Aug. 13, 1935. P. VERMEIREN 2,011,207

APPARATUS FOR WASHING DRINKING GLASSES AND LIKE ARTICLES

Filed April 30, 1934 2 Sheets-Sheet 1

FIG. 1.

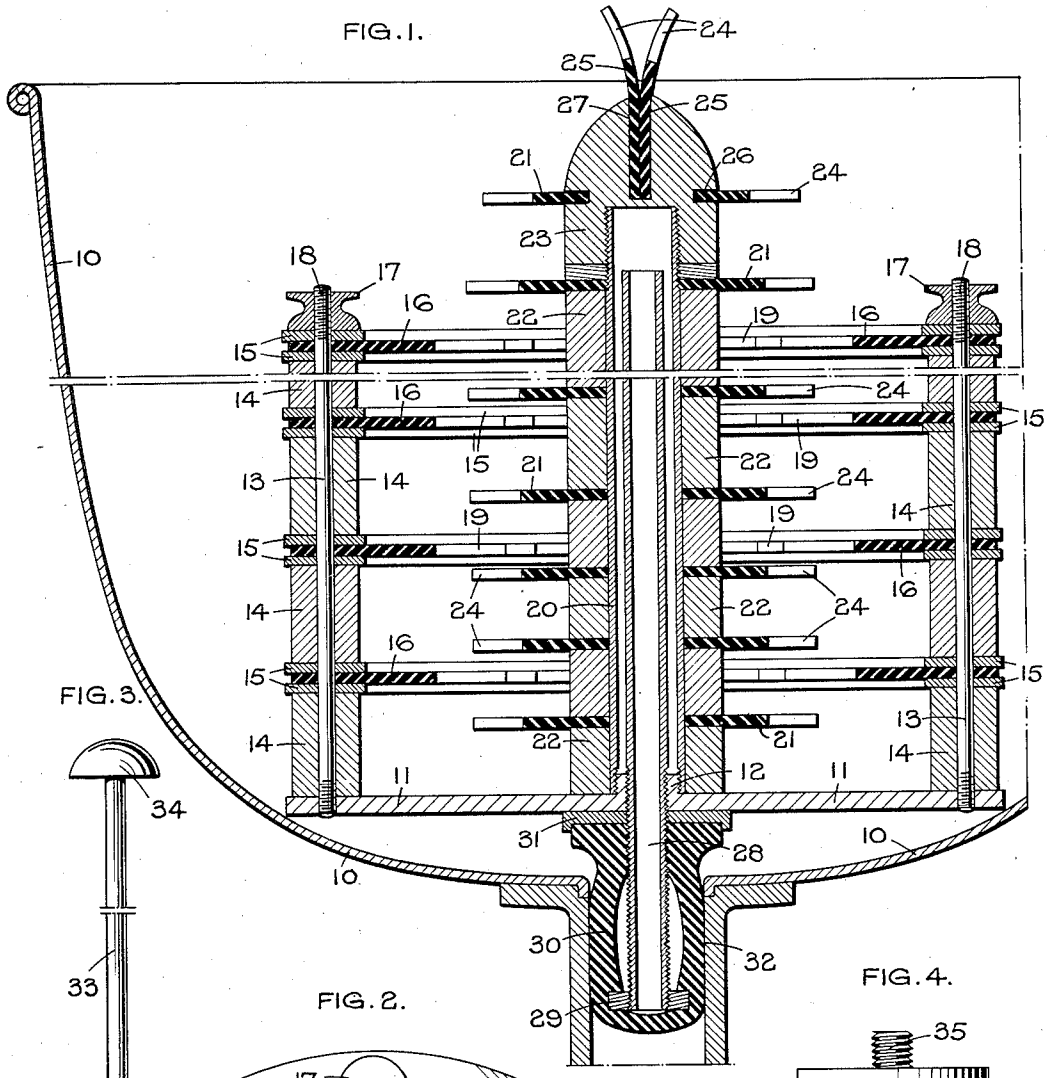


FIG. 2.

