

No. 708,321.

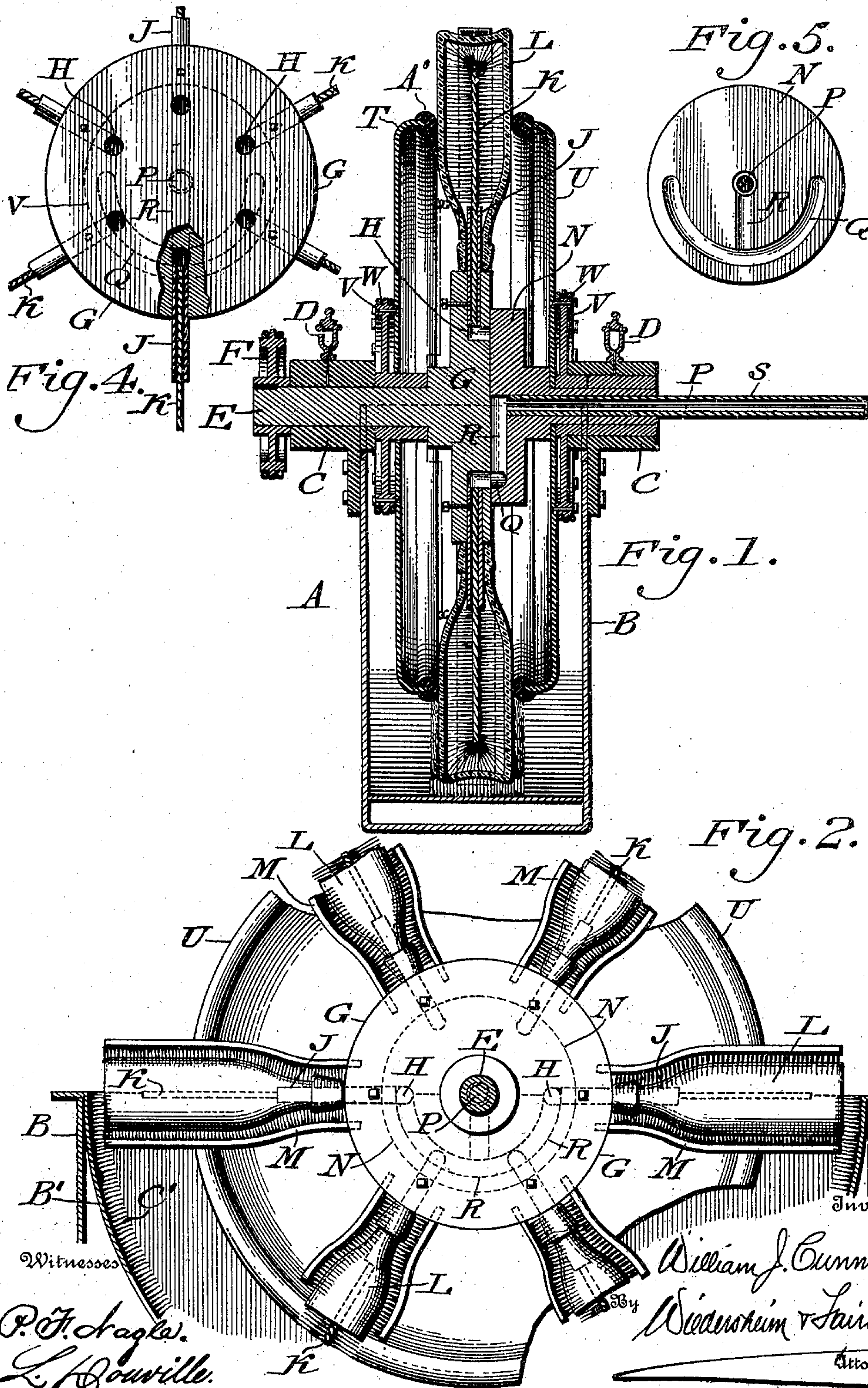
Patented Sept. 2, 1902.

W. J. CUNNINGHAM.
BOTTLE WASHING MACHINE.

(Application filed Mar. 1, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses
P. H. Nagle.
L. Bouville.

Inventor
William J. Cunningham.
Wiederheim & Fairbanks,
Attorneys

No. 708,321.

Patented Sept. 2, 1902.

