

No. 705,430.

Patented July 22, 1902.

J. H. W. ORTMANN & C. W. HERBST.

BOTTLE WASHING MACHINE.

(Application filed Feb. 17, 1902.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

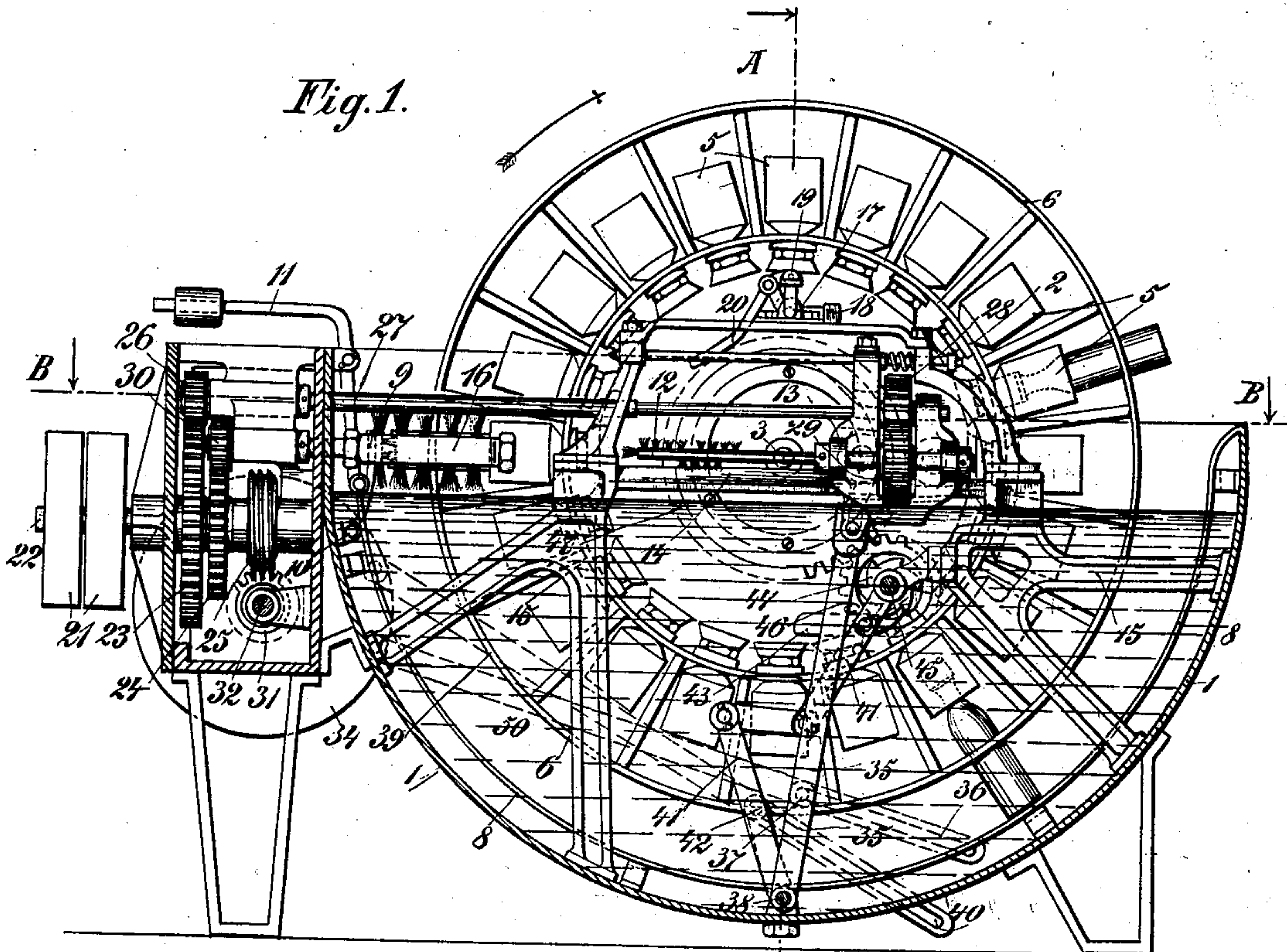
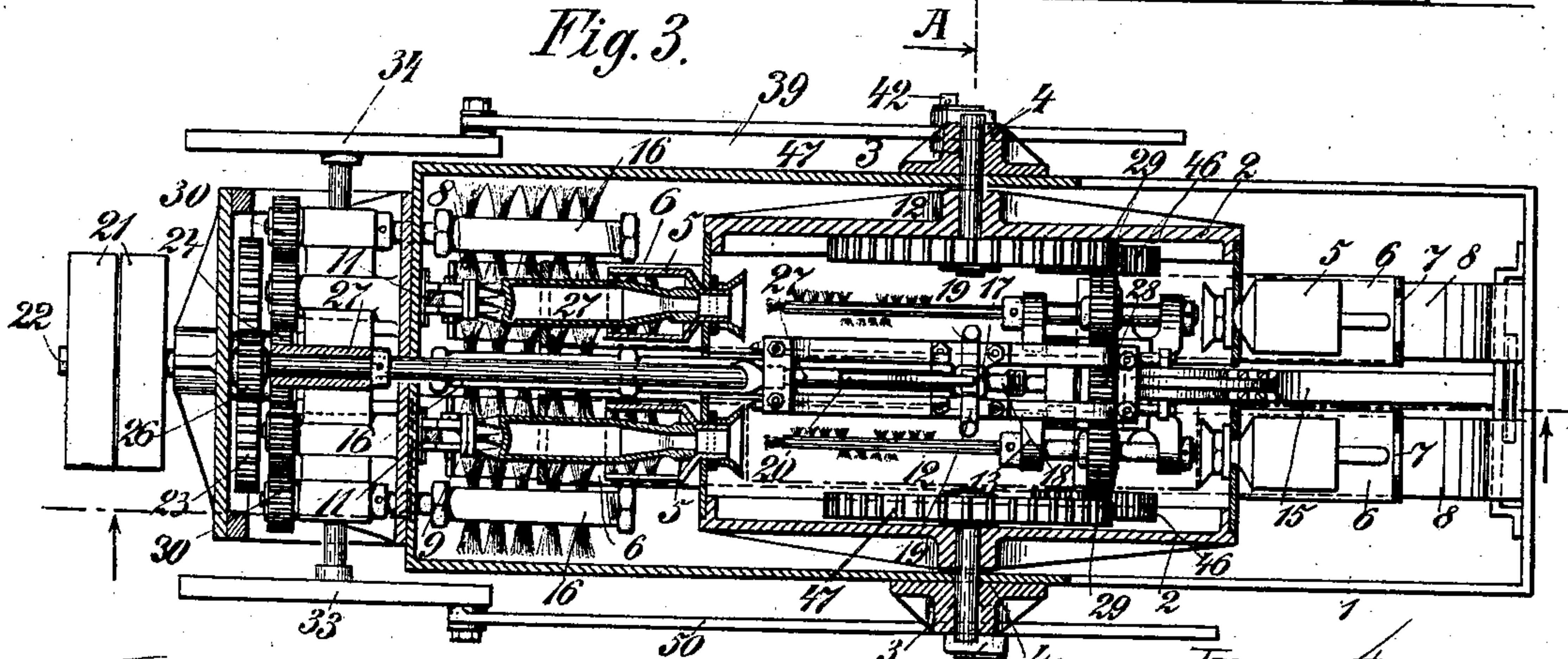


