

No. 611,180.

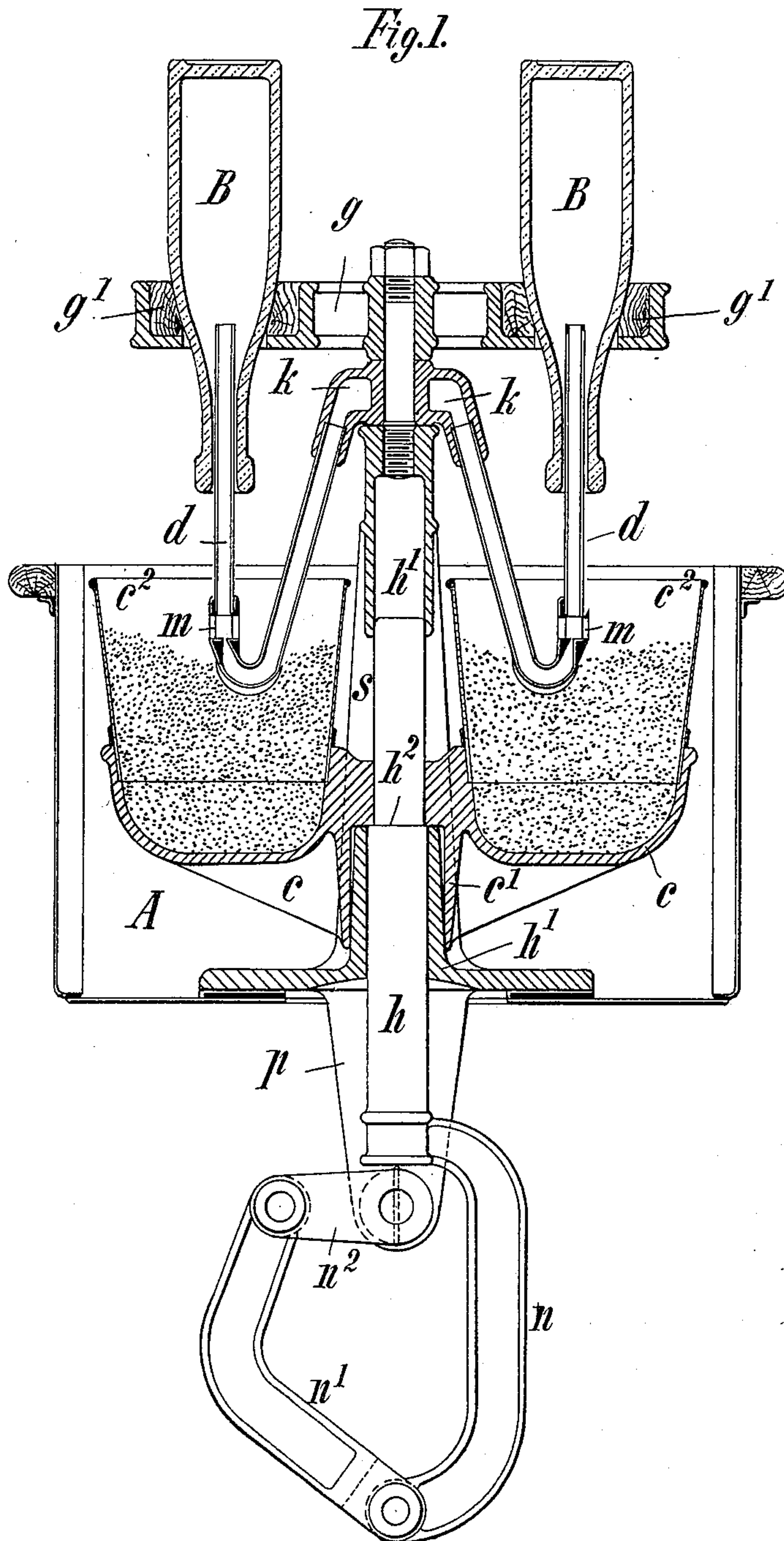
Patented Sept. 20, 1898.

