

(No Model.)

E. R. RICHARDS.  
BOTTLE WASHER.

No. 566,471.

Patented Aug. 25, 1896.

Fig. 1.

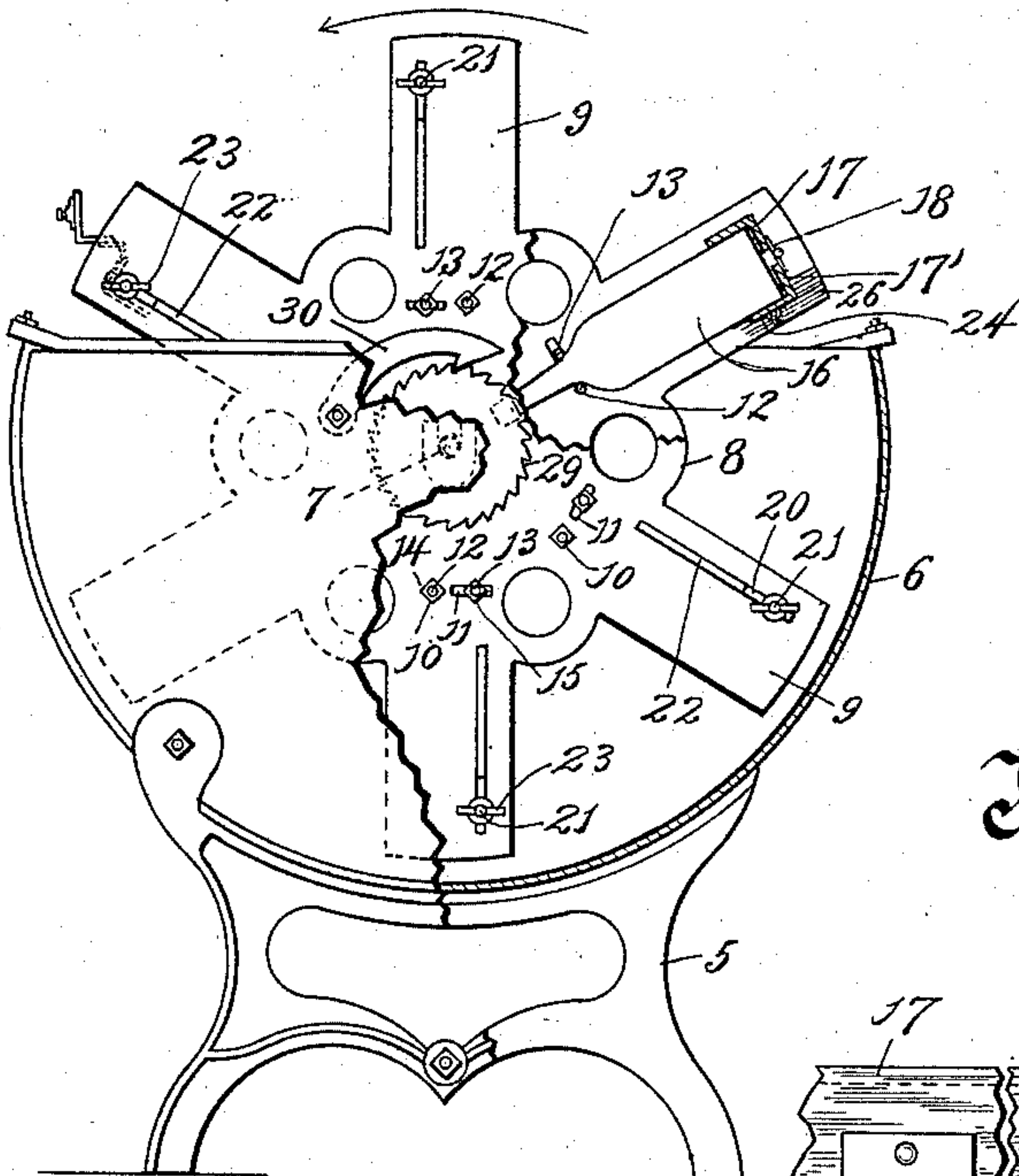


Fig. 3.

