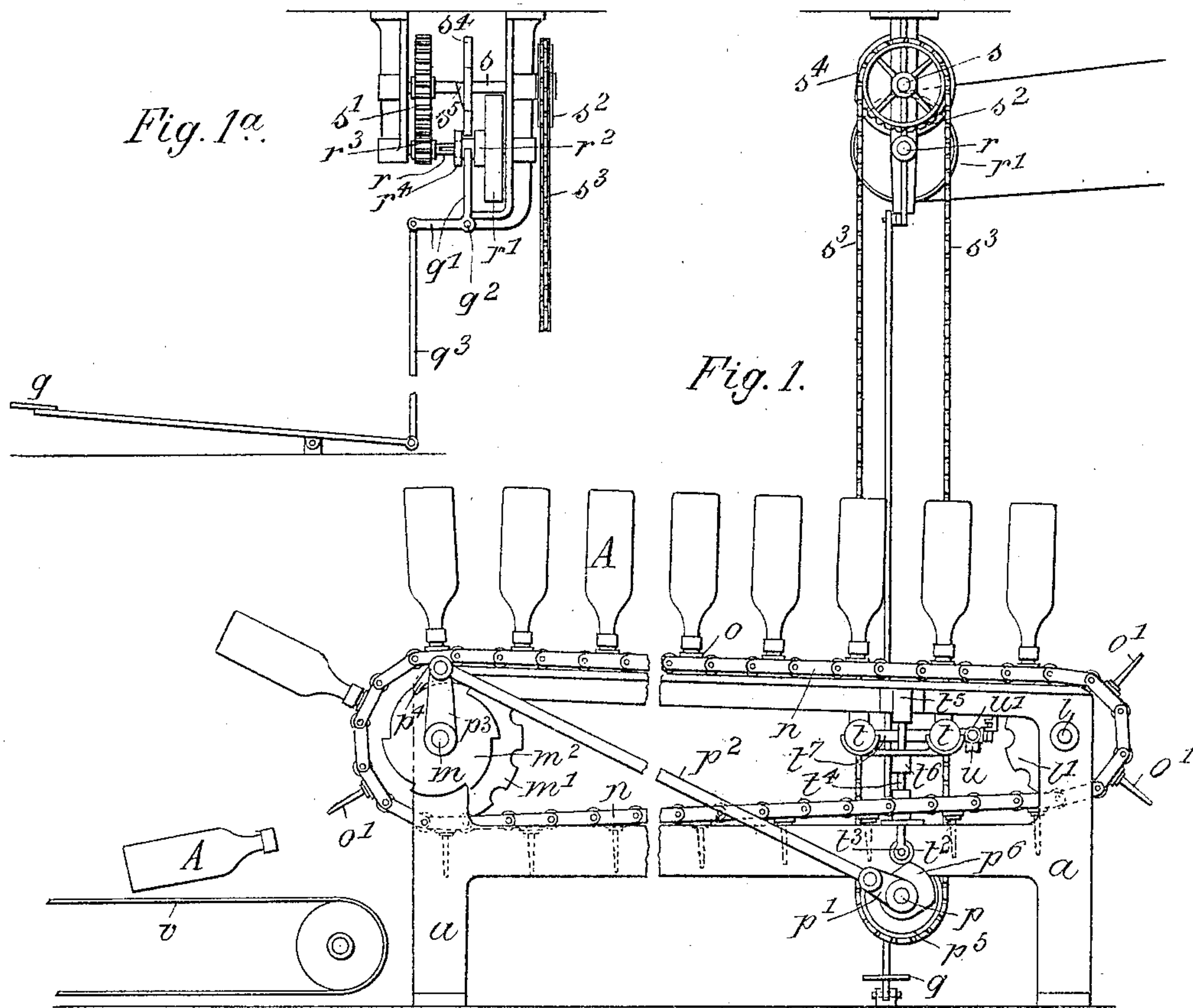


J. A. PRINCE.  
BOTTLE WASHING MACHINE.  
APPLICATION FILED MAR. 3, 1905.

2 SHEETS--SHEET 1.



Witnesses:  
Arthur Zumppe,  
Fred. Welfrich.