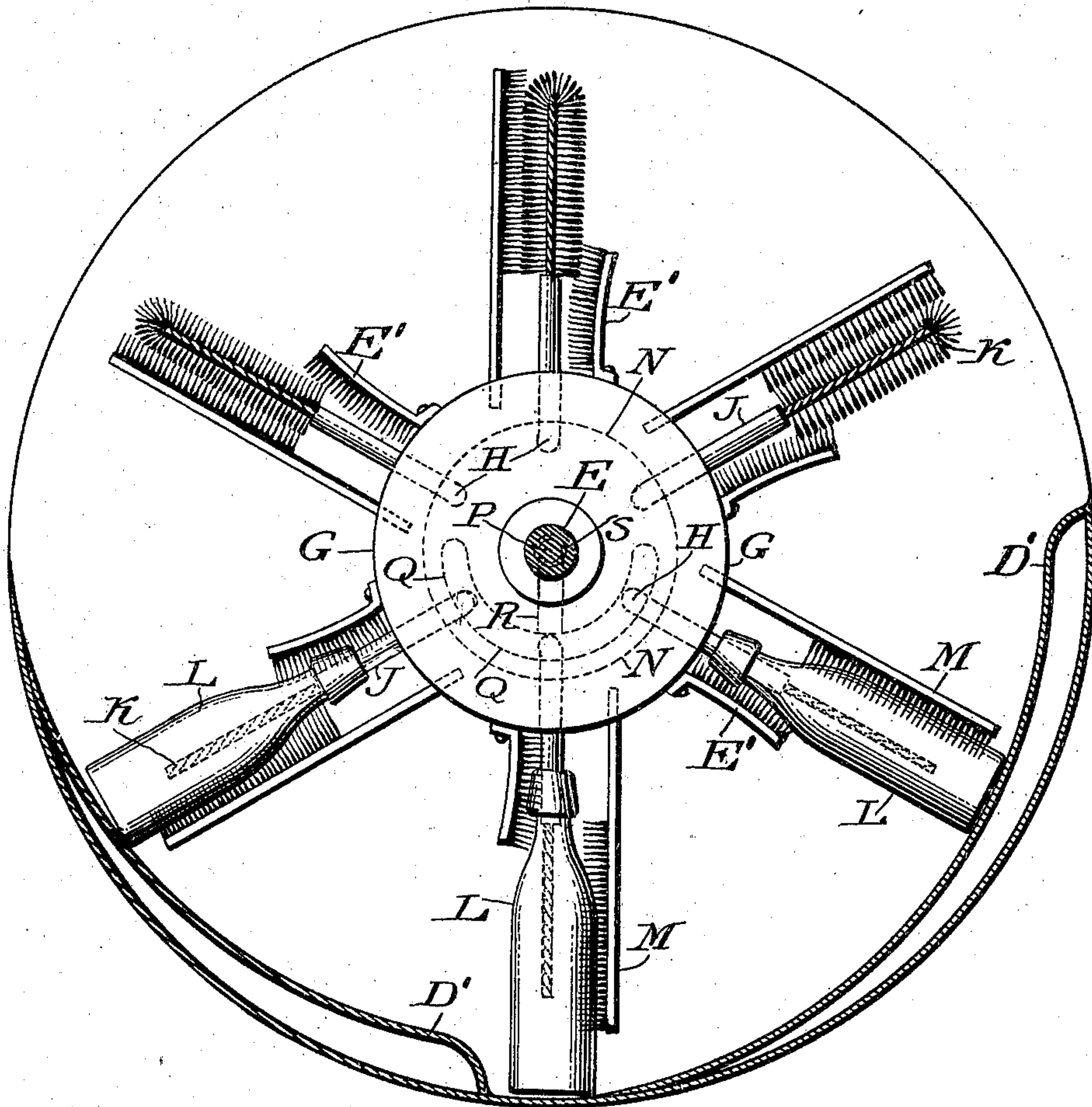
W. J. CUNNINGHAM.
BOTTLE WASHING MACHINE.

(Application filed Mar. 1, 1902.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.



Witnesses
P. H. Nagle.
L. Houville.

Inventor
William J. Cunningham.
By Wiedersheim & Leibanks.
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM J. CUNNINGHAM, OF PHILADELPHIA, PENNSYLVANIA.

BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 708,321, dated September 2, 1902.

Application filed March 1, 1902. Serial No. 96,245. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CUNNINGHAM, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Bottle-Washing Machines, of which the following is a specification.

My invention consists of an improvement in a bottle-washing machine wherein I provide brushes for washing the bottles and means for revolving the bottles.

It further consists of means for conveying water or other cleansing material to the interior of the bottle and for automatically controlling the flow thereof.

It further consists of providing means for imparting a reciprocating motion to the bottles with respect to the holders thereof.