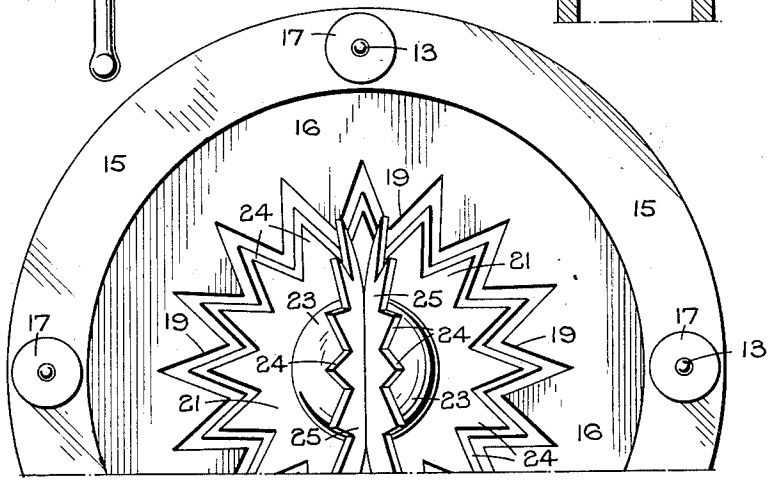
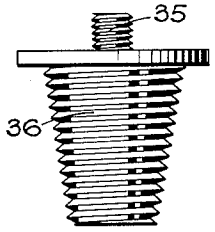


FIG. 4.



PIERRE VERMEIREN
INVENTOR
By Otto Munk
his Atty.

Aug. 13, 1935. P. VERMEIREN 2,011,207

APPARATUS FOR WASHING DRINKING GLASSES AND LIKE ARTICLES

Filed April 30, 1934 2 Sheets-Sheet 2

FIG. 5.

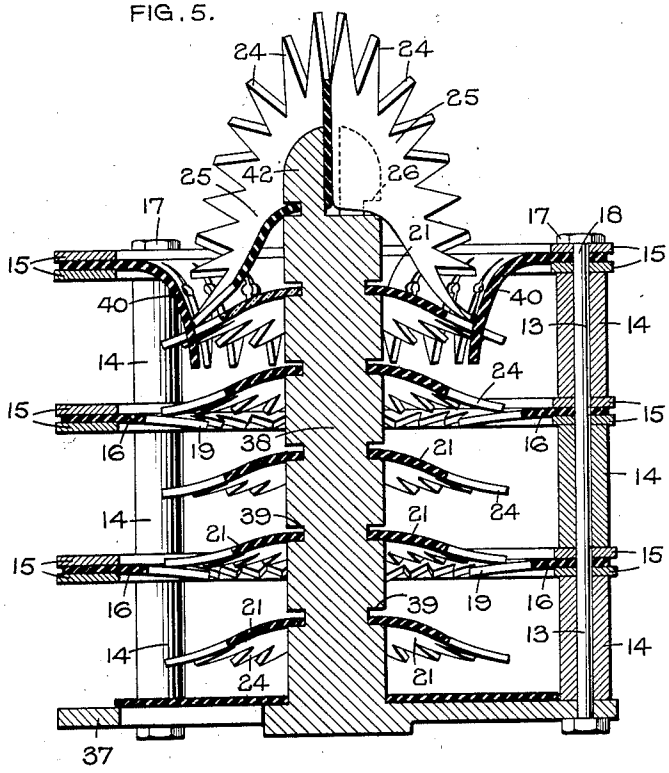


FIG. 7.

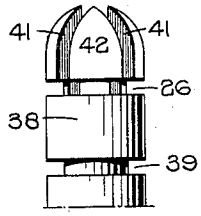


FIG. 8.

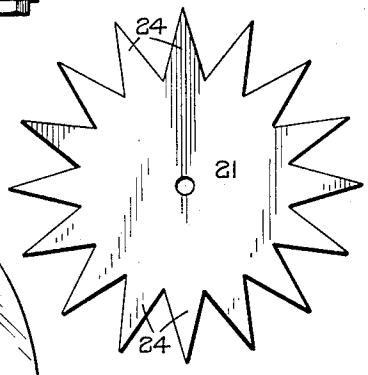
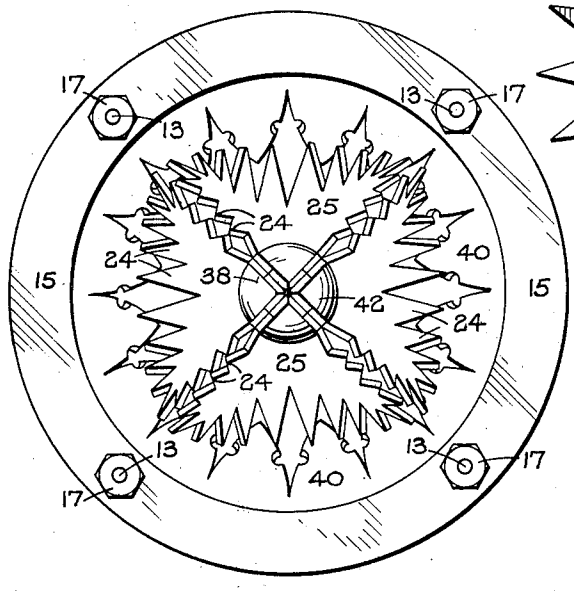


FIG. 6.