Inventor:  
John A. Prince,  
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No. 804,170.

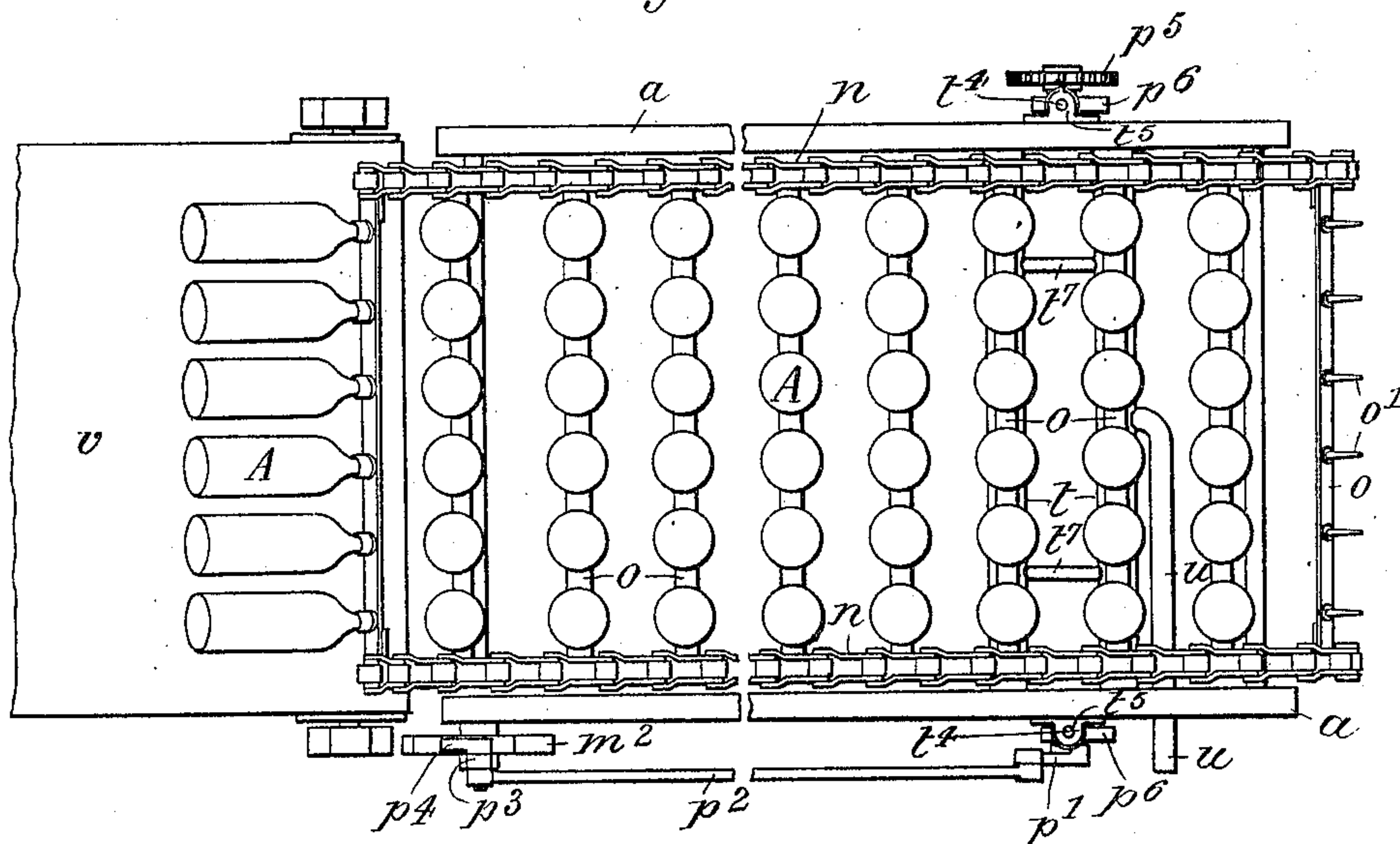
PATENTED NOV. 7, 1905.

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BOTTLE WASHING MACHINE.

