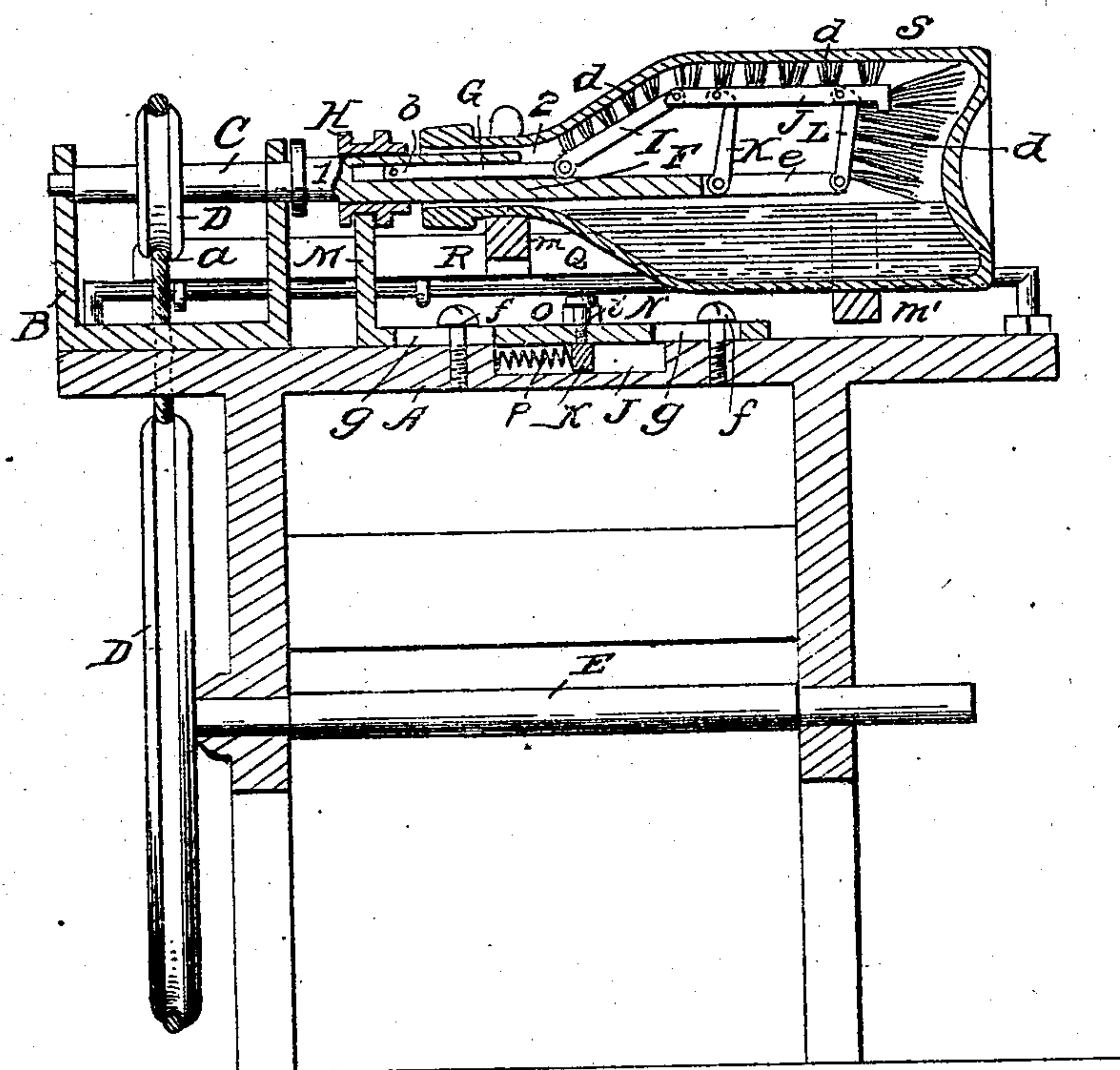


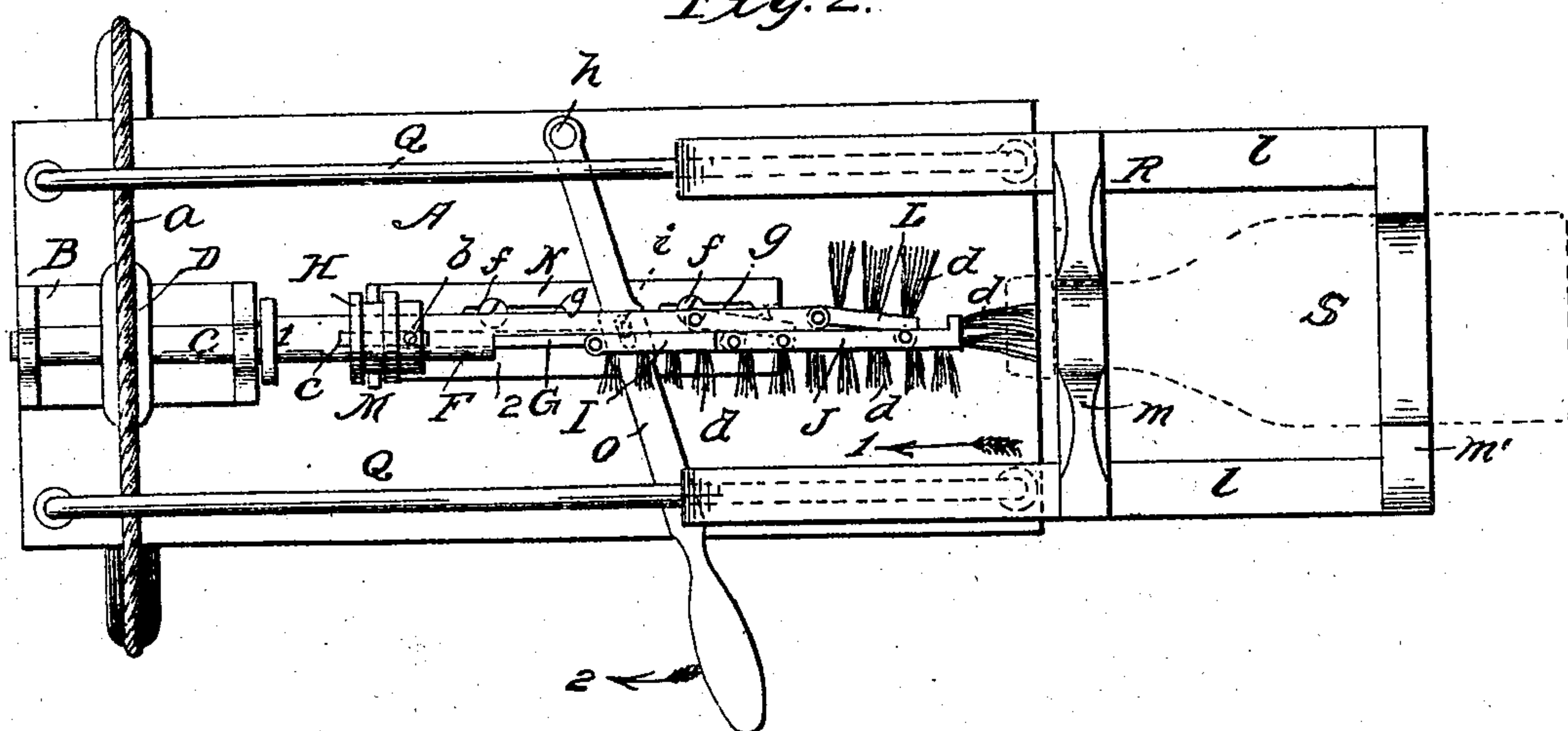
H. N. DE GRAW.  
BOTTLE WASHER.

No. 18,086.

Patented Sept. 1. 1857.



*Fig. 1.*



*Fig. 2.*



# UNITED STATES PATENT OFFICE.

HENRY N. DEGRAW, OF WATERVLIET, NEW YORK.

## MACHINE FOR WASHING BOTTLES.

Specification of Letters Patent No. 18,086, dated September 1, 1857.

*To all whom it may concern:*

Be it known that I, HENRY N. DEGRAW, of Watervliet, in the county of Albany and State of New York, have invented a new  
5 and Improved Implement or Device for Washing Bottles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of  
10 this specification, in which—

Figure 1. is a longitudinal vertical section passing through the center. Fig. 2. is a plan or top view of ditto.

Similar letters of reference indicate corresponding parts in the figures.

My invention consists in the employment or use of a rotating and expanding brush used in connection with a sliding holder, the parts being so arranged as will be herein-  
20 after fully shown and described, that the requisite pressure of the brush against the inner sides of the bottle may be obtained in order to cleanse the bottles perfectly and the bottles also readily adjusted or applied to  
25 the machine so that the operation of cleansing the bottles is performed with great facility and in a perfect manner.

To enable those skilled in the art to fully understand and construct my invention, I  
30 will proceed to describe it.

