No. 655,792. Patented Aug. 14, 1900.

F. LUGVIEL.

BOTTLE WASHING MACHINE.

(Application filed June 12, 1899.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.

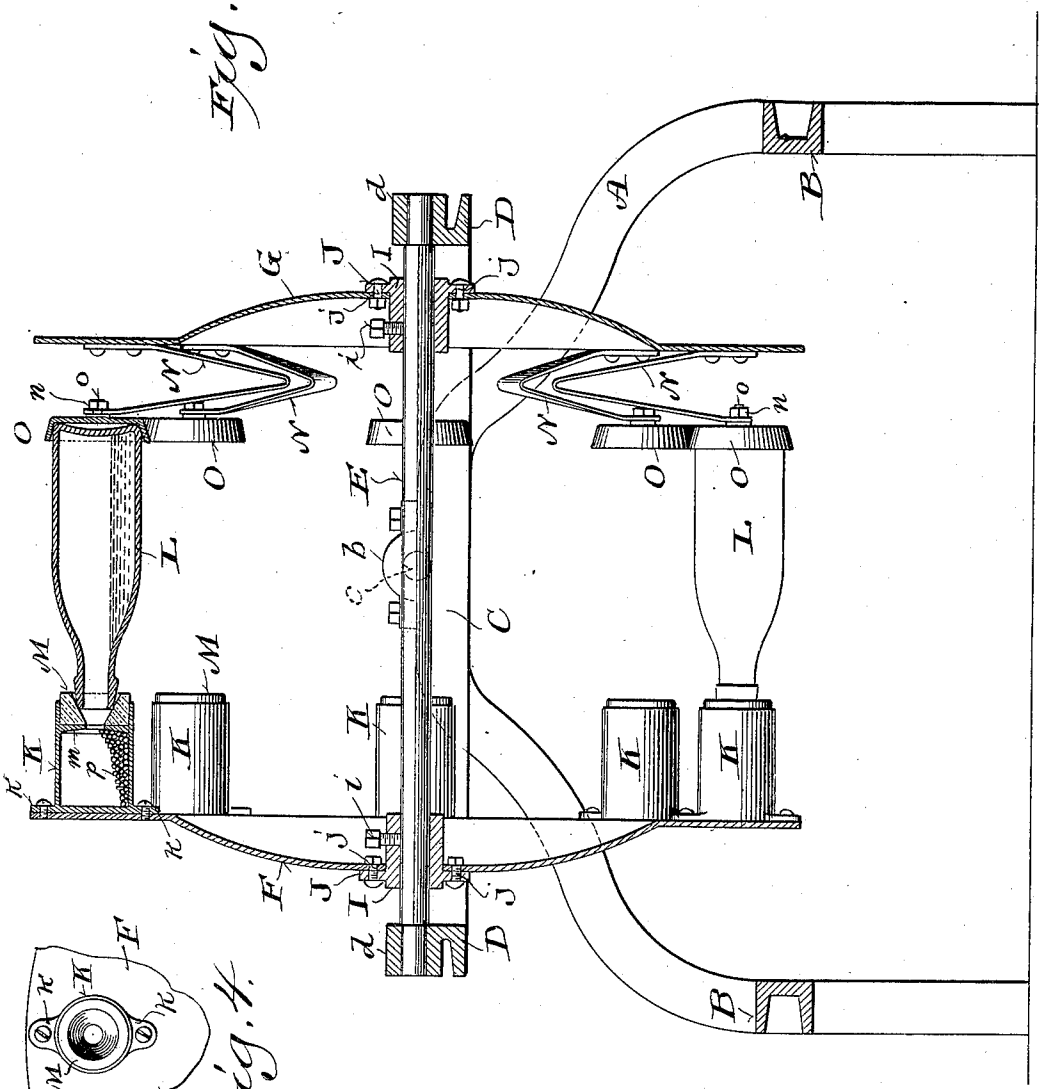


Fig. 4.

Witnesses:
Geo. W. Young.
B. C. Roloff

Inventor
Fritz Lugviel
By H. G. Underwood
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 2.