PIERRE VERMEIREN
INVENTOR

BY Otto Munk
his Atty.

Patented Aug. 13, 1935 2,011,207

UNITED STATES PATENT OFFICE

2,011,207

APPARATUS FOR WASHING DRINKING GLASSES AND LIKE ARTICLES

Pierre Vermeiren, Brussels, Belgium

Application April 30, 1934, Serial No. 723,098
In Great Britain and Belgium June 22, 1933

10 Claims. (Cl. 15—211)

This invention relates to apparatus for washing drinking glasses and like articles, and the object of the invention is to provide an apparatus for washing such articles rapidly over the whole of the external and/or the internal surface.

Referring to the drawings:—

Figure 1 is a sectional elevational view of one form of washing apparatus according to this invention.

Figure 2 is a partial plan view of same.

Figure 3 is an elevation of an accessory.

Figure 4 shows a modified attachment plug.

Figure 5 is a sectional elevation of a modified washing unit.

Figure 6 is a plan view of same.

Figure 7 is a detail of part of the central shaft of the construction illustrated in Figures 5 and 6.

Figure 8 is a plan view of one of the inner washing elements.

In the construction illustrated in Figures 1 and 2, the apparatus includes a washing unit disposed within a bowl 10, the unit including a base plate 11 in the centre of which is provided a hollow boss 12 externally screw threaded, and near the outer edges of the plate are attached four upwardly projecting pillars or rods 13.

Upon these rods are provided distance pieces 14 and pairs of clamping rings 15 between each of which is provided an outer washing element 16 of annular form and constructed from resilient sheet material such as rubber.

Distance pieces 14 are provided between each pair of clamping rings 15, so that upon the base plate are mounted in spaced relationship outer washing elements each clamped around its peripheral edge between the clamping rings 15 which are clamped upon the elements by means of clamping nuts 17 mounted on the upper screw threaded ends 18 of the rods or pillars 13.

Each outer element is, in the construction illustrated, provided on its inner peripheral edge with teeth 19 projecting inwardly towards the centre of the unit, the free space formed at the centre of these elements 16 being smaller than the diameter of the drinking glasses to be washed, whilst the crowns of the elements extend over a height at least equal to the effective height of the drinking glasses.

Upon the central boss 12 is mounted a central shaft 20 comprising a tube internally screw threaded at one end to engage the external screw thread on the boss 12, the tube being externally screw threaded at its upper or projecting end which extends to a height above the upper ends of the pillars 13.

Upon this central shaft are mounted inner washing elements 21 of disc-like form, these elements being spaced apart by distance sleeves 22, and being clamped in position by means of a removable head 23 having an internally screw threaded opening for engagement with the externally screw threaded portion at the upper end of the shaft 20.

The elements 21 are also formed from resilient sheet material such as rubber, and each is provided at its outer peripheral edge with teeth 24 projecting radially outwards.

The external diameter of the elements 21 is greater than the internal diameter of the glasses to be washed, and these elements 21 are interleaved with the outer elements 16 so that the teeth 19 and 24 do not interfere with one another although they overlap.

The head 23 is rounded at its upper end and is provided with top elements 25 which extend circularly over the top and are adapted to engage and wash the interior of the base of a drinking vessel.

This top is provided with an annular groove 26 and a single groove 27 extending axially over the end of the head between diametrically opposite points of the groove 26.

Two top elements are mounted upon the head, each of these elements comprising a disc of rubber similar to the discs 21, and formed with a central aperture and outwardly projecting teeth 24 at the outer peripheral edge. Each element 25 is mounted upon the head by engaging the central aperture in one half of the groove 26 and entirely along the groove 27, so that whilst each element engages in this groove 27 with the two elements in side by side relationship as shown in Figure 1, the portions of the elements engaging in the two halves of the groove 26 extend away from one another and form in effect the equivalent of one of the elements 21.

Within the tubular boss 12 is mounted an externally screw threaded tube 28, one end of which projects from the underside of the base 11 and engages a washer 29 mounted within a hollow rubber plug 30 provided at that end adjacent the base plate with an expansion plate 31 which also engages the external screw thread on the tube 28.

