

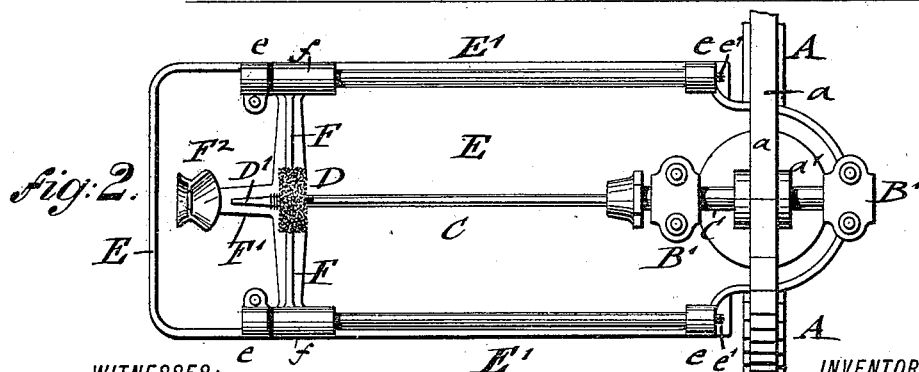
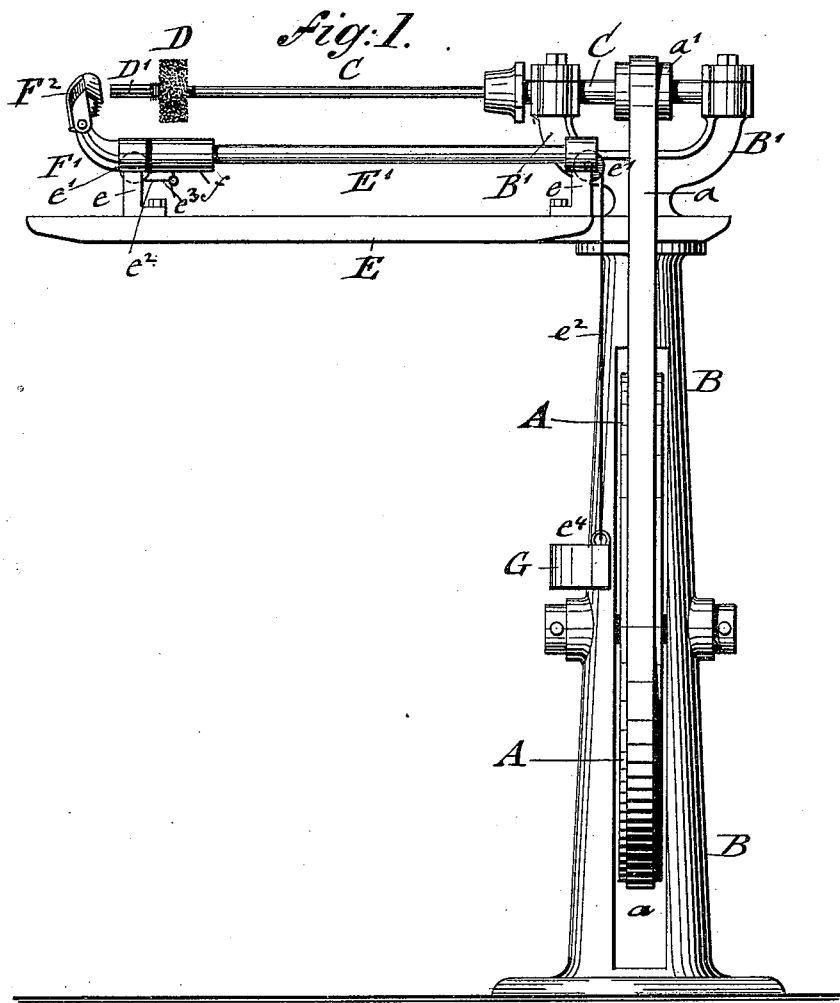
(No Model.)

3 Sheets—Sheet 1.

J. F. WITTEMAN.
BOTTLE WASHING MACHINE.

No. 419,486.

Patented Jan. 14, 1890.



WITNESSES:

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Charles K. Kutz

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(No Model.)

3 Sheets—Sheet 2.

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Fig. 3.