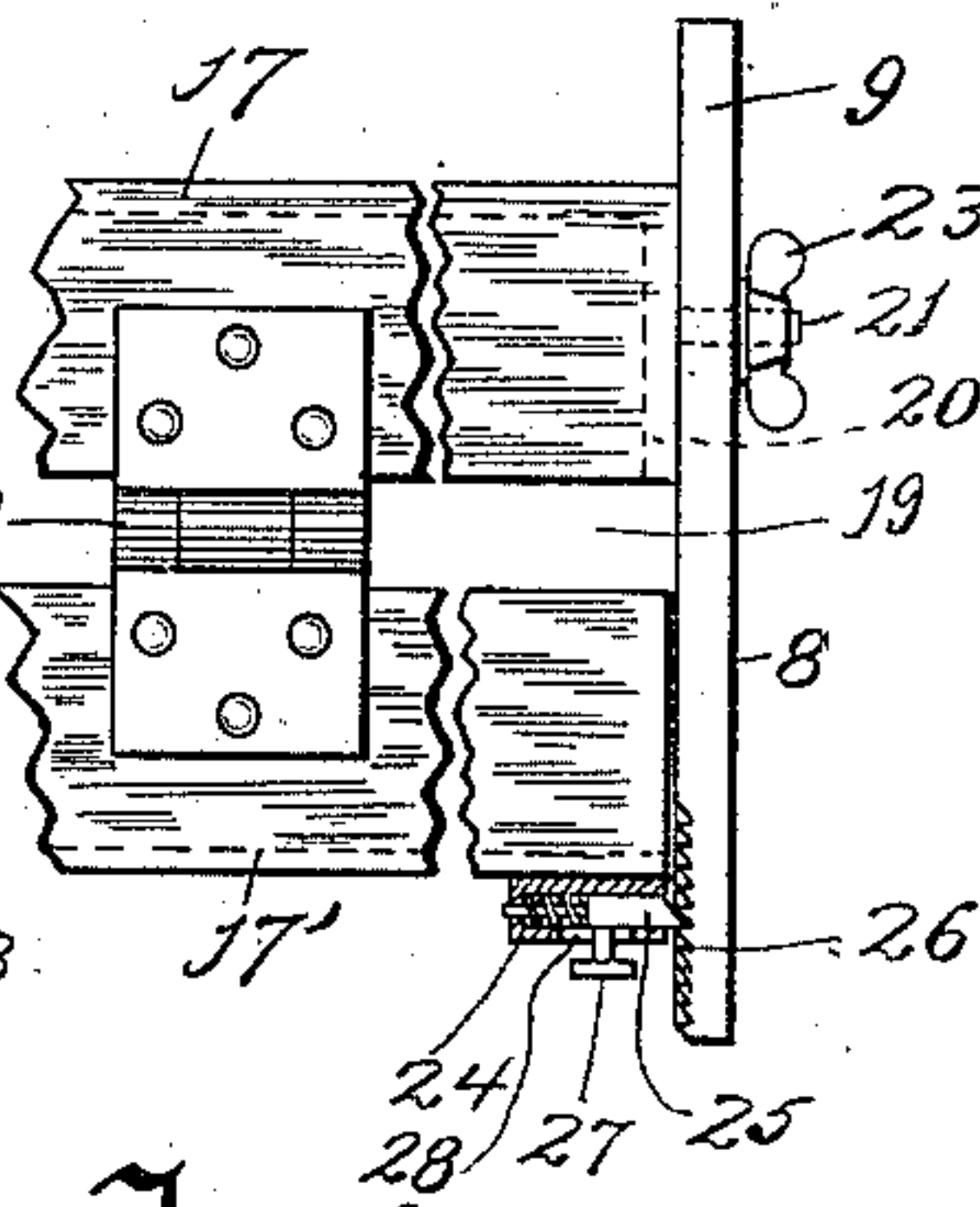


Fig. 4.

