

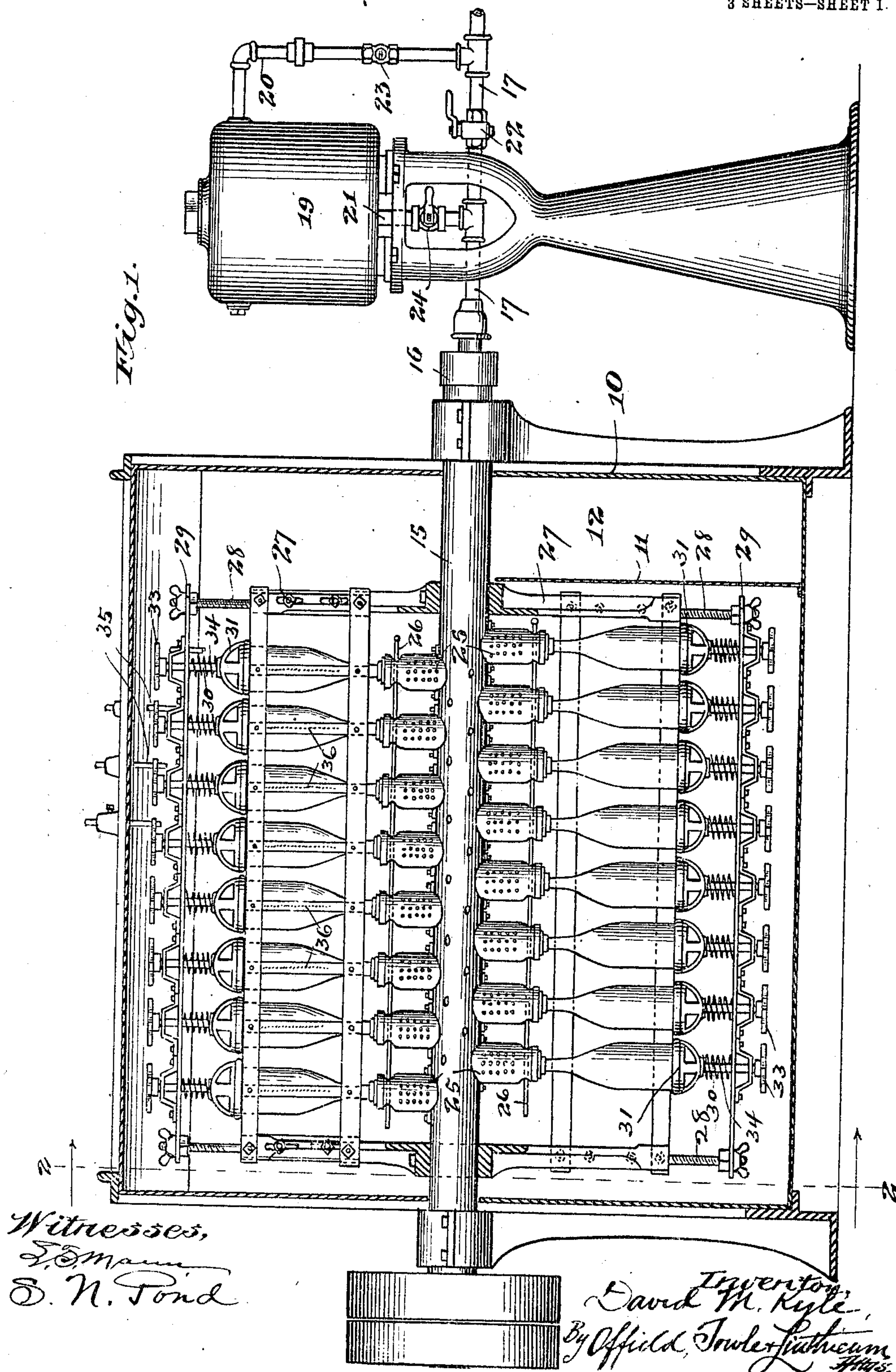
No. 837,310.

PATENTED DEC. 4, 1906.

