C. W. HAMANN.

BOTTLE WASHER.

APPLICATION FILED AUG. 26, 1910.

995,596.

Patented June 20, 1911.

4 SHEETS—SHEET 1.

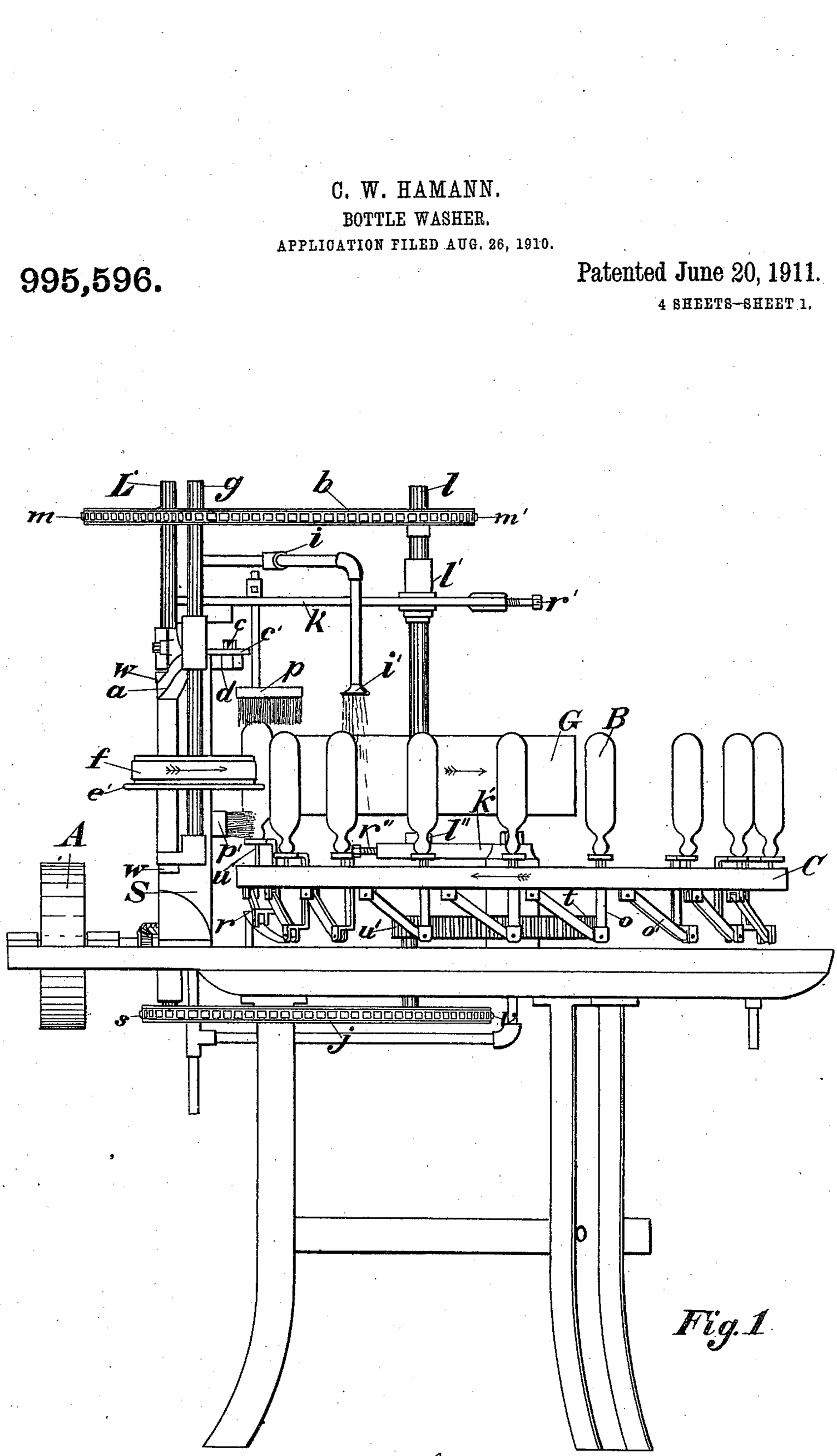

Fig. 1.

WITNESSES:

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4 SHEETS—SHEET 2.