In order to engage the plug 30 in the outlet pipe 32 of the bowl, the plug is expanded axially to contract the side walls radially, and this is effected by means of a rod 33 of the form illustrated in Figure 3, this rod being inserted down the tube 28 after removing the detachable head

23, sufficient pressure being applied to the knob 34 of the rod to lengthen the plug axially so that it can be slid into the outlet pipe 32.

The pressure on the rod 33 is then removed and the plug allowed to expand radially into engagement with the interior of the outlet pipe, the rod being subsequently removed and the head 23 mounted in position as shown in Figure 1.

The plug can be engaged more positively in the outlet pipe by turning the unit within the bowl about its axis so as to secure the expansion plate 31 with respect to the tube 28 and thereby contract the plug 30 axially and expand it radially.

In Figure 4 is illustrated an alternative form of attachment device comprising a metal plug having an externally screw threaded shank 35 for engagement in the internally screw threaded hole in the boss 12, the plug having a downwardly projecting conical portion 36 for engagement in the outlet pipe.

The screw thread on this cone can be inter-engaged with the outlet pipe by rotating the element with respect to the plug, the screw threaded shank 35 allowing adjustment of the plug with respect to the base 11.

In the modification illustrated in Figures 5 to 7, the unit comprises a base 37 to which are attached pillars 13 provided with distance tubes 16, pairs of clamping rings 15 and outer annular elements 16 substantially as described with reference to Figures 1 and 2.

The elements 16 are again provided with teeth 19 projecting inwardly from the inner peripheral edge, and are clamped in position by means of nuts 17 engaging screw threaded portions 18 at the upper projecting ends of the pillars 13.

The base 37 is provided with an integral upwardly projecting shaft 38 having annular grooves 39 at spaced positions along the length thereof, and in each of these grooves is mounted an inner element 21 of disc-like form and provided with radially projecting teeth 24 as in the previously described construction.

The topmost outer element in this construction is provided with teeth 40 of substantially greater length than the teeth 19, and these teeth 40 extend inwardly and downwardly as shown in Figure 5 to form an inverted conical mouth or aperture into which the edge of the drinking glass is inserted.

At the upper end of the post 38 four top elements 25 are provided, and the post is provided with an annular groove 26 and four grooves or slots 41 spaced apart equally around the circumference of the shaft and each extending from the groove 26 up to the point of the rounded head 42 of the shaft.

Each element 25 is mounted in a quarter of the groove 26, and two of the grooves or slots 41 so that when all four elements 25 are mounted in position, these elements combine to fill up the groove 26, whilst parts of two adjacent elements extend in side by side relationship in each of the grooves or slots 41. The arrangement is similar to that obtaining in the construction illustrated in Figures 1 and 2, with the exception that four elements are provided at the top of the shaft 38, whereas only two elements 25 are provided at the top of the post 20.

With the exception of the elements and the plug 30, the remaining parts or members may be formed from suitable metal such as aluminium or copper, and if desired a plated finish of nickel or chromium may be provided if desired, and the elements 16, 21 and 25 together with the distance sleeves 14 and 22 and the plug 30 are formed from resilient or elastic material such as rubber.

A glass or like vessel to be washed is inverted and inserted mouth downwards over the upper end of the central shaft, the edge of the glass being engaged between the outer edges of the inner elements and the inner edges of the outer elements which engage entirely around the inner and outer circumference of the glass, and this latter can be cleaned over its whole surface by a longitudinal or rotary movement or a combination of these two. It will be appreciated that a suitable washing liquid such as water is provided in the bowl 10, and the washing elements are spaced apart so that the washing liquid shall have free access to the surface of the glass and to the elements themselves.

What I claim then is:—

1. Washing apparatus for glasses and like articles including a central shaft, inner disc elements of resilient sheet material on said shaft, integral teeth projecting from the peripheral edge of each of said elements, outer elements for engaging the exterior of a glass, each of said outer elements being of annular form and extending around said central shaft to engage the whole of the external circumference of the glass and being formed from resilient sheet material, integral teeth projecting from the inner edge of each of said outer elements, a pair of clamping rings for each of said outer elements, and said elements being disposed in spaced relationship to allow access of the washing liquid to the surface of the glass.

