

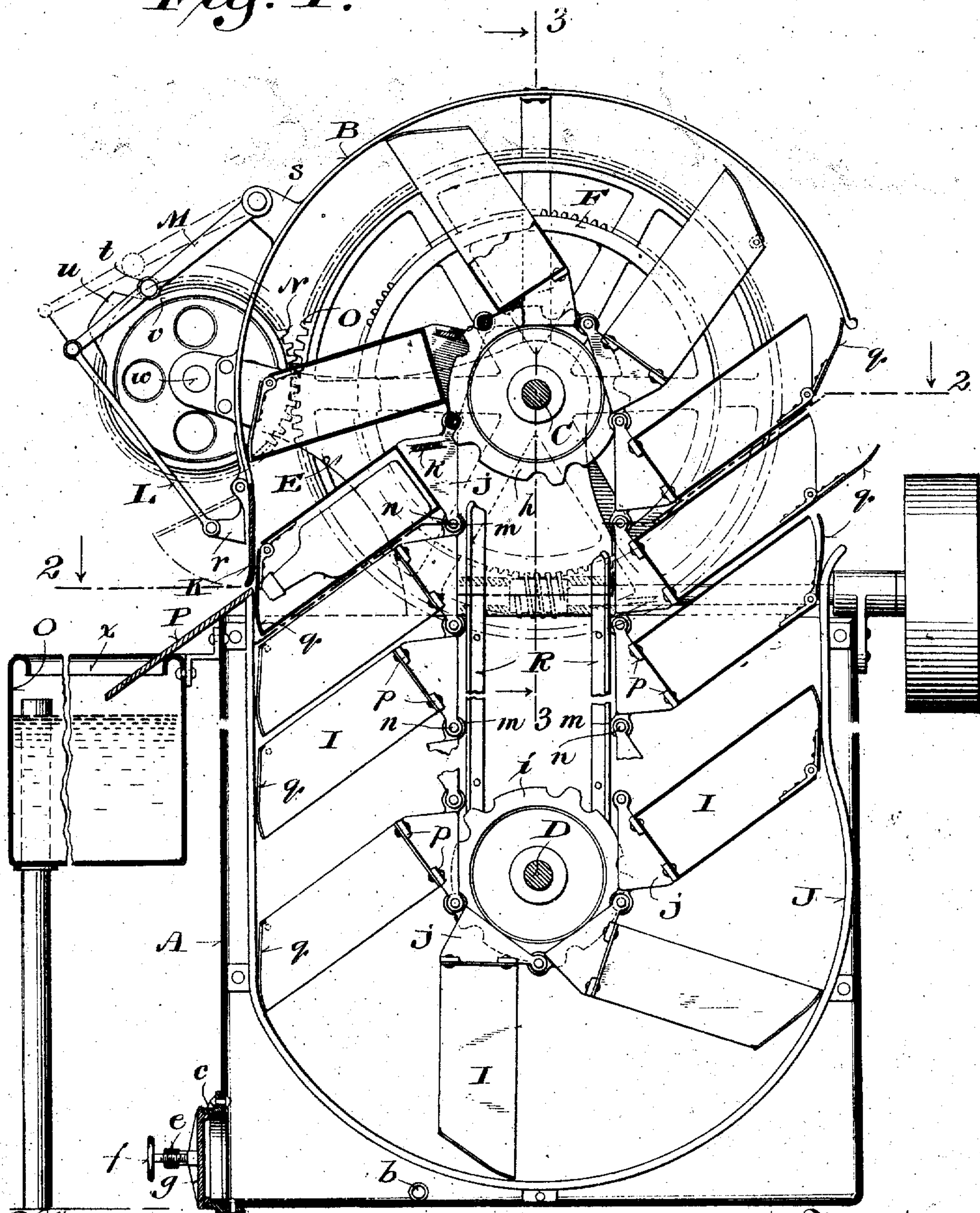
No. 858,740.

PATENTED JULY 2, 1907.