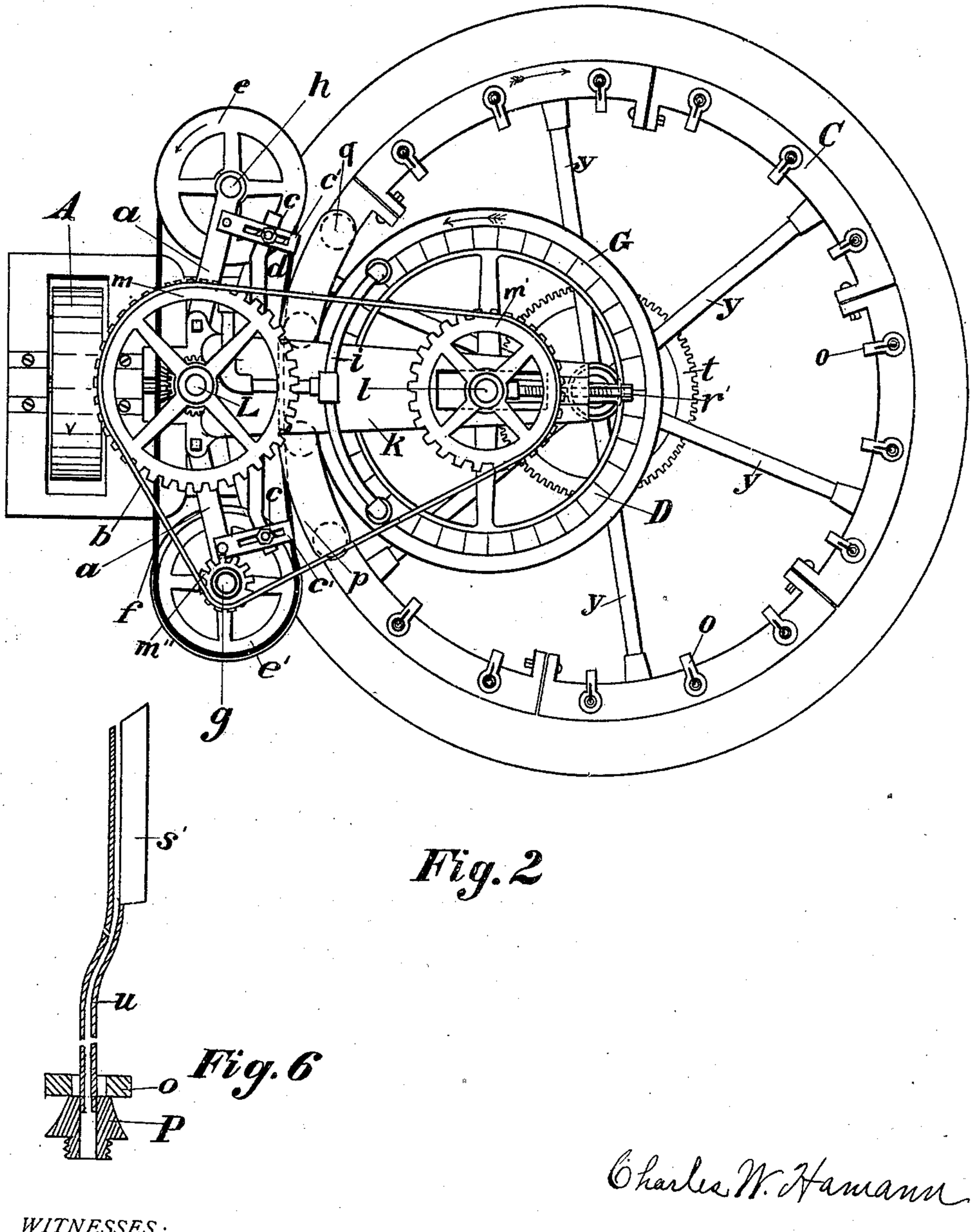

Fig. 2

Fig. 6

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4 SHEETS—SHEET 3.

