Feb. 7, 1961 G. B. LACY ET AL 2,970,700

COMMUNION CUP WASHING APPARATUS

Filed May 1, 1958

2 Sheets-Sheet 1

FIG. 1

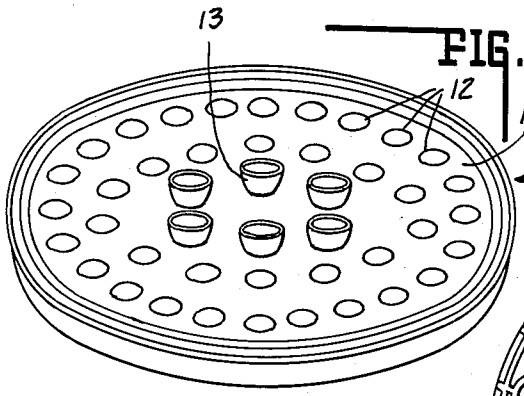


FIG. 2

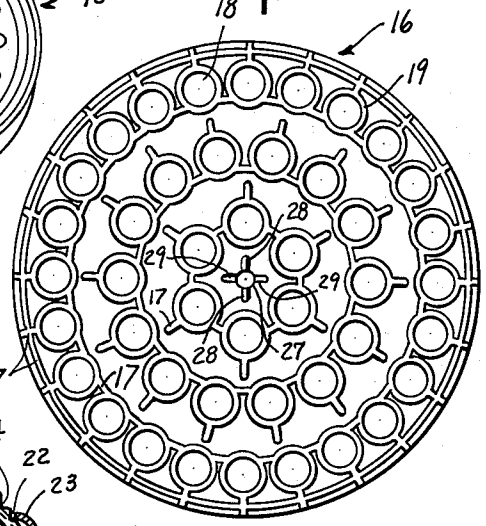


FIG. 3

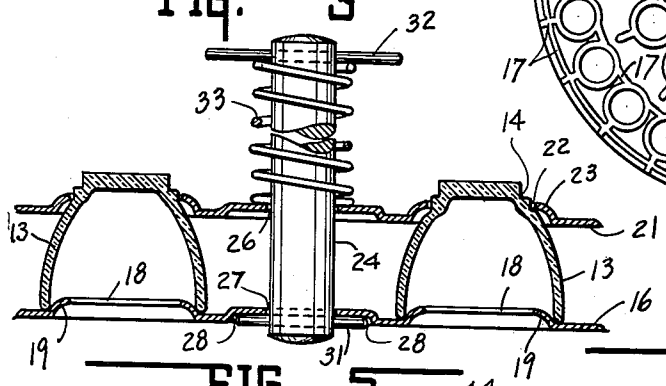


FIG. 5

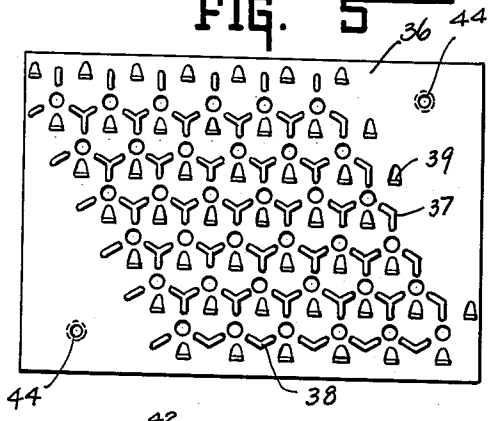


FIG. 6

