

No. 771,664.

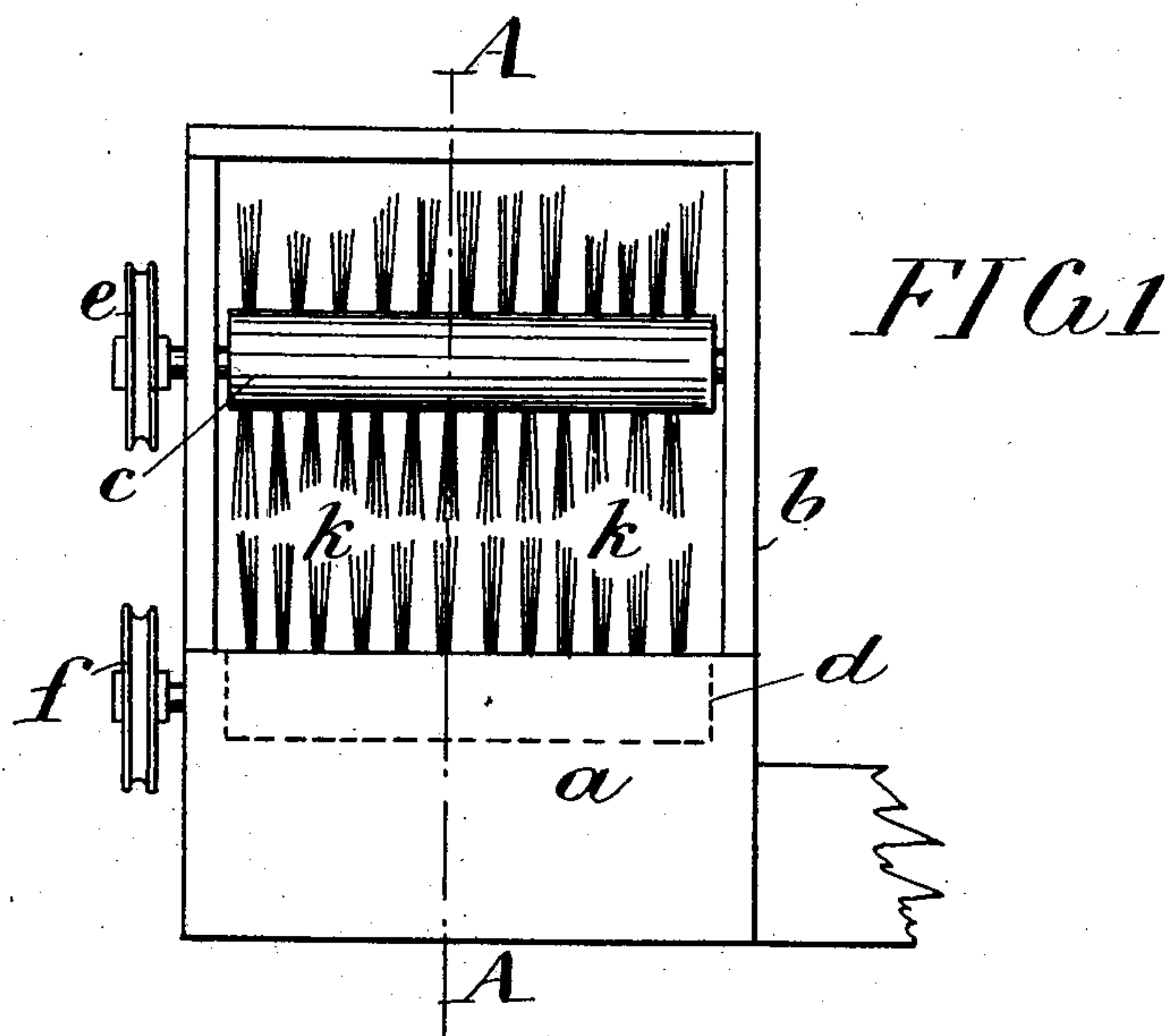