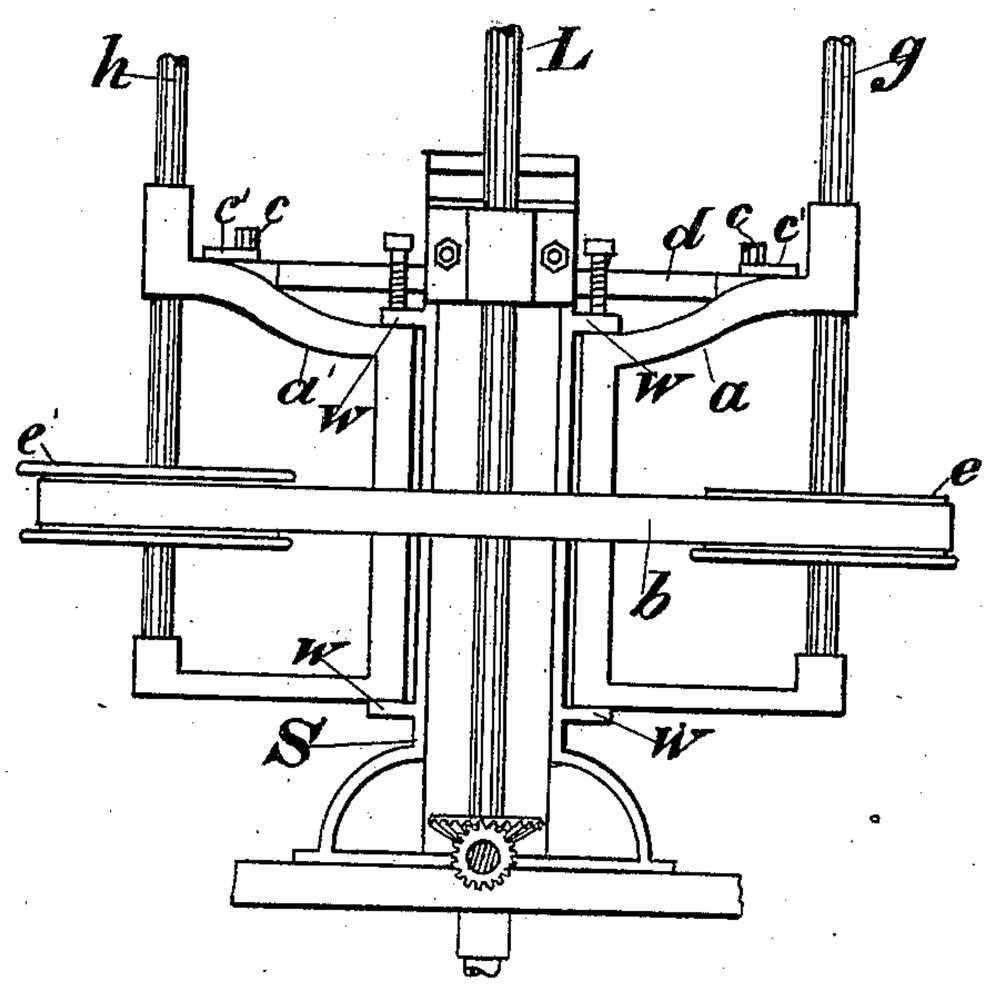

Fig 3

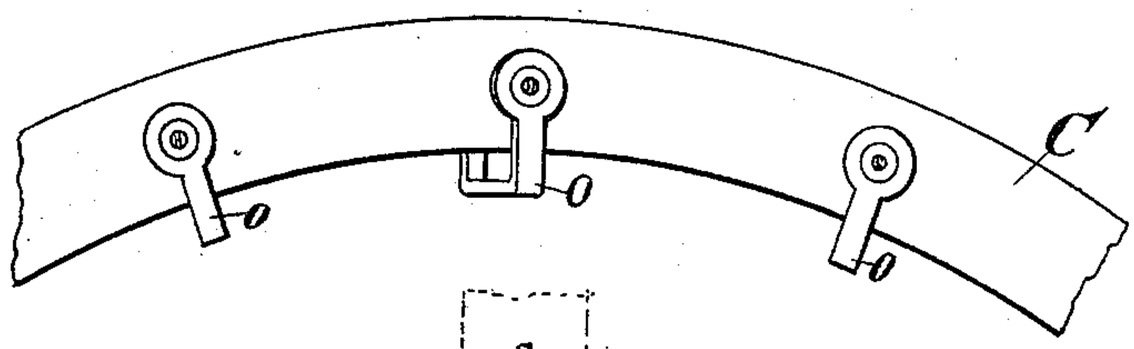

Fig. 4

