

(No Model.)

2 Sheets—Sheet 1.

S. SCAM & J. MUTH.
BOTTLE WASHER.

No. 563,068.

Patented June 30, 1896.

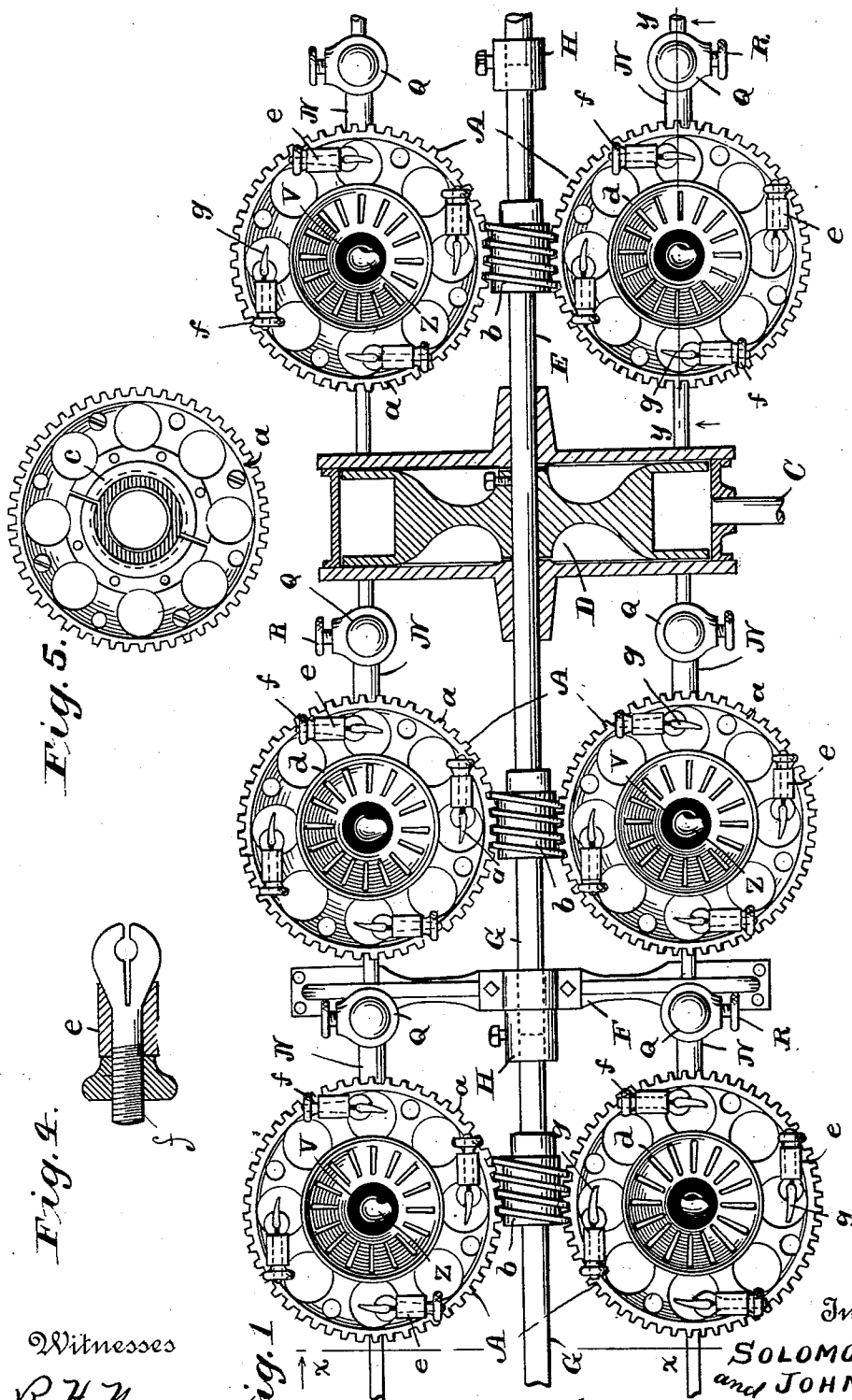
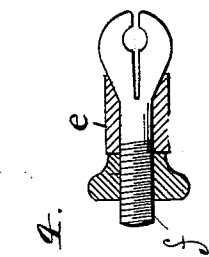


Fig. 5.