G. J. MEYER.
SOAK TANK APPARATUS
APPLICATION FILED DEC. 22, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



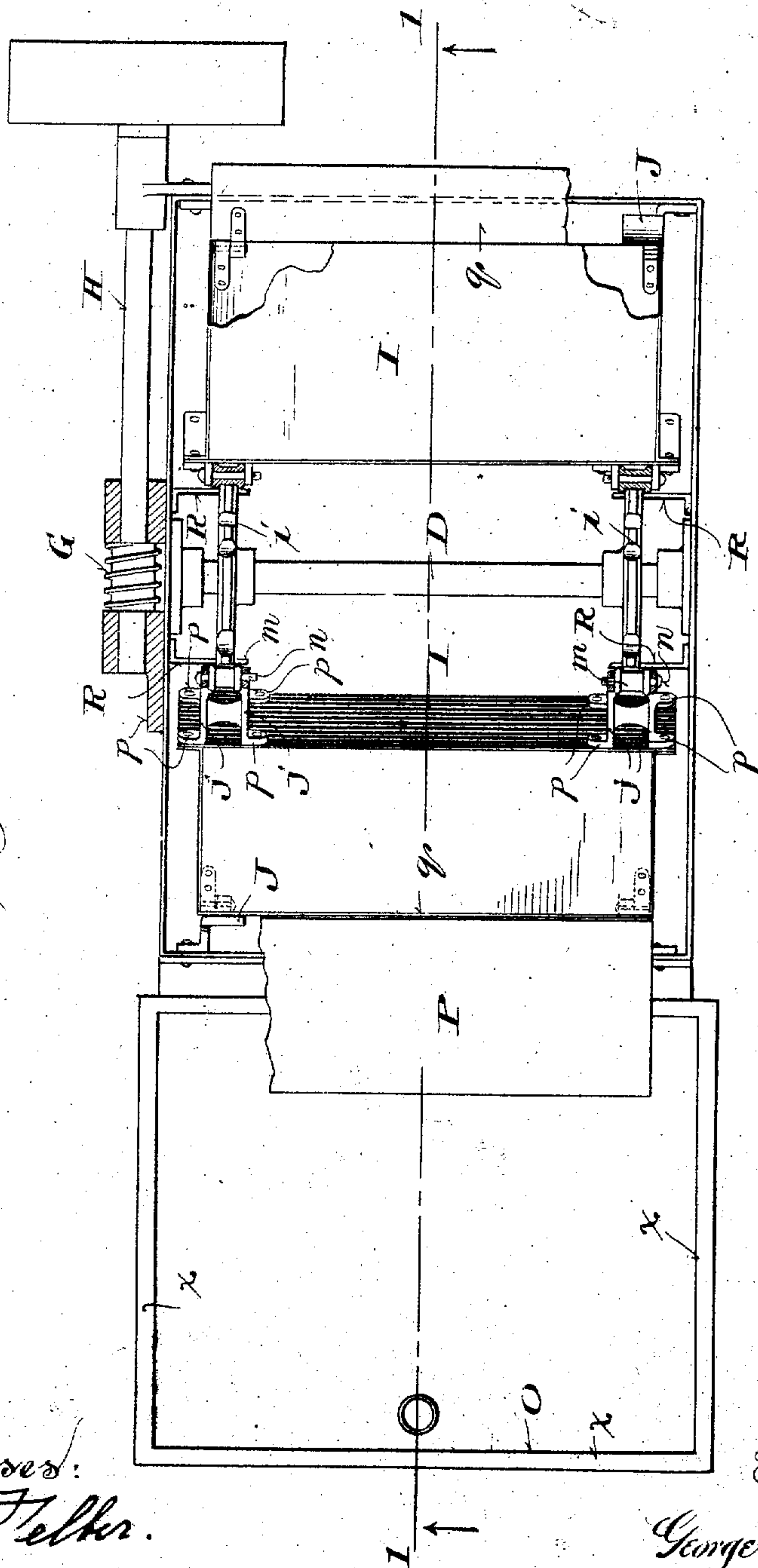
Witnesses:
George Telher.
Fred Palm.

Inventor:
George J. Meyer.
By Eliphant & Young
Attorneys

G. J. MEYER.
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3 SHEETS—SHEET 2.

Fig. 2.



Witnesses:
George Felter.
Fred Palm.

Inventor:
George J. Meyer.
By Oliphant & Young
Attorneys

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3 SHEETS—SHEET 3.