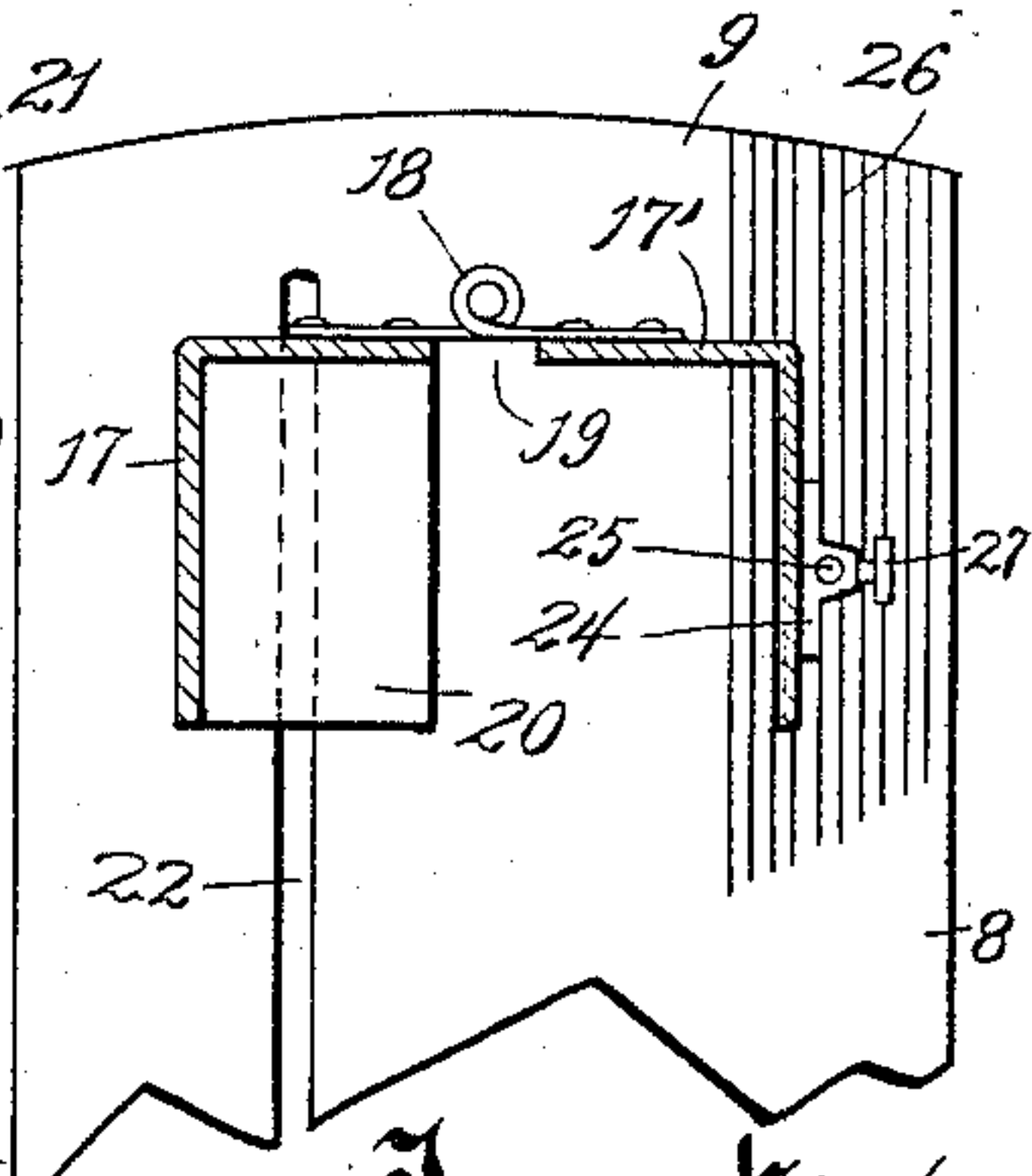