Witnesses

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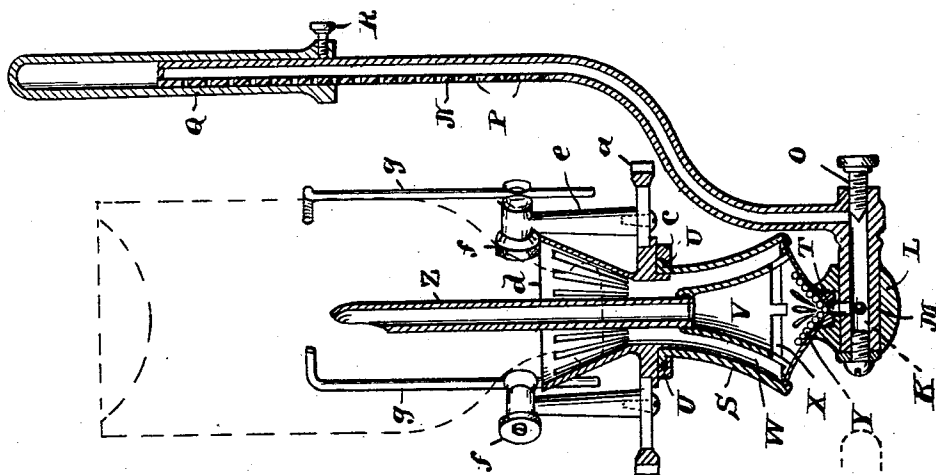


Fig. 3.

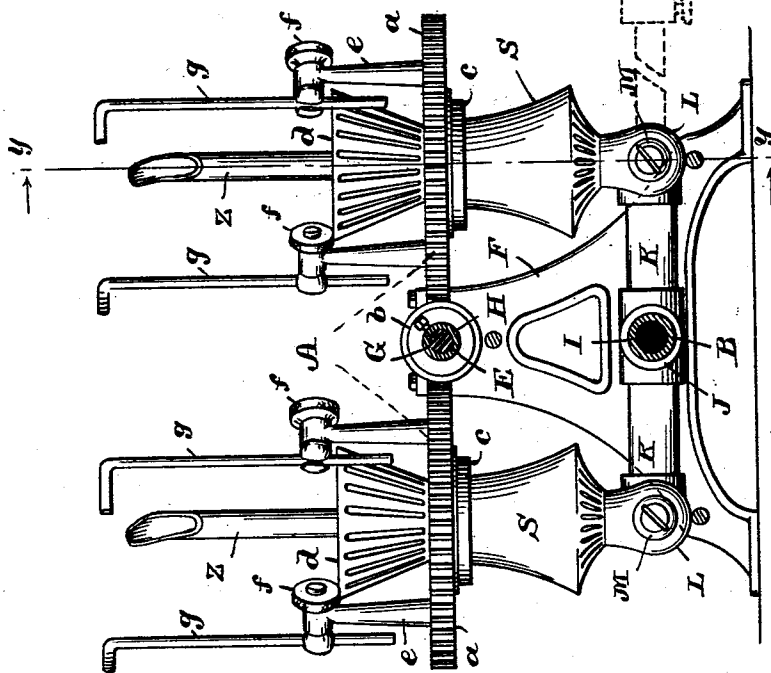


Fig. 2.

Witnesses
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Harriet Slason.

Inventors
SOLOMON SCAM
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UNITED STATES PATENT OFFICE.

SOLOMON SCAM AND JOHN MUTH, OF SOUTH NORWALK, CONNECTICUT.

BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 563,068, dated June 30, 1896.

Application filed March 21, 1896. Serial No. 584,213. (No model.)

To all whom it may concern:

Be it known that we, SOLOMON SCAM and JOHN MUTH, citizens of the United States, and residents of South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

Our invention relates to new and useful improvements in machines for washing various styles and forms of bottles by means of water with the assistance of tin shot.

