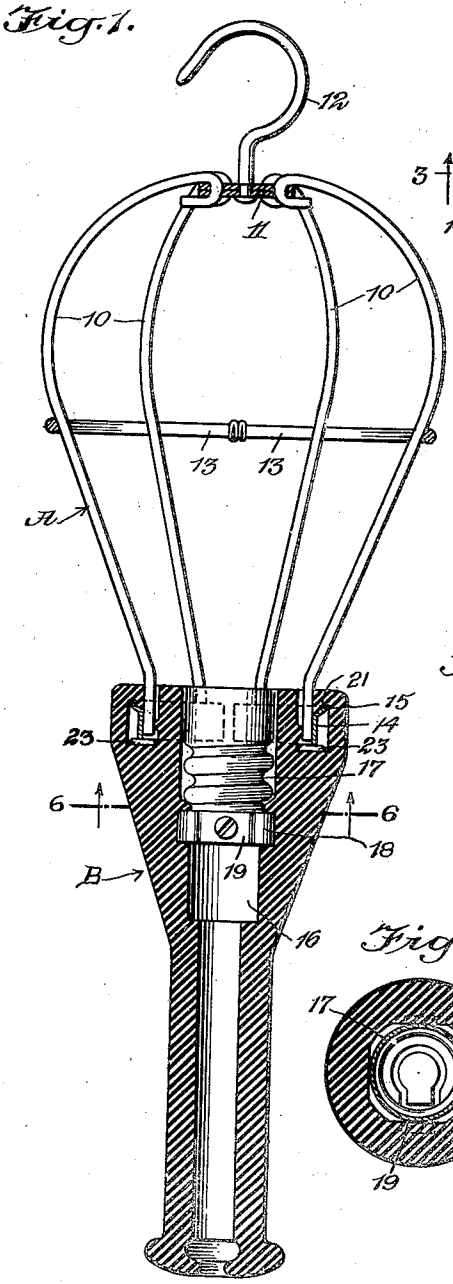


Fig. 2.

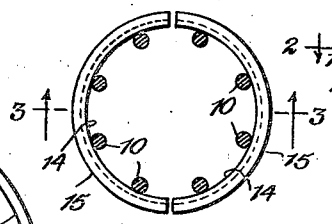


Fig. 3.

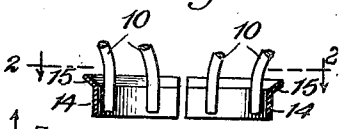


Fig. 4.

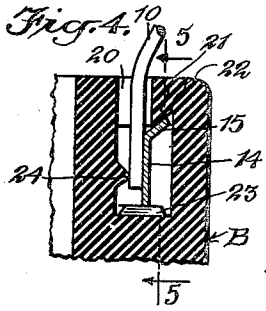


Fig. 5.

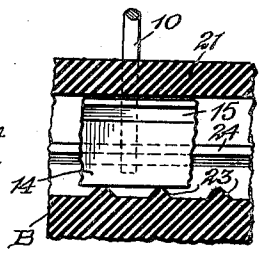


Fig. 7.

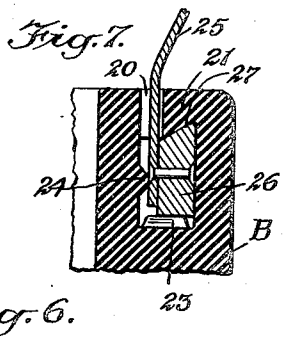


Fig. 8.

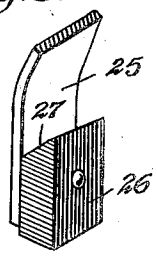


Fig. 6.

WITNESSES

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SAFETY LAMP GUARD

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4 Claims. (Cl. 240—54)

This invention relates to a safety lamp guard, an object of the invention being to provide improved coupling means between the lamp cage and the handle, said coupling means eliminating the use of bolts, screws, and other similar devices, and requiring no tools or external securing medium whatever.

A further object is to provide a guard of this character in which the cage may be readily coupled to the handle or uncoupled therefrom whenever desired.

The invention embodies many novel features of construction and combinations and arrangements of parts, all of which will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawing—

Fig. 1 is a view in longitudinal section of my improved safety lamp guard;

Fig. 2 is a view in transverse section of the lamp cage, the view being taken on the line 2—2 of Fig. 3;

Fig. 3 is a fragmentary view in longitudinal section on the line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary detail view in section showing the coupling means between the cage and handle;

Fig. 5 is a fragmentary view in section on the line 5—5 of Fig. 4;

Fig. 6 is a view in transverse section on the line 6—6 of Fig. 1;

Fig. 7 is a fragmentary view in section similar to Fig. 4, illustrating a modification;

Fig. 8 is a fragmentary perspective view of the cage member shown in Fig. 7.

The reference character A is employed to indicate generally the open lamp receiving and protecting cage of my improved guard, and the reference character B is employed to indicate generally the handle to which the cage is coupled.

The cage embodying the preferred form of the invention includes a circular series of outwardly bowed spring wires 10 which are at their upper ends movably coupled to a disk 11, and the latter is provided with a hook 12 as shown. These longitudinal spring wires 10 are divided into two groups, and each group has secured thereto a semi-circular wire 13. The wires 13 extend transversely around the cage and normally have their ends abutting so that when the lower ends of the wires are moved inwardly they have a tendency to expand outwardly when released. This provision of the groups of wires enables them to be separated so as to position a lamp in the cage. The groups of wires 10 at their lower ends have secured to their outer faces semi-circular strips 14, which at their upper edges are provided with inclined flanges 15.

