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NON-REFILLABLE BOTTLE ATTACHMENT.

APPLICATION FILED MAY 1, 1905.

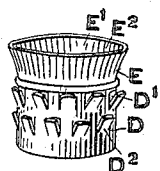


Fig. 2.

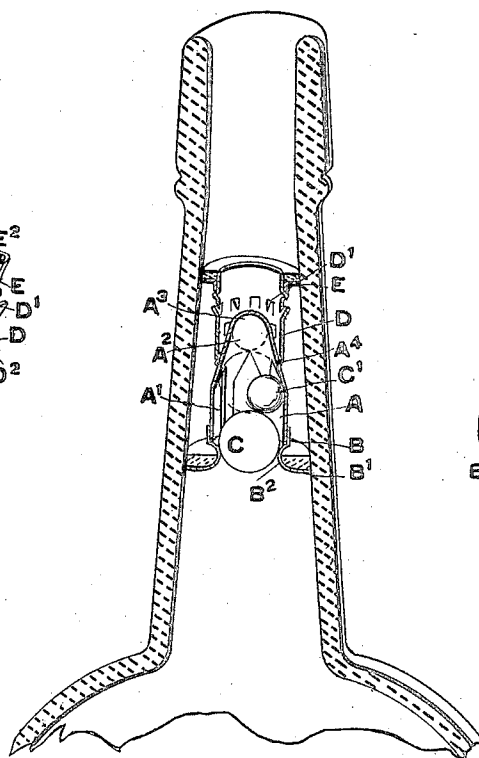


Fig. 1.

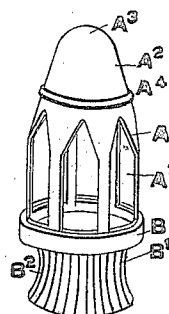


Fig. 3.

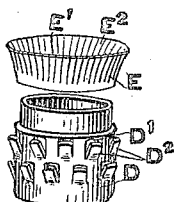


Fig.4.

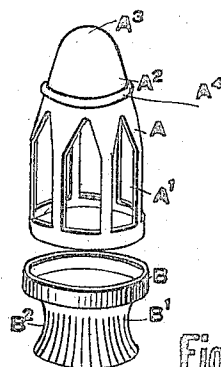


Fig. 5.

Witnesses.

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# UNITED STATES PATENT OFFICE.

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## NON-REFILLABLE-BOTTLE ATTACHMENT.

No. 818,312.

Specification of Letters Patent.

Patented April 17, 1906.

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*To all whom it may concern:*

Be it known that we, EDWARD ALAN SULLIVAN, mechanical engineer, residing at the city of Toronto, in the county of York, in the Province of Ontario, Canada, THOMAS WILLIAM PRITCHARD, insurance broker, residing at Germantown, county of Philadelphia, and RODMAN W. C. ELLISON, gentleman, residing at Bryn Mawr P. O., Montgomery county, State of Pennsylvania, citizens of the United States, have invented certain new and useful Improvements in Non-Refillable-Bottle Attachments, of which the following is a specification.

Our invention relates to improvements in non-refillable-bottle attachments; and the object of the invention is to devise an attachment to be applied to the neck of a bottle which will effectually prevent the refilling of the same and thus obviate any danger of the adulteration of liquids contained in the bottle or the substitution of inferior liquid for the original, and further objects are to provide such a device as will not necessitate any change in the form of the neck of the bottle and which may be adaptable to different necks of bottles with facility and which will also be simple and cheap to construct and such as cannot be tampered with without detection or injury to the device, so as to prevent its effective operation or allow of the device being so manipulated that the bottle may be refilled; and it consists, essentially, of an open cage provided with a tapered upper portion, a ring fitting the bottom of the cage and provided with an expansible portion designed to be spread to fit the neck and receive a filling of cement to hold the lower portion in place and a major ball having its seat in the bottom ring and a minor ball resting on the same within the cage, a sleeve fitting onto the tapered portion and provided with a plurality of perforations formed up out of the same with slanting lips extending upwardly from the bottom of the perforations, and an expansible ring fitting the top of the sleeve and designed to be spread to fit the neck and receive a filling of cement to hold the sleeve in place, the parts being otherwise constructed and arranged in detail, as hereinafter more particularly explained.

Figure 1 is a sectional perspective view showing our improved attachment for pre-

venting the refilling of the bottle. Fig. 2 is a perspective view of the upper portion of the attachment. Fig. 3 is a perspective view of the lower portion of the attachment. Fig. 4 is a perspective view of the two parts forming the upper portion of the attachment separated. Fig. 5 is a perspective view of the two parts forming the lower portion of the attachment separated.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the cage formed with the openings A'; as indicated, and the tapered upper portion A<sup>2</sup>, having, preferably, the rounded top A<sup>3</sup>.

B is a ring having an expansible flange B', formed by slitting crosswise of the flange, as indicated, so as to form a series of teeth. The ring B fits at the top preferably around the bottom of the cage A and is contracted at B<sup>2</sup> to form a seat for the major ball C. The flange B' is spread into the position shown in Fig. 1 by pressing the flange down against the bottom of the bottle by a suitable holding device, which it is not necessary here to describe. The lower portion is then drawn up into the position shown in the drawings, the teeth pressing closely into the neck, and the cement is then introduced to fill up the annular space between the seat and the neck.