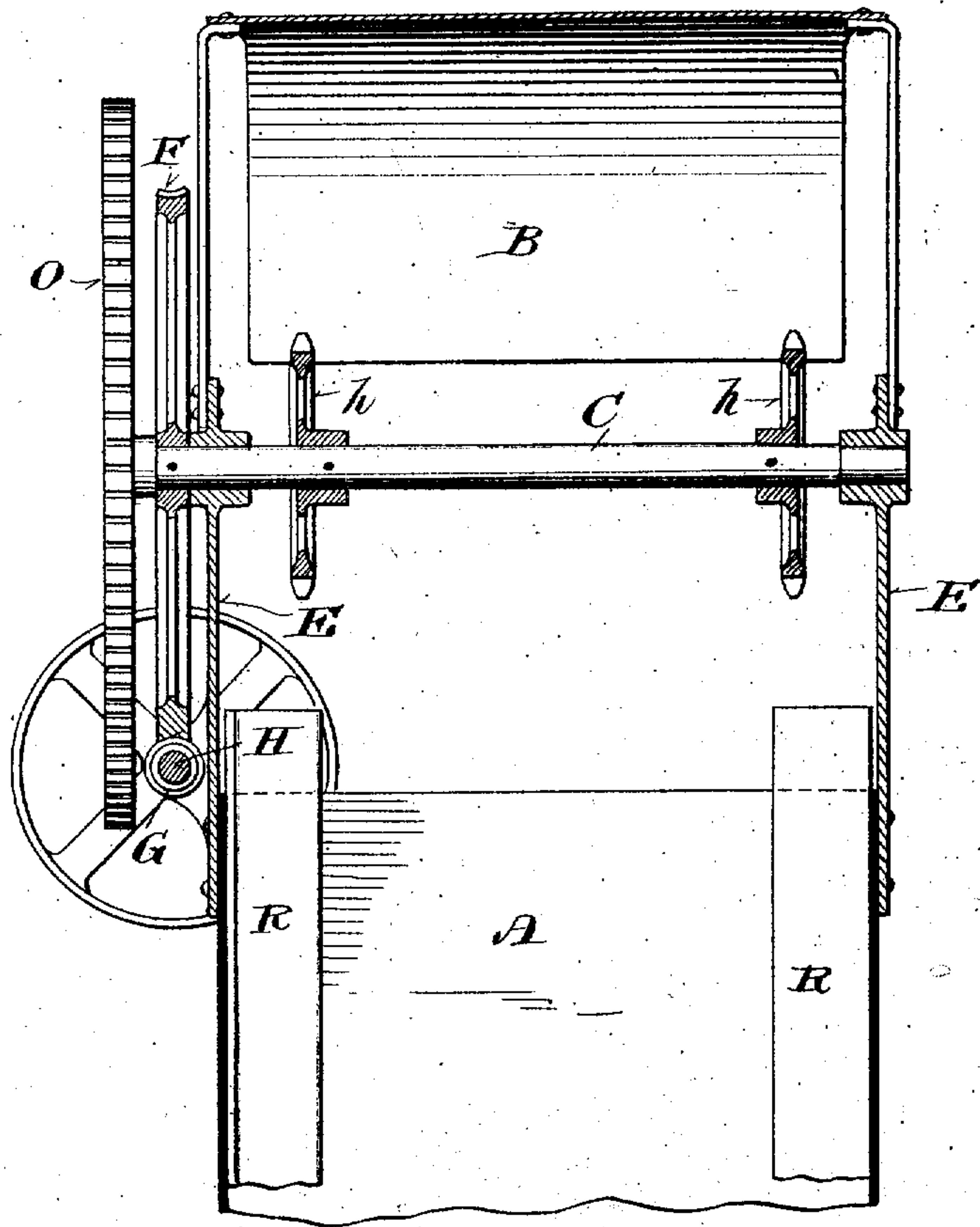