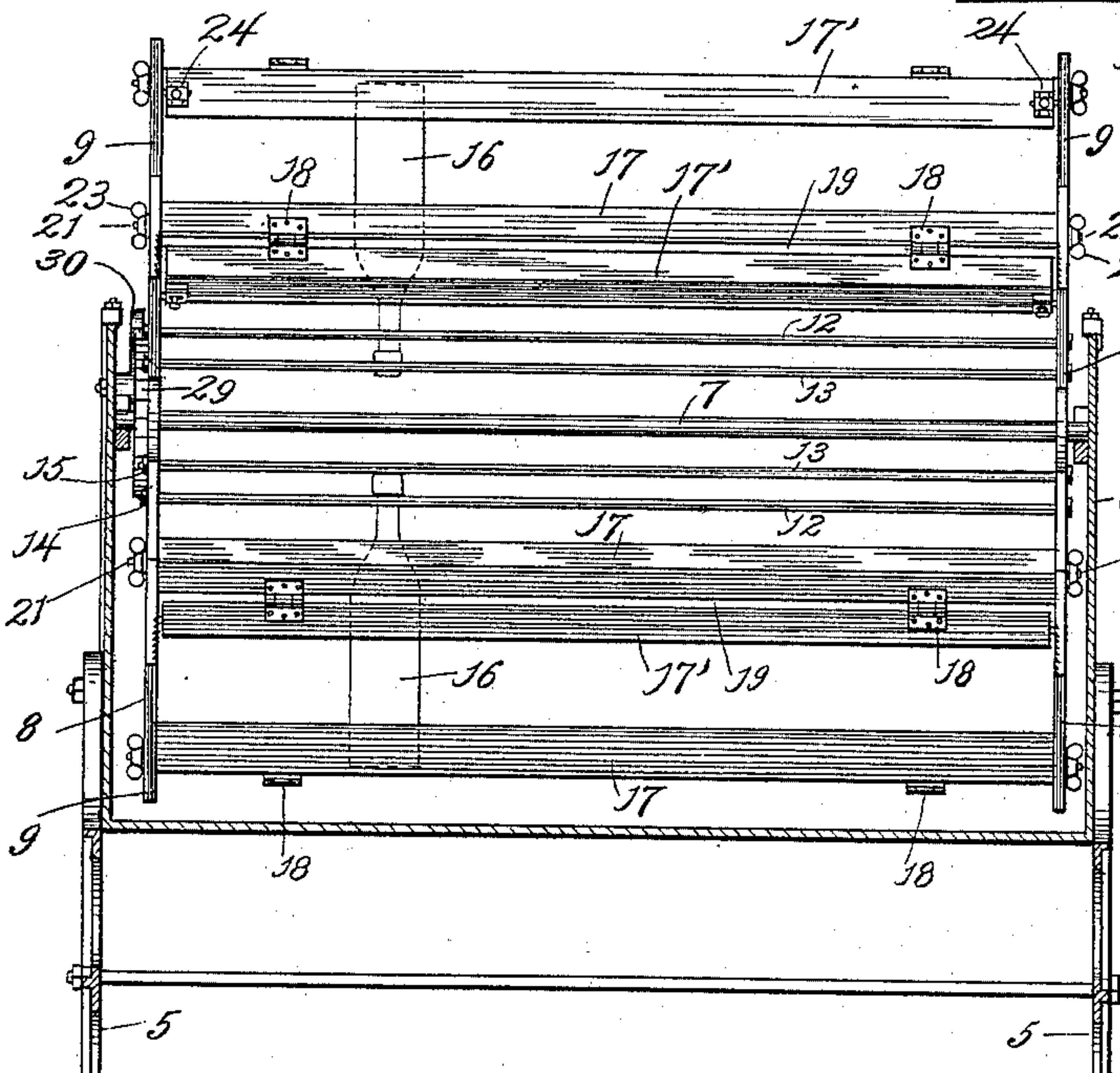