H. W. E. MENTZE.
BOTTLE WASHER.

(Application filed Dec. 31, 1897.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses.
B. H. H.
W. Sommers

Inventor.
Rudolf Wilhelm Elinar Mentze.
by *[Signature]*
Atty.

No. 611,180.

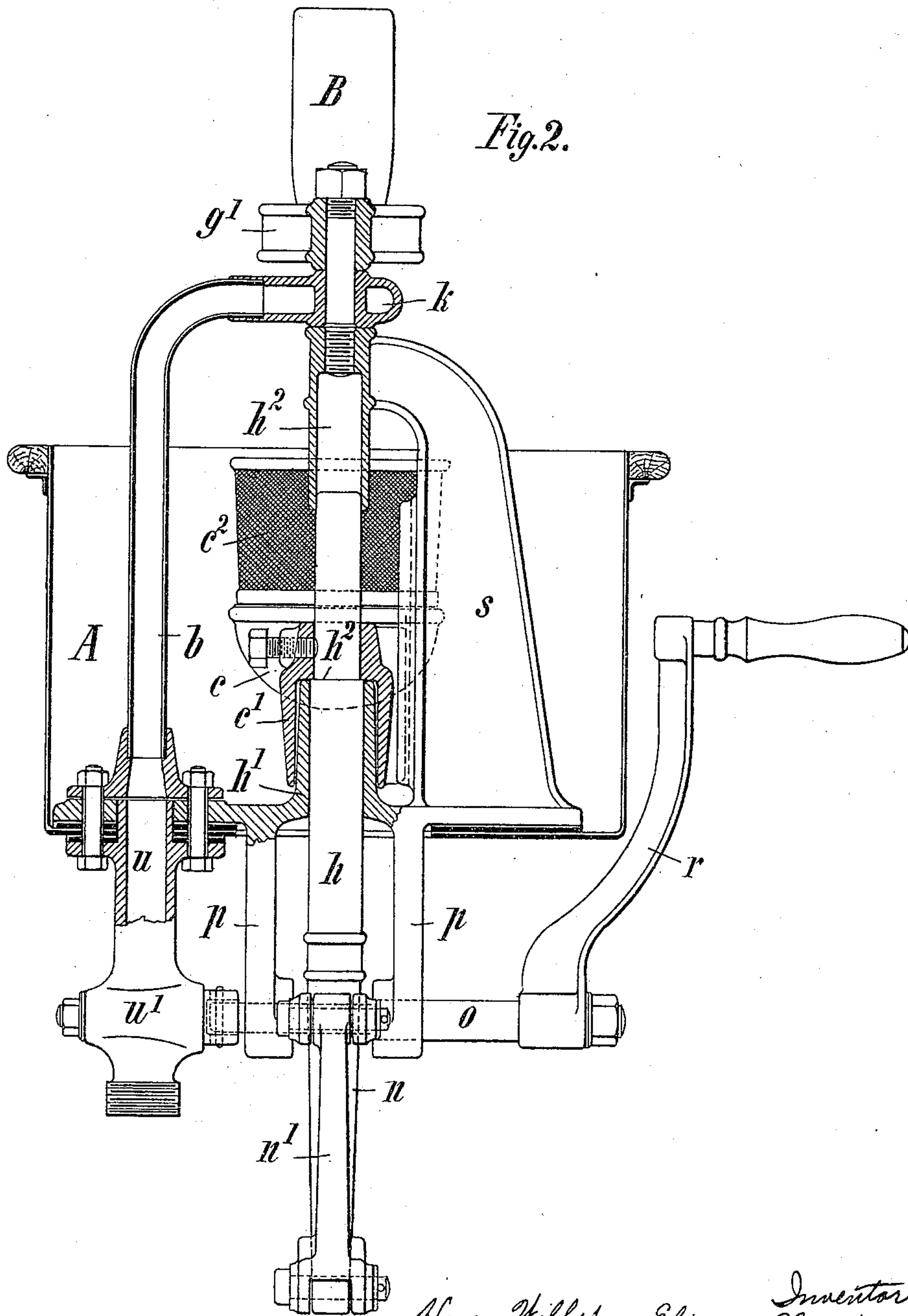
Patented Sept. 20, 1898.

