D. NEILLY.

BOTTLE WASHER.

APPLICATION FILED JAN. 28, 1910.

979,191.

Patented Dec. 20, 1910.

2 SHEETS—SHEET 1.

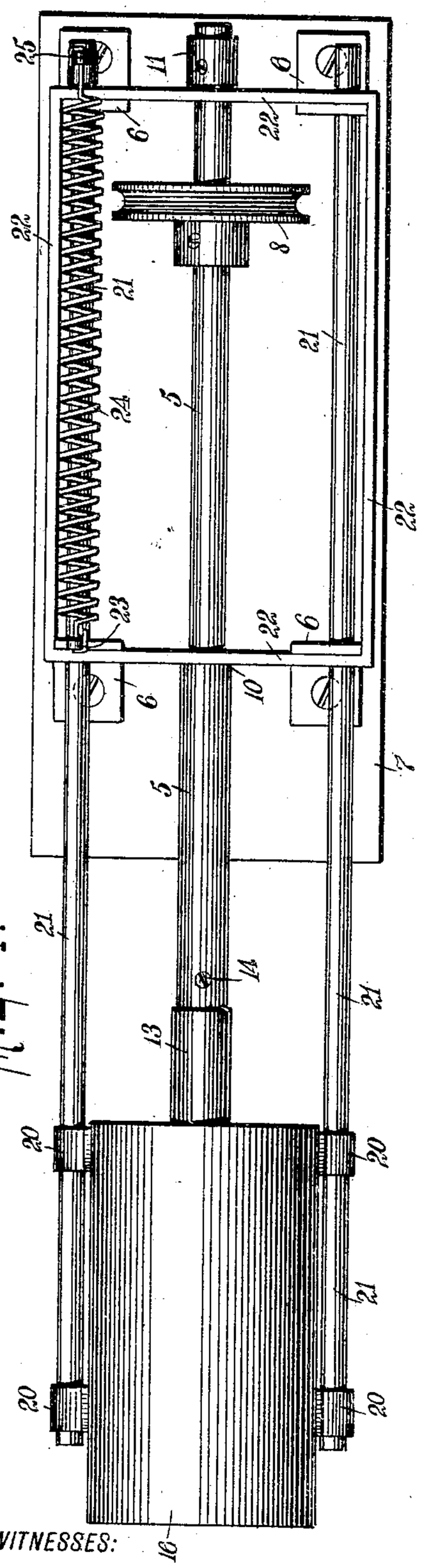

Fig. 1.