It further consists of novel details of construction, all as will be hereinafter fully set forth, and particularly pointed out in the claims.

Figure 1 represents a vertical sectional view of a bottle-washing machine embodying my invention. Fig. 2 represents a sectional view on line $x x$, Fig. 1, showing a portion of the device broken away. Fig. 3 represents a similar section, showing the means for imparting a reciprocating motion to the bottles. Fig. 4 represents a side elevation of a portion of the valve-mechanism device in detached position. Fig. 5 represents a side elevation of a portion of the valve-mechanism device in detached position.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a bottle-washing machine having a tank B, which is adapted to contain or receive suitable cleansing material and which is provided with journals C, which are provided with oil-cups D for evident purposes. Mounted in one of said journals is a shaft E, to which motion is imparted in any suitable manner, in the present instance by means of power applied to the sprocket-wheel F, which is keyed thereto, said shaft having secured thereto or forming part thereof a plate G, which latter is provided with any number of passages or ports H, in which are secured pipes J, which pro-

ject beyond the periphery of said plate G and in which are secured the handles of the brushes K, which latter are adapted to enter the bottles L, while secured to the said plate G, adjacent each of said ports H, are the brushes M, which may be of suitable material so as to allow for a certain amount of play, it being seen that the bottles L are situated between said brushes M when in position with the brushes K on the interior thereof, it being noted that the said brushes M are preferably diametrically opposite to each other and that the said brushes M and L revolve with the plate G, but are stationary with respect to the bottle.

Suitably mounted with respect to the tank B is the fixed block or plate N, which is provided with a central bore R and a curved passage Q, which is in communication with the central bore P by the passage R, a suitable pipe S communicating with the said bore P and with a suitable source of supply in order to conduct suitable cleansing material into said passage R and the curved passage Q.

T and U designate disks, which are suitably supported in order to turn freely with respect to the rest of the mechanism already described, each of which is provided with a sprocket-wheel V, to which power is applied in any suitable manner, in the present instance by the chain W, said disks being so constructed as to contact with the sides of the bottle and the edges thereof being preferably provided with some resilient material A', such as rubber, in order not to break the bottles, said disks revolving in opposite direction to each other.

Secured to the tank is a track B', upon which the bottoms of the bottles are adapted to rest when within the tank in order that the same will not leave the holders, said track being provided, if desired, with a suitable brush C' in order to cleanse the bottle, it being further seen that in place of making a track B' an equal distance with respect to the plate G I provide the same with raised portions D', whereby it will be seen that as the bottles are carried around by the plate G the same will bear against the track B' and the raised portions D', so that a reciprocating motion will be imparted to said bottles with respect

to said plate G, which effect is evident, while in lieu of forming the brushes M of equal size I may make one side shorter, as E'.

The operation is as follows: The bottles are
5 placed in position between the brushes M or
the brushes M and E', with the brushes K on
the interior thereof, and motion is imparted
to the various portions of the device—for ex-
10 ample, to the shaft E, which revolves the
plate G and with it the brushes M and K and
the bottles L. Motion is also imparted at a
different speed with respect to each other and
with respect to the plate G to the disks T and
15 U, the edges of which contacting with the
bottle rotate the same with respect to the said
brushes M and K, whereby it will be seen
that the brushes will be thoroughly washed
on the exterior and interior and on the bot-
20 tom by reason of the brushes C'. Water or
other cleansing material meanwhile is intro-
duced through the pipe S into the passage R
and the curved passage Q, and as the said
block N is stationary the passages H in the
25 plate G will register with said curved passage
Q at certain times during the revolution,
whereby it will be seen that the cleansing ma-
terial will pass from said passage Q through
the ports or passages H and into the interior
30 of the bottle, the introduction of the cleans-
ing material into the bottles of course being
stopped after the ports are closed. It will be
seen that in this way the valve mechanism is
obtained which is automatically opened and
35 closed. It will further be evident that the
bottles can be removed during the revolution
of the plate G and a new one substituted
as desired. It will be further evident that
changes may be made by those skilled in the
40 art which will come within the scope of my
invention, and I do not, therefore, desire to be
limited in every instance to the exact con-
struction herein shown and described.

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

1. In a bottle-washing machine, brushes
adapted to receive and hold the bottles, means
for rotating said brushes and with them the
bottles, and means for revolving said bottles
50 with respect to said brushes.

2. In a bottle-washing machine, bottle-hold-
ers, brushes on said holders adapted to con-
tact with the interior and exterior of the bot-
tles, means for revolving the same, means for
55 rotating said bottles with respect to said bot-
tle-holders and brushes, and means for im-
parting a reciprocating motion to said bot-
tles with respect to said bottle-holders and
brushes.