H. W. E. MENTZE.
BOTTLE WASHER.

(Application filed Dec. 31, 1897.)

(No Model.)

3 Sheets—Sheet 2.



Witnesses
B. S. Soper
B. W. Sommers

Inventor,
Hugo Wilhelm Elimar Mentze,
by *[Signature]*
Attorney.

No. 611,180.

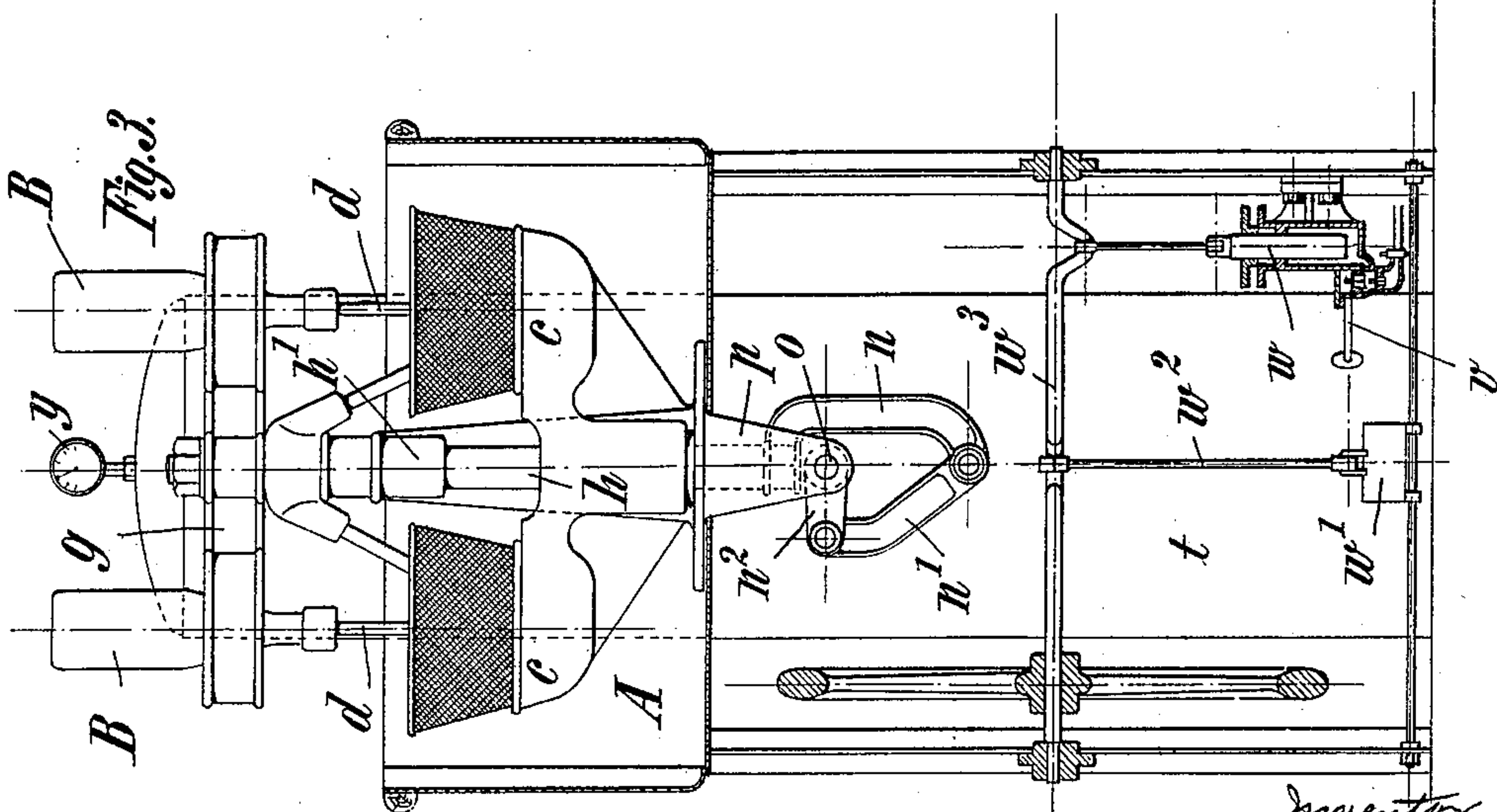
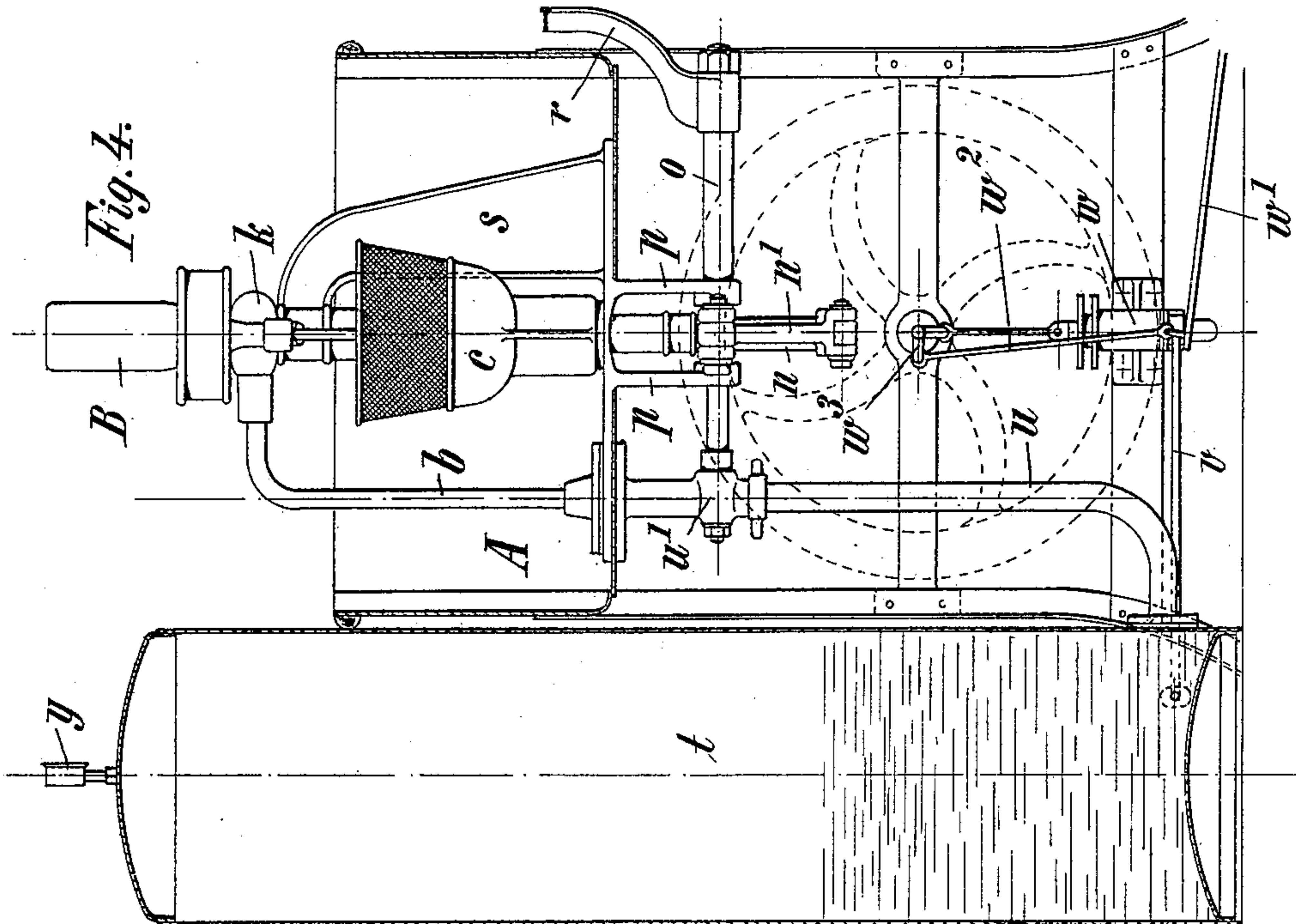
Patented Sept. 20, 1898.