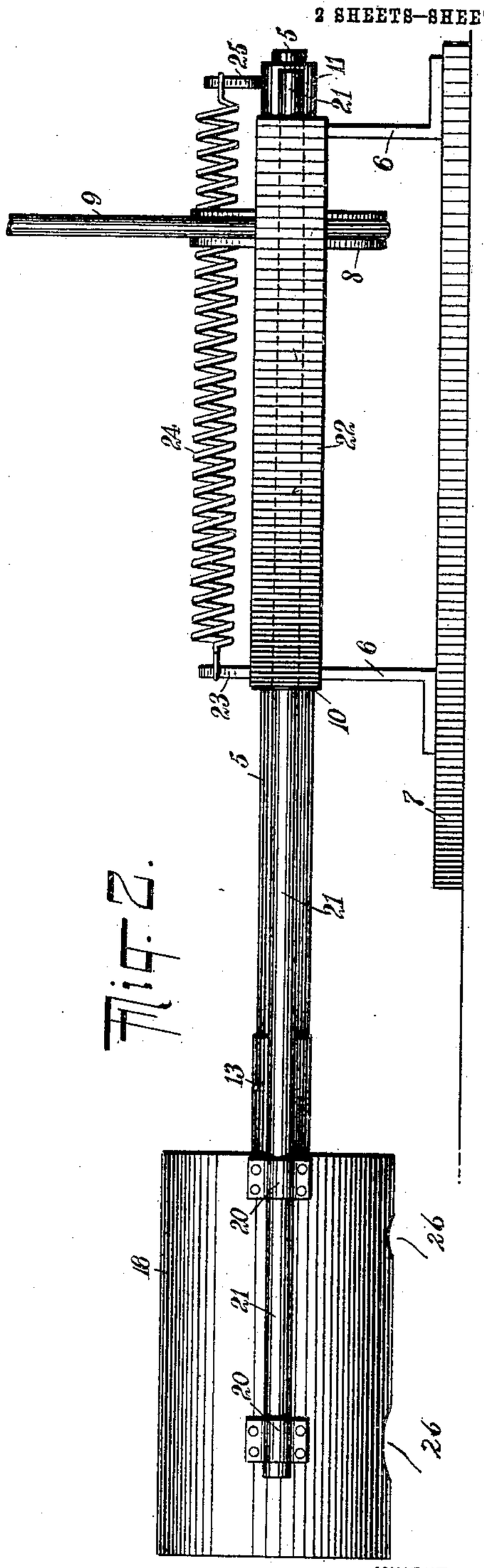

Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

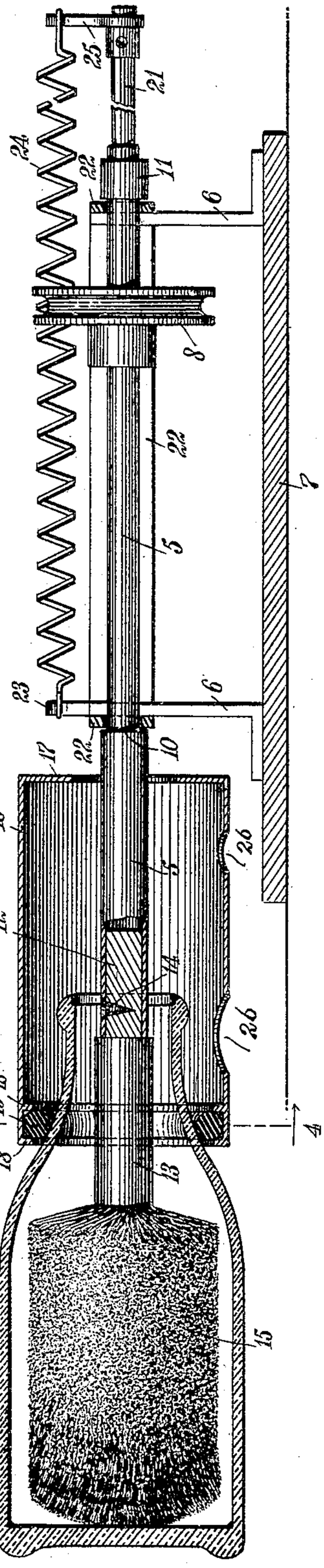
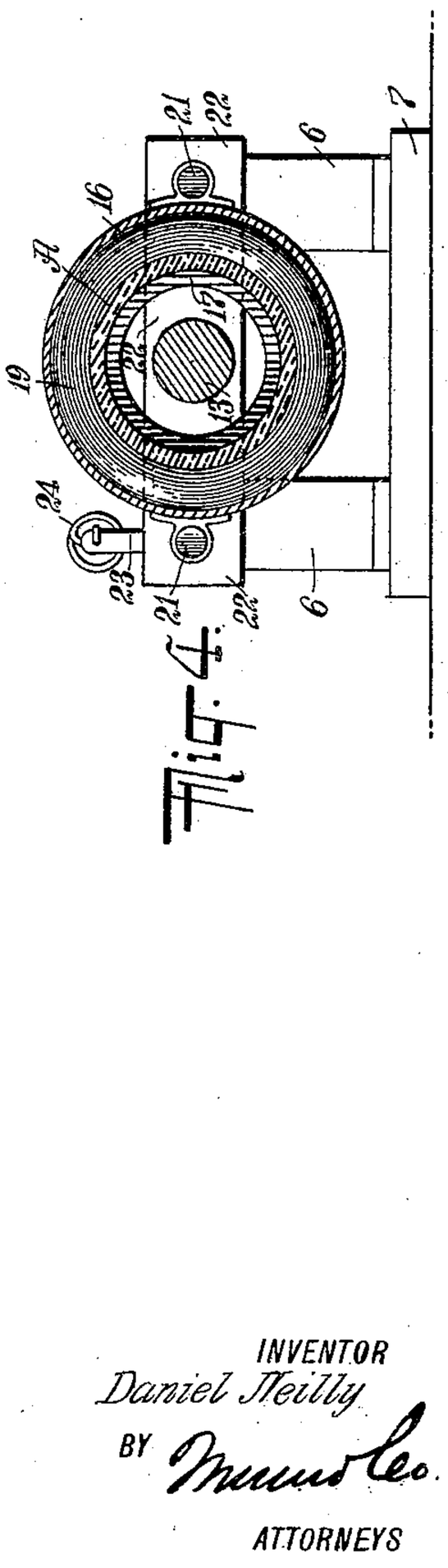


Fig. 4.



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UNITED STATES PATENT OFFICE.

DANIEL NEILLY, OF BRADFORD, PENNSYLVANIA.

BOTTLE-WASHER.

979,191. Specification of Letters Patent. Patented Dec. 20, 1910.

Application filed January 28, 1910. Serial No. 540,508.

To all whom it may concern:

Be it known that I, DANIEL NEILLY, a subject of the King of Great Britain, and a resident of Bradford, in the county of McKean and State of Pennsylvania, have invented a new and Improved Bottle-Washer, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide a mechanism for washing bottles wherein is prevented the lateral discharge of water incident to the usual employment of a bristle brush; to provide means for holding a bottle during the operation of washing; to provide a shield for the rotary brush employed for washing bottles, to prevent the distribution of the water contained in the said brush; and to simplify and economize the construction of bottle washing machines employing rotary cleaning brushes.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a plan view of a washing attachment constructed in accordance with the present invention; Fig. 2 is a side elevation of the same; Fig. 3 is a longitudinal section of the construction as shown in Fig. 1, illustrated in its operative relation with a bottle; and Fig. 4 is a cross section taken on the line 4—4 in Fig. 3.