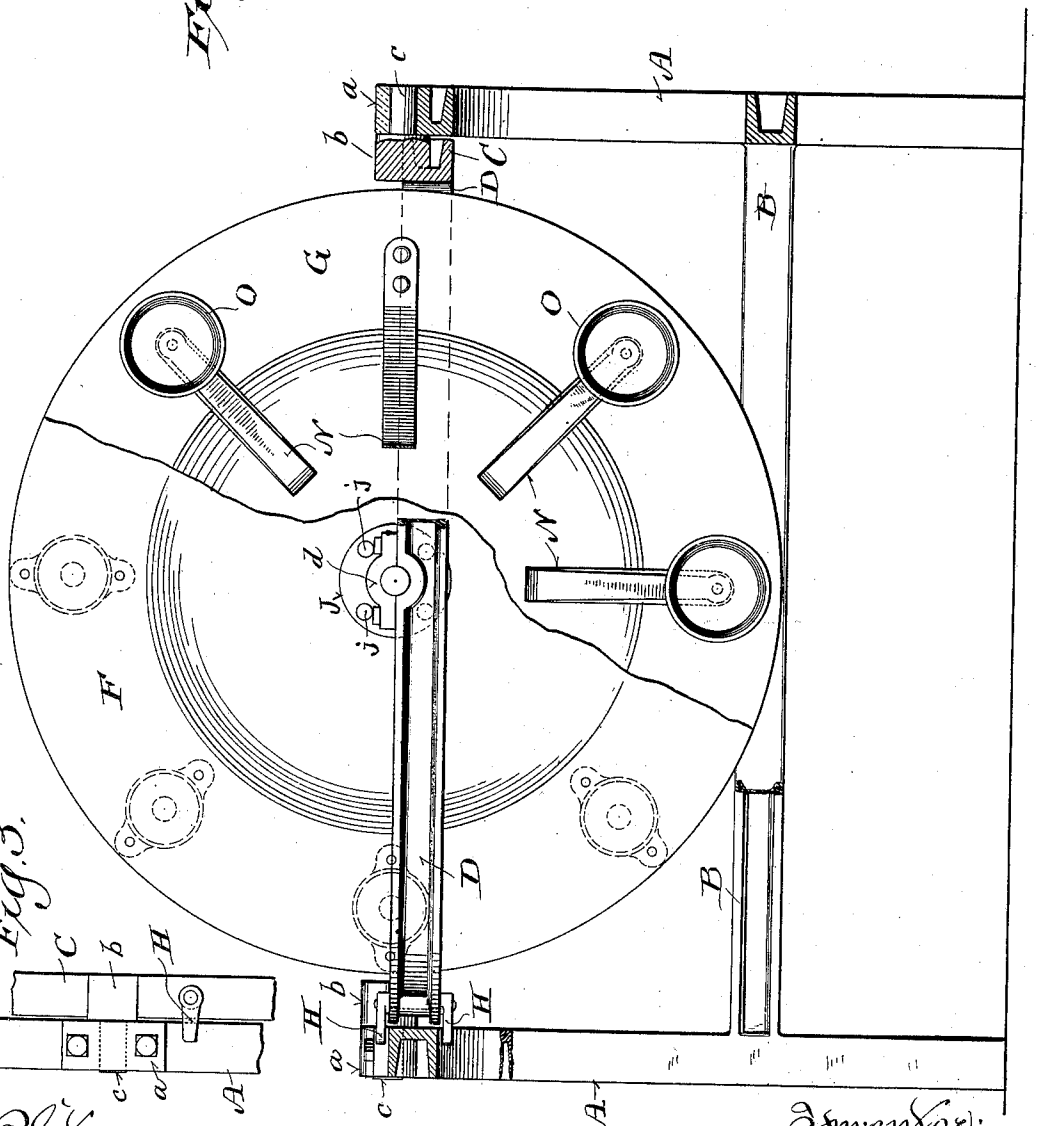


Fig. 3.

Witnesses:
Geo. W. Tenney.
B. C. Roloff.