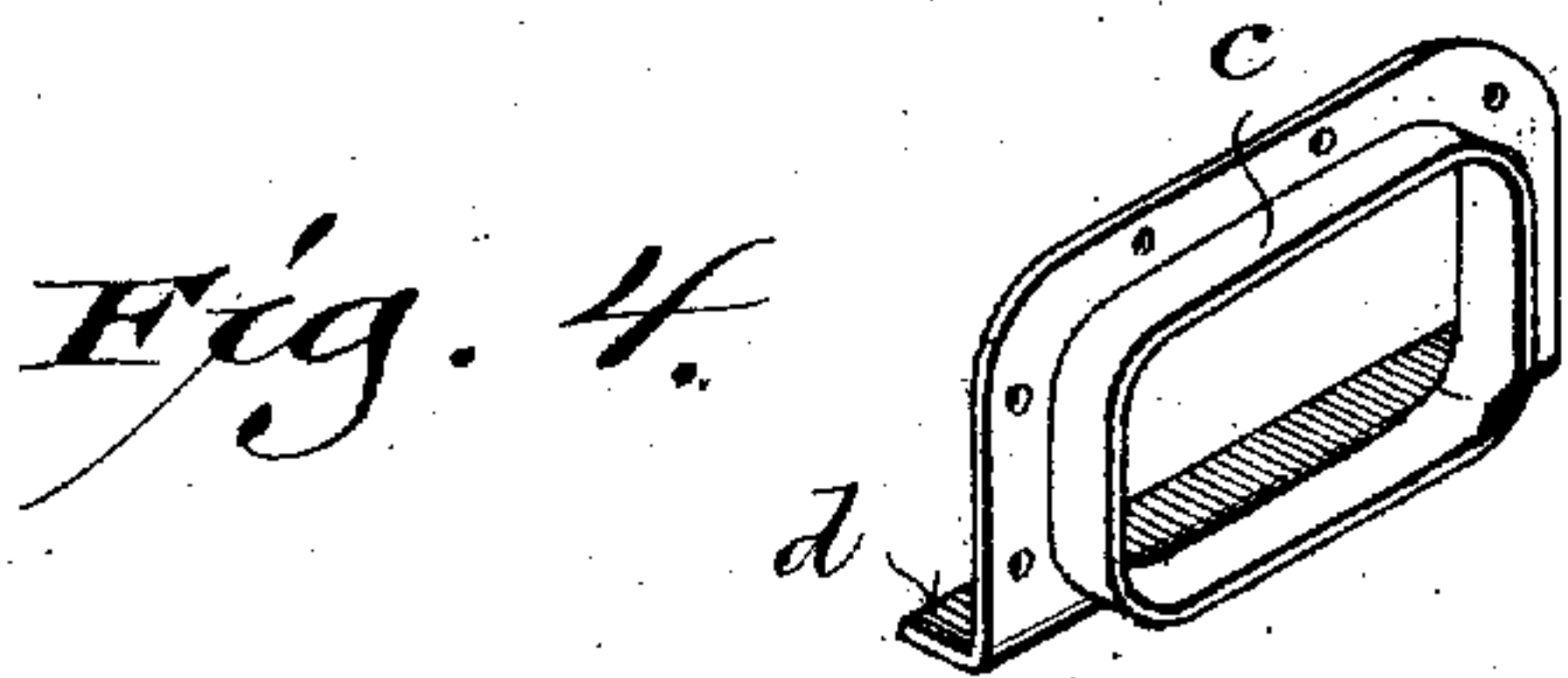


