Dec. 29, 1931. A. GRIFFITHS 1,838,940

MACHINE FOR WASHING TUMBLERS AND LIKE LIQUID RECEPTACLES

Filed Aug. 19, 1929 2 Sheets-Sheet 1

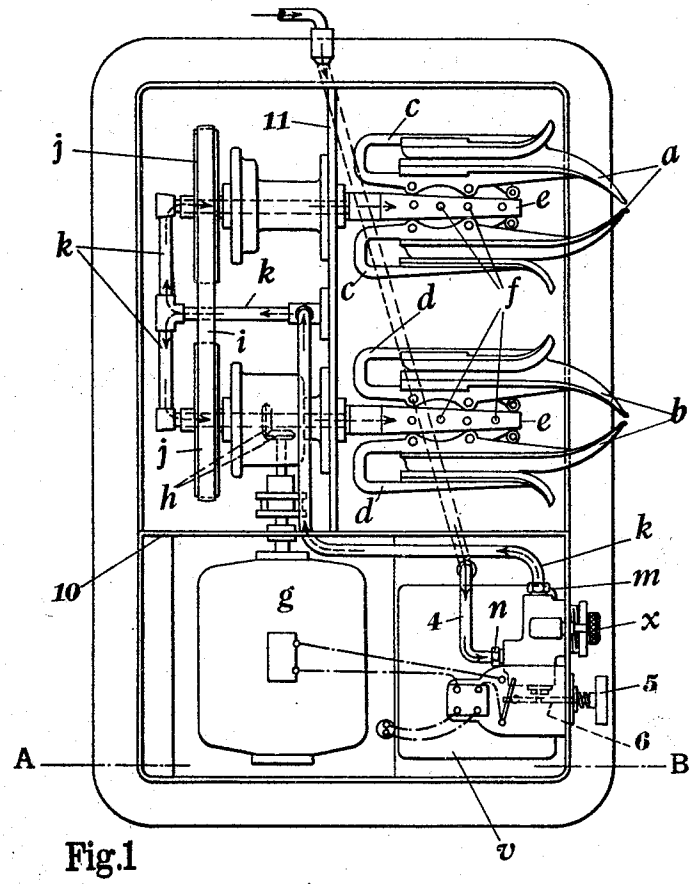



Fig.1

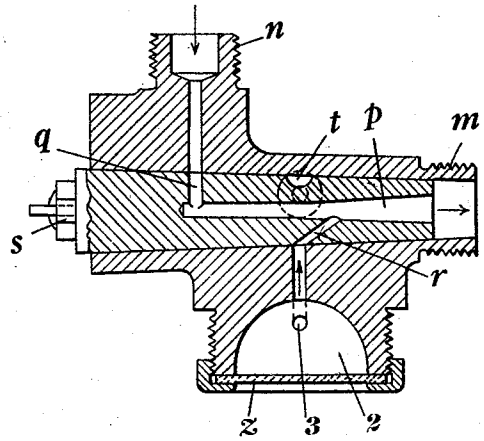



Fig.5

A. Griffiths INVENTORS

By: Marks & Clerk Attys.

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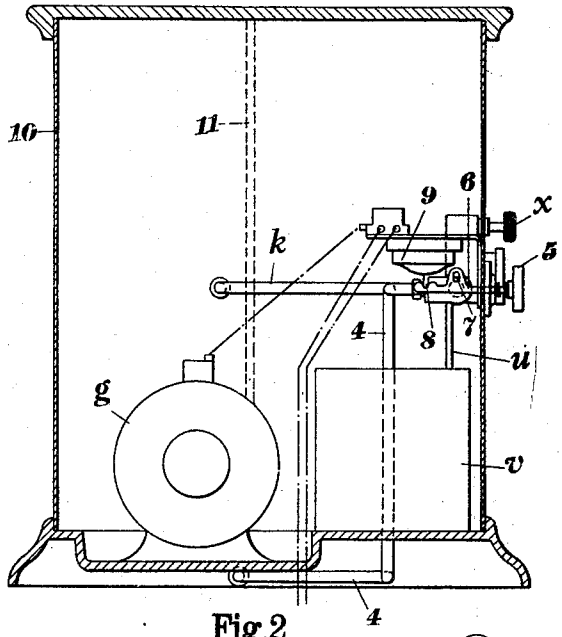