Inventor:
Fritz Lugviel
By H. G. Underwood
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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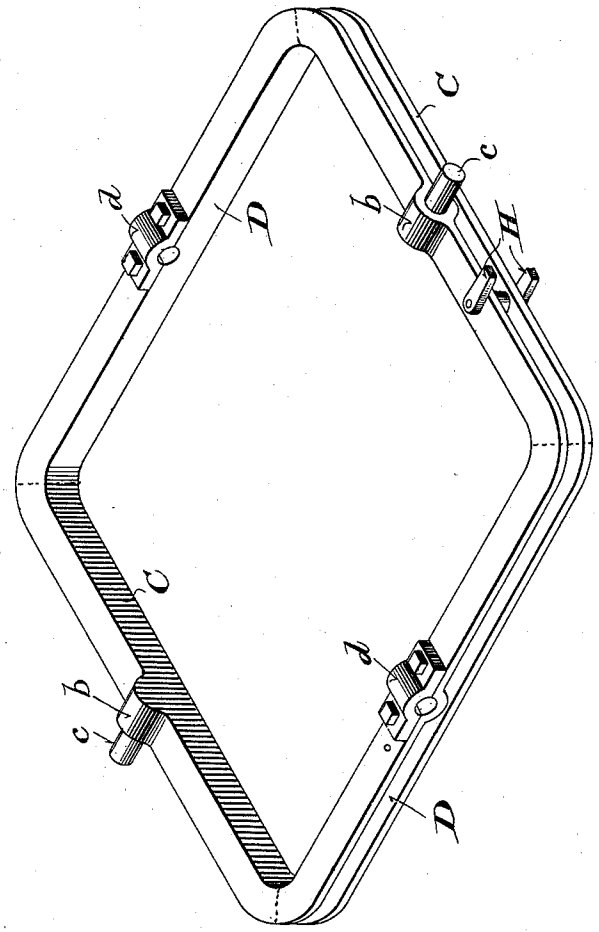
F. LUGVIEL.

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(No Model.) 3 Sheets—Sheet 3.

Fig. 5.



Witnesses:
Geo. W. Young.
B. C. Roloff.

Inventor
Fritz Lugviel,
By H. G. Underwood
Attorney

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRITZ LUGVIEL, OF OCONOMOWOC, WISCONSIN.

BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 655,792, dated August 14, 1900.

Application filed June 12, 1899. Serial No. 720,142. (No model.)

To all whom it may concern:

Be it known that I, FRITZ LUGVIEL, a citizen of the United States, and a resident of Oconomowoc, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Bottle-Washing Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to devices for washing bottles; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a vertical central sectional view of a device embodying my invention. Fig. 2 is a view in side elevation of said device, partly broken away or in section to better illustrate certain details of construction. Figs. 3 and 4 are detail views. Fig. 5 is a perspective view of a rectangular frame forming a part of my invention.

Referring to the drawings, A A represent the end pieces, and B B the cross-braces, of the supporting-frame, while C C D D represent the members of a rectangular frame that carries the journal E of the bottle-supporting disks F G, the said journal E having its bearings in central semicircular recesses in said members D D and being held in place by the caps *d d* and suitable bolts, as shown. The tops of the end pieces A A are provided with similar semicircular recesses to receive the trunnions *c c* projecting from the raised central portions *b b* of the members C C, said trunnions being likewise secured in place by caps *a a* and suitable bolts.

H H represent the fingers of a double button or catch pivotally secured to one of the end members of the described rectangular frame and adapted to be turned to project above and below the upper part of one of the end pieces A of the main supporting-frame to temporarily secure the rectangular frame thereto, as shown in Figs. 2 and 3, or to be turned back with its fingers in line with the end member of the last-named frame when it is desired to disengage the two frames, as hereinafter described.

The disks F G are preferably made of boiler-iron for lightness and strength, and each disk has a hub I, (which may be of cast or malleable iron,) whose bore receives the journal E, to which it is adjustably secured by means of a set-screw *i*, the said hubs I having annular exterior flanges J, and the disks F G have central openings through which the said hubs pass, the disks and their hubs being secured together by bolts *j* passing through said disks and hub-flanges, as shown in Fig. 1.

K K represent a series of cups (preferably of brass) formed with base-flanges *k k*, whereby they are riveted or bolted to the disk F, being arranged in an annular series, as shown, adjacent to the periphery of said disk. These cups have each a centrally-perforated partition-plate *m* partially closing them near their open ends, which ends receive blocks M of flexible material, such as india-rubber, formed with conical bores therethrough, the bore at its inner end coinciding with the opening in the partition-plate *m*, against which the block M rests, while the tapering walls of said bore are adapted to receive the mouth end of the bottle L to be cleaned, as shown in Fig. 1.