D. M. KYLE.
BOTTLE WASHING MACHINE.

APPLICATION FILED OCT. 29, 1904.

3 SHEETS—SHEET 1.



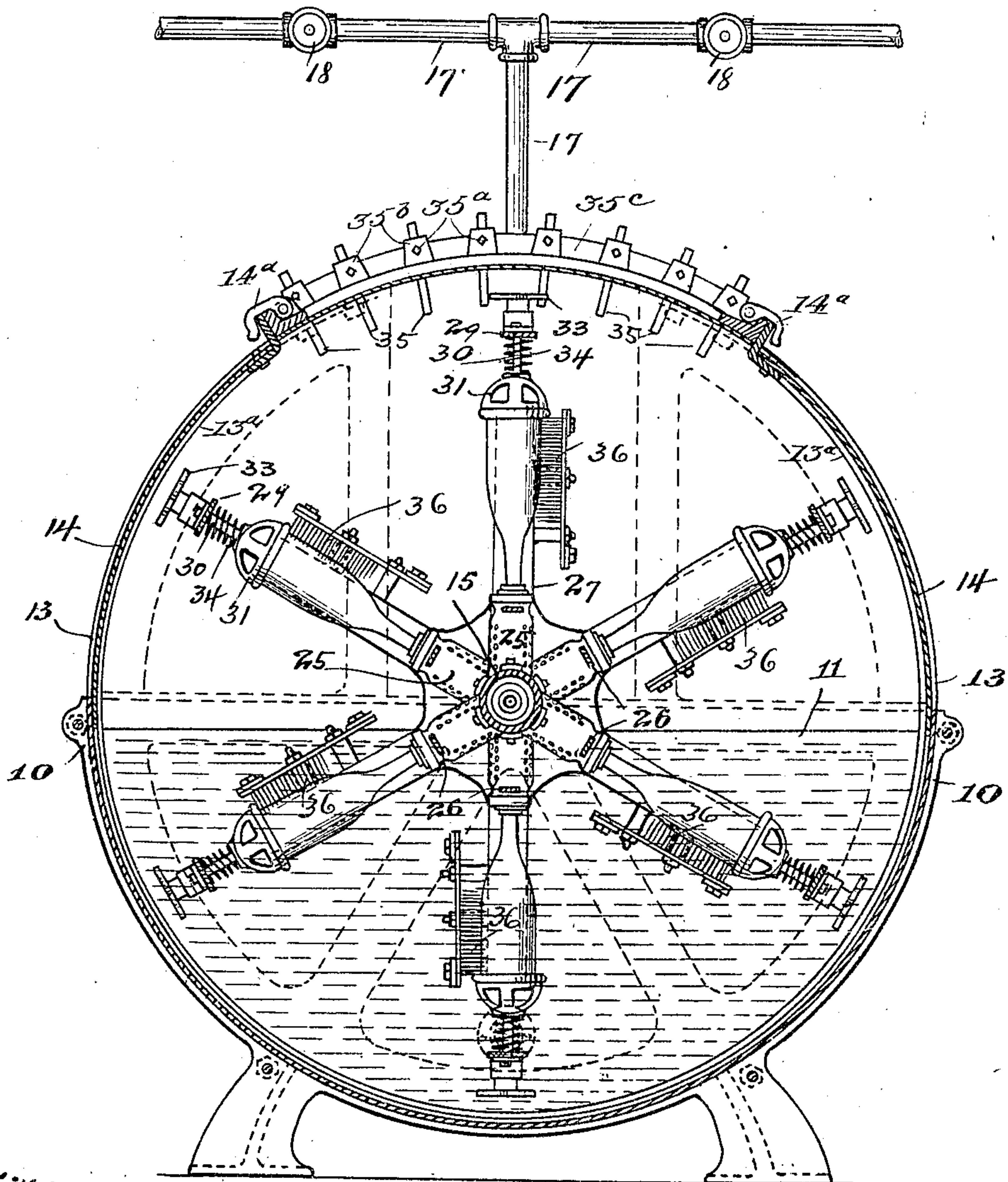
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3 SHEETS—SHEET 2

Fig. 2.