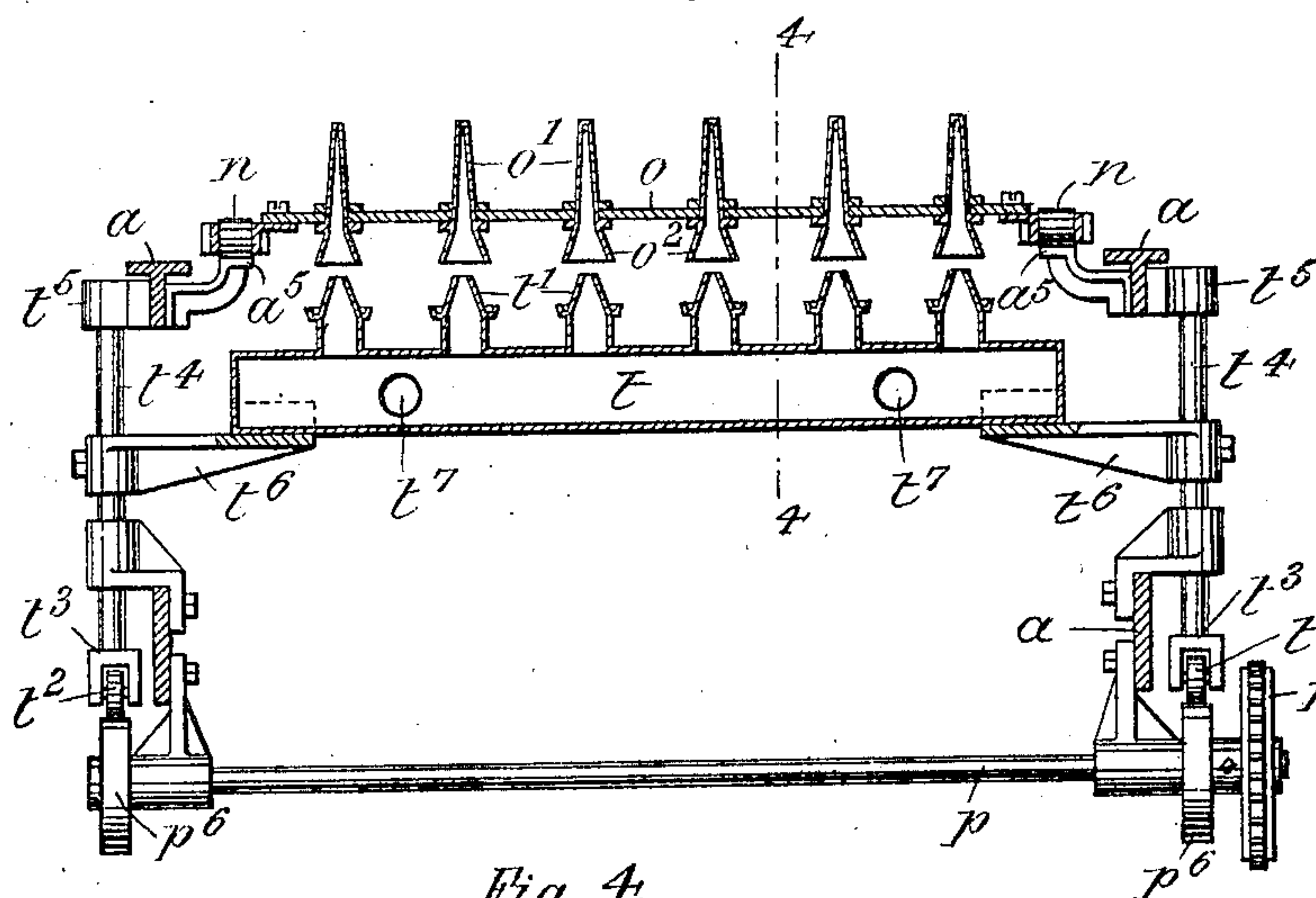
APPLICATION FILED MAR. 3, 1905.