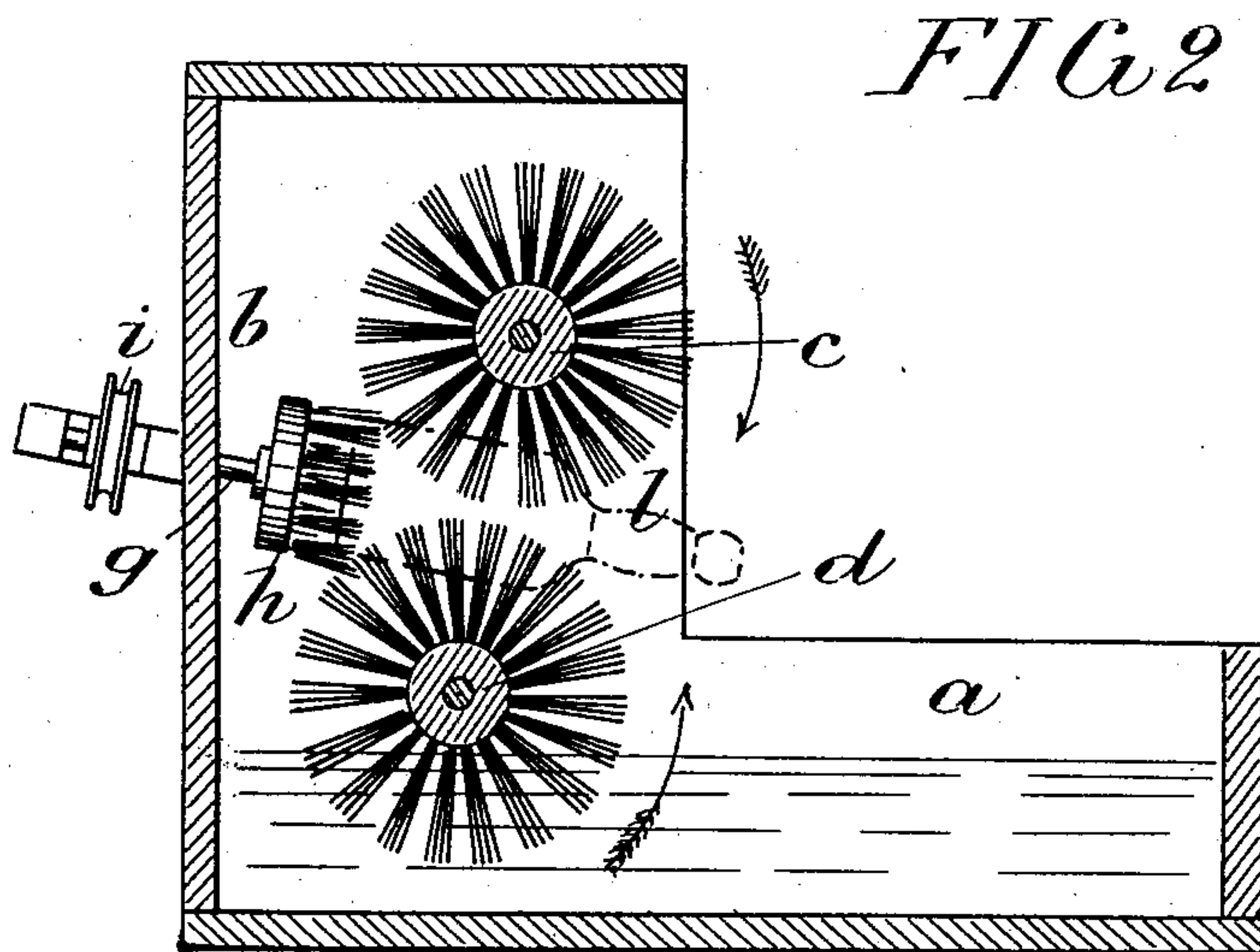
PATENTED OCT. 4, 1904.

