No. 835,866. PATENTED NOV. 13, 1906.

A. A. PINDSTOFTE.

APPARATUS FOR CLEANING AND RINSING BOTTLES.

APPLICATION FILED OCT. 22, 1904.

2 SHEETS—SHEET 1.

Fig 1

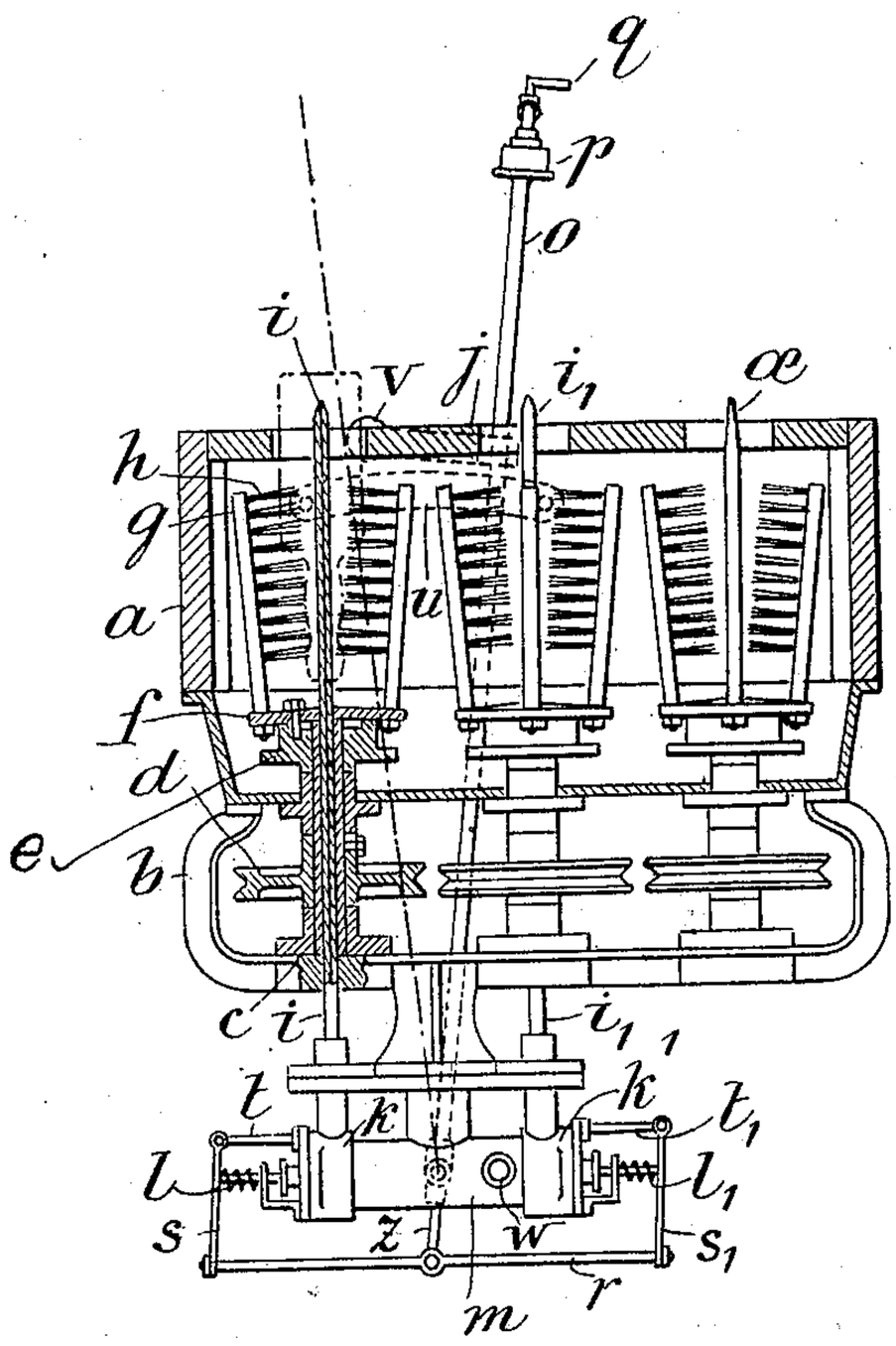
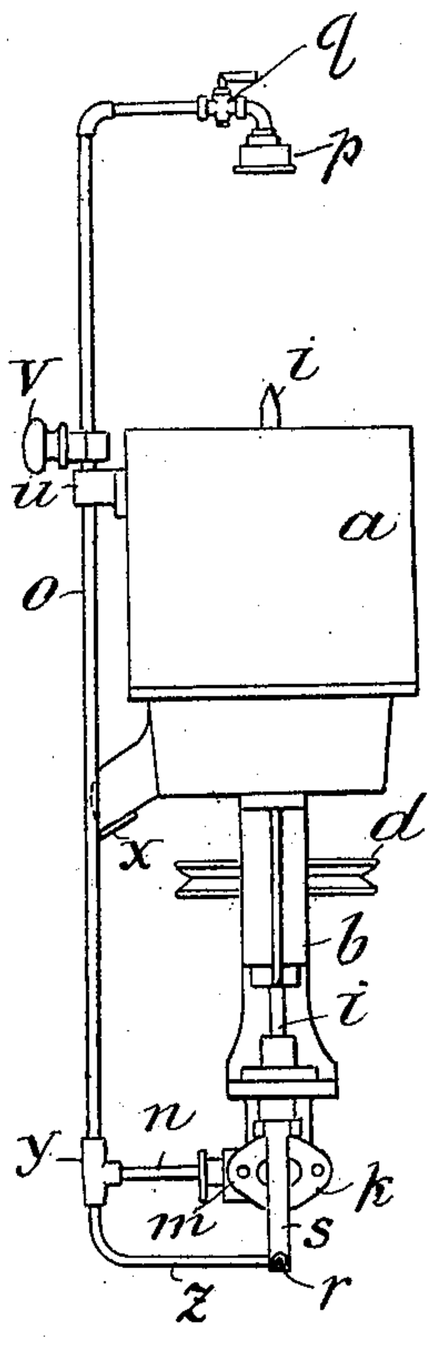