2 SHEETS—SHEET 2.

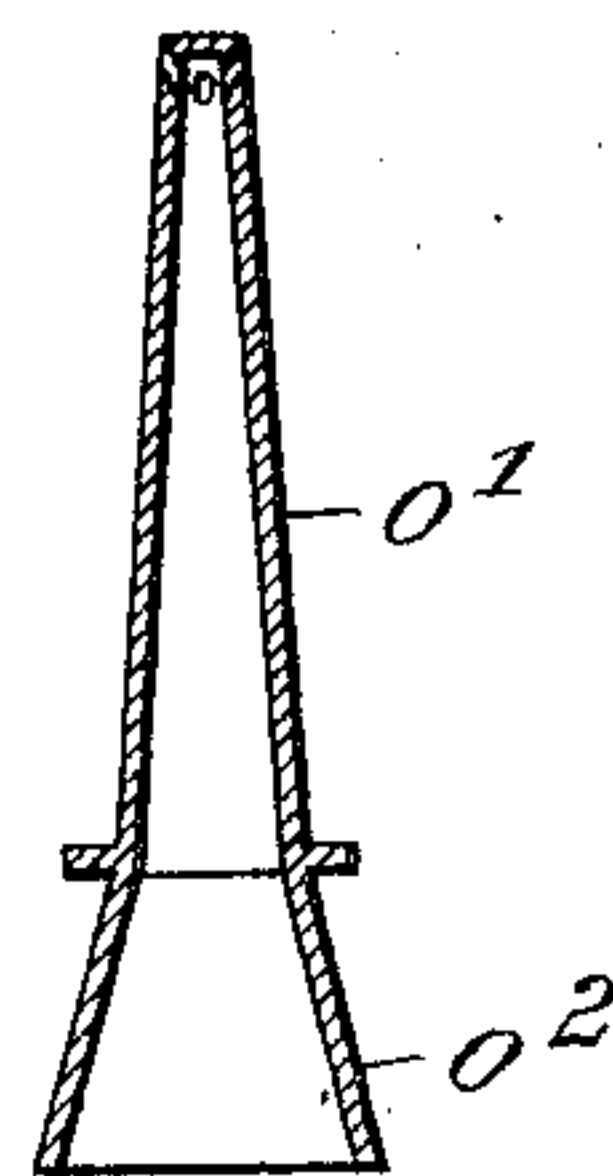
*Fig. 2.*



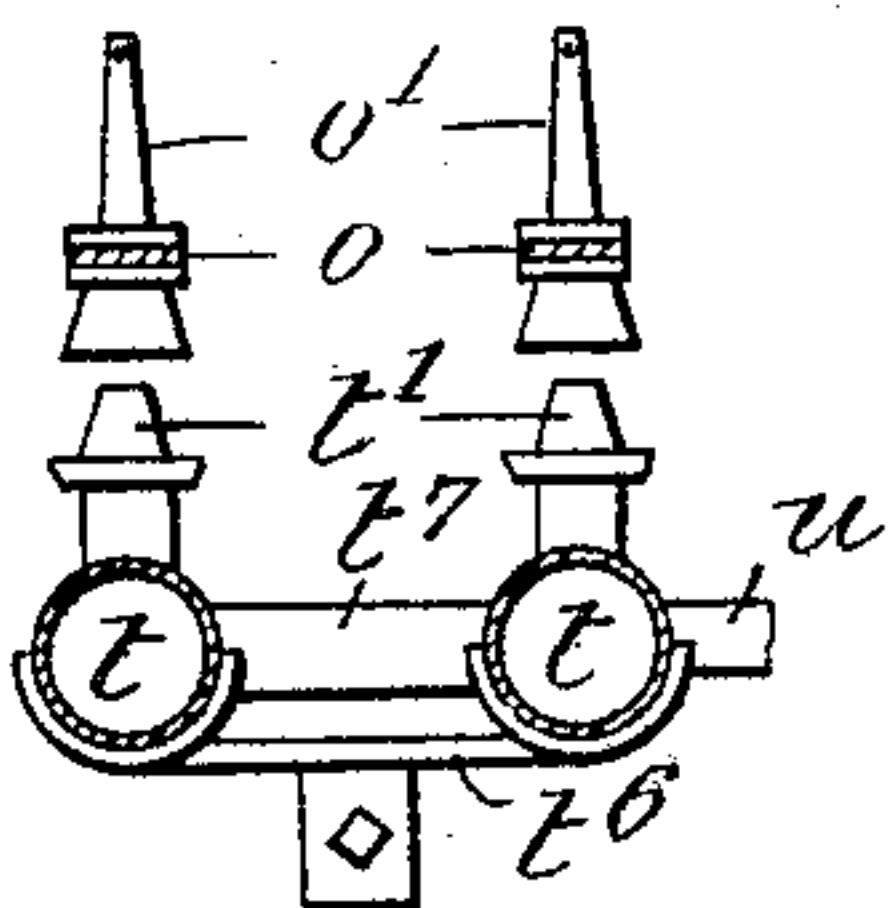
*Fig. 3.*