Fig. 3.



Witnesses:
Fred Palm,
George Fisher

Inventor:
George J. Meyer.
By Clifton H. Young,
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE J. MEYER, OF MILWAUKEE, WISCONSIN.

SOAK-TANK APPARATUS.

No. 858,740.

Specification of Letters Patent.

Patented July 2, 1907.

Application filed December 22, 1905. Serial No. 292,909.

To all whom it may concern:

Be it known that I, GEORGE J. MEYER, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have
5 invented certain new and useful Improvements in Soak-Tank Apparatus; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to economize space in a bottle-cleaning establishment and to provide a simple, economical and efficient vertical soak-tank apparatus that consists in certain peculiarities of construction and combination of parts hereinafter particularly set forth with reference to the accompanying drawings and subsequently claimed.

15 Figure 1 of the drawings represents a partly sectional elevation of a soak-tank apparatus in accordance with my invention, the same being indicated by line 1—1 in Fig. 2, which Fig. 2, is a plan-view of the same partly in horizontal section on lines 2—2 in Fig. 1, parts in this
20 showing being broken, Fig. 3, a partly sectional view of a fragment of the apparatus, the same being indicated by line 3—3 in Fig. 1, and Fig. 4, a perspective view of a manhole casing of said apparatus.

Referring by letter to the drawings, A indicates a
25 vertical tank and B a semi-circular hood supported over the same. The tank is provided with a drain-outlet *b* and a normally covered man-hole, the casing *c* of which man-hole is made to be flush with the tank-bottom, as shown in Fig. 1. As a result of this construction the
30 cleaning out of the tank is facilitated, an offset inner horizontal portion *d* of the casing-flange, bolted to said tank-bottom, being necessary to the carrying out of this feature of my improved apparatus. The casing of the man-hole is provided with the usual yoke *e*, and a screw
35 *f* has its bearing in the yoke to oppose the close fitting cover *g* of said man-hole.

The tank and upper opposite side-brackets E, of the same are provided with bearings for parallel upper and lower shafts C, D. Fast on the upper shaft C is a worm-wheel F in mesh with a worm G of a drive-shaft H for
40 which a bracket E and the tank A is provided with bearings. Fast on the shaft C is a pair of sprocket-wheels *h* and a pair of similar wheels *i* are fast on the shaft D, said wheels of the respective shafts being engaged with chain-belts, the links of which are of the
45 peculiar construction herein shown and described. Each link is a single casting comprising triangular sides *j* connected by a spacing-web *k* and an eye-boss *m*, this boss of one link being caught on a pin *n* between ends
50 of the sides of the link next adjacent. The triangular sides of the links are provided with outer lugs *p*, and the disposition of said links is such that inner ends of bottle-holders I bolted to said lugs against inclined outer edges of the aforesaid links incline backward
55 from the direction of the travel of the chain-belt, at a

predetermined angle, this being an important feature of the apparatus.

Each bottle-holder is provided at its outer end with a swing-gate *q* that automatically opens, by gravity, above the tank on the feed-side of the apparatus where
60 space is had, between said tank and the hood B, through which to load bottles into the holders. By means of cam-tracks J, supported in the tank, the gate of each bottle-holder is automatically closed and thus held during the travel of said bottle-holder in said
65 tank. The gates are also held closed when the bottle-holders are traveling in the rear portion of the hood B with which said gates have contact.

At the delivery-side or rear of the apparatus, a self-closing shutter K is shown hinged to the hood B and
70 provided with an outer lug *r* connected, by a link L, with a lever M fulcrumed in connection with a lug *s* of said hood. An anti-friction sleeve *t* on a side stud of the lever M is in the path of a striker-lug *u* of an otherwise annular side-flange *v* of a spur-wheel N that turns
75 on a stud *w* of the bracket E aforesaid and meshes with a similar wheel O fast on the shaft C above specified, the time of this gear-mechanism being such that the shutter K is lifted during the interval that each alternate bottle-holder is passing the discharge-space pro-
80 vided between the aforesaid tank and hood, there being an odd number of the bottle-holders in connection with the chain-belts of the apparatus. The shutter being lifted the gate of the bottle-holder passing the
85 discharge-space will be opened by force of gravity acting on bottles that are now free to descend an incline P arranged to extend into a rinse-tank Q of any suitable construction, and from the foregoing it will be understood that provision is had for conveying bottles
90 twice through the tank A when desirable, but the shutter K may be disconnected from its automatic controlling mechanism so that the several bottle-holders may successively discharge their contents into the
rinse-tank. While the hood B and shutter K are preferred they are not absolutely essential as parts of
95 the apparatus.

Owing to the peculiar inclination of the bottle-holders any form of bottles properly placed therein will be entirely filled with the solution in the soak-tank during the downward travel of said holders, and said bottles
100 have opportunity to discharge their contents after passing clear of said solution.

To insure the efficiency of the apparatus, vertical guides R for the chain-belts are provided, and these guides extend down to approximately the center of the
105 lower sprocket-wheels. The rinse-tank walls are each provided at the upper end with an inner overhang *x* that prevents the water in said tank from splashing out.