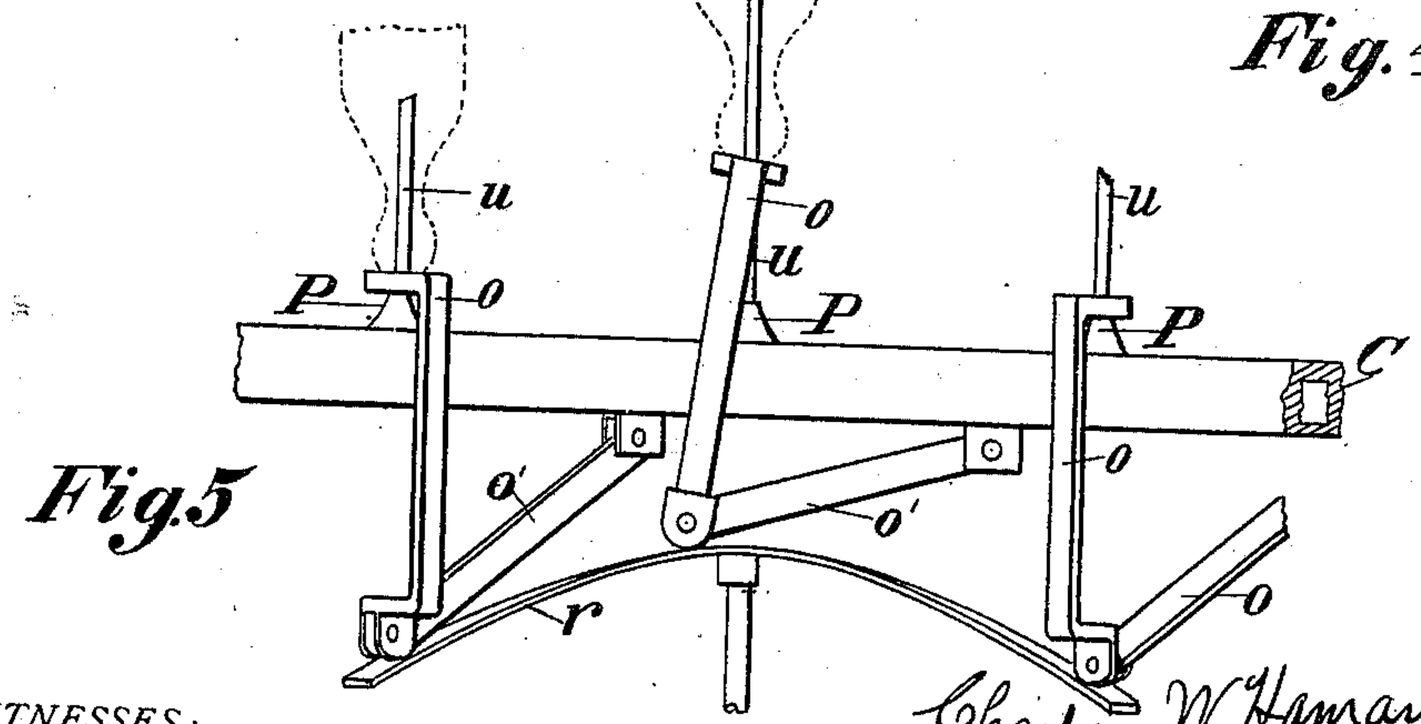

Fig.5

WITNESSES:

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4 SHEETS—SHEET 4.