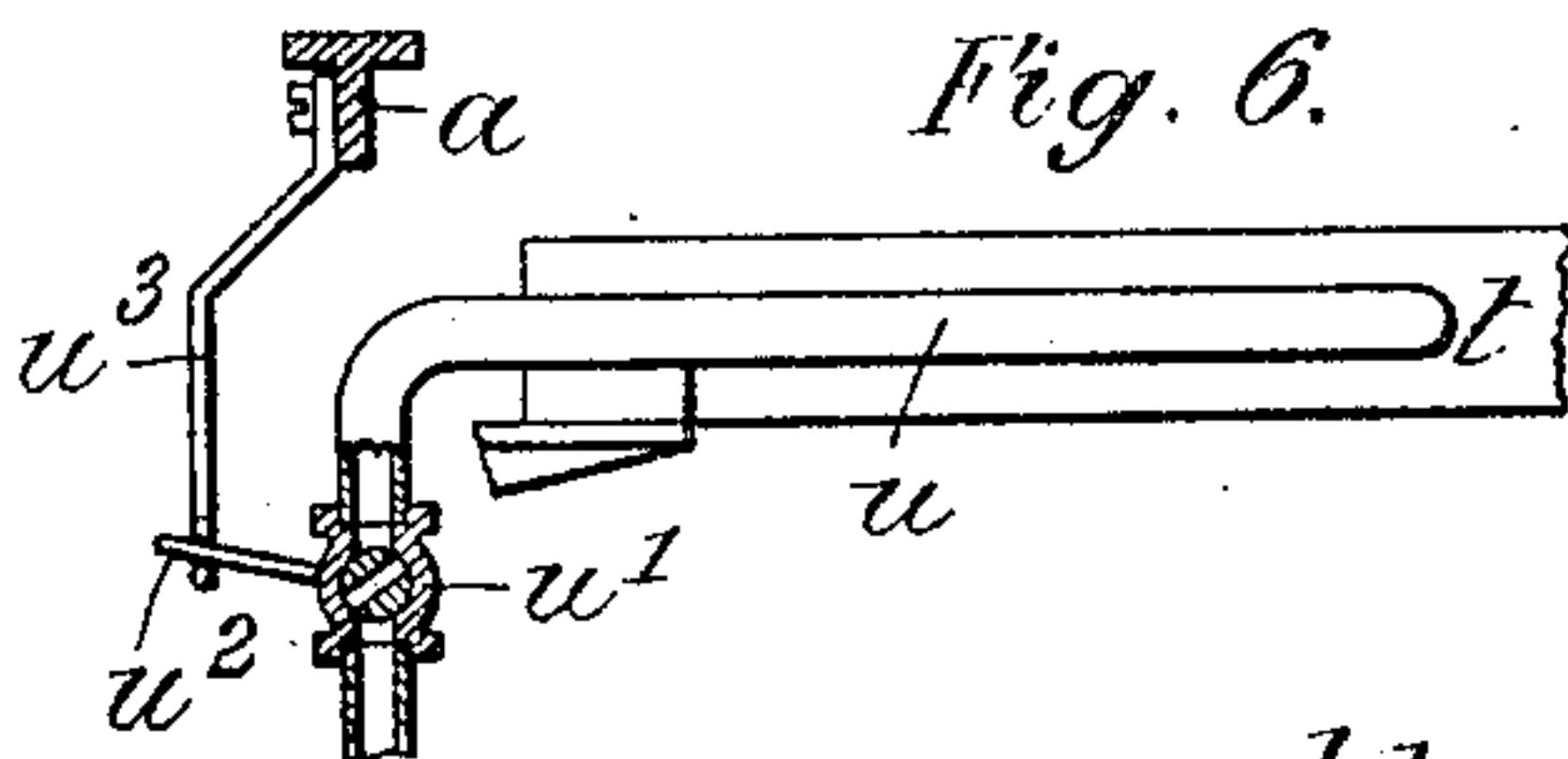
*Fig. 5.*



*Fig. 4.*



*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

JOHN A. PRINCE, OF NEW YORK, N. Y.