C' is the minor ball, which rests on the major ball and is designed to exert a constant pressure on the same. The internal diameter of the rounded portion of the cage A is slightly greater than the ball C', so as to prevent the ball from sticking in the upper portion of the cage when the bottle is tilted. The cage A is preferably provided with a ring A<sup>4</sup>, pressed or otherwise formed up in the tapered portion A<sup>2</sup>, so as to form a seat.

D is a sleeve which has attached to or forming part of it the ring E, provided with the flange E', formed with teeth E<sup>2</sup>, similarly cut to the teeth of the lower flange B'. The sleeve D is provided with perforations D', which are stamped or otherwise formed up out of the sleeve with slanting lips D<sup>2</sup>, which extend from the lower edge of the perforation in a slanting upward direction.

We show two circles of perforations, the perforations being preferably staggered in relation to each other for the sake of strength.

The sleeve D is fitted down so that the bottom edge rests upon the ring shoulder or

seat A<sup>4</sup> of the tapered portion A<sup>2</sup> and the split or tooth-like flange is spread outwardly by any suitable instrument, so that it projects laterally beyond the sleeve and below the top thereof. The space between the flange which fits the neck and the sleeve is preferably filled with cement.

It will be seen from the construction described that the liquid may be poured out from the bottle and will pass through the opening A' when the bottle is tilted and the balls pass into the dotted position. When the liquid passes out through the opening into the annular space surrounding the cage and sleeve, it will next pass inwardly through the perforations D' in the sleeve D, thence out through the sleeve and mouth of the bottle.

Should any attempt be made to refill the bottle, the major ball will pass immediately back to its seat, and therefore any ingress of the liquid into the bottle is obviated.

It will be noted that as the sleeve is disposed directly over the cage and as the perforations have inclined upwardly-extending lips, as hereinbefore described, it will be impossible to get a wire down into any position which will interfere with the freedom of movement of the ball or into any position in which it will enable the ball to be held in order to refill the bottle. It will also be understood that the size of the openings A' and perforations D', as well as the size of the opening which the ball C fills, will be made such as is most conducive to the best results and easy pouring of the liquid.

We do not wish to confine ourselves to the exact construction shown for our attachment, as it may be varied to a more or less extent without departing from the spirit of our invention.

What we claim as our invention is—

1. A non-refillable-bottle attachment comprising a lower portion or cage having an outwardly-extending holding-flange internally contracted to form a seat, a ball fitting such contracted portion and an upper sleeve portion fitting on the top of the cage and provided with a suitable holding-flange and perforations as and for the purpose specified.

2. A non-refillable-bottle attachment comprising a lower portion or cage having an outwardly-extending holding-flange internally contracted to form a seat, a ball fitting such contracted portion and an upper sleeve portion fitting on the top of the cage and provided with a suitable holding-flange and perforations, and a minor ball designed to coact with the major ball as and for the purpose specified.

3. A non-refillable-bottle attachment comprising a lower open portion or cage having an outwardly-extending holding-flange split into teeth and designed to be expanded to fit the

neck, said flange being contracted internally to form a seat, a filling of cement designed to surround the annular space around the flange and a ball fitting such contracted portion, and an upper sleeve portion fitting on the top of the cage and provided with a flange split to form teeth and designed to be expanded to fit the neck and provided with perforations, and a cement filling designed to fit into the annular space between the sleeve and the neck as and for the purpose specified.

4. In a non-refillable-bottle attachment a lower portion consisting of an open cage tapered at the top and rounded and provided at the bottom with a contracted neck and a ball designed to have its seat in the neck as and for the purpose specified.

5. In a non-refillable-bottle attachment a lower portion consisting of an open cage tapered at the top and rounded and provided at the bottom with a contracted neck, a ball designed to have its seat in the neck, and a minor ball located within the cage and designed to coact with the major ball and have its seat when the bottle is inverted in the tapered upper portion as and for the purpose specified.

6. In a non-refillable-bottle attachment a lower portion consisting of an open cage and a flange or ring surrounding the bottom edge of the cage and provided with a portion split into teeth and designed to be expanded to fit into the neck of the bottle as and for the purpose specified.

7. In a non-refillable-bottle attachment a sleeve designed to fit onto the lower portion and provided with perforations having inclined lips extending from the bottom of the perforations, and permanent means for holding the sleeve in the neck as and for the purpose specified.

8. In a non-refillable-bottle attachment a sleeve designed to fit onto the lower portion and provided with perforations having inclined lips extending from the bottom of the perforations, a ring or flange fitting around the upper portion of the sleeve and split, so as to form teeth, which are expansible to fit the neck as and for the purpose specified.

9. In a non-refillable bottle, the combination with an open cage having a tapered closed upper portion and an annular projection extending around such portion, of a perforated sleeve designed to have the lower edge rest on the annular projection as and for the purpose specified.

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