A represents a horizontal bed, on one end of which a head B is secured, said head having a mandrel C fitted within it. The head B is stationary and a pulley D is placed on  
35 the mandrel C, the mandrel being driven by a belt (a) from a wheel D on the driving shaft E. To one end of the mandrel C a rod or shaft F is attached. This rod or shaft is cylindrical and hollow for a certain distance, from (1) to (2) and the remaining  
40 portion is of semicylindrical form, or the rod or shaft may be described as being divided longitudinally from its outer end to the point (2) the end of the cylindrical portion one half of the rod being removed.  
45 Within the cylindrical portion of the rod or shaft F a square or rectangular bar G is fitted and allowed to slide freely therein. This bar is connected to a sliding collar H  
50 which is fitted on the tubular portion of the rod or shaft F the pin (b) which connects the collar H with the bar G being fitted in slots (c) in the rod or shaft F. To the end of the bar G a bar I is pivoted, and the bar  
55 I has bristles (d) fitted in it, to the end of the bar I a similar bar J is pivoted also pro-

vided with bristles (d). The bar J is connected to the rod or shaft F by bars K, L, one end of which are pivoted to the bar J, and the opposite ends to the rod F. The  
60 bar L is provided with bristles. The outer part of the rod or shaft F is slotted as shown at (e) Fig. 1, so as to receive the bar K. The collar H is grooved and is fitted in the upper end of a vertical plate M which is at-  
65 tached to a horizontal slide N on the bed A, the slide being kept in proper position by guide pins (f) which pass through slots (g) in said slide.

O is a lever which is pivoted to the bed A,  
70 at (h). This lever is connected to the slide N at (i) and P is a spiral spring, which is fitted in a slot (j) in the bed A. One end of this spring bears against a projection (k)  
75 on the under side of the slide N.

Q, Q represent two guide rods which are placed longitudinally, one at each side of the bed A, and a frame R is fitted on these rods, said frame being allowed to slide freely  
80 back and forth thereon. The frame R is formed of two side pieces (l) (l) connected by cross pieces (m) (m') the outer cross piece (m') is of semi-annular form to receive the back part of the bottle which is represented by S and the cross piece (m) is  
85 notched to receive the neck of the bottle. The frame R provided with the cross pieces and fitted on the guide rods as shown, forms a sliding or reciprocating holder for the  
90 bottles.

The operation is as follows: The bottles to be washed are placed in a tank or reservoir of water placed near the attendant or operator, who grasps a bottle and fits it in the holder R the neck of the bottle being  
95 fitted in the notch in the cross piece (m) and the body resting in the semi-annular cross piece (m'). The bottles always contain some water as they are immersed in the tank, a certain quantity of water will of  
100 course escape from them when placed in the holder but enough will remain for cleansing purposes. The spring P in bearing against the projection (k) on the slide N keeps the collar H forced out from the head  
105 B and the bars I, J, are in contact with the rod or shaft F, as shown in Fig. 2. When the operator has adjusted the bottle S in the holder, he moves the holder in the direction indicated by arrow (1) and the brush  
110 bars I. J. and rod or shaft F pass into the bottle, and when they are into the bottle the



required distance the lever O is moved in the direction indicated by arrow (2) and the collar H and bar G are moved of course in the same direction and the brush bars I, J will be forced out from the rod or shaft F and the brush bar L moves at right angles or nearly so with the rod or shaft. The brushes (d) therefore of the bars I, J, bear against the side of the bottle and the brushes (d) of the bar L bear against its bottom as shown in Fig. 1 and a rotary motion being given the mandrel C. and rod or shaft F from the shaft E, the bottle will be thoroughly cleansed by a few revolutions of said rod. The brushes may be made to bear with the requisite degree of pressure against the bottle by pressing against the lever O sufficiently hard in the direction of arrow 2. The mandrel C is not stopped but rotates continuously, the operator places the bottles one at a time in the holder forcing them up toward the brushes which pass into the bottle, and are then expanded by moving the lever O the bottles as they are cleaned being moved back and removed from the holder and fresh ones placed in it.

I am aware that expanding brushes constituted similarly to the one herein described have been previously used for the same purpose, but they have been arranged in quite a complicated way so as to preclude them from general use, on account of the cost attending their construction and keeping them in repair.

I do not claim separately or in itself considered, the expanding brush, for that or its equivalent has been previously used, but

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is—

The expanding brush formed of the brush bars I, J, L connected to the rod F and bar G as shown and expanded and contracted by the lever O and spring P, when said brush thus arranged and operated is used in connection with the sliding holder R for the purpose set forth.

HENRY N. DEGRAW.

Witnesses:

JAMES REMINGTON,  
BENJ. F. MANIER.