Fig.2

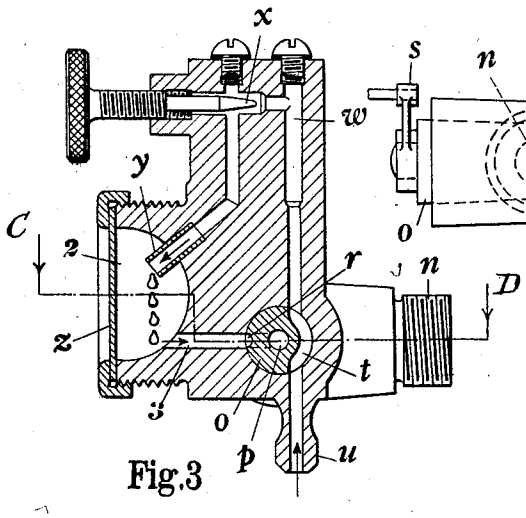



Fig.3

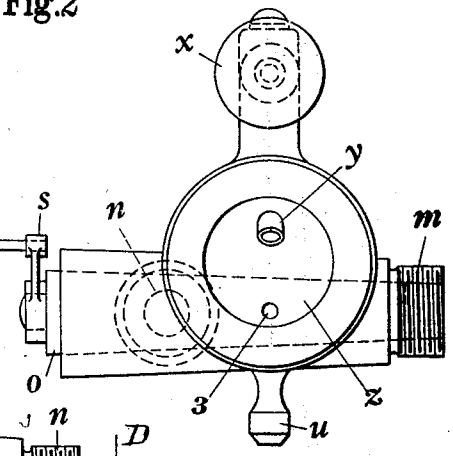



Fig.4

A. Griffiths, INVENTORS

By: Marks & Clerk Attys

Patented Dec. 29, 1931

1,838,940

# UNITED STATES PATENT OFFICE

ALFRED GRIFFITHS, OF LONDON, ENGLAND, ASSIGNOR TO KLEENGLAS (1929) LIMITED, OF LONDON, ENGLAND

## MACHINE FOR WASHING TUMBLERS AND LIKE LIQUID RECEPTACLES

Application filed August 19, 1929, Serial No. 386,672, and in Great Britain January 3, 1929.

This invention relates to machines for washing tumblers (or drinking glasses), cups and like hollowware (hereinafter referred to as tumblers for convenience of reference), and more particularly to the means by which a liquid disinfectant is added in small proportions to the water by which the washing is effected.

The object of my present invention is to provide simple and efficient means for proportioning the disinfectant to the water and controlling the supplies of water and disinfectant.

The invention comprises the provision of means whereby the washing water is caused to create a vacuum in a sight feed device in order to draw disinfectant through it at a predetermined rate.

The invention further comprises the arrangement of a plug cock for controlling the flow of the washing water, the introduction of the disinfectant to such washing water and the supply of disinfectant to the sight feed device.

The invention further comprises the provision of means for the simultaneous control of the said plug cock and of the electric motor driving the tumbler washing devices.

Referring to the accompanying explanatory drawings:—

Figure 1 is a plan view of a machine embodying my improvements.

Figure 2 is a vertical sectional view on the line A B of Figure 1.

Figure 3 is a vertical sectional view, Figure 4 a front elevation and Figure 5 a horizontal sectional view along the line C D Figure 3 of the washing water and disinfectant control means drawn to a larger scale than in Figures 1 and 2.

The same reference letters in the different views indicate the same parts.

The means for washing the tumblers may be similar to those described in the specification of my prior application for patent, Ser. No. 376,645, and comprise squeegees *a*, *b*, carried in U shaped members *c*, *d* attached to stems *e* having holes *f* therein through which the washing water issues. The stems are rotated by an electric motor *g* which may drive one stem through bevel gears *h*, the two stems being coupled by a belt *i* upon pulleys *j*. Liquid is delivered to the interior of the stems by the pipes *k* which are supplied by the ejector fitting shown in Figures 3, 4 and 5. The pipe *k* is attached to such fitting at *m* and the supply of liquid to the fitting is by way of the branch *n*. The interior conical part *o* of the fitting has a divergent passage *p* therein with two branch passages *q* and *r* leading therein. The conical part *o* which constitutes a plug cock is turned by the arm *s*. It has also a groove or channel *t* therein as shown in Figure 3 which can establish communication between a pipe *u* by which disinfectant or sterilizing fluid is raised from a tank *v* and a passage *w* by which such fluid is delivered through a valve *x* to a tube *y* having its delivery behind a glass *z* and in a space 2 which is closed, except for a connection 3 which can be placed in communication with the passage *r* within the cock *o*.