It is the object of our invention to produce a machine which is adapted to wash both the inside and outside of bottles in a practical and efficient manner; also, to be able to increase its capacity and range of work, and, further, to adapt it to be driven by either water or steam power, and to construct the machine in such a manner that it may be put up in sections, each of which represent a certain capacity, thus increasing the capacity of the machine with each additional section.

With the above objects in view we have devised the simple and novel construction illustrated upon the accompanying drawings, forming a part of this specification, and upon which similar reference-characters indicate like or corresponding parts.

Figure 1 of the drawings indicates a plan view of our machine, showing three pairs or sections of washers. Fig. 2 indicates a sectional elevation of our machine, taken on line *x x* of Fig. 1. Fig. 3 is a vertical cross-section taken on line *y y* of Figs. 1 and 2, which section is at a right angle to that of Fig. 2. Fig. 4 is an enlarged sectional plan view of the adjustable means for clamping the bottle-support in position. Fig. 5 is an inverted plan view of the gears constituting a part of one of the rotary holders.

In the construction of our machine we provide means for supporting and rotating the bottle upon a vertical axis during the cleansing operation. Said rotary movement is obtained by means of a motor, which can be driven by either water or steam power.

Our machine can be set up in any suitable place, such, for instance, as in a sink or upon the cemented floor of a properly-drained wash-room. As before stated, it can be operated by either steam or water power. The latter,

however, is essential for cleansing purposes and serves to thoroughly wash the interior of the bottle with the assistance of fine shot.

Upon the accompanying drawings, A indicates the several sections or pairs of bottle-supports, and of which there can be any desired number. Said sections are all operated, however, by the same means, and simultaneously with each other.

B indicates the main water-supply pipe, which would be connected to the city or any suitable water-supply having a sufficient force to properly operate the apparatus.

C is a branch pipe leading from the main supply and connected to a suitable motor D, which is mounted upon and operates the main driving-shaft E. The driving-shaft is journaled in suitable legs F, connected with the water-supply pipe B, and forms a support for the machine. This shaft is further formed of lengths G, as shown, each length constituting a part of each section of the machine. Said lengths are operatively joined together by means of couplings H, as shown. (See Fig. 1.) The feed-water-supply pipe B, before mentioned, is also formed in lengths I, each of which form a part of each section A, and are provided with couplings J, as shown.

The several sections A of our machine are in every respect similar to each other, and will therefore not need to be separately described. Each section consists of two individual bottle-washers, both of which, however, are operated from the driving-shaft E and supplied with water from the main supply-pipe B. Said individual washers are similar in all essential particulars to each other. Therefore similar reference-characters will be applied to the same.

The supply-pipe B is provided with branch pipes K K, extending outward from and at a right angle to the several sections of the main supply, and serve to convey the water from said supply-pipe to the washers proper. At a suitable distance from the main supply-pipe are formed elbows L, having hollow plug-valves M, fitted and adapted to turn within said elbows. These valves serve the purpose of controlling the supply of water to both the interior and exterior washing devices. Formed integral with said valve is a vertically-extending pipe N, provided with a con-

ical screw-plug O, adapted to regulate its supply of water. Said vertical pipe is preferably curved in a manner to substantially conform to the shape of an ordinary bottle. On the side of said pipe, adjacent to the bottle, are formed a series of small perforations P, which serve as outlets for the water and discharge the same upon the exterior of the rotating bottle. In order to adjust this spraying device for different lengths of bottles, we provide a tubular covering Q to fit over said pipe, and which can be raised or lowered thereon and secured in any desired position by means of the clamping-screw R. This spray-pipe also serves as a handle by means of which the valve M is operated, it being obvious that said valve is open when the pipe N is in a vertical position and that it is closed when in a horizontal position. (See dotted lines, Fig. 2.)