## BOTTLE-WASHING MACHINE.

No. 804,170.

Specification of Letters Patent.

Patented Nov. 7, 1905.

Original application filed November 29, 1904, Serial No. 234,753. Divided and this application filed March 3, 1905. Serial No. 248,230.

*To all whom it may concern:*

Be it known that I, JOHN A. PRINCE, a citizen of the United States, residing at New York city, Manhattan, county and State of New York, have invented new and useful Improvements in Bottle-Washing Machines, (which is a division of application filed November 29, 1904, under Serial No. 234,753), of which the following is a specification.

This invention relates to an improved machine for washing bottles, and more particularly to improved means for rinsing the bottles after the same have been washed and scrubbed.

In the accompanying drawings, Figure 1 is a side elevation of my improved bottle-washing machine; Fig. 1<sup>a</sup>, a detail of the clutch-operating means; Fig. 2, a plan of the machine; Fig. 3, a detail of the rinsing mechanism; Fig. 4, a cross-section on line 4-4, Fig. 3; Fig. 5, an enlarged detail of one of the rinsing-nozzles, and Fig. 6 a detail of the water-inlet pipe and cock.

The letter *a* represents the frame of the machine, in which are journaled a pair of transverse shafts *l m*, carrying sprocket-wheels *l' m'*. These wheels are engaged by a pair of endless parallel roller feed-chains *n*, the upper runs of which travel on rail *a<sup>5</sup>*, Fig. 3. The chains *n* are connected at suitable intervals by transverse perforated bars *o*, in which are fitted a series of nozzles *o'*, having lower flaring ends *o<sup>2</sup>*, Fig. 5.

Intermittent movement is imparted to shaft *m*, and consequently to feed-chains *n*, from counter-shaft *p* by crank *p'* and rod *p<sup>2</sup>*, pivoted to lever *p<sup>3</sup>*. This lever turns on shaft *m* and has a pawl *p<sup>4</sup>*, engaging a ratchet-wheel *m<sup>2</sup>*, fast on such shaft. Thus each revolution of shaft *p* will turn wheel *m<sup>2</sup>* for the length of one tooth and will correspondingly advance chain *n* and nozzles *o'*. The movement of chains *n* is controlled by a treadle *q*, by the depression of which the counter-shaft *p* is operatively connected to a driving-shaft *r*, while the counter-shaft is automatically disconnected therefrom upon one complete rotation of the former. The means for effecting this result are as follows: Upon driving-shaft *r* turns loose driving-pulley *r'*, that may be coupled thereto by clutch *r<sup>2</sup>*. This clutch is operated by a bent shipping-lever *q'*, fulcrumed at *q<sup>2</sup>* and connected by rod *q<sup>3</sup>* to treadle *q*, Fig. 1<sup>a</sup>. The shaft *r* is intergeared with arbor *s* by wheels *r<sup>3</sup> s'*, while arbor *s* is operatively connected to shaft *p* by chain *s<sup>3</sup>*, passing

over wheels *s<sup>2</sup> p<sup>5</sup>* of like size. On arbor *s* is mounted a disk *s<sup>4</sup>*, having nose *s<sup>5</sup>*, adapted to engage a collar *r<sup>4</sup>* of clutch *r<sup>2</sup>*. When the treadle *q* is depressed, the shipping-lever *q'* will move clutch *r<sup>2</sup>* to the right, and thereby couple pulley *r'* to shaft *r*. In this way motion will be transmitted from shaft *r* through wheels *r<sup>3</sup> s'*, arbor *s*, and chain *s<sup>3</sup>* to shaft *p*. On each complete rotation of shaft *s*, and consequently of shaft *p*, the nose *s<sup>5</sup>* will open clutch *r<sup>2</sup>* to arrest shaft *r*, and thereby stop shaft *p*.