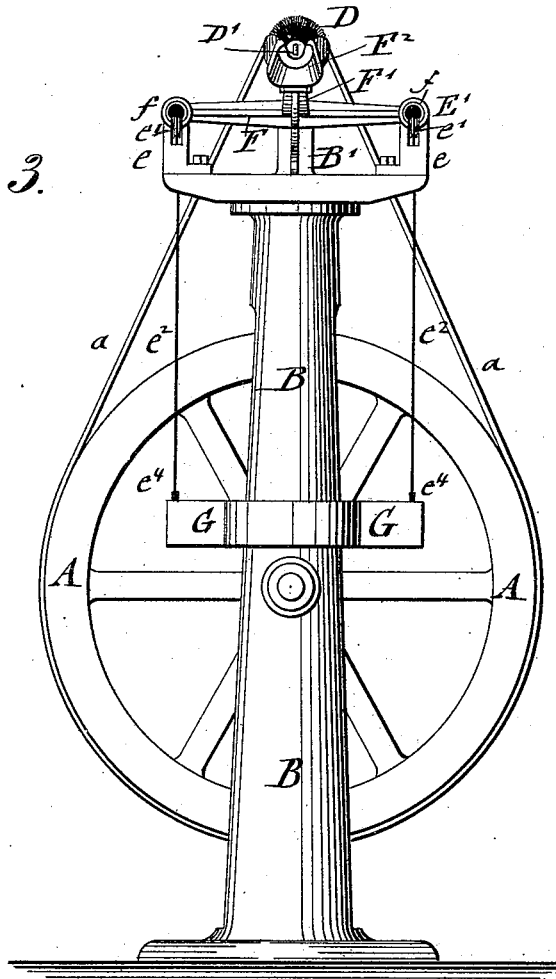
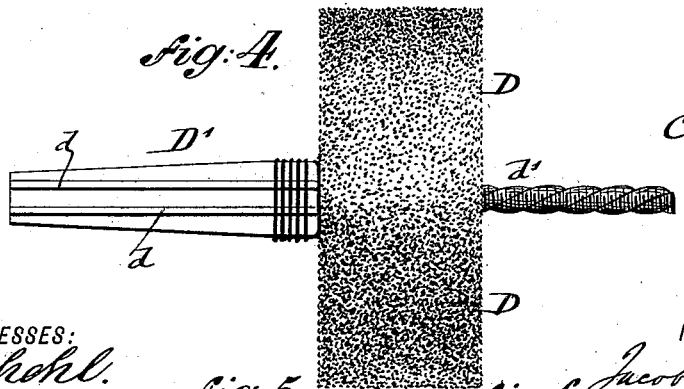


Fig. 4.



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Fig. 5.

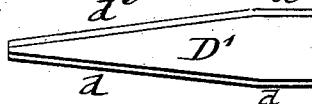


Fig. 6.



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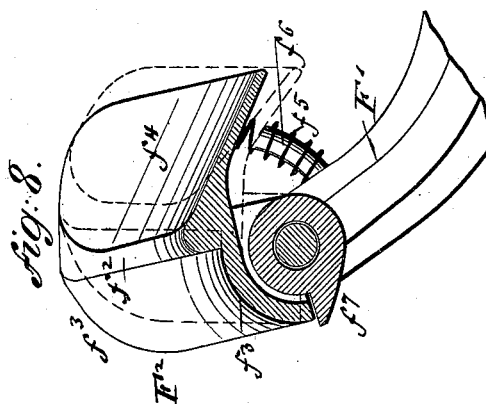
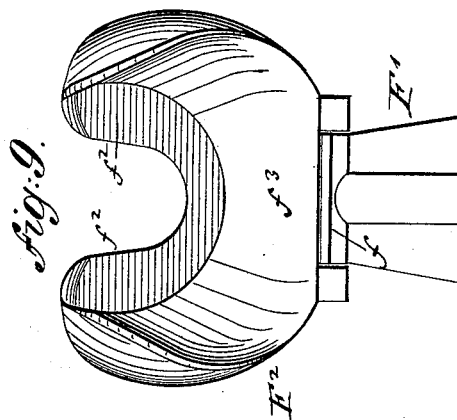
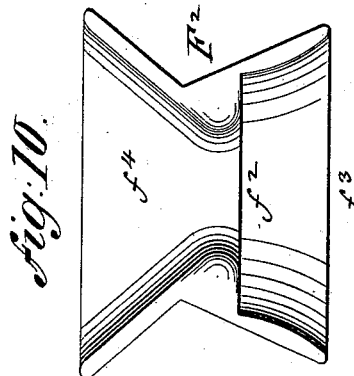
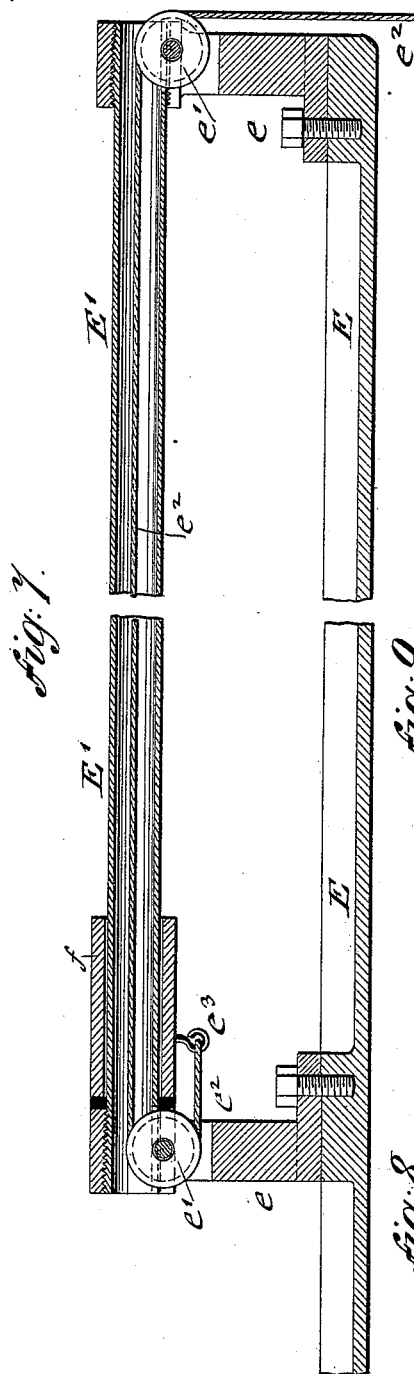
(No Model.)