Fig. 2.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## BOTTLE-WASHER.

SPECIFICATION forming part of Letters Patent No. 566,471, dated August 25, 1896.

Application filed February 6, 1896. Serial No. 578,222. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST R. RICHARDS, of Sheboygan, in the county of Sheboygan and State of Wisconsin, have invented a new and useful Improvement in Machines for Washing Bottles, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in machines for washing bottles. Its object is to provide a simple, inexpensive, easily and quickly operated machine, involving certain peculiar and novel features of adjustment, whereby the device is rendered adaptable to bottles of different lengths, of different sizes of necks, and of varying diameters of body.

The invention consists of the devices and parts, or their equivalents, as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is an elevation of the complete machine, showing a part of the casing broken away, also showing one of the holders for the lower end of the bottle in section and another of said holders thrown open. Fig. 2 is a vertical longitudinal section of the casing with the interior mechanism therein. Fig. 3 is a plan view, on an enlarged scale, of an end of one of the holders for the lower portion of the bottle, with the casing of the catch in section; and Fig. 4 is a cross-section through Fig. 3.

Referring to the drawings, the numerals 5 5 indicate the supporting feet or standards which support and have secured thereto a partly-circular case 6, said casing constituting a receptacle for the washing fluid. Mounted in the end pieces of this receptacle is a shaft 7, which carries thereon a revolvable bottle-holding device. This device consists, mainly, of two end pieces 8 8, which end pieces have radiating from their edges a series of aligned arms 9. The end pieces are provided with sets of openings arranged annularly. One of these openings is indicated by the numeral 10, and the other, which is elongated, is indicated by the numeral 11. Through these openings, from one end piece of the bottle-holding device to the other, pass rods 12 and 13. The rods 12, which pass through the openings 10, are each provided upon one end with a head bearing against the

side piece adjacent, and their opposite ends are threaded to receive nuts 14. The other rods 13 are likewise each provided at one end with a head, and with threads at the opposite end to receive a nut 15. It is obvious that when these nuts 15 are loosened the rods 13 can be moved closer to or farther away from the rods 12. Between these sets of rods the necks of the bottle 16 pass. If the rods are set at a certain distance apart, and it is desired to support bottles having their necks of a greater or less width than the width of the space between the rods, said rods can be readily adjusted to the required width.

The upper ends of the arms 9 carry devices for supporting the lower ends of the bottles. These devices consist each of two right-angled castings 17 17', hinged together by the hinge-joints 18 18. The opposing edges of the two sections of the castings are so arranged as to leave a space 19 therebetween, so as to allow for the free upturning of the hinge-section. The fixed sections 17 are provided with end pieces 20, (see Fig. 4,) from which project trunnions 21 21. These trunnions pass through elongated slots 22 22 in the arms 9, and receive on their outer threaded extremities winged nuts 23 23. By this arrangement it is evident that the holder for the lower end of the bottle can be readily adjusted to suit different lengths of bottles. In order to effect this adjustment, all that is necessary is to loosen the winged nuts and slide the holders to the desired position, after which the nuts are again tightened.