The portion constituting the apparatus for washing the interior of the bottle is mounted directly over the before-mentioned valve M, and consists as follows: We construct a sheet-metal cylinder S, having a perforated deflected bottom with a central water-inlet T. Said cylinder is detachably secured to the elbow before mentioned, and in consequence receives the water supply therefrom through said inlet. The upper portion of said cylinder is contracted to about one-half the size of its base, and is then flared out, as at U, to form a bearing for the rotary holder, as will be later more fully described. To the deflected bottom of the cylinder we attach an inverted conical-shaped sprayer V, the lower portion of which substantially conforms to the shape of the cylinder, but is somewhat smaller, thus forming a return-passage W for the water and shot. The base of said sprayer is provided with openings X, which allow said return water to flow upon the deflected bottom and escape through the perforations thereof, while the shot Y will roll down the incline toward the water-inlet T, where they will again be forced up through the deflector of the bottle. The vertical tubular portion Z of the deflector is preferably made detachable, as shown, so as to admit of similar tubes of varying lengths being substituted to accommodate varying sizes and lengths of bottles.

In the construction of the bottle-support we provide means for accommodating different sizes of bottles, and also for affording said support a continuous rotary movement. Upon the flange U of the cylinder S is journaled a gear-wheel *a*, which constitutes the base or main portion of the support, and meshes with the worm-wheel *b* on the main driving-shaft D, which serves to rotate said gear upon its axis. Said gear-support is rotatably fixed to the flange of the cylinder by means of an annular retaining-piece *c*, screwed to said support and overlapping the flange aforesaid. Immediately over the opening in the cylinder is provided a flaring perforated receptacle *d*, in

which the mouth of the bottle rests, and which serves to receive the water and shot as they are discharged from the bottle. The perforations in said receptacle are to allow the soiled water to escape therefrom, and at the same time deflect the shot back into the cylinder. Upon the rotating gear are secured posts *e*, which are provided with binding-screws *f* to adjustably clamp the vertical braces *g* in any desired position. The upper extremity of said braces are flattened out and curved to one side in a manner to provide ample engagement with the bottle when the same is placed invertedly upon the receptacle.

From the above it will be apparent that our machine can readily be adjusted for different sizes of bottles by raising or lowering the braces *g* and substituting tubes Z of different lengths.

In the construction of our machine we do not wish to be limited to any particular number of sections of washers, as they may be varied without departing from our invention, and would be determined only by the requirements of the purchaser. It is also obvious that sections can be added to or taken from said machine at any time without having to take the same down or in any way materially inconveniencing the operation of the apparatus.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a bottle-washing machine, the combination of a frame, a cylinder S supported thereby and having a deflected perforated bottom, a conical-shaped spraying-pipe secured within the cylinder and slotted at its lower end, a pipe and valve to supply water thereto, a rotary bottle-holder mounted upon the cylinder, and mechanism for rotating the holder, substantially as described.

2. In a bottle-washing machine, the combination of a frame, a cylinder supported thereby and having a deflected perforated bottom, a conical-shaped spraying-pipe secured within the cylinder, an independent return-passage between said spray-pipe and the cylinder aforesaid, a pipe and valve to supply water thereto, a rotary bottle-holder mounted upon the cylinder, adjustable braces secured to said holder and means for rotating said holder, substantially as described.

3. In a bottle-washing machine, the combination of a frame, a cylinder supported thereby and having a deflected perforated bottom, a conical-shaped spraying-pipe secured within the cylinder and slotted at its lower end, a pipe and valve to supply water thereto, an exterior vertical spray-pipe N having an adjustable covering to regulate the discharge of water, a rotary bottle-holder mounted upon the cylinder and mechanism for rotating said holder, substantially as described.

4. In a bottle-washing machine, the combination of a frame, a cylinder supported thereby and having a deflected perforated bottom, a

conical-shaped spraying-pipe secured within
the cylinder and slotted at its lower end, a re-
turn-passage between said spraying-pipe and
the walls of the cylinder, an exterior spraying-
5 pipe having an adjustable covering to regu-
late the discharge of water, a pipe and valve to
supply water to both the interior and exterior
spray-pipes, a rotary bottle-holder mounted
upon the cylinder, posts secured to said holder
10 and provided with adjustable braces and

mechanism for rotating said holder, substan-
tially as described.

Signed at Bridgeport, in the county of Fair-
field and State of Connecticut, this 18th day
of March, A. D. 1896.

SOLOMON SCAM.

JOHN MUTH.

Witnesses:

C. M. NEWMAN,

HARRIET L. SLASON.