N N represent a series of doubled flat springs corresponding in number to described cups K, one end of each of said springs N being secured, as by bolts or rivets, to the disk G and arranged in an annular series and the opposite end of each spring N being perforated for the reception of a screw-threaded shank *o*, projecting from the bottom of a socket-plate O and secured by a nut *n*, said socket-plate being designed to receive the bottom end of the bottle to be cleaned, as shown in Fig. 1.

The operation of my device will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawings. The socket-plates O may be made in sets of different sizes, and the proper size, according to the size of the bottles to be washed, are secured to the springs N in the manner just described, and the disks F G are adjusted on the journal E the proper distance apart, according to the height or length of the said bottles, and then the disk-hubs are tightened to place by the set-screws *i*, and the bottles L are partly filled with water or whatever cleaning fluid is to be employed and adjusted to place between the cup-blocks M and socket-plates O, it being usually desirable to place a

quantity of shot *p* inside each cup K, and then all of the cups and plates having been supplied with bottles the device is ready for use, a slight pull on the disks F G with the hands being all that is necessary to rapidly and easily rotate said disks and their uniting bottles, the main supporting-frame and rectangular frame being preferably held in engagement by the double button or catch H H during this rotation of the disks. When it is desired to wash the bottles end over end, the frames are disengaged, and then the rectangular frame is rotated on its trunnions *c c*, the water in the bottle and shot in the cup being rapidly driven back and forth between the base of the bottle and the base of the cup, and thus the bottles are very thoroughly washed and cleaned in a very short time, and while the springs N will securely hold the bottles in place during this operation the said springs will readily yield to permit the withdrawal of the cleaned bottles or the substitution of other bottles of like size when desired. The number of bottles to be cleaned at once is only limited by the size of the disks, and the machine may be organized to clean twenty-four bottles at once as readily as for half a dozen bottles.

By the described construction of the device the rectangular frame C C D D, as well as the revoluble disks F G, will always revolve within the limits of the main supporting-frame A B, which is of great advantage, inasmuch as space is thereby economized and the machine rendered very compact with all parts readily accessible to a single operator.

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

1. In a bottle-washing machine, the combination with a supporting-frame, of a rectangular frame revolubly supported therein, and a pair of bottle-supporting disks revolubly supported in said rectangular frame, whereby said disks always revolve within the limits of the rectangular frame, and the latter always revolves within the limits of the supporting-frame.

2. In a bottle-washing machine, the combination with a stationary supporting-frame, of an independent rectangular frame revolubly mounted in said supporting-frame, a revoluble journal having bearings in said rectangular frame, a pair of bottle-supporting disks adjustably secured to said journal, means for holding the rectangular frame against rotation when desired, an annular series of cups projecting inwardly from one of said disks, and a corresponding annular series of spring-mounted socket-plates secured to the other of said disks.

3. In a bottle-washing machine, the combination with a revoluble frame, of a revoluble journal having bearings in said frame; a pair of bottle-supporting disks, each longitudinally movable upon said journal; set-screws for securing said disks to said journal after adjustment; an annular series of close-bottomed cups secured to one of said disks; and a corresponding annular series of doubled flat springs secured to the other of said disks, and having socket-plates removably secured to the free ends of said springs.

4. In a bottle-washing machine, the combination with a revoluble journal, of a pair of bottle-supporting disks, each longitudinally movable upon said journal; set-screws for securing said disks to said journal after adjustment; an annular series of close-bottomed cups secured to one of said disks; flexible blocks carried by said cups, and formed with conical bores for receiving the mouths of bottles; a corresponding series of doubled flat springs, secured to the other of said disks, and having perforations through their free ends; a series of socket-plates having screw-threaded shanks projecting from the bottoms thereof for removable engagement with the perforated ends of said springs; and nuts for temporarily securing the said springs and socket-plates together.

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.

FRITZ LUGVIEL.

Witnesses:
H. G. UNDERWOOD,
B. C. ROLOFF.