H. W. E. MENTZE.
BOTTLE WASHER.

(Application filed Dec. 31, 1897.)

(No Model.)

3 Sheets—Sheet 3.



Witness
Ed. Bern.
W. Sommers

Inventor.
Hugo Wilhelm Elimar Mentze.
by
[Signature]
Att'y.

UNITED STATES PATENT OFFICE.

HUGO WILHELM ELIMAR MENTZE, OF HAMBURG, GERMANY, ASSIGNOR TO
BOLDT & VOGEL, OF SAME PLACE.

BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 611,180, dated September 20, 1898.

Application filed December 31, 1897. Serial No. 665,034. (No model.) Patented in Germany June 21, 1896, No. 92,131, and October 21, 1896, No. 93,681; in France September 16, 1896, No. 248,206; in England October 14, 1896, No. 22,802; in Switzerland October 24, 1896, No. 13,387; in Hungary October 24, 1896, No. 7,744, and in Austria November 12, 1896, No. 46/4,554.

To all whom it may concern:

Be it known that I, HUGO WILHELM ELIMAR MENTZE, a subject of the German Emperor, and a resident of Hamburg, in the German Empire, have invented certain new and useful Improvements in Apparatus for Cleaning Bottles and other Hollow Vessels, (for which I have obtained a patent in Germany, No. 92,131, dated June 21, 1896, and No. 93,681, dated October 21, 1896; in France, No. 248,206, dated September 16, 1896; in Great Britain, No. 22,802, dated October 14, 1896; in Switzerland, No. 13,387, dated October 24, 1896; in Hungary, No. 7,744, dated October 24, 1896, and in Austria, No. 46/4,554, dated November 12, 1896,) of which the following is a specification.

In the cleaning apparatus forming the subject of this invention the granular substance used is prevented from entering the water-outlet in a novel and improved manner.

In the accompanying drawings I have shown how my said invention may be conveniently and advantageously carried into practice.

Figures 1 and 2 are vertical sectional elevations of the principal parts of my improved apparatus, taken at right angles to each other. Figs. 3 and 4 are vertical elevations, partly in section, of the whole apparatus, taken also at right angles to each other and drawn at a somewhat smaller scale.

Similar letters refer to similar parts throughout the several views.

In a suitable tank or vessel A, Figs. 1 and 2, there is arranged a standard s, provided with a lower and an upper stationary socket h' and h^2 , respectively. In these sockets is mounted a rod or bar h , adapted to be moved vertically in the said sockets or guides h' h^2 by means of a suitable device—for instance, a crank device. The crank device shown on the drawings consists of a shaft o, journaled in suitable bearings p and provided with a crank n^2 , the latter being pivotally connected

to the rod h or its lower extension-arm n by means of an intermediate link n' .

Fixed upon the rod h is a transverse bracket c , fitting with its socket-like lower extension c' over the socket h' . Each of the bracket-arms c forms, together with its annular head-piece c^2 , made of perforated sheet metal or the like, a receptacle c for the reception of the granulated material. The crank-shaft o when being turned by its handle r in one or the other direction will either raise or lower the rod h , together with the bracket and sand-receptacles c c' c^2 . The bracket c c' , besides its being clamped to the rod h , may, moreover, rest upon a shoulder h^2 of the said rod, as shown in Figs. 1 and 2.

The standard s carries an annular chamber k , from which are extending jet-pipes d and a transverse bracket g , provided with suitable bottle-carriers g' . The sand-receptacle c^2 , the jet-pipes d , and the bottle-carriers g' correspond in number and are arranged each set one above the other, as this will be fully understood from the drawings.

Each jet-pipe d is provided with lateral openings m , which when the bracket c , with its sand-receptacles c^2 , is raised or lifted are immersed in the granular substance contained in each of said receptacles and when the said bracket with the receptacles is lowered will be raised from and thus be clear of the said granular substance, as shown in Figs. 1 and 2.