A. A. PINDSTOFTE.  
BOTTLE WASHING MACHINE.

APPLICATION FILED APR. 17, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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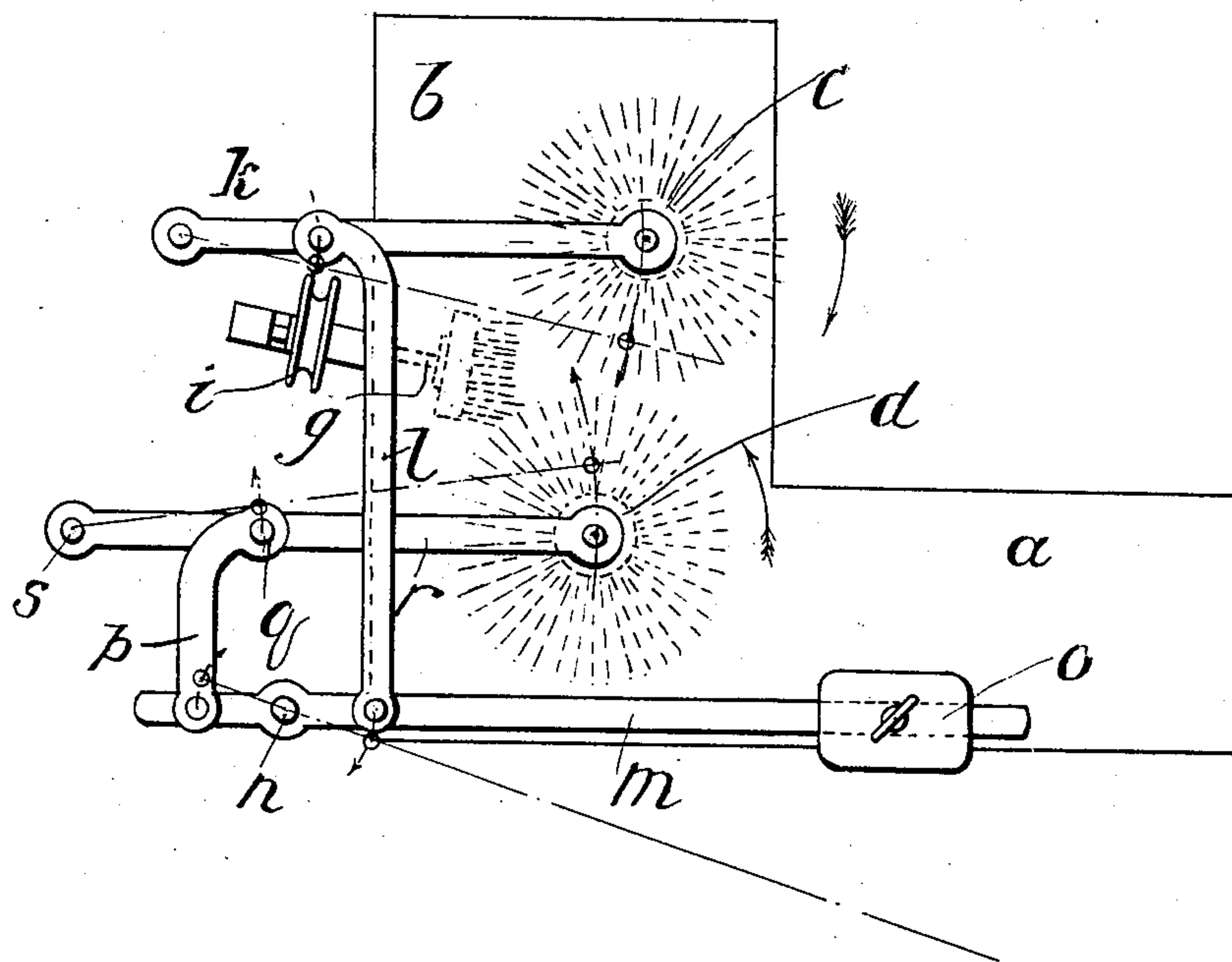
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NO MODEL.

2 SHEETS—SHEET 2.

*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

ANDERS ANDERSEN PINDSTOFTE, OF COPENHAGEN, DENMARK.