2. Washing apparatus for glasses and like articles including a central shaft, inner disc elements of resilient sheet rubber on said shaft, integral teeth projecting from the peripheral edge of each of said elements, outer elements for engaging the exterior of a glass, each of said outer elements being formed from resilient sheet rubber and of annular form, said outer elements extending around said central shaft to engage the whole of the external circumference of the glass, integral teeth projecting from the inner edge of each of said outer elements, the teeth on said inner elements being opposite to the spaces between the teeth on said outer elements, a pair of clamping rings for each of said outer elements, and said elements being disposed in spaced relationship to allow access of the washing liquid to the surface of the glass.

3. Washing apparatus for glasses and like articles including a central shaft, inner disc elements of resilient sheet rubber threaded on said shaft, distance pieces threaded on said shaft to space said inner elements therealong, a rounded head screwing on said shaft, said head having grooves therearound and over the end thereof, top elements of resilient sheet rubber in said grooves and extending over said rounded head, said top elements being engageable with the interior of the base of a glass, and outer elements of resilient sheet rubber for engaging the exterior of a glass, said outer elements being of annular form to extend around said central shaft and said inner elements to engage the whole of the external circumference of the glass and teeth on the operative edges of said elements.

4. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, inner elements arranged in spaced parallel planes along said shaft, a rounded head on said shaft, top elements extending over said rounded head, said top elements being engageable

with the interior of the base of a glass, pillars on said base around said central shaft, outer elements on said pillars for engaging the exterior of a glass, said outer elements being of annular form to engage the whole of the external circumference of the glass, a pair of clamping rings on said pillars for each of said outer elements, distance pieces on said pillars between the pairs of clamping rings for spacing said outer elements along said pillars, all of said elements being formed from resilient sheet material, and teeth on the operative edges of said elements.

5. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, a plug on the underside of said base plate, inner elements on said shaft, a rounded head on said shaft, top elements extending over said rounded head, said top elements being engageable with the interior of the base of a glass, pillars on said base plate, said pillars being spaced around said central post, a plurality of pairs of clamping rings threaded on said pillars, an outer element of resilient sheet material between each pair of clamping rings, said outer elements being of annular form to engage the whole of the external circumference of the glass and distance pieces threaded on said pillars between said pairs of clamping rings to space said outer elements along said pillars.

6. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, inner elements on said shaft, integral teeth projecting from the peripheral edge of each of said elements, upwardly projecting pillars on said base plate around said central shaft, a plurality of pairs of clamping rings threaded on said pillars, an outer element of resilient sheet material between each pair of clamping rings, said outer elements being of annular form to engage the whole of the external circumference of the glass, integral teeth projecting from the inner edge of each of said outer elements, the teeth on said inner elements being opposite to the spaces between the teeth on said outer elements, and distance pieces threaded on said pillars between said pairs of clamping rings to space said outer elements along said pillars.

7. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, upwardly projecting pillars on said base plate around said central shaft, outer elements on said pillars, said outer elements being of annular form to engage the whole of the external circumference of the glass, a pair of clamping rings for each of said elements, distance pieces for spacing said pairs of rings along said pillars, inner elements on said shaft, said inner and said outer elements being formed from resilient sheet material, and teeth on the operative edges of said elements.

8. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, inner elements on said shaft, a rounded head on said shaft, top elements extending over said rounded head, said top elements being engageable with the interior of the base of a glass, upwardly projecting pillars on said base plate around said central shaft, outer elements on said pillars, said outer elements being of annular form to engage the whole of the external circumference of the glass, a pair of clamping rings for each of said elements, distance pieces for spacing said pairs of rings along said pillars, and said elements being formed from resilient sheet material.

9. Washing apparatus for glasses and like articles including a base plate, a central shaft on said base plate, said shaft being of hollow form, inner elements on said shaft, said elements being disposed in spaced relationship, a removable head on said shaft, top elements extending over said rounded head, said top elements being engageable with the interior of the base of a glass, upwardly projecting pillars on said base plate around said central shaft, outer elements on said pillars, said outer elements being of annular form to engage the whole of the external circumference of the glass, a pair of clamping rings for each of said elements, and distance pieces for spacing said pairs of rings along said pillars.

10. Washing apparatus for glasses and like articles including a base plate, a central hollow shaft on said base plate, inner elements on said shaft, upwardly projecting pillars on said base plate around said central shaft, a plurality of pairs of clamping rings threaded on said pillars, an outer element of resilient sheet material between each pair of clamping rings, said outer elements being of annular form to engage the whole of the external circumference of the glass, distance pieces threaded on said pillars between said pairs of clamping rings to space said outer elements along said pillars, a tube extending up said hollow shaft and projecting from the underside of said base plate, and a plug mounted on said tube.

PIERRE VERMEIREN.