The flaring lower ends *o<sup>2</sup>* of nozzles *o'* are adapted to receive tapering nipples *t'*, projecting upwardly from a pair of transverse water-supply pipes *t*. These pipes are vertically movable, so that when raised their nipples will project into two transverse rows of nozzles, while when the pipes are lowered their nipples will clear the nozzles and permit the chains to be moved. To alternately raise and lower the pipes *t*, there are mounted upon shaft *p* a pair of cams *p<sup>6</sup>*, engaged by rollers *t<sup>2</sup>*, journaled in the lower forked ends *t<sup>3</sup>* of lifters *t<sup>4</sup>*. These lifters are vertically movable in bearings *t<sup>5</sup>* and carry brackets *t<sup>6</sup>*, to which the pipes *t* are attached. Thus it will be seen that each rotation of shaft *p* will cause a complete reciprocating movement of pipes *t*.

The pipes *t* communicate with each other by branches *t<sup>7</sup>*, and one of the former receives rinsing-water by inlet-pipe *u*, which rises and falls with pipes *t*. The cock *u'* of pipe *u* is automatically opened when pipes *t* are raised and closed when the pipes are lowered. To produce this result, a handle *u<sup>2</sup>* of cock *u'* passes through an eye in the lower end of a fixed arm *u<sup>3</sup>*, depending from frame *a*. When the pipe *t*, and consequently the pipe *u*, is raised, the engagement of handle *u<sup>2</sup>* with arm *u<sup>3</sup>* will open cock *u'*, while upon a descent of the pipes the cock will be closed.

In use the washed and scrubbed bottles *A* are placed in suitable manner upon the right-hand upwardly-extending transverse row of nozzles *o'*. By depressing treadle *q* the feed-chains *n* are advanced for a distance equal to the distance between a pair of adjoining bars *o*. After this advance has taken place the chains will be automatically arrested by the operation of the clutch-opening nose *s<sup>5</sup>*. Thus the successive depressions of treadle *q* will intermittently advance the bottles mounted upon nozzles *o'*. Each operation of treadle *q* will also by cam *p<sup>6</sup>* elevate pipes *t* and raise their nipples *t<sup>2</sup>* into engagement with the flaring ends *o<sup>2</sup>* of those two rows of nozzles *o'* which



are in vertical alinement with the nipples. The raising of pipes  $t$  will simultaneously open cock  $u'$  by arm  $u^3$  and handle  $u^2$ . In this way jets of rinsing-water are squirted  
5 into the bottles to finish the washing operation. The clean bottles are carried by nozzles  $o'$  over a conveyer  $v$ , upon which they drop, Fig. 1, and which transports them to the bottling-department or other destination  
10 desired.

What I claim is—

1. A bottle-washing machine provided with a pair of feed-chains, transverse connecting-bars, nozzles mounted on the bars and adapted to engage the bottles, means for intermit-  
15 tently advancing the feed-chains, vertically-movable nipples adapted to engage the nozzles, and means for admitting water to the nipples, substantially as specified.

20 2. A bottle-washing machine provided with a pair of feed-chains, transverse connecting-bars, nozzles mounted on the bars and adapted

ed to engage the bottles, means for intermittently advancing the feed-chains, a vertically-movable supply-pipe, and nipples on said pipe  
25 adapted to engage the nozzles, substantially as specified.

3. A bottle-washing machine provided with a pair of feed-chains, transverse connecting-bars, nozzles mounted on the bars and adapted to engage the bottles, means for intermit-  
30 tently advancing the feed-chains, a vertically-movable supply-pipe, nipples on said pipe adapted to engage the nozzles, a water-inlet pipe movable with the supply-pipe, a cock in  
35 the inlet-pipe, and an arm engaging the cock, substantially as specified.

Signed by me at New York city, (Manhattan,) New York, this 2d day of March, 1905.

JOHN A. PRINCE.

Witnesses:

FRANK V. BRIESEN,  
WILLIAM SCHULZ.