H. W. LESTER.

BULB.

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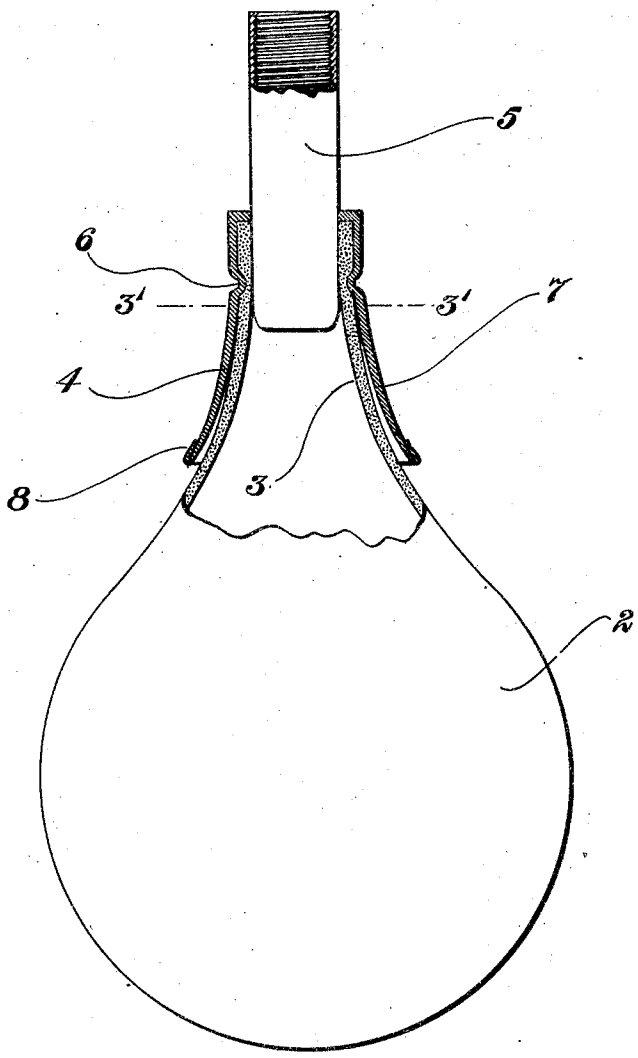
1,025,986. Patented May 14, 1912.



Witnesses:

L. L. Markel.

E. C. Anderson

Inventor:

Howard W. Lester

By his Attorneys,

Sutherland & Anderson

UNITED STATES PATENT OFFICE.

HOWARD W. LESTER, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE POST & LESTER COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

BULB.

1,025,986. Specification of Letters Patent. Patented May 14, 1912.

Application filed July 29, 1911. Serial No. 641,312.

To all whom it may concern:

Be it known that I, HOWARD W. LESTER, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Bulbs, of which the following is a specification.

This invention relates to bulbs.

A bulb embodying my invention is primarily adapted for use in connection with, or as a part of, a signal device which may be a horn, whistle or something of an equivalent nature which is sounded by means of compressed air. It is the custom to make the bulbs of rubber and to cap the same with a metallic ferrule which fits the neck of the bulb into which a tube is introduced, this ferrule being intended theoretically to protect the neck. These bulbs are usually mounted upon parts which are subjected to considerable jars and shocks and naturally the jars will vibrate the bulbs. As the range of movement of the bulbs is very great, the bulb crystallizes at the center of motion thereof and ultimately breaks through, it being understood that the inner end of the ferrule tightly or closely embraces the bulb or its neck. I provide a construction wherein this difficulty is eliminated or at least reduced to the minimum, by virtue of which the life of the bulb is materially lengthened. I provide a ferrule with a flange which projects inwardly therefrom such a distance that when the bulb does oscillate the buckling or bending area is widely distributed and is not localized. This flange is preferably, though not necessarily, integral with the ferrule and its inner surface is normally wholly free of the bulb so as to provide for a certain amount of movement of the bulb without the same coming in contact with the inner wall of said flange. On maximum vibration in any direction, however, of the bulb, the inner and free edge of this flange is met by the bulb, and the latter will be collapsed at a point remote from the rigid connection of the bulb with said ferrule thereby reducing the possibility of crystallization by vibration to the least possible extent.