3 Sheets—Sheet 3.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

JACOB F. WITTEMANN, OF NEW YORK, N. Y.

BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 419,486, dated January 14, 1890.

Application filed January 10, 1889. Serial No. 295,921. (No model.)

To all whom it may concern:

Be it known that I, JACOB F. WITTEMANN, of the city, county, and State of New York, a citizen of the United States, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

The object of this invention is to provide a simple, compact, and convenient bottle-washer.

In the accompanying drawings, Figure 1 represents a side elevation of my improved bottle-washing machine. Fig. 2 is a plan; Fig. 3, a front elevation of the same; Fig. 4, a side view of the brush with its elastic scraper, drawn on a larger scale. Figs. 5 and 6 are a detail side view and a vertical transverse section of the scraper. Fig. 7 is a detail vertical longitudinal section of the slide-frame of the bottle-rest and the guide-tubes for the same; and Figs. 8, 9, and 10 are details of the pivoted bottle-rest.

Similar letters of reference indicate corresponding parts.

My improved bottle-washing machine is specially intended to be worked by foot-power with a suitable treadle, by which motion is imparted to the spindle of the cleaning-brush. It can also be used with steam or other power, if desired, by applying a pulley to the shaft of the fly-wheel. The action of the treadle is transmitted by a pitman and crank to the shaft of the fly-wheel A, which is supported in bearings of a recessed upright standard B, said fly-wheel serving also as a pulley for transmitting by a belt a motion to a pulley a' on the spindle C of the rotary cleaning-brush D. The spindle C is supported in bearings of the fork-shaped upper part B' of the standard B, as shown in Fig. 1. A horizontal table E is attached to the upper part of the standard B, said table supporting in sleeves of short upright arms e e parallel guide-tubes E', on which a transverse reciprocating slide-frame F is guided by end sleeves f f. The transverse slide-frame F carries at its center a curved upwardly-extending arm F', which supports an open bottle-rest F², which latter is located in front of the rotary brush D and in line with the axis of the same. The arms

e e are provided at both ends of the parallel guide-tubes E' with pulleys e', over which are passed wire or other cords e², that are attached at their front ends to eyes e³ at the under side of the guide-sleeves f of the transverse slide-frame F. The cords e² pass from the eyes e³ of the guide-sleeves f over the pulleys at the front end of the table and in the guide-tubes E' to the pulleys at the rear end of the table, then downward to the eyes e⁴ of a weight G, which is suspended in front of the standard B, as shown in Figs. 1 and 3. The weight G serves to balance the transverse slide-frame F in its reciprocating motion along the guide-rods E' and to return the same to its normal position at the front ends of the same.

The open bottle-rest F² serves to support the neck of the bottle to be cleaned, and is formed of a transverse semicircular rib f² and an outwardly-curved flange f³, in front of said rib, said flange and rib forming a socket for the neck of the bottle. From the rib f² extends in backward direction a flaring flange f⁴, which serves to guide the rotary brush D and an elastic scraper D', in front of the same, into the mouth of the bottle supported on the bottle-rest.