Fig 2



Witnesses

Samuel J. Hoexter

R. F. Schmidt

Inventor

Anders Andersen Pindstofte

By Knight Bros

Attys.

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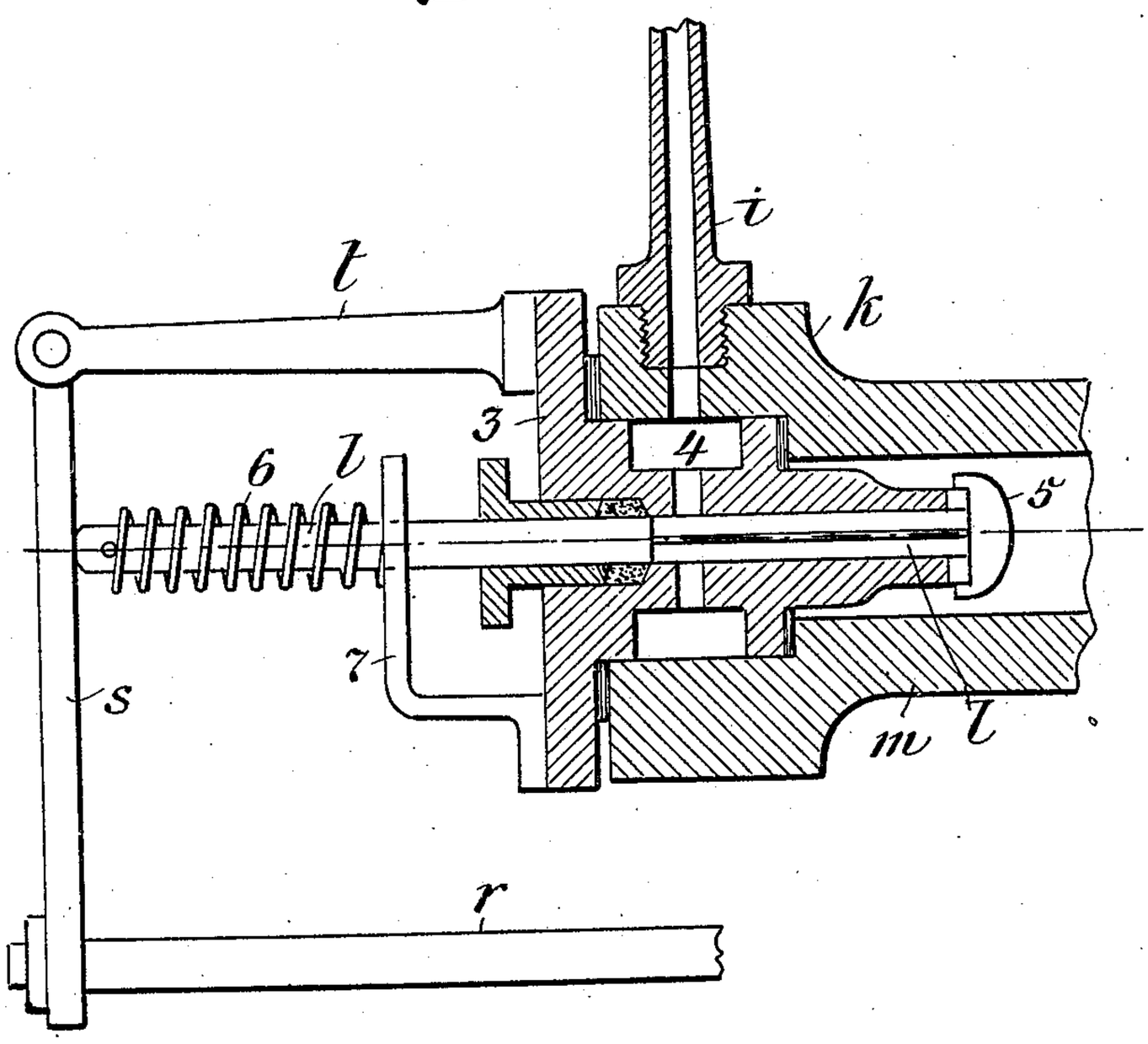
2 SHEETS—SHEET 2.

Fig. 3



Witnesses
William B. Hammond
C. F. Sonnek

Inventor
Anders Andersen Pindstofte
By Knight Bros
Attys.

UNITED STATES PATENT OFFICE.

ANDERS ANDERSEN PINDSTOFTE, OF FREDERIKSBERG, DENMARK.

APPARATUS FOR CLEANING AND RINSING BOTTLES.

No. 835,866. Specification of Letters Patent. Patented Nov. 13, 1906.

Application filed October 22, 1904. Serial No. 229,645.

To all whom it may concern:

Be it known that I, ANDERS ANDERSEN PINDSTOFTE, manufacturer, a subject of the King of Denmark, residing at No. 62[1] Frederiksberg Allé, Frederiksberg, near Copenhagen, Denmark, have invented new and useful Improvements in Apparatus for Cleaning and Rinsing Bottles, of which the following is a specification.

The present invention relates to an apparatus for rinsing and cleansing bottles by means of water under pressure, and particularly for use after the exterior and interior of the body portion of the bottle has been suitably scrubbed with the exception of the neck portion, so that when the bottle is placed in the present apparatus the interior and exterior of said bottle will be thoroughly rinsed and the neck of the bottle will be scrubbed during this rinsing operation.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the apparatus, partly in section, while Fig. 2 is an end view. Fig. 3 is a view in detail, partly in section, of the valve mechanism.

The vessel *a* is carried by a substructure *b*, provided with bearings for shafts *c*, the latter being provided with belt-pulleys *d* for operating disks *e*, arranged upon the shafts *c*, to which disks *e* the disks *f*, carrying the brushes *g*, are fastened. The brushes *g* carry bristles *h*, which point toward the prolongation of the shafts *c*.

Through each of the hollow shafts *c* pass tubes *i i'*, which are narrowed at the top and discharge at a suitable distance from bottom of the bottle, which is placed over the tube *i* and between the brushes *g*. The tubes *i* and *i'* are below connected with the collars *k k'* on the tube *m*, into which the water passes through the opening *w*. Each of the collars *k k'* is provided with a valve toward the corresponding tube *i i'*, the said valves being provided with spindles *l l'*, which are closed by means of screw-springs.