It will be observed that the passage in pipes d , leading to the gap formed therein by the openings m , is contracted into an injector-nozzle, so to speak, so that the jet of water forced across the gap will act to draw in the surrounding sand and carry the same into the bottle with considerable force, and when the receptacle is lowered the sand entering the ejector part of said pipe d will flow down to and out of the openings m .

The chamber k is connected with the water-conduit u by means of a feed-pipe b . The

valve or cock w' of the water-conduit u is connected or coupled with the crank-shaft o in any appropriate manner, so as to open when the sand-receptacles are lifted and to close after they have been lowered.

When the crank-shaft o is turned in such a manner that the bracket $c c'$ ascends, the lateral openings m of the jet-pipes d will be immersed into the granular substance of the also ascending receptacles $c c^2$, while simultaneously a stream of water passes through the jet-pipes into the bottles B to be cleaned. During this operation a mixing of the water with the granular material takes place at the lateral openings m . After the bottle B or other vessel has been cleaned the transverse bracket c , together with the receptacles containing the granular material, is lowered and the feed-water cock thus closed, the openings m in the jet-pipes then being out of the granular material, so that the entry of the latter into the said openings is rendered impossible. Subsequently the operation may be finished by rinsing the bottles with water alone, which latter is passed through the water-conduit, while the jet-pipe openings are clear of the granular material.

A contrivance for feeding the water up to the cleaning apparatus is represented in Figs. 3 and 4 by way of example. At the side of the cleaning apparatus, which may be supported by a suitable frame, a closed reservoir t is placed, into which water may be pressed through a connecting-pipe v by a pump w or the like connected with a suitable source of water. The more water is forced into the reservoir the more the air contained therein will be compressed. This compressed air acts in the same manner as in an ordinary air-chamber, so that when the cock w' of the water-conduit is opened the water is forced out of the reservoir and through the said water-conduit communicating with the reservoir t . At a proper place the reservoir is provided with a suitable pressure-gage y . The pump w may be operated, for instance, by means of a simple treadle mechanism which consists of a treadle w' , pivoted at one end to a suitable frame or support for the apparatus and at the other to a connecting-rod w^2 , which rod has its upper end connected to a crank on a crank-shaft w^3 , on which shaft is a fly-wheel. (Shown in section in Fig. 3 and in dotted lines in Fig. 4.) To the crank-shaft at one side of the machine (on the right-hand side of Fig. 3) is operatively connected the

pump w , of any desired shape, construction, or manufacture suitable for pumping water from a source of supply (not shown) through the pipe v to the reservoir t .

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a bottle-washing machine, a support for the bottles, a water-supply, a holder for granular material adapted to be raised and lowered, a link-motion for raising and lowering said holder, a bent pipe between the water-supply and the bottle, and an injector in the branch of the bent pipe leading to the bottle and above the bend in said pipe, substantially as and for the purpose set forth.

2. In a bottle-washing machine a suitable frame a support for the bottles thereon, a water-supply, pipes from said supply to the bottles and injectors in the pipes in combination with a support for a granular material and means for raising and lowering said support so as to immerse the injector-orifices in the granular material, substantially as described.

3. In a bottle-washing machine, a support for the bottles pipes for supplying water to the bottles, means for introducing a granular material into said pipes, a holder for the granular material, a rod supporting said holder, a crank and a link-motion connecting said rod and crank for elevating the holder, substantially as described.

4. In a bottle-washing machine jet-pipes for supplying water to the bottles, means for introducing a granular material into the jet-pipes, a holder for the granular material, means for reciprocating the holder and for simultaneously regulating the water-supply, substantially as described.

5. In a bottle-washing machine, a water-supply pipe, jet-pipes for feeding water to the bottle, means for introducing a granular material to said pipe, a holder for the granular material, a link-motion on said holder, a cut-off in the water-supply and a crank and shaft adapted to operate said cut-off and link-motion, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 16th day of December, 1897.

HUGO WILHELM ELIMAR MENTZE.

Witnesses:

MAX LEMCKE,

E. H. L. MUMMENHOFF.