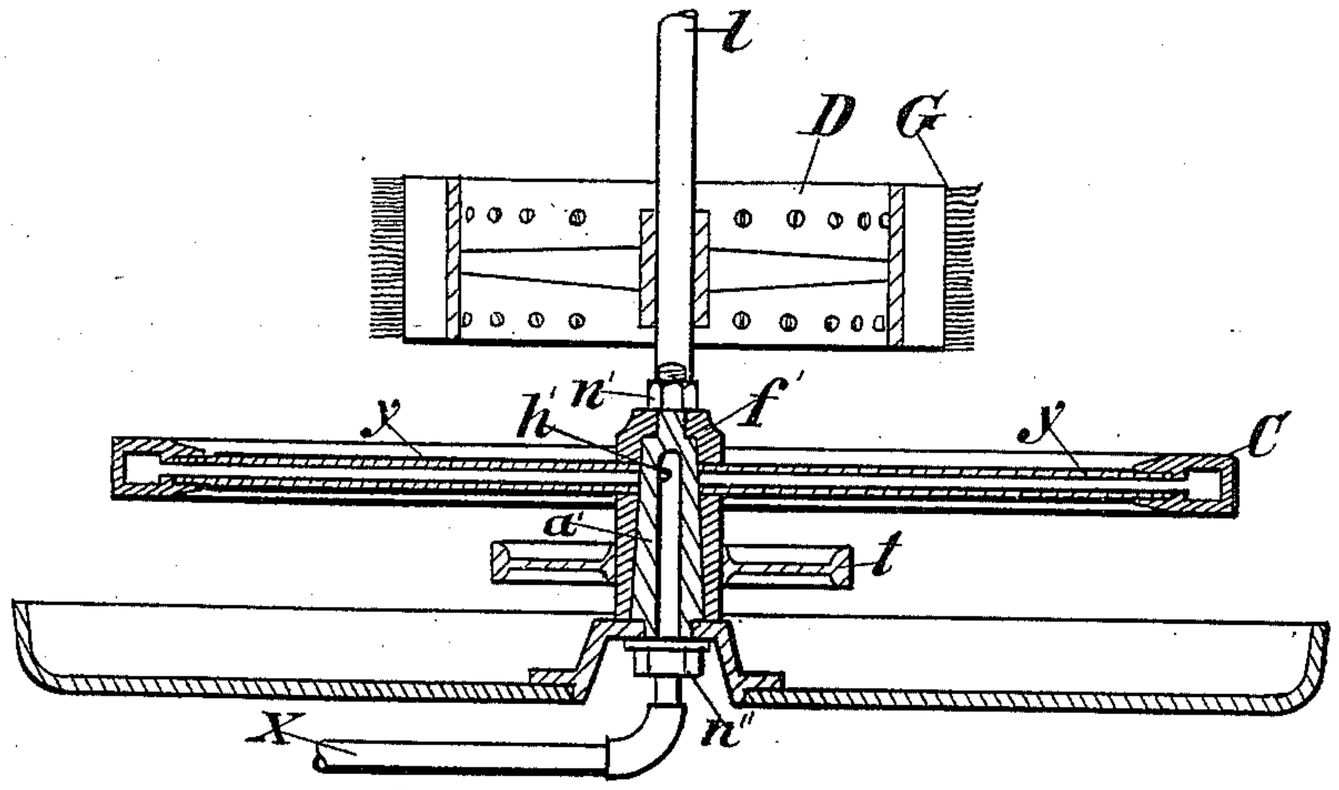

Fig. 7.