In practice it is desirable to feed the bottles to the machine bottom first, said bottles being grasped by the
110

neck in each hand of the operator as they usually stand in cases. Thus a rapid feeding of the machine is effected and chipping of the bottle-necks avoided, such chipping being common in machines that require feeding of bottles neck first.

In my construction of soak-tank apparatus the play of the links of the chain-belts aforesaid is constantly in one direction, whereby the bottle-holders can be arranged adjacent to one another very compact to thus secure a maximum of capacity for the space required.

I claim:—

1. The combination in a soak-tank apparatus of parallel upper and lower shafts for which bearings are provided, sprocket-wheels fast on the shafts, chain-belts engaging the sprocket-wheels and having the outer edges of their links suitably inclined, bottle-holders secured at their inner ends against the inclined edges of the belt-links to project therefrom at a predetermined angle, and a driving-gear in connection with one of said shafts.

2. The combination in a soak-tank apparatus of parallel upper and lower shafts for which bearings are provided, sprocket-wheels fast on the shafts, chain-belts engaging the sprocket-wheels and having the outer edges of their links suitably inclined, bottle-holders secured at their inner ends against the inclined edges of the belt-links to project therefrom at a predetermined angle, swing-gates provided at the outer ends of the bottle-holders, means in the tank for automatically closing the gates and holding the same in closed position, and a driving-gear in connection with one of said shafts.

3. The combination of a soak-tank, a semi-circular hood for the same, shafts for which bearings are provided, sprocket-wheels fast on the shafts, chain-belts engaging the sprocket-wheels, bottle-holders secured to the belts at a suitable angle thereto and provided at their outer ends with swing-gates, means in the tank for automatically closing the gates and holding the same in closed position, a self-closing shutter for a discharge-space between said tank and hood, a driving-gear in connection with one of said shafts, and mechanism for automatic predetermined opening of the shutter.

4. The combination of a soak-tank, a semi-circular hood for the same, shafts for which bearings are provided, sprocket-wheels fast on the shafts, chain-belts engaging the sprocket-wheels, bottle-holders secured to the belts at a suitable angle thereto and provided at their outer ends with swing-gates, means in the tank for automatically closing the gates and holding the same in closed

position, a self-closing shutter for a discharge-space between said tank and hood, a driving-gear in connection with one of said shafts, a spur-wheel fast on this driven-shaft, another spur-wheel in mesh with the one aforesaid and provided with a flange having a striker-lug, a lever pivoted to the aforesaid hood and provided with a side projection in the path of said lug, and a link connecting the lever and shutter.

5. The combination of a soak-tank, shafts for which bearings are provided, sprocket-wheels fast on the shafts, chain-belts engaging the sprocket-wheels and each consisting of links that severally comprise triangular sides connected by an integral spacing-web and eye-boss, the boss of one link being caught on a pin between ends of the sides of the link next adjacent; bottle-holders fastened to side lugs of the links to incline at a suitable angle, and provided at their outer ends with swing-gates, means in the tank for automatically closing the gates and holding the same in closed position, and a driving-gear in connection with one of said shafts.

6. The soak-tank having a man-hole, provided with a casing that is flush with the bottom of said tank.

7. The soak-tank having a man-hole provided with a casing having a flange offset to form an inner horizontal portion that is bolted to the bottom of said tank.

8. The combination in a soak-tank apparatus of vertically disposed chain-belts the links of which have inclined outer edges, means for driving the belts, and bottle-holders secured at their inner ends against said inclined edges of the belt-links to project therefrom at a predetermined angle.

9. The combination in a soak-tank apparatus of vertically disposed chain-belts the links of which have inclined outer edges, means for driving the belts, guides for said belts, and bottle-holders secured at their ends against said inclined edges of the belt-links to project therefrom at a predetermined angle.

10. The combination of a soak-tank, means for conveying bottles through the same, a rinse-tank into which bottles are discharged from the soak-tank, and an overhang with which the rinse-tank is provided to prevent splashing of water therefrom, and an incline from said soak-tank supported on the overhang of said rinse-tank.

In testimony that I claim the foregoing I have hereunto set my hand at Milwaukee in the county of Milwaukee and State of Wisconsin in the presence of two witnesses.

GEO. J. MEYER.

Witnesses:

N. E. OLIPHANT,

GEORGE FELBER.