3. In a bottle-washing machine, bottle-hold-
ers, brushes on said holders adapted to con-
tact with the interior and exterior of the bot-
tles, means for revolving the same, means for
rotating said bottles with respect to said bot-
65 tle-holders and brushes, and means for con-
ducting cleansing material to the interior of

said bottle-holders and for automatically clos-
ing the supply thereof.

4. In a bottle-washing machine, bottle-hold-
ers, brushes on said holders adapted to con- 70
tact with the interior and exterior of the bot-
tles, means for revolving the bottles with re-
spect to said bottle-holders and brushes, and
a valve mechanism for automatically con-
trolling the supply of cleansing material to 75
said bottles and bottle-holders.

5. In a bottle-washing machine, bottle-hold-
ers, means for revolving the same, means for
rotating said bottles with respect to said bot-
tle-holders, means for imparting a reciprocating 80
motion to said bottles with respect to said
bottle-holders, and a valve mechanism for
automatically supplying cleansing material
to the interior of said bottles.

6. In a bottle-washing machine, a tank, 85
brushes suitably supported therein and adapt-
ed to receive a bottle, means for revolving
said brushes with respect to said tank, and
disks suitably supported and adapted to con-
tact with said bottle for rotating the same 90
with respect to said brushes.

7. In a bottle-washing machine, a tank,
brushes suitably supported therein and adapt-
ed to receive a bottle, means for revolving
said brushes with respect to said tank, and a 95
track provided with means for imparting a
reciprocating motion to the bottle with re-
spect to said brushes.

8. In a bottle-washing machine, a tank,
brushes suitably supported therein, means 100
for revolving the same with respect to said
tank, bottles adapted to be held adjacent said
brushes, and disks suitably supported and
adapted to contact with the bottle and means
for imparting motion to said disks whereby 105
said bottles are rotated with respect to said
brushes.

9. In a bottle-washing machine, a tank,
brushes suitably supported therein and adapt-
ed to receive bottles, means for revolving 110
said brushes with respect to said tank, and a
block having suitable passages therein which
are adapted to register with the communica-
tions to the interior of the bottles, whereby
cleansing material is conducted thereinto. 115

10. In a bottle-washing machine, a tank, a
plate suitably supported therein, means for
revolving said plate, brushes connected with
said plate, one of which is adapted to enter
the bottle, ports in said plate communicating 120
with the interior of said bottle and a block
having a passage therein which is so situated
as to register with said ports or passages in
said plate, in order to conduct cleansing ma-
terial to the interior of the bottle at a suit- 125
able time.

11. In a bottle-washing machine, a tank, a
plate secured therein, means for revolving
said plate, brushes connected with said plate,
one of which is adapted to be inserted in a 130
bottle, ports in said plate, disks suitably sup-
ported and adapted to contact with the sides

of the bottle, means for rotating said disks independent of said plate, a block having a port therein adapted to register with the ports or passages in said plate and means for conducting cleansing material into said port, whereby cleansing material is supplied to the interior of the bottle at the proper time.

12. In a bottle-washing machine, bottle-holders adapted to receive the bottles, means for rotating the said holders and with them the bottles; means for revolving said bottles with respect to said bottle-holders, and means for conducting cleansing material to the interior of the bottles when in position.

13. In a bottle-washing machine, brushes adapted to receive and to hold the bottle and adapted to contact with the interior and exterior of the bottles when in position, means for rotating said bottles with respect to said brushes, means for imparting a reciprocating motion to said bottles with respect to said brushes, and means for conducting cleansing material to the interior of said bottle.

14. In a bottle-washing machine, a tank

adapted to receive cleansing material, brushes suitably supported and adapted to receive a bottle and to rotate in said tank, whereby the bottles are carried through the cleansing material, and means for revolving said bottles with respect to said brushes, whereby the bottles are thoroughly cleansed.

15. In a bottle-washing machine, a tank adapted to receive cleansing material, brushes suitably supported and adapted to contact with the interior and exterior of said bottles, means for rotating said brushes and bottles with respect to said tank, whereby the said bottles pass through the cleansing material, means for revolving said bottles with respect to said brushes, and means for introducing suitable cleansing material into said bottles whereby the exterior and interior of said bottles are thoroughly cleansed.

WILLIAM J. CUNNINGHAM.

Witnesses:

JOHN A. WIEDERSHEIM,

WM. CANER WIEDERSHEIM.