## BOTTLE-WASHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 771,664, dated October 4, 1904.

Application filed April 17, 1902. Serial No. 103,402. (No model.)

*To all whom it may concern:*

Be it known that I, ANDERS ANDERSEN PINDSTOFTE, manufacturer, of Copenhagen, in the Kingdom of Denmark, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a specification.

In the accompanying drawings, Figure 1 is a front elevation of a machine constructed according to this invention. Fig. 2 is a vertical section taken on the line A A of Fig. 1, and Fig. 3 is a side elevation showing the movable counterweight.

According to my invention my improved device consists of a receptacle *a*, fitted at its rear end with a superstructure *b*. In the walls of the latter are mounted two brushes *c* and *d*, arranged one above the other, the upper brush being slightly in advance of the lower one, as shown in Fig. 2. The shaft of each of the brushes is provided with a belt or strap pulley *e* and *f*, which latter rotate the brushes in opposite directions to each other, as indicated by the arrows in Fig. 2. In the rear wall of the superstructure are provided bearings for inclined spindles *g*, said spindles being arranged in such a manner that their median axis is at right angles to the plane passing through the axes of the two brushes *c* and *d* and cutting said plane in the center of the two axes. At that end of each of the spindles *g* situated within the superstructure *b* is mounted a brush *h*, while on the outside of the superstructure each spindle carries a belt or strap pulley *i*, adapted to impart rapid rotary motion to the spindles *g*, and thus also to the brushes *h*. The brushes *h* are so arranged as to enable the distance from the brushes *c* and *d* to be varied. The means for driving the brushes *c* and brushes *h* and the direction of rotation may be varied according to individual requirements. The bristles of the brushes *c* and *d* are so cut away as to form openings *k*, Fig. 1, of slightly-smaller diameter than that of the bottles being cleaned. These openings are arranged opposite to the brushes.

The operation of the improved device is as follows: Water is filled into the receptacle *a* until the lowermost brush *d* dips therein. The bottles to be cleaned are inserted in the opening *k* until the bottom touches against the brush *h*, (see Fig. 2,) and they are then released. The brushes *c* and *d* rotating press the bottles against the brushes *h* and at the same time clean the exterior of the bottle, while the brushes *h* clean the bottom end of the bottles and cause them to turn around between the brushes *c* and *d*, so as to be cleaned all round. After the bottles have thus been cleanly brushed they are removed and replaced by others. In the machine shown by way of example in the drawings two bottles are simultaneously cleaned; but obviously the machine may be arranged to take any desired number.

The spindles of the brushes *c* and *d* may be adjustably disposed and may, for example, be provided with counterweights, so that the distance between them is automatically regulated to suit the thickness of various bottles.

The shaft *c* has its bearing in a lever *j*, which is pivoted at *k*, said lever having pivoted thereto a rod *l*, which is connected with one arm of the two-armed lever *m*, pivoted at *n*. The arm of the lever *m* engaged by a rod *l* carries a movable counterweight *o*, and the other arm has pivoted thereto the rod *p*, which is connected with another single-arm lever *r* at *q*, said lever *r* being pivoted at *s* and provided with bearings for the shaft *d*. If the counterweight *o* depresses the arm *m*, the rod *p* will press the lever *r* upward, while the rod *l* depresses the lever *j*, which will cause the shafts *c* and *d*, with their brushes, to draw nearer to each other, which is of great value if the brushes are somewhat worn out by use.

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

A bottle-cleaning machine embracing a water-receptacle, and a number or plurality of rotary brushes, upper and lower brushes thereof having their peripheries adapted to form

a groove-like outline or conformation to receive the body of the bottle, and a third brush thereof arranged contiguously to said brush peripheries and in alinement with said groove-  
5 like outline or conformation to engage the bottom of the bottle, and means for actuating said brushes, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

ANDERS ANDERSEN PINDSTOFTE.

Witnesses:

MAGNUS JENSEN,  
V. O. FESSEN.