The class of machines to which the present washing machine particularly belongs is most adapted for employment in washing milk bottles, or bottles having enlarged neck openings. These bottles are preferably washed by being immersed in a tank of water, and while partly filled, have introduced within the body portion a rotative bristle brush or other radially extensible washing tool. In those machines wherein have been employed bristle brushes much of the same construction as shown in Fig. 3 of the drawings, the brush has remained exposed except when immersed within the body of the bottle. In this condition, when the bottle has been withdrawn from over the brush, the latter has voided its contained or adhered water outward against dashboards, or other fending devices provided to confine the throw of the water within certain limits. The distribution of the water, however, has been sufficient to thoroughly wet the operator who, when performing this line of work, is compelled to wear waterproof clothing. This result is avoided in my invention.

A shaft 5 is mounted in bearings formed in standards 6, 6, which are mounted upon a table 7, or other suitable stand. Fixedly attached to the shaft 5 is a pulley 8, provided to receive a power transmission driving belt 9, whereby the shaft 5 is rapidly rotated. The shaft 5 is further provided with a thrust shoulder 10 and a collar 11. The forward or extended end of the shaft 5 is tubular, and is provided to receive the reduced extended end 12 of a brush handle 13. In the present instance the brush handle is of solid construction, and preferably formed of wood. In this form the handle is held within the tubular end of the shaft 5 by means of a screw 14. Upon the forward end of the handle 13 are secured the bristles of a brush 15. While the construction of the handle of the brush with its extension 12 is illustrated and described as solid, it will be understood that should the shaft 5 be constructed from tubing and attached to a water supply system, the handle 13 and extension 12 thereof may also be tubular, and provided with the usual arrangement of perforations laterally opening, whereby the water may be delivered outward through the bristles of the brush. Any of the usual and well known constructions would be employed in such case. The position of the shaft 5 upon the standards 6 remains at all times constant, the said shaft, and brush connected therewith, not being reciprocated in the said bearings.

Under normal conditions the brush 15 is entirely enveloped by a shield 16. The shield 16 is constructed of thin metal of a diameter sufficiently large to admit the extremes of varieties of necks of the class of bottles for the washing of which the present machine is designed. The shield 16 is provided at the rear end with a wall 17, perforated to pass the tubular extension of the shaft 5. At the forward end of the tube are formed inwardly extended annular flanges 18, 18, adjacent to the opening of the shield, and adapted to receive a rubber packing 19. It will be understood that the rubber packing 19 may be substituted by a coiled spring, the purpose of the packing or spring being identical, to wit, to cushion the impact of the bottle A upon the shield. The packing serves to hold the bottle against being ro-

tated by the brush 15. The shield is fixedly mounted by means of ears 20, 20 upon guide rods 21, 21. The guide rods 21, 21 are extended through perforations formed in a rectangular frame 22 to be reciprocated therein. Set out from the forward end of the frame 22 is a connecting tab 23, to which the anchored end of a coiled spring 24 is attached. The opposite end of the spring 24 is attached to a projection 25 set out from the end of one of the rods 21, 21. The office of the spring 24 is to project the shield 16 into position, as shown in Figs. 1 and 2 of the drawings, and wherein the brush is totally contained within the shield 16.

In the operation of washing, when employing a machine of the character described and illustrated in the accompanying drawings, the brush is mounted in juxtaposition to a tub or water containing tank. The operator immerses the soiled bottle A within the water of said tub or tank, and while the bottle is partially filled introduces the brush 15 within the bottle, depending upon the water contained therein for all cleansing aid to the brush 15. It will be understood that at all times the shaft 5 and the brush 15 contained thereon are running at a high rate of speed. Heretofore the limit of speed has been governed in large measure by the throw or speed of the water as distributed from the bristles of the brush after the removal of the bottle therefrom. No such limitation is necessary in the present instance, as it will be observed that as the brush is withdrawn from the bottle the shield 16 is advanced by the spring 24 to infold the brush and to receive the water discharged centrifugally from the bristles thereof.

With a machine provided with the shield 16 it will be observed that the operation of washing may be quickly performed, it being only needed that the operator shall grasp the partly filled bottle and insert the neck thereof within the opening of the packing 19. The packing 19 forms a guide and rest for the bottle so that the operator is not required to guide the bottle, but merely to press upon the same until the shield 16 is retracted to the position shown in Fig. 3 of the drawings, and the brush 15 is completely introduced within the body of the bottle. It will be observed that the brush 15, being thus inserted within the body of the bottle, and the neck portion of the bottle resting upon the packing 19, the bottle may be swung about upon the rest thus provided to add any particular stress upon any portion of the bottle, thereby adding the necessary strength needed for the eradication of adhered or gummy foreign substances.

To drain the shield 16 the same is provided with a hole or series of holes, 26, 26 formed in the under side of the said shield, as shown in the drawings.

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

A bottle washer comprising a rotary brush; a supporting frame for said brush having bearings therein; a shield adapted to cover said brush slidably mounted in said frame; and springs for disposing said shield to infold said brush, said springs being adapted to yield to the hand pressure of the operator when the bottle to be cleaned is introduced within said shield.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

DANIEL NEILLY.

Witnesses:
RUFUS B. STONE,
ELIZABETH O'MARA.