Witnesses,
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S. N. Pond

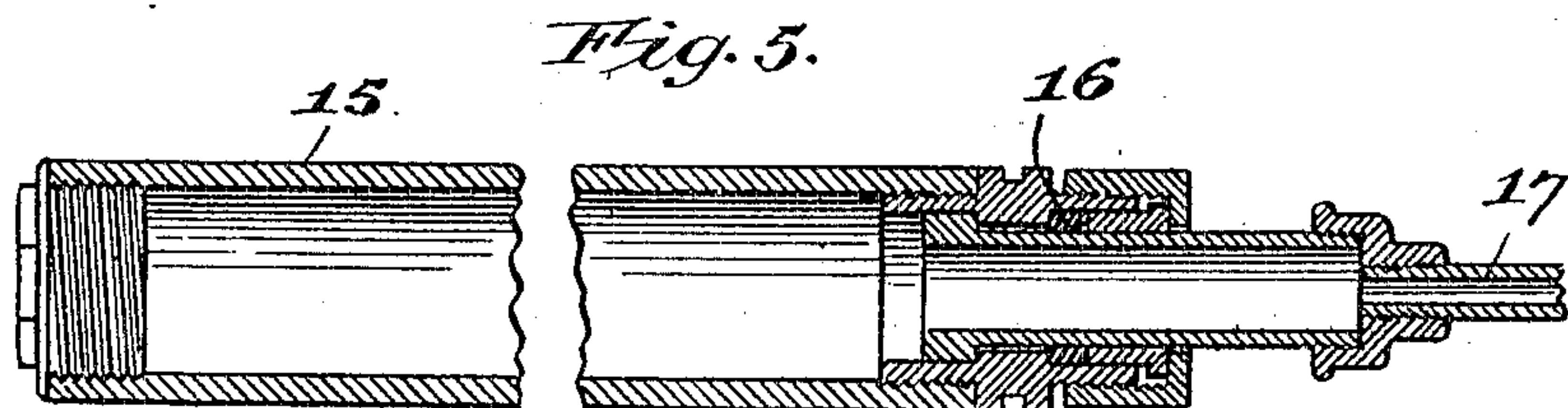
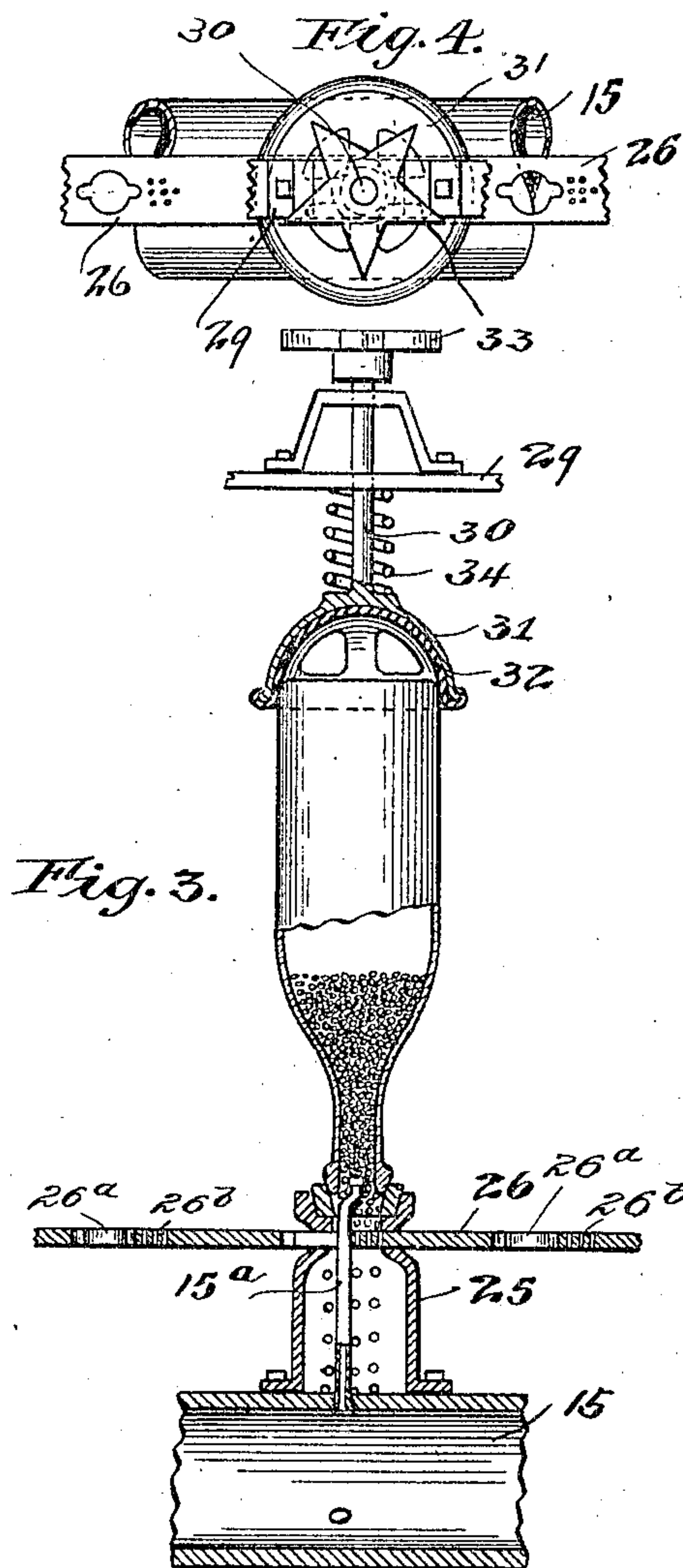
Inventor,
David M. Kyle
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