The form of the bottle-rest F² is clearly shown in the detail, Figs. 8, 9, and 10. The bottle-rest F² is hinged to the upper end of the curved arm F', for the purpose of imparting a small degree of oscillating motion thereto. A spiral spring f⁵ is interposed between the arm f' and the bottom part of the bottle-rest and placed on a curved pin f⁶ of the arm F', as shown in Fig. 8, for the purpose of imparting a certain degree of oscillation to the bottle-rest, and permitting the pressing of the elastic scraper against the bottom of the bottle and into the corner of the same, so as to produce thereby the more perfect and effective cleaning of the inner surface of the bottle. The front flange f³ of the bottle-rest abuts against a fixed stop f⁷, and the rear flange f⁴ against the end of the guide-pin f⁶, said stop and pin limiting the extent of oscillating motion of the bottle-rest. The scraper D' is preferably made of soft rubber and provided with longitudinal ribs d, as shown in Figs. 4, 5, and 6, said scraper being made of

hollow tapering shape and rigidly attached by wire to the front end of the wire shank of the brush D.

The brush D is formed of a number of radial bristles, which are firmly retained by spirally-twisted-wire shank d' , which is threaded at the rear end for being readily screwed into a threaded socket at the front end of the spindle C, as shown in Fig. 4.

The operation of the machine is as follows: The bottle is taken from the washing-tank and placed with its neck on the bottle-rest, being then in line with the axis of the spindle of the brush D. The bottle is then pressed against the bottle-rest and moved with the latter and its supporting slide-frame in backward direction, so as to raise the balance-weight of the slide-frame. By the backward motion of the slide-frame and bottle-rest the bottle is passed over the scraper and brush, the flaring rear flange of the bottle-rest guiding the scraper and brush into the mouth of the bottle, so that the brush, which is rotated at the same time, cleans the inner surface of the bottle, while the ribbed scraper is bent at right angles to the spindle and serves to clean the bottom of the bottle. The bottle is held by the hand, and is quickly cleaned by the rotary motion of the brush and scraper, the oscillation imparted by the pivoted bottle-rest serving to clean the bottom of the bottle in a more perfect manner.

When the bottle is cleaned by the action of the rotary brush and scraper, the pressure on the bottle-rest is relaxed, so that the balance-weight is lowered and the slide-frame and bottle-rest returned to their normal position at the front end of the guide-tubes E'. The bottle is thereby withdrawn from the brush and scraper and set aside. The next bottle is then taken up and the same action repeated. The rotary motion of the brush and scraper is kept up by the motion-transmitting mechanisms, which are operated by the foot or other suitable power.

My improved bottle-washing machine has the advantage that the same can be furnished at a comparatively low price and that it forms an effective machine for cleaning bottles in a quick and reliable manner.

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

1. The combination of a rotary brush-shaft, a rotary brush thereon, two parallel tubular guideways, supports for said shaft and guideways, a slide-frame on said guideways, a bottle-rest on said slide-frame, pulleys on said supports at opposite ends of said tubular guideways, cords connected at their front ends to said slide-frame and passing over said pulleys and through said tubular guideways, and a weight suspended from the rear ends of said cords.

2. The combination, with the balanced horizontally-reciprocating slide-frame having an upright central arm, of an open spring-actuated bottle-rest pivoted to said arm, and a rotary brush in line with said bottle-rest, substantially as set forth.

3. The combination of a rotary brush-shaft, a rotary brush thereon, a horizontal table, supports for said shaft and table, parallel tubular guideways supported on said table, a slide-frame on said guideways, a bottle-rest on said slide-frame, pulleys on said supports at opposite ends of said tubular guideways, cords connected at their front ends to said slide-frame and passing over said pulleys and through said guideways, and a weight suspended from the rear ends of said cords.

4. The combination of a vertical slotted standard having a forked bracket at its upper end, a driving-shaft in said standard, a fly-wheel pulley on said driving-shaft within the slot of said standard, a brush-shaft supported at its rear end in bearings in said forked bracket, a rotary brush on said brush-shaft at its front end, a pulley on said brush-shaft between the forks of said bracket, a belt passing over said pulley and fly-wheel pulley, a horizontal table attached to said standard near its upper end and provided with upright arms, parallel tubular guideways supported in said arms, a slide-frame on said guideways, and a bottle-rest supported on said slide-frame.

5. In a bottle-washing machine, an open bottle-rest formed of a center rib, a curved flange in the front of the same, and a flaring flange at the rear of the same, substantially as set forth.

6. In a bottle-washing machine, the combination of a horizontally-reciprocating slide-frame, an upright arm at the center of the same, an open bottle-rest pivoted to the upper end of the arm, said bottle-rest having a curved front flange and a flaring rear flange, a stop for the front flange, a guide-pin attached to the arm, and a spiral spring on said guide-pin for cushioning the rear flange of the bottle-rest, substantially as set forth.

7. In a bottle-washing machine, a cleaning-brush provided with a ribbed elastic scraper in front of the same, substantially as set forth.

8. In a bottle-washing machine, an elastic scraper formed of a hollow tapering body provided with longitudinal ribs, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JACOB F. WITTEMANN.

Witnesses:

PAUL GOEPEL,
JOHN A. STRALEY.