Fig. 3.



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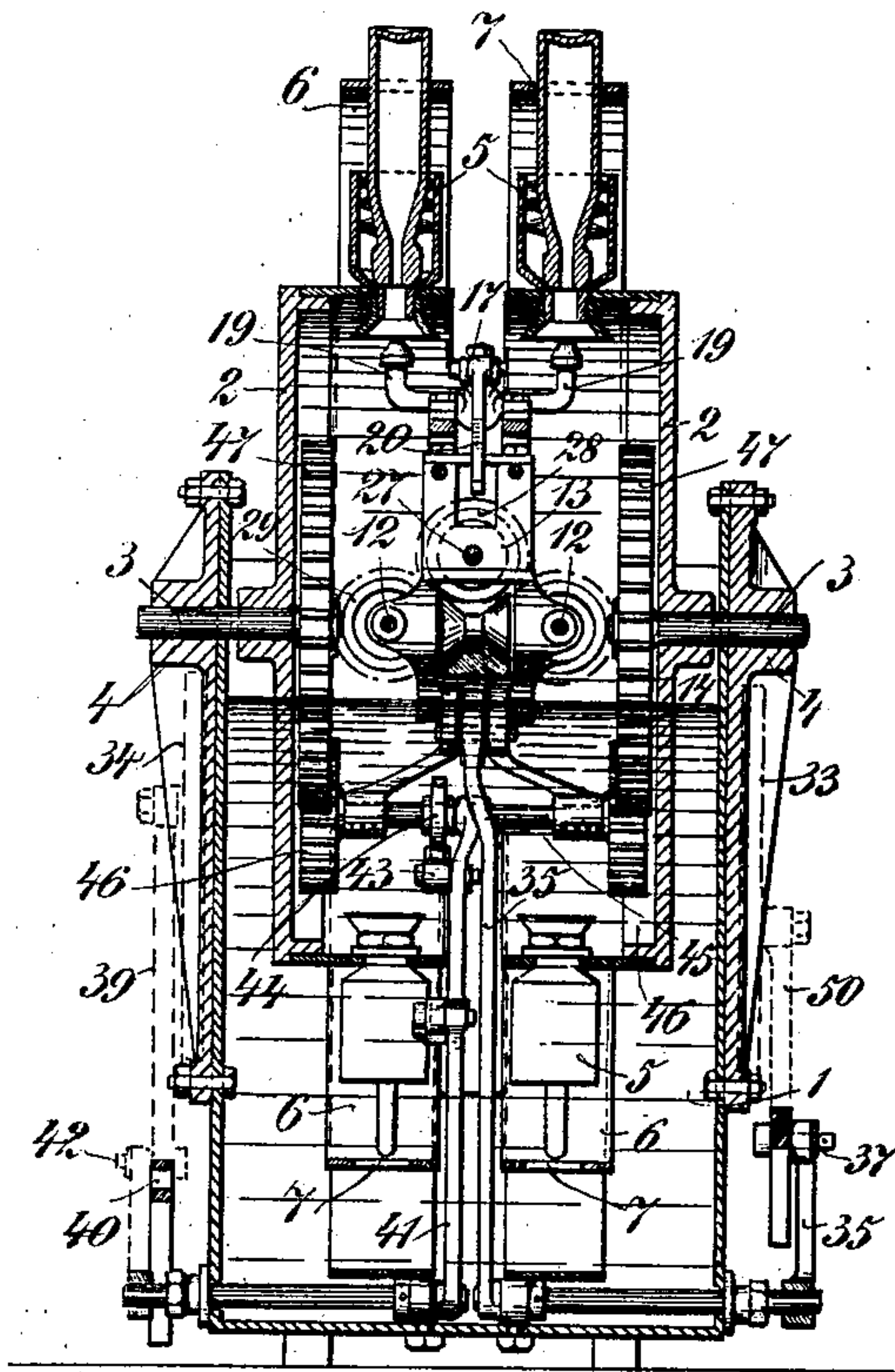
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2 Sheets—Sheet 2.

Fig. 2.



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# UNITED STATES PATENT OFFICE.

JOHN HENRY WILLIAM ORTMANN AND CARL WILHELM HERBST, OF  
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## BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 705,430, dated July 22, 1902.

Application filed February 17, 1902. Serial No. 94,550. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN HENRY WILLIAM ORTMANN and CARL WILHELM HERBST, manufacturers, subjects of the Emperor of Germany, residing at Gothenstrasse 9, in the free town of Hamburg, in the State of Hamburg and Empire of Germany, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a full, clear, and exact description.

This invention relates to a bottle-washing machine the advantage of which compared with similar machines consists in the bottles being placed on a rotary frame or turn-table which is mounted on a horizontal shaft and moves a step at a time. The bottles which are to be washed are first placed on the rotary frame with the mouths toward the shaft of the frame and are there introduced into receptacles the insides of which are furnished with brushes, these brushes being fixed to the frame. The bottles are then carried through the vessel, that is filled with water, being canted over, and upon returning to the horizontal position in which they were previously placed are cleaned inside by means of a brush which moves in the same plane, the outsides of the bottles being cleaned in the usual manner by revolving brushes mounted in the same plane and between which the bottles are conveyed, as well as by spring-brushes which press against the bottoms of the bottles, these latter being also caused to rotate around their longitudinal axes through the rotation of the horizontally-mounted revolving brushes. After the bottles have been thoroughly cleaned inside and outside by means of the brushes they are brought over a spraying or rinsing apparatus, where they are once more thoroughly rinsed out.

A bottle-washing machine of the kind is illustrated in the accompanying drawings, Figure 1 being a longitudinal view, partly in section; Fig. 2, a section along the line A A in Fig. 1, and Fig. 3 is a section along the line B B in Fig. 1.