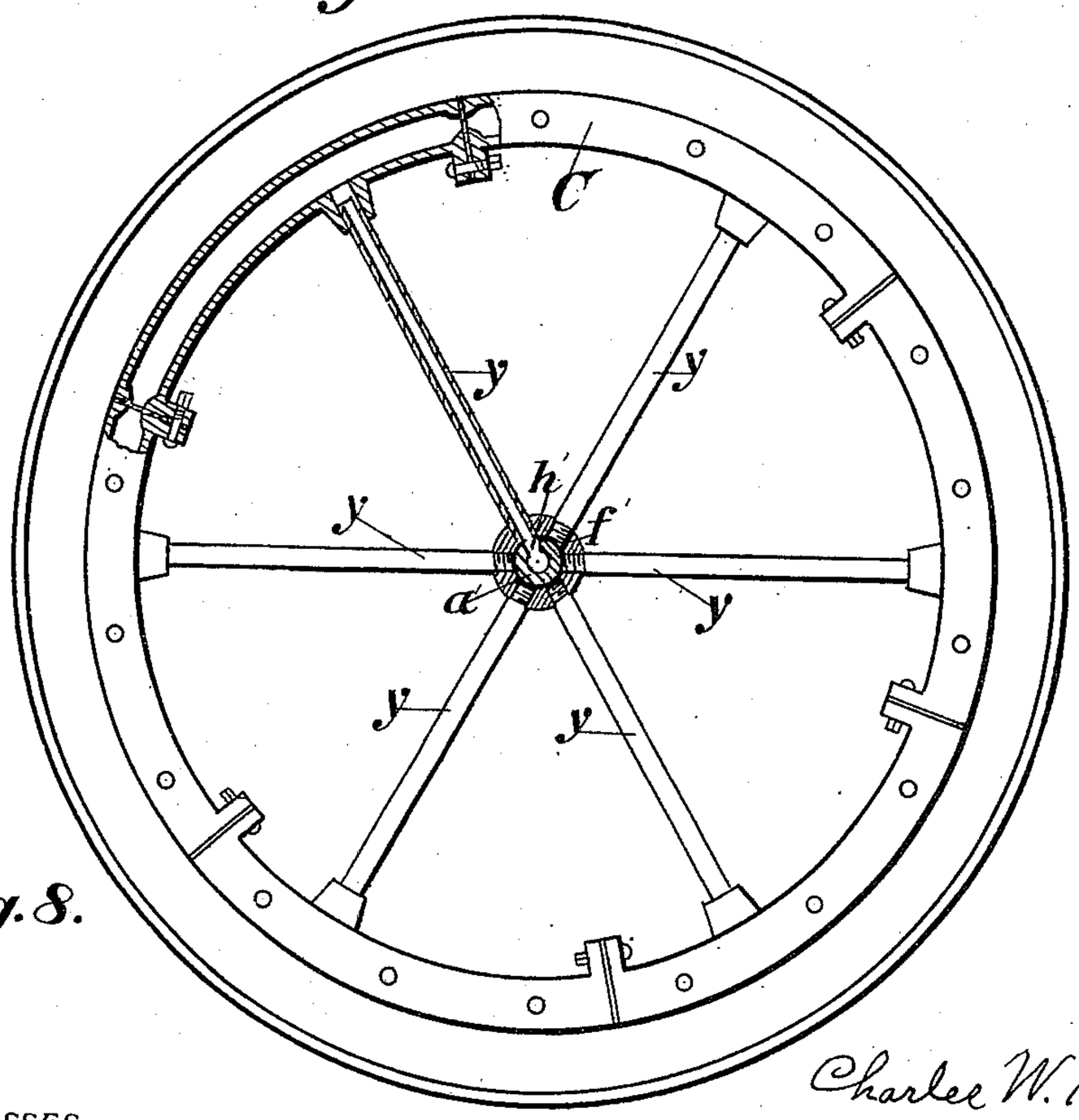

Fig. 8.

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UNITED STATES PATENT OFFICE.

CHARLES W. HAMANN, OF CAMPGAW, NEW JERSEY.

BOTTLE-WASHER.

995,596. Specification of Letters Patent. Patented June 20, 1911.

Application filed August 26, 1910. Serial No. 579,089.

To all whom it may concern:

Be it known that I, CHARLES W. HAMANN, citizen of the United States, residing at Campgaw, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Bottle-Washers, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of my invention is to provide a machine for washing bottles, cleansing and rinsing them both inside and outside and my present invention is an improvement upon the machine formerly invented by me and described in United States Letters Patent No. 499,021, dated June 6, 1892.

My present invention consists in the novel construction, combination and arrangement of the various devices hereinafter more particularly described and pointed out in the claims, reference being had to the accompanying drawings in which:—

Figure —1— is a side elevation of my improved bottle washing machine showing bottles in position; Fig. —2— is a plan with the bottles removed; Fig. —3— is a rear elevation of the main standard, main shaft —L— and shafts —*h*—*g*— showing adjustable bearing brackets —*a*—*a'*—; Fig. —4— is a plan and Fig. —5— an elevation of part of the sectional carrier-ring —C— and the jiggers —*o*—. Fig. 6 is a sectional view of one of the scraper-carrying tubes. Fig. —7— is a sectional view showing drum with cleansing material and means for admitting water to the ring sections in succession and Fig. —8— is a plan view, partly sectional, showing means for admitting water to the ring sections in succession.

The shafts —L— —*g'*— are connected by means of a sprocket chain —*b*— passing over gear or sprocket wheels —*m*—*m'*— and —*m''*—. Pulleys —*e*— and —*e'*— are connected by means of a flat rubber belt —*f*—. The shaft —*l*— is adjustable in slots in the arms —*k*— and —*k'*— by means of the sliding bearing-blocks —*l'*— and —*l''*— and the screw bolts —*r'*—*r''*—. The drum —D— is fastened to the shaft —*l*—, the cylindrical surface of same being covered with a mat of bristle —G— or other substance.

