

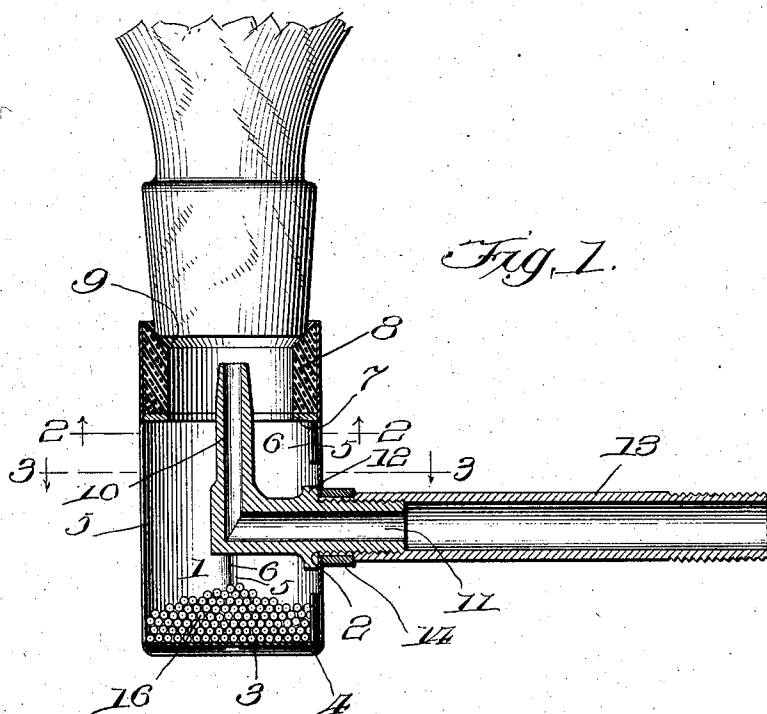
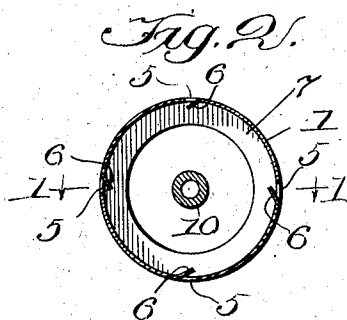
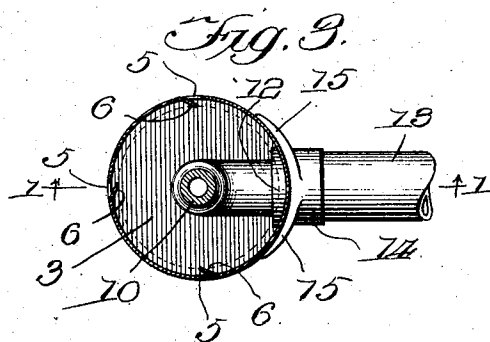
No. 791,634.

PATENTED JUNE 6, 1905.

E. A. LUFKIN.

SHOT CUP FOR BOTTLE WASHING MACHINES.

APPLICATION FILED AUG. 25, 1904.



Witnesses:

H. S. Gaither

George L Chindahl

*Inventor:*

Edward A. Lufkin.

by Luther L. Miller.  
Attorney.

# UNITED STATES PATENT OFFICE.

EDWARD A. LUFKIN, OF BELOIT, WISCONSIN.

## SHOT-CUP FOR BOTTLE-WASHING MACHINES.

SPECIFICATION forming part of Letters Patent No. 791,634, dated June 6, 1905.

Application filed August 25, 1904. Serial No. 222,077.

*To all whom it may concern:*

Be it known that I, EDWARD A. LUFKIN, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Shot-Cups for Bottle-Washing Machines, of which the following is a specification.

This invention relates to machines for interiorly cleansing bottles and similar articles, and refers particularly to the means for supporting the bottle while the latter is being operated upon. This supporting means generally comprises a cup adapted to fit upon the mouth of the bottle, which cup contains a quantity of shot and is provided with means for introducing water into the bottle. The bottle and shot-cup are reciprocated and rotated by suitable mechanism in order to cause the shot to enter the bottle and be violently agitated therein, the more effectually to cleanse the bottle.

One of the objects of this invention is the production of a shot-cup provided with means for permitting the rapid escape of water from the bottle after cleaning.

A further object of the invention is the general improvement of shot-cups with a view to increased efficiency and lessened cost of manufacture.