It should be understood that I do not claim a bulb provided with a ferrule rigidly connected therewith as this is not of my invention, but I do claim such parts associated together where the ferrule has a flange possessing the characteristics to which I have alluded.

In the accompanying drawing I have shown a bulb embodying my invention, the outer portion of the same together with the flanged ferrule being in section, this showing being made so that those skilled in the art can practice the invention.

I do not limit myself to the disclosure made by said drawing and the following description thereof; I may depart therefrom in several respects within the scope of the invention included in said claims.

Referring to said drawing, the numeral 2 denotes the body of the bulb which is provided with a neck 3. The said body and neck may be and preferably are of the usual character. Fitted around the neck 3 is a ferrule 4 the head of which overlies the outer edge of said neck, and extending into said neck is a tube or nipple 5 the head of said ferrule having an opening or perforation through which said tube or nipple extends.

In assembling the parts the ferrule 4 is first applied to the neck 3 after which the tube or nipple 5 with rubber cement applied to its exterior surface, is introduced into said neck, which has the effect of pressing the stock of the neck into firm and solid contact with said ferrule to about the line 3', by reason of which the neck, ferrule and tube are permanently connected together.

The ferrule 4 is shown provided with an annular bead or ridge 6 inside the same which can be easily formed by spinning an exterior groove in said ferrule so that when the tube or nipple 5 is inserted in place the stock or rubber of the neck 3 is forced firmly against said bead 6 to thereby augment the holding effect. It is needless however, for me to further describe the construction of the ferrule, neck and tube, as the same in themselves form no part of the present invention, being as already intimated of kinds now in general use.

The ferrule 4 is provided with an inwardly extending flange 7 which preferably is of progressively increasing diameter toward the inner end thereof. I prefer that the inner surface of this tapered flange be normally wholly free of the adjacent portion of the neck 3, as in this way I provide for normal or ordinary vibration of the bulb which occurs for instance when the

same is mounted on an automobile. If the flange 7 closely hugged the neck 3, the bulb when it is bent would flex right at the edge of the flange as is the case now at the inner edge of customary ferrule, and this flexure at such point, which is abrupt, causes crystallization which effect, as will be obvious, I avoid. I have the neck of the bulb normally free of this flange and I find in practice when the bulb collapses, that the collapsing zone is considerable or is as already stated, spread over a wide area and is not confined to one point, by virtue of which the life of the bulb is greatly prolonged. I prefer as shown that the inner wall of the flange be upon a curve. Said inner curved surface, it will be observed, is of progressively increasing diameter toward the body 2 of the bulb, which is a simple means for insuring that the inner surface of said flange will be out of contact normally with the neck of the bulb, although as will be apparent I do not restrict myself to this relation. As a matter of further protecting the bulb I prefer that the free or inner edge of the flange 7 be rounded so that there is no tendency whatsoever of this edge cutting into the rubber or other material of which said bulb is composed, and this rounding may be secured by doubling or bending the free portion of the flange on itself as shown at 8.

What I claim is:

1. As an article of manufacture a compressible bulb having a reduced neck, and a ferrule permanently fitted to the neck and having a flange flared toward the larger portion of the bulb, the inner face of the flange being spaced from the bulb.

2. An article of manufacture comprising a compressible bulb having a reduced neck, a ferrule fitted to the outer end of the neck and provided with a perforated head overlying the outer edge of said neck, and a nipple extending into said neck through the perforation of said head, the ferrule having an internal annular bead fitting against the neck and also having a flange flared toward the larger portion of the bulb, the inner face of said flange being spaced from said bulb.

In testimony whereof I affix my signature in presence of two witnesses.

HOWARD W. LESTER.

Witnesses:
L. L. MARKEL,
F. E. ANDERSON.