The bearing brackets —*a*— and —*a'*— are swung on pivots in lugs —*w*— projecting from the main standard —S— as shown in Fig. —3— and are adjustable by means of the slotted pieces —*c'*—, said slotted pieces being held in position by means of the nuts —*c*— against the rigid arm —*d*—.

By reason of the above mentioned adjustable shaft —*l*— slotted arms —*k*—*k'*—, the sliding blocks —*l'*—*l''*— and the screw bolts —*r'*—*r''*— as well as the bearing brackets —*a*—*a'*— adjustable by means of the slotted pieces —*c'*—, and the arrangements of the shafts, pulleys and driving means, not only are the drum shaft and the pulley shafts driven from the main shaft as stated, but may be so adjusted that the cleansing elements may be arranged to clean bottles of various sizes. This could not be done by the device described and shown in my patent above referred to, as the drum shaft and pulley shafts were mounted in bearings that were not adjustable.

Motion is imparted to the main shaft —L— by means of the pulley —A— and the bevel gears at the end of the shaft of said pulley —A—. The revolving gear wheel —*m*— and the chain —*b*— which connects the same with the gear wheels —*m'*— and —*m''*— causes the drum —D— and the pulley-wheel —*e'*— to revolve. The gear wheel —*m''*— and the pulley-wheel —*e'*— is secured to the shaft —*g*—. The revolution of the pulley —*e'*— imparts motion to the pulley —*e*— by means of the flat rubber belt —*f*— which passes around both said pulleys. By means of the gears —*s*— and —*v*—, and the sprocket chain —*j*— which passes around the same, together with the intermeshing gears —*u'*— and —*t*—, a rotary motion is imparted to the hollow sectional ring —C—.

In my previous Patent, No. 499,021, hereinbefore referred to, the water was allowed to flow from a supply pipe up into a vertical cock upon which was mounted the hub of a horizontal wheel. There were openings in said cock lying in the same horizontal plane with and arranged so as to be connected at regular intervals with openings in the hub connecting with hollow spokes which support the hollow ring or rim which was made in sections, each spoke leading to a separate section. Arranged upon the rim were bottle receiving tubes connecting each section and these tubes were provided with collars resting on springs. From the tubes projected small bent pipes having openings and provided with scrapers.

In my present invention the water is ad-

mitted practically in the same manner, but I have substituted hollow screw plugs into which the scraper carrying bottle receiving tubes are secured, said plugs being screwed into the rim.

The bottle washer described in my patent referred to shows a curved brush. This brush, also the bottle receiving tubes provided with collars, actuated by springs, upon which said collars rested, as shown in said patent, have been done away with.

In my improved bottle washer herein described I employ a jigger to give the bottles a rising and falling vertical movement during the revolution of the ring —C—. Thus the bottles carried by the revolving ring —C— are caused to revolve on the scraper carrying bottle receiving tubes —*u*— which form an axis for each bottle, the belt —*f*— revolving the bottles thus the bottles are brought into contact with the cleaning devices —*p*—. —*p'*—. —G—, and —*s'*—, as shown. During the revolution of the ring —C— the brush —G— on the drum —D— is being moistened by water from the nozzle —*i'*— of the pipe —*i*—, and water is being admitted from the supply pipe —X— into the hollow axis —*a'*— from which it passes through the opening —*h'*— to the hollow spokes —*y*—, successively entering each section of the ring —C— and passing up through the hollow screw-plugs —P— and the scraper carrying bottle receiving tubes —*u*— to the interior of the bottles.

The bottles —B— rest on the ring forming part of the jigger —*o*—, said jigger —*o*— consisting of two arms joined together as shown in Fig. —5—. When the ring —C— in its revolution carries each jigger —*o*— successively to a point near the main standard —S— the bottom of said jigger encounters a stationary cam-plate —*r*— which causes said jigger —*o*— to rise, carrying bottles —B— with it as shown in Figs. —4— and —5—, thus forcing the bottoms of said bottles in contact with the brush —*p*— and the necks in contact with the brush —*p'*—. As the bottles —B— are carried around on the ring —C—, the sides of said bottles are brought in contact with the brush-surface —G— of the drum —D— and the flat belt —*f*—, the former cleaning the sides of said bottles while the latter causes them to revolve on the scraper tube —*u*— as an axis. Each scraper-carrying tube —*u*— is provided with a scraper *s'*. The brush —G— on the drum —D— is moistened by water delivered through the pipe —*i*— and the nozzle —*i'*—. The dotted circles —*q*— represent bottles which are passing under the brush —*p*— and in contact with the belt —*f*— and the mat —G— which covers the cylindrical surface of the drum —D—.

