July 24, 1923.

1,462,598

O. C. GRENZKE

BOTTLE WASHING MACHINE

Filed July 18, 1921

2 Sheets-Sheet 1

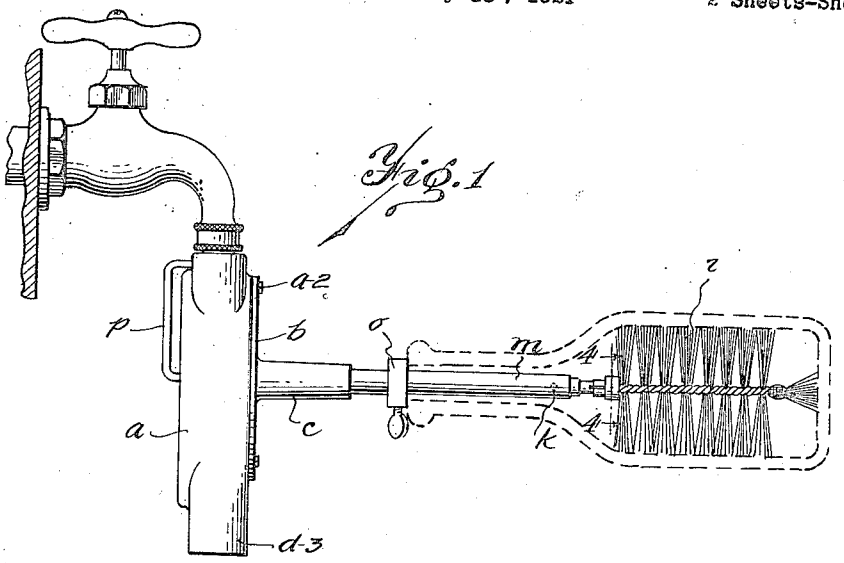


Fig. 1

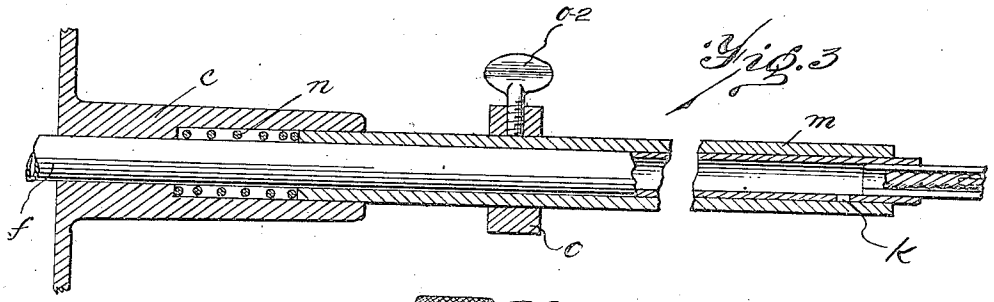


Fig. 3

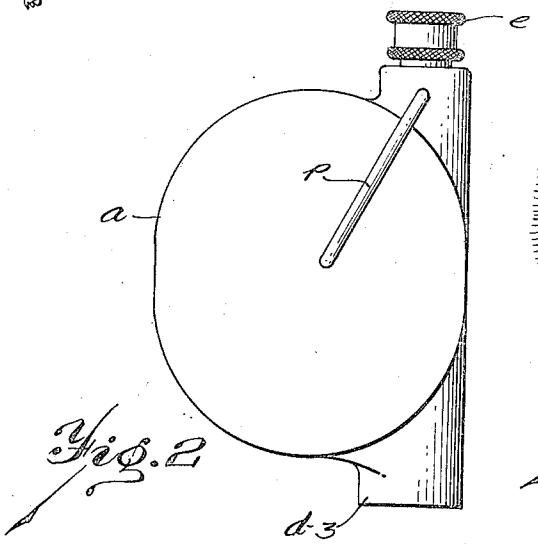


Fig. 2

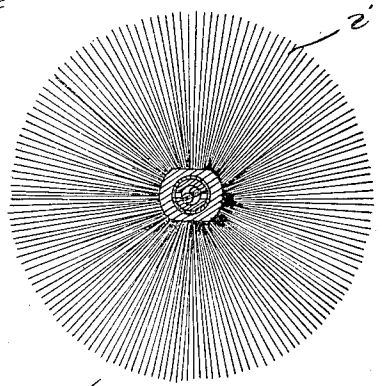


Fig. 4

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O. C. GRENZKE

BOTTLE WASHING MACHINE

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2 Sheets-Sheet 2

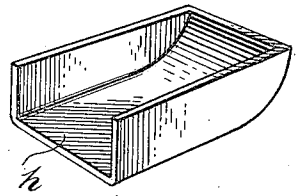
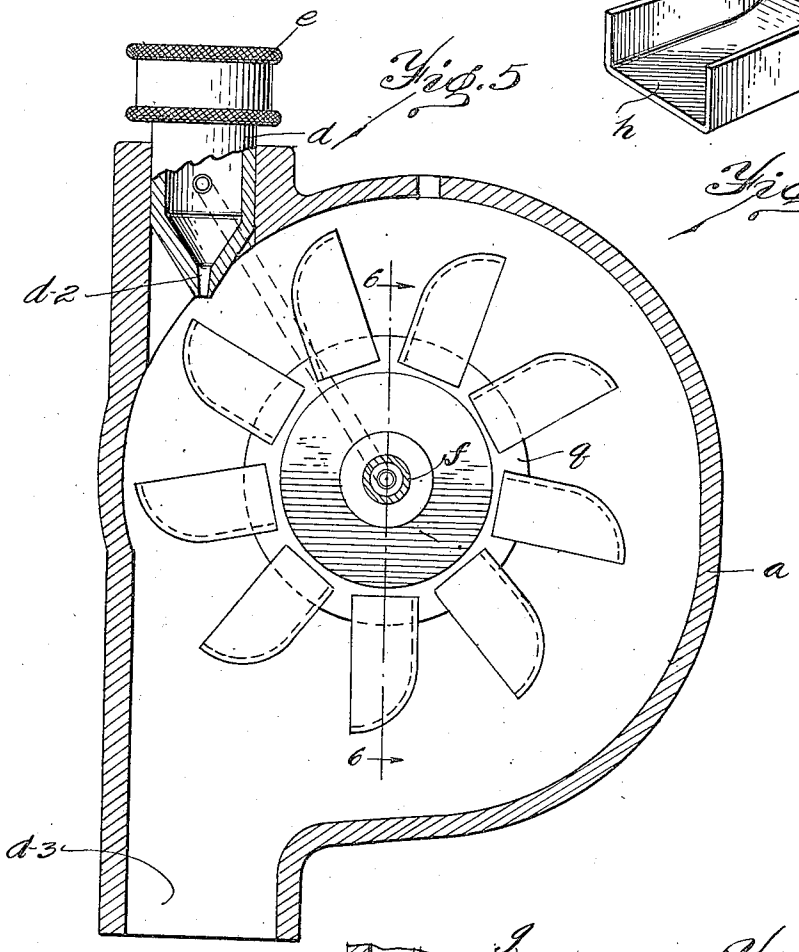
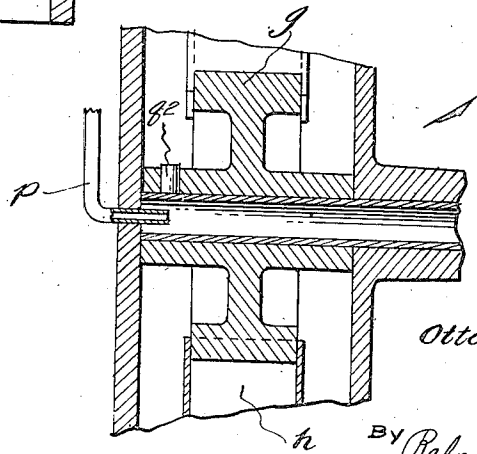


Fig. 7





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Patented July 24, 1923. 1,462,598

UNITED STATES PATENT OFFICE.

OTTO C. GRENZKE, OF DETROIT, MICHIGAN.

BOTTLE-WASHING MACHINE.

Application filed July 18, 1921. Serial No. 485,703.

To all whom it may concern:

Be it known that I, OTTO C. GRENZKE, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Bottle-Washing Machines, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My improvements relates to improvements in bottle washing machines driven by means of a water motor which motor is adapted to be attached to a water faucet such as the common water faucet used in connection with the city water supply systems so that the water motor may be driven by water under city water pressure.

An object is to provide a bottle washer driven by means of a water motor of such a character that during the operation of the device water is supplied to the interior of the bottle.

A further object is the provision of a new and improved bottle washing machine of simple inexpensive manufacture and so constructed that as the bottle is forced downwardly on the shaft which carries the cleaning brush, a valve is uncovered through which water is discharged into the bottle.

These and other objects together with details of construction will more fully appear from the following description, appended claims and accompanying drawings, in which:

Figure 1 is an elevation of my device secured to a water faucet showing a bottle in the neutral position inserted over the brush.

Fig. 2 is a side elevation of the water motor.