The handle B is of semi-soft rubber and is longitudinally cored, as shown at 16, for the accommodation of electric wires, and in the handle a lamp socket 17 is located. This lamp socket 17 is provided at its inner end with a block 18 which has flattened faces 19 and corresponds in shape to the shape of the interior or core of the handle so as to prevent any turning movement of the socket in the handle. The end of the handle B is provided with a circular groove 20 and the outer wall of this groove 20 is formed with an inwardly projecting flange 21 which is undercut or beveled on its inner face as shown at 22. The bottom wall of this groove 20 is provided with a circular series of upwardly projecting resilient webs 23 and an annular resilient web 24 is formed on the inner wall of the groove.

When the cage is in normal position the ends of the wires 13 abut so that any inward movement of the lower ends of the wires 10 is resisted by the spring action of the wires which tend to spring outwardly.

The operation of coupling and uncoupling the cage and handle such as above described is as follows: The operator grips the lower portions of the wires 10 pressing them toward each other and while thus held a longitudinal movement of the cage relative to the handle is imparted to the cage so as to force the strips 14 and the lower ends of the wires 10 into the groove 20, and when the strips 14 engage the resilient webs 23 they compress said webs slightly until the flanged upper edges of the strips are in position to ride under the flange 21 of the handle and when in this position the annular resilient web 24 tends to force the strips outwardly. This movement is also augmented by the spring tendency of the wires 10 so that the upper edges of the strips 14 engage under the flange 21 and securely couple the cage and handle together.

When it is desired to uncouple the cage from the handle, it is necessary to again grip the lower portions of the wires 10 moving them toward each other and at the same time exerting a downward pressure thereon so as to permit the strips 14 to move from under the flange 21, and when this is uncoupled the end of the cage can be drawn out of the groove 20. Thus the coupling and uncoupling of the cage and handle can be easily and quickly effected, and when once coupled will be securely held.

In Figs. 7 and 8 I illustrate my invention in

connection with a cage which is composed of fibrous strips **25** instead of the wires **10**. When a fiber cage is employed blocks **26** may be secured to the lower ends of the strips **25** and provided with beveled upper edges **27** so that when these blocks and also the ends of the strips are forced into the groove **20**, they will have an outward spring tension to cause the blocks **26** to engage under the flange **21** and securely couple the blocks together.

While I have illustrated and described what I believe to be a preferred embodiment of my invention, it is obvious that various changes may be made with regard to the form and arrangement of parts without departing from my invention, and hence I do not limit myself to the precise details set forth but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the claims.

I claim:

1. A safety lamp guard including an open lamp cage having an expansible inner end, a handle having a circular groove in its end and an inwardly projecting flange on the outer wall of the groove, the inner end of said guard adapted when manually contracted to enter the groove, and devices on the inner end of the guard adapted when the inner end of the guard is expanded to interlockingly engage said flange.

2. A safety lamp guard including an open lamp cage and handle of soft rubber, said cage comprising a plurality of groups of spring wires, means coupling the groups of wires at the outer end of the guard, normally separated curved strips connecting the inner ends of each group of wires, transverse wires secured to each group intermediate their ends and adapted to abut when the guard is closed and require pressure on the inner ends of the groups to bring the ends of the strips together when the inner end of the guard is contracted, said handle having a circular groove in its end of a diameter corresponding to the diameter of the inner end of the cage when contracted, and an inwardly projecting annular flange at the end of the handle back of which the strips project when the inner end of the handle is in the groove and permitted to expand.

3. A safety lamp guard including an open lamp cage and handle of soft rubber, said cage comprising a plurality of groups of spring wires, means coupling the groups of wires at the outer end of the guard, normally separated curved strips connecting the inner ends of each group of wires, transverse wires secured to each group intermediate their ends and adapted to abut when the guard is closed and require pressure on the inner ends of the groups to bring the ends of the strips together when the inner end of the guard is contracted, said handle having a circular groove in its end of a diameter corresponding to the diameter of the inner end of the cage when contracted, and an inwardly projecting annular flange at the end of the handle back of which the strips project when the inner end of the handle is in the groove and permitted to expand, said flange and strips having inter-engaging contact portions when the guard is coupled into engagement with the handle.

4. A safety lamp guard including an open lamp cage and handle of soft rubber, said cage comprising a plurality of groups of spring wires, means coupling the groups of wires at the outer end of the guard, normally separated curved strips connecting the inner ends of each group of wires, transverse wires secured to each group intermediate their ends and adapted to abut when the guard is closed and require pressure on the inner ends of the groups to bring the ends of the strips together when the inner end of the guard is contracted, said handle having a circular groove in its end of a diameter corresponding to the diameter of the inner end of the cage when contracted, and an inwardly projecting annular flange at the end of the handle back of which the strips project when the inner end of the handle is in the groove and permitted to expand, said flange and strips having inter-engaging contact portions when the guard is coupled into engagement with the handle, and a resilient web on a wall of the groove maintaining the strips and flange in engagement.

CHAUNCEY H. RIBBLE.