The collars *k k'* carry arms *t t'*, to which are pivotally fastened links *s s'*, said links being at their lower ends adjustably connected with a cross-bar *r*. At the middle of the cross-bar *r* is fastened a bent arm *z*, which is connected with the T-shaped coupling *y*, arranged upon the tube *n*, which can be rotated in the tube *m*. The coupling *y* at the top carries a pipe *o*, which by means of a handle *v* can be adjusted within the bow *u*, fastened to the vessel *a*. The upper part of the pipe *o* is bent and carries at its outer end a rose *p* with cock *q*.

In a suitable hole in the collar *k* and the tube *m* is inserted a plug 3, which, with suitable packing means, is supported against the outer end of the collar and a projection in the tube *m*. In the plug 3 is arranged a groove 4 and a hole for the valve-spindle, said groove and hole communicating through a series of vertical holes. The spindle *l*, the one inner part of which has triangular cross-section, carries the valve 5 and is kept in its outermost position by means of a spring 6, the free end of which is supported against a projection 7 on the plug 3, so that the valve 5 is pressed against its seat in closing position, while the opening of the valve is effected by the rod *s* pressing the valve-spindle *l* inwardly, overcoming the pressure of the spring 6.

Above the vessel *a* is placed a cover *j*, having circular openings above each of the brush-holders. The bottles are put down through these openings, which serve partly to guide the bottles and partly to prevent the bottles from obtaining the same rotating speed as the cleaning-brushes. In the vessel *a* is placed a third brush having brushes with somewhat stiffer bristles—for instance, steel bristles. This brush-holder is not provided with any water-supply pipe; but in the middle of it a perpendicular arm 1 is arranged, on which the bottle can be placed. This brush is only used as a reserve, and especially for further cleaning such bottles which after having been cleaned in one of the other bottle-holders are not sufficiently clean.

The apparatus is used in the following manner: The brushes are rotated by means of belts passing over the pulleys *d*. When a bottle is placed in the brush-holder shown farthest to the left in Fig. 1, the pipe *o* is moved toward the bottle, so as to bring the rose or sprinkler *p*, which is continually supplying water, directly above the bottle. The supply through this sprinkler is regulated by the cock *q*. The action of shifting the pipe toward the extreme left will cause the cross-bar *r* to move to the right, and the motion imparted to link *s* will actuate the spindle *l*, which in turn operates and opens the valve which is situated in the collar *k*. At the same time the valve situated in collar *k'* will be closed, causing the water under pressure to be forced through the pipe *l* and squirted

inside the bottle, thus rinsing it thoroughly. At the same time water is supplied through the pipe *o* and sprinkler *p*, rinsing and cleansing the outside of the bottle. When the bottle has been sufficiently cleaned and another bottle has been placed on the second brush-holder, the pipe *o* is passed toward this new bottle and the same process is repeated, the cleaned bottle at the same time being replaced by a dirty one. At the bottom of the vessel *a* an outlet *x* for the rinsing-water is provided.

Having now described and ascertained the nature of my said invention, I declare that what I claim is—

1. In an apparatus of the character described, the combination of a suitable bottle-retaining frame, of brushes located therein, means for imparting to said brushes a rotary motion, pipes located centrally of said brushes, valves controlling the supply of cleansing fluid through said pipes, a movable pipe carrying a sprinkler, a cock controlling the circulation of the cleansing fluid through said pipe, said movable pipe controlling the actuation of the valves and the circulation of the cleansing fluid through the centrally-located pipes, substantially as described.

2. In an apparatus of the character described, the combination of a suitable bottle-retaining frame, a series of rotatable brushes located therein, means for cleansing the interior of the bottles, said means comprising a series of stationary pipes projecting upwardly and centrally of the brushes, a movable pipe carrying a sprinkler, said sprinkler adapted to be moved into alinement with some of the said bottles, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANDERS ANDERSEN PINDSTOFTE.

Witnesses:

MARCUS ALOLLER,

MAGNUS JENSEN.