When the cock is in the position shown in Figures 3, 4 and 5, liquid under the pressure in the water supply mains is delivered by the pipe 4 to the branch *n* and so into the divergent passage *p*. The flow of such liquid produces a partial vacuum in the passages *r* and 3 and so in the space 2 behind the glass *z*. This causes disinfectant or sterilizing fluid to be drawn through the tube *y*, valve *x*, passages *w* and *t* and pipe *u* from the container *v*. Such fluid falls in drops between the tube *y* and branch *p*, such drops being visible through the glass *z* and being regulated by the valve *x*. It will be seen that the device comprising the glass *z*, space 2, tubes *y* and 3 and valve *x*, constitutes a sight feed device for the disinfectant. By its aid I obtain a proportioning of disinfectant to water to secure the sterilization of the tumblers or drinking glasses washed by the rotating squeegees *a* and *b* previously referred to.

When the cock *o* is turned by its handle or arm *s* to cut off the water supply, the connection between the passages *r* and 3 and *t* and *w* are also cut off so that fluid ceases to be drawn into the space 2 and to be delivered therefrom to the interior of the cock *o*.

The arm *s* is turned by means of the handle

or knob 5 on the front of the machine, as shown in Figures 1 and 2. Such handle or knob 5 moves a bar 6 which has a slot 7 therein to engage a projecting piece upon the arm *s* and a slot to receive the end of the arm 8 which operates the electric switch 9 controlling the motor *g* so that when the supplies of water and disinfectant are cut off, the motor also stops and the machine comes to rest. Likewise when the machine is started, the water and disinfectant supplies are restored.

The machine as shown in Figures 1 and 2 is divided into three compartments by the division pieces 10 and 11. One compartment contains the motor *g*, the cock *o* and associated control fittings, another compartment the means for driving the stems *e*, and the third compartment the squeegee devices.

I may vary the details of my improved machine to suit requirements.

What I claim is:—

1. In machines for washing tumblers, cups and like hollowware, in combination, rotating heads for cleansing the hollowware, pipes supplying cleansing fluid to such heads, a plug cock having an axial passage through which said fluid flows, a fluid supply passage leading into said axial passage through the wall of the plug cock, a further passage also leading into said axial passage through the wall of the plug, a closed vessel with a transparent part maintained under vacuum by said further passage which leads into the bottom of said vessel, a disinfectant fluid inlet passage leading to the top of the vessel, a valve controlling the flow through said disinfectant fluid inlet passage, a groove in the periphery of said plug cock forming a part of said disinfectant fluid inlet passage, and means for turning said cock to cut off (1) the fluid supply to the axial passage, (2) the connection between the closed vessel and the said axial passage, and (3) the supply of disinfectant fluid to the fluid inlet passage.

2. In a machine for washing tumblers, cups and like hollowware, in combination, rotating heads for cleansing the hollowware, an electric motor for rotating said heads, a switch for said motor, pipes supplying cleansing fluid to such heads, a plug cock with an axial divergent passage therethrough for the flow of such fluid to said heads, a fluid supply passage leading into said axial passage through the body of the plug cock, a further passage also leading into said divergent passage through the body of the plug cock, a closed vessel with a transparent part maintained under vacuum by said further passage which leads into the bottom of said vessel, a disinfectant fluid inlet passage leading to the top of the vessel, a valve controlling the flow through said disinfectant fluid inlet passage into said closed vessel, a groove in the periphery of said plug cock forming a part of said disinfectant fluid inlet passage, a handle for operating said plug cock to control the supply of cleansing fluid and disinfectant and the production of vacuum in the closed vessel and also operatively connected to said switch to control the rotation of the cleansing heads.

In testimony whereof I have signed my name to this specification.

ALFRED GRIFFITHS.