In the accompanying drawings, Figure 1 is a central section through a shot-cup embodying the features of my invention, showing also the arm for supporting said shot-cup. Fig. 2 is a transverse section through the cup on dotted line 2 2 of Fig. 1. Fig. 3 is a similar view on dotted line 3 3 of Fig. 1.

In the production of a shot-cup embodying my invention I provide a cylindrical body portion 1, of sheet metal, in one side of which body portion is formed an opening 2 to receive the stem of a discharge-nozzle. One end of the body portion 1 is closed by a disk 3 fitting within it and held from movement in one direction by an inturned flange 4 upon one end of said body portion. In the sides of the body portion are formed a number of openings 5, preferably by cutting and punching inward the material of the body portion to form inwardly-projecting lips 6. One end

of each of these lips lies in contact with the disk 3, said disk being held in place by said lips 6 and the inturned flange 4. Fitting within the cylindrical body portion 1 is a ring 7, which lies in contact with one end of each of the lips 6. Between the ring 7 and the open end of the body portion is a rubber packing-ring 8, having an outer beveled edge 9 for receiving the mouth of the bottle.

A discharge-nozzle 10, having a tubular securing-stem 11 extending at a right angle therewith, is supported at the longitudinal center of the cup, said stem extending through the opening 2 in the side of the cup. An integral peripheral flange 12 on the securing-stem 11 is adapted to lie in contact with the inner wall of the body portion 1, said flange conforming to the curve of said wall. The outer end of the stem 11 is exteriorly screw-threaded to receive the internally-screw-threaded end of a tubular supporting-arm 13. A sleeve 14, having curved side wings 15, fits over the securing-stem 11 and is clamped between the side of the body portion 1 and the end of the supporting-arm 13 by turning said arm upon the threaded end of said stem. Within the shot-cup is a quantity of small steel balls or shot 16.

In use the shot-cup having been brought in the operation of the mechanism to substantially the position shown in Fig. 1, the mouth of the bottle to be cleaned is applied to the beveled edge 9 of the packing-ring 8 and held in such position by any suitable means. (Not shown.) The position of the bottle and shot-cup is now more or less completely reversed in order to cause the shot 16 to drop into the bottle. Water having been introduced into the bottle through the tubular supporting-arm 13 and the nozzle 10, the bottle and shot-cup are vigorously shaken by the machine in order that the shot and water may reach and clean all parts of the interior of the bottle. When the bottle has been cleaned, the bottle and shot-cup are placed in their initial position, whereupon the shot falls into the lower part of the shot-cup and the water escapes from the bottle and the cup through the openings 5 in the sides of said cup. It will be noted that these openings 5 extend to a point

considerably above the shot lying in the lower end of the cup. The water thus is permitted to escape freely without being forced to pass first through the mass of shot.

5 It is apparent that various changes may be made in the construction herein shown without departing from the spirit and scope of my invention, wherefore I desire to have it understood that I do not limit myself to the  
10 precise details herein set forth.

I claim as my invention—

1. A shot-cup having a closed end and an open end, with a rubber packing seated within its open end, and an opening in its side extending from its closed end to a point near its  
15 open end, whereby water may escape from the cup without passing through the shot and the cup be completely drained.

2. In a shot-cup, in combination, a cylindrical body portion having a flange at one end;  
20 an inwardly-extending projection integral with the material of which the body portion is formed; and a disk for closing one end of said body portion, said disk lying between  
25 said flange and said projection.

3. In a shot-cup, in combination, a body portion open at one end; a rubber packing-ring seated within the open end of said body

portion; a ring within the body portion for supporting said packing - ring; and an inwardly-extending projection integral with the material of which the body portion is formed for holding said supporting-ring in place. 30

4. In a shot-cup, in combination, a body portion having a flange at one end; a rubber packing-ring seated within the opposite end; a disk lying in contact with said flange; a ring for supporting said packing-ring; and a lip integral with the body portion, the ends of which lip hold said disk and supporting-ring  
40 in place.

5. In a shot-cup, in combination, a body portion closed at one end and open at the other, said body portion having an opening in its side intermediate its ends; a discharge-nozzle  
45 having a securing-stem extending at an angle therewith, which stem is secured within said opening; a tubular supporting-arm attached to said stem and forming a water-supply pipe; and a rubber packing at the open end of said  
50 body portion, said body portion having an outlet-opening in its side near its open end.

EDWARD A. LUFKIN.

Witnesses:

W. O. HANSEN,  
JOHN S. KENNEY.