DAVID M. KYLE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
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BOTTLE-WASHING MACHINE.

No. 837,310.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed October 29, 1904. Serial No. 230,584.

To all whom it may concern:

Be it known that I, DAVID M. KYLE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

This invention relates to bottle-washing machines wherein the bottles are held in suitable holders secured to a rotatable hollow shaft, and particularly relates to means for turning the bottles in the holders, brushes for removing labels and other material from the exterior of the bottles, means whereby a cleansing substance may be introduced into the fluid that is injected into the bottles, and other novel features, which will be more particularly described in the specification and pointed out in the claims.

Referring to the drawings, Figure 1 is a sectional side elevation taken centrally of the machine, parts being omitted for clearness. Fig. 2 is a transverse sectional view taken on the line 2 2 of Fig. 1 looking in the direction of the arrows. Fig. 3 is a sectional detail view of one of the bottle-holders and coöperative parts. Fig. 4 is a plan view of the parts shown in Fig. 3, and Fig. 5 is a fragmentary sectional detail of the hollow shaft.

In the drawings, 10 is a tank having a partition 11, over which the cleaning fluid is designed to flow and carry refuse matter, such as labels, into a chamber 12, where from time to time such matter may be removed. The upper casing of the tanks is provided with openings 13, having sliding closures 14, which are movable portions of the shell of the tank guided at its edges in suitable arc-shaped guideways 13^a and adapted to be locked in closed position by catches 14^a, which furnish a simple means of access to the interior, wherein is mounted a hollow revoluble shaft 15, having a packed joint 16, through which the fluid is admitted from a supply-pipe 17, provided with suitable temperature-controlling valves 18.

19 is a chamber to contain soda or other soluble substance and having connection with the supply-pipe 17 by means of the branch pipes 20 21, the former entering the chamber near the top and the latter entering the bottom thereof.