With this description of my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a bottle washer, a hollow sectional ring, in combination with a series of jiggers, each jigger being provided at its upper extremity with a bottle supporting ring, a series of scraper-carrying bottle receiving tubes, each adapted to pass through the ring of a jigger and be secured to said hollow sectional ring, means for imparting a rotary motion to said ring and means for causing said jiggers to rise and fall successively during the revolution of said ring, substantially as set forth.

2. In a bottle washer, a main standard, and bottle carriers, in combination with a drum, provided with a cylindrical brushing surface and mounted on a shaft, adjusting arms and sliding bearing-blocks for said shaft, two adjustable bearing brackets, a shaft and pulley mounted in each of said brackets, a driving belt passing around said pulleys and means whereby the drum shaft and pulley shafts are driven from the main shaft, substantially as set forth

3. In a bottle washing machine, a hollow sectional ring provided with a series of hollow plugs having bottle receiving tubes extending therefrom, an adjustable drum mounted eccentrically to said ring and adapted to bear against the sides of the bottles placed over said tubes adjacent thereto, a belt, arranged to bear against the opposite side of bottles, means for adjusting said belt according to the size of the bottles, means for revolving said drum and ring and running said belt, and connections whereby water is admitted to successive sections of said ring, substantially as set forth.

4. In a bottle washing machine, a hollow sectional ring provided with a series of hollow plugs having tubes extending therefrom, an adjustable drum mounted eccentrically to said ring and adapted to bear against the sides of the bottles placed over said tubes adjacent thereto, means for adjusting said drum according to the size of the bottles, a belt arranged to bear against the opposite side of said bottles, means for adjusting said belt according to the size of said bottles, a brush supported above the same, a sprinkling pipe, means for revolving said drum and ring and running said belt and connections whereby water is admitted to successive sections of said ring, substantially as set forth.

5. In a bottle washing machine, the combination with a main standard of three shafts, adjustable bracket-bearings, and an adjustable belt regulated thereby to bear against sides of bottles, a drum provided upon its cylindrical surface with a cleansing material, adjustable sliding bearings for shaft of said drum, a hollow sectional ring provided with a series of hollow plugs hav-

ing tubes extending therefrom, and scrapers secured to said tubes, said ring and drum being mounted eccentrically to each other, means for revolving said drum and ring and running said belt, connections whereby water is supplied to the successive sections of said ring, a series of jiggers pivotally secured to said hollow ring, the free end of each jigger being provided with a ring adapted to surround the scraper carrying tube extending from said hollow plugs and forming a seat for the head of the inverted bottle, a stationary arc-shaped cam-plate secured to the main standard and in the path of said jiggers and over which said jiggers are adapted to ride successively and raise and lower said bottles into and out of contact with side and upper brushes, substantially as set forth.

6. In a bottle washing machine, the combination with a hollow sectional ring provided with a series of hollow plugs having tubes extending therefrom and scrapers secured to said tubes, of a series of jiggers pivotally secured to said hollow ring, the free end of each jigger being provided with a ring adapted to surround the scraper carrying tube extending from said hollow plugs and forming a seat for the head of the inverted bottle, a stationary arc-shaped cam-plate, secured to the main standard and in the path of said jiggers and over which said jiggers are adapted to ride successively and raise and lower said bottles, a drum mounted eccentrically to said ring, having upon its cylindrical surface a cleansing material, a belt adapted to bear against sides of bottles, means for adjusting said belt, and regulating the friction thereof, means for adjusting said drum and regulating the friction thereof, stationary brushes, means for supplying water to the bottles and cleansing devices, and means for revolving said drum and ring and running said belt, substantially as set forth.

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

CHARLES W. HAMANN.

Witnesses:

JOHN F. KERR,

JENNETTE PEAL.