Fig. 3 is a cross section through the driving shaft.

Fig. 4 is a vertical section taken on line 4—4 Fig. 1.

Fig. 5 is a vertical section through the water motor.

Fig. 6 is a section taken on line 6—6 Fig. 5.

Fig. 7 is a perspective of one of the water buckets.

In the drawings, let *a* indicate the water motor casing which is provided with a removable cover plate *b* which cover plate is provided with an axially extending bearing *c* within which the driving shaft is mounted for rotation. This cover plate is secured by means of screws a^2, or as may be desired, to the casing. The casing is provided at the upper end with an inlet pipe *d*, the passageway through which is constricted at the outlet as at d^2 and which is provided with a thumb nut *e* adapted to secure the same to the end of a faucet. Suitable gaskets may be provided to make a water tight joint between the faucet and the water motor. At the lower end the water motor casing is provided with a discharge spout d^3.

The rotary portion of the motor comprises a hollow driving shaft *f* which is mounted for rotation within the hollow bearing *c*. This shaft carries a water wheel *g* to the periphery of which is secured a series of circumferentially arranged water buckets *h*. As shown in the drawing, the hub of the water wheel is provided with a series of radial slots in which these buckets are inserted being secured rigidly therein. It is apparent that the buckets might be secured to the water wheel in any desired fashion and be of the shape which was found most suitable. As shown in the drawing, a set screw g^2 is used to secure the wheel to the hollow shaft *f*.

There is provided a water communicating by-pass *p*, in the form of a conduit disposed outside the motor casing, which takes away a small proportion of the water which enters the casing through the inlet *d* and projects the same into the end of the hollow shaft *f*, by means of which the water enters the interior of the bottle which is being cleaned.

At the outer end, this hollow shaft is provided with a cleaning brush *i* of any desired form, a preferred form being that shown in the drawing, which brush may be secured to the shaft in any desired manner to rotate therewith. The driving shaft *f* is provided at the end proximate the brush with a discharge vent *k* through which the water from the interior thereof flows to enter the bottle. This discharge vent is normally closed by the sleeve *m* which encircles the driving shaft and is held yieldingly outwards so as to cover the vent by a spiral spring *n* which encircles the driving shaft and is disposed within an annular recess formed within the bearing *c*, one end of the spring resting against a shoulder formed in said bearing,

the other end of the spring bearing against the end of the sleeve. An adjustable collar *o* is secured by means of a set screw o^2 to the sleeve at the point desired, depending upon the size of bottle to be cleaned. This collar is so attached to the sleeve that when the bottle is inserted over the brush and moved downwardly on the sleeve the mouth of the bottle engages the collar and as the bottle is forced inwardly the sleeve is moved longitudinally on the shaft *f* against the resistance of the spring *n* so as to uncover the discharge vent *k* permitting the water to flow from the interior of the shaft into the bottle.

It is apparent that the water will discharge through the vent *k* in the shaft only when a bottle has been inserted over the end of the shaft so as to actuate the sleeve *m*.

What I claim is:

1. In a bottle washer, the combination with a water motor adapted to be attached to a water faucet, of a hollow drive shaft adapted to be rotated by said motor, a bottle cleaning brush at the outer end of said shaft, a water communicating by-pass leading from the water inlet to the interior of the hollow drive shaft, said shaft provided with a discharge outlet at the end adjacent the brush, a sleeve encircling said shaft longitudinally movable thereon, spring means normally holding said sleeve outwardly to close the discharge outlet from the shaft, a collar adjustable lengthwise on said sleeve, said collar adapted to engage the mouth of a bottle when the bottle is inserted over the brush and sleeve so that the sleeve may be moved longitudinally over the shaft against the resistance of the spring to uncover the discharge outlet from the shaft.

2. In a bottle washing machine, in combination, a water motor casing having an intake opening adapted to be detachably secured to a water faucet to receive the discharge thereof, a water motor disposed within said casing, a hollow shaft driven by said motor, said casing provided with an extended bearing for said shaft, which bearing has an annular recess surrounding said shaft, a cleaning brush carried by said shaft to rotate therewith, said shaft provided with a discharge vent adjacent said brush, a sleeve encircling said shaft movable lengthwise thereof, one end of said sleeve slidably received within the annular recess of the bearing, a spring disposed within said recess to exert pressure on said sleeve to hold the same outwardly to cover the discharge vent of the shaft, a stop carried by said sleeve adjustable longitudinally thereof adapted to engage the mouth of the bottle inserted over the shaft.

In testimony whereof, I sign this specification.

OTTO C. GRENZKE.