Valves 22 23 24 afford means for control-

ling the flow of the fluid in the supply-pipe, whereby the chamber 19 may be included or excluded in the course thereof. Hollow perforated bottle-holders 25 are radially disposed upon the hollow shaft and are designed to carry shot, which shot may be controlled by manually-operated valve-bars 26 and caused to enter the bottles to assist in the scrubbing thereof. The valve-bars 26 are longitudinally slidable and are provided at intervals with openings 26^a and adjacent thereto perforated portions 26^b, the former permitting the passage of the shot between the holders and the bottles and the latter permitting the outflow of water from the bottles through the holders, but retaining the shot in the bottles. The openings 26^a also provide for the passage through the bar of the upper ends of the tubes 15^a. Tubes 15^a extend from the shaft 15 and afford means whereby the fluid is injected into the bottles. Spiders 27, mounted upon the shaft, are provided with threaded extensions 28, upon which are adjustably secured bars 29, having rotatably mounted therein rods 30, upon the inner ends of which are secured cup-like members 31, having rubber linings 32 and the outer ends having star-wheels 33. Springs 34 surround the rods 30 between the bars 29 and the cups 31 and provide means for holding the bottles, which are placed with their mouths in the members 25 and their bottoms in the rubber-lined cups, which through the springs 34 cause a firm grip upon the bottoms of the bottles, and when in the course of rotation of the shaft the star-wheels are caused to engage projections 35 in the casing the bottles are partially rotated, slipping in the holders 25 by reason of the lesser friction thereon. The projections 35 are simply pins adjustably secured by set-screws 35^a in blocks 35^b, carried on an arc-shaped casting 35^c, mounted on top of the tank. The bottles in making the partial rotation in their holders are caused to come in wiping contact with brushes 36, which are adjustably secured to the spiders 27.

It is seen that with the bottle-holding devices described each bottle is independently held, and therefore bottles of varying sizes may be successfully treated at the same time.

Without limiting myself to precise details of construction, I claim—

1. In a bottle-washing apparatus, the com-

combination with a tank, of a revoluble tubular shaft mounted upon the tank and provided with a series of radially-disposed bottle-holders directly communicating therewith, said
5 holders comprising hollow members upon the shaft, clamping members upon a suitable support having springs whereby each bottle is independently clamped with the shaft member, and means for imparting a rotary
10 movement to each bottle in the holders.

2. In a bottle-washing apparatus, the combination of a tank, a revoluble tubular shaft mounted upon the tank and provided with a series of radially-disposed inner hollow bottle-holders directly communicating there-
15 with, outer holders cooperating with said inner holders, tubes adapted to admit fluid from the hollow shaft into the bottles, and means for partially rotating each bottle independently.
20

3. In a bottle-washing apparatus, the combination of a tank, a revoluble tubular shaft mounted upon the tank and provided with a series of radially-disposed hollow bottle-hold-
25 ers directly communicating therewith, tubes adapted to admit fluid from the hollow shaft into the bottles, and means for partially rotating each bottle independently, said means consisting of a clamping member for each
30 bottle having a rotatable shaft provided with a star-wheel, which wheel is contacted by projections within the tank.

4. In a bottle-washing apparatus, the combination with a tank having an overflow-
35 chamber therein, of a revoluble tubular shaft mounted within the tank provided with a series of radially-disposed inner hollow bottle-holders directly communicating therewith,

outer holders cooperating with said inner holders and means for injecting a fluid into
40 the bottles.

5. In a bottle-washing apparatus, the combination with a tank provided with an aperture having a sliding closure therefor, of a revoluble tubular shaft therein provided
45 with a series of radially-disposed inner hollow bottle-holders directly communicating therewith, outer holders cooperating with said inner holders, tubes adapted to admit fluid from the hollow shaft into the bottles, and
50 means for partially rotating each bottle independently.

6. In a bottle-washing apparatus, the combination of a tank, a revoluble tubular shaft mounted upon the tank and provided with a
55 series of radially-disposed inner hollow bottle-holders directly communicating therewith, outer holders cooperating with said inner holders, means for partially rotating each bottle, and brushes adapted to contact
60 the exterior of the bottles.

7. In a bottle-washing apparatus, the combination of a tank, a revoluble tubular shaft mounted upon the tank and provided with a
65 series of radially-disposed inner hollow bottle-holders directly communicating therewith, outer holders cooperating with said inner holders, means for partially rotating each bottle, spiders secured upon the hollow shaft, and brushes secured to the arms of the spi-
70 ders whereby to contact the exterior of the bottles.

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Witnesses:

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