On the side of each section 17' of the holder is a casing 24, in which is disposed a spring-actuated catch 25. This catch is adapted to be normally forced by the spring into engagement with teeth 26, formed on the inner side of each arm 9, near one edge thereof. Each catch is provided with a projecting finger 27, which extends through an elongated slot 28 in the casing 24. When it is desired to throw the hinge-section 17' upwardly, the finger of the catch is grasped and said catch forced inwardly, so that its outer end is released from engagement with the teeth. It will be understood that each arm 9 is provided with a number of separate longitudinal lines of these teeth 26, as clearly shown in Fig. 3. Now, if the lower end of the bottle is of con-



siderable diameter or of a diameter greater than the space between the angular castings forming the holder, when the hinge-section thereof is turned down to its full extent, as shown in Fig. 4, then said hinge-section is not permitted to be turned down to its full limit, but will contact with the side of the bottle. The catch at the same time will automatically engage with the longitudinal line of teeth at the point where the hinge-section stops. It will thus be seen that the holders for the lower ends of the bottles are not only adjustable to suit different lengths of bottles, but are, furthermore, adjustable to suit bottles having bodies of varying diameters. Mounted on the shaft 7 between one side or end of the casing 6 and the adjacent end piece 8 of the bottle-holding device is a toothed wheel 29. Pivoted to the inner side of this side piece of the casing is a dog or pawl 30, which is adapted to engage with the teeth of the wheel 29 and prevent back rotation of the revoluble bottle-holder.

In the application of my invention the necks of the bottles to be washed are fitted between the rods 12 13 and the lower ends of the bottles are fitted between the two sections 17 17'. The holding device is then rotated in the direction of the arrow, Fig. 1. The receptacle is filled up to a certain height with a suitable cleaning fluid, preferably a chemical. As a line of bottles first passes into the fluid, said fluid will enter the bottles, and when this line of bottles has reached their lower perpendicular position the bottles will be completely filled. On the up movement of a line of bottles said bottles begin to be again inverted, and by the time they reach their upper perpendicular position the bottles are completely drained of the contents of the fluid. These bottles are then removed and a new line of bottles substituted therefor, and so on indefinitely. One of the principal advantages of my device is the rapidity with which the cleaning can be effected with a minimized amount of labor on the part of the operator. Furthermore, the device is adaptable to different sizes of bottles of almost any range.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a bottle-washer, the combination, of a fluid-containing receptacle, a bottle-holder revoluble therein, said holder having two end pieces provided with sets of apertures, one of said apertures of each set being elongated,

rods passing through these apertures, a nut on one end of each of the rods which pass through the elongated slots, whereby said rods are adjustable toward and from the fixed rods, and means for supporting the lower ends of the bottles.

2. In a bottle-washer, the combination, with a fluid-containing receptacle, of a bottle-holder revoluble therein, angular brackets forming a part of said bottle-holder, and adapted to engage the lower ends of the bottles, one of said angular brackets being hinged and means for supporting the upper ends of the bottles.

3. In a bottle-washer, the combination, with a fluid-containing receptacle, of a bottle-holder revoluble therein, angular castings forming a part of said bottle-holder, and adapted to engage the lower ends of the bottle, one of said angular castings being fixed, and the other hinged, the hinged section provided with a catch which is adapted to engage with other parts, and thereby hold the hinged section to adjusted position, and means for supporting the upper ends of the bottles.

4. In a bottle-washer, the combination, with a fluid-containing receptacle, of a bottle-holder revoluble therein, said holder provided with elongated slotted end pieces, devices forming a part of the bottle-holder, and adapted to engage the lower ends of the bottle, one of said parts provided at opposite ends with projections passing through the elongated slots of the end pieces, nuts engaging the threaded extremities of the projecting parts, and means for supporting the upper ends of the bottles.

5. In a bottle-washer, the combination, of a fluid-containing receptacle, a shaft mounted therein, end pieces mounted upon said shaft, sets of rods connecting said end pieces, said rods adapted to receive the necks of the bottles therebetween, devices for holding the lower ends of the bottles, consisting of a fixed angular section and a similar section hinged to the fixed section, the opposite ends of said fixed sections provided with projecting trunnions adapted to pass through elongated slots in the end pieces, and means for holding the hinge-sections to adjusted position.

In testimony whereof I affix my signature in presence of two witnesses.

ERNEST R. RICHARDS.

Witnesses:

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E. AZUFELT.