A rotary frame 2, with shafts or spindles 3, is arranged in the vat 1. On the frame receptacles 5, furnished inside with brushes 9 and at the bottom with funnel-like openings, are arranged, and in these the bottles are in-

serted. A rim 6, provided with suitable openings 7 for the bottles, is fixed above the receptacles in order that the bottles may be firmly held. When the frame 2 is rotated, the bottles, as soon as they assume the horizontal position, run onto the slideway or slide-surface 8 of the vat and as the frame continues to rotate are carried along this surface. In the machine-vat 1 brushes 9 are provided, which rotate around bearings 10 and are pressed against the bottoms of the bottles by weighted levers 11. The brushes 9 are intended for cleaning the bottoms of the bottles on the outside and likewise for holding the bottles firmly in the receptacles 5. The brushes 12, which are employed for cleaning and rinsing out the inside of the bottles, are fixed on a slide or carriage 13. The latter, together with the rinsing-brushes 12, is moved backward and forward on a guideway 14, which is arranged on pedestals 15 in the vat 1. The outsides of the bottles are cleaned by brushes 16, which are pivoted in the same horizontal axial plane as the brushes 12. When the brushes 16 are rotated, the bottles lying between them are also rotated in consequence of the friction, so that the bottles can be thoroughly cleaned from all sides. When the bottles have been thoroughly cleaned inside and outside by the brushes 12 and 16, they are brought over the spraying or rinsing apparatus, where they are once more thoroughly rinsed out. The rinsing apparatus consists of a valve-casing 17, connected at 18 with a water-pipe, while the nozzle-like rinsing-tubes 19 come under the funnel-like openings provided in the receptacles 5, on which the heads of the bottles lie. The valve is operated by the slide-carriage 13, the latter each time when moving forward striking against a lever 20, connected with the valve-plug, and thus opening the valve. The machine is driven by the pulleys 21, which, like the tooth-wheels 23 24 and the worm 25, are mounted on the shaft 22. The wheel 23 engages with another wheel 26, mounted on a shaft 27, on which the driving-wheel for the slide-carriage is also mounted. The wheel 28 in turn engages with the wheels 29, by which wheels the brushes 12 are rotated. The wheel 24 engages with the wheel 30, which operates the brushes 16.



The worm 25 is coupled with the worm-wheel 31 and rotates the shaft 32 and the crank-disks 33 and 34, mounted thereon. The crank-disk 33 is coupled with the slide-carriage 13  
 5 by the connecting-rod 50 and the lever 35, these latter being pivoted to the shaft 38. The connecting-rod 50 is furnished with a slot 36, through which a bolt 37, arranged on the lever 35, engages. When the crank-disk  
 10 33 is rotated by the worm 25 and worm-wheel 31, the slide-carriage 13 is pushed forward through the medium of the rod 50 and the lever 35, the rotating brushes 12 being introduced into the bottles which are lying  
 15 horizontally. At the return movement the slide-carriage and the brushes 12 are actuated—in other words, pushed back in the same manner. At this moment the connecting-rod 39, arranged on the crank-disk 34 and  
 20 likewise provided with a slot 40, through which a bolt 42, arranged on the bent lever 41, engages, comes with a pawl 43, arranged in the upper end of the lever 41, into engagement with a ratchet-wheel 44 and rotates the  
 25 latter to the extent of one tooth, the rotary frame being rotated each time step by step the distance between two bottles by means of a tooth-wheel 46, seated with the ratchet-wheel 44 on a shaft 45 and coupled with  
 30 tooth-wheels 47, connected with the frame 2.

The operation of the machine, briefly stated, is as follows: When the bottles have been put into the receptacles 5, the rotary frame 2 is set in motion. The bottles run onto the  
 35 guide-rails arranged in the vat and slide along there and are sufficiently wet by the water contained in the tank for softening any dirt that may be adhering to the inside or the

outside of the bottles. The bottles are then brought between the brushes 16, while at the  
 40 same time the brushes 12, connected with the slide-carriage, are set in motion and introduce guides into the bottles. The spring-brush 9 lies firmly against the bottom of the bottle on the outside thereof and presses  
 45 the bottle more firmly into the receptacle 5, holding it fast therein. The brushes 16 in rotating carry the bottle, which is likewise rotated along within them and cleaned inside and outside. When the bottles have been  
 50 cleaned by the brushes, they come over the rinsing apparatus, where they are again thoroughly rinsed out and can be removed from the receptacles ready for use, whereupon fresh bottles are put into the recepta-  
 55 cles and the above-described process is repeated.

What we claim, and desire to secure by Letters Patent, is—

In a bottle-washing machine, the combination with the vat, a rotary frame mounted therein having receptacles for the bottles, a slide-carriage, a guideway for imparting a forward-and-backward movement to the slide-carriage of a rinsing apparatus, a valve con-  
 60 nected with a water-supply pipe, a lever coacting with the valve, and the said slide-carriage coacting with the valve to open and close the same, substantially as specified.

In witness whereof we subscribe our signatures in presence of two witnesses.

JOHN HENRY WILLIAM ORTMANN.

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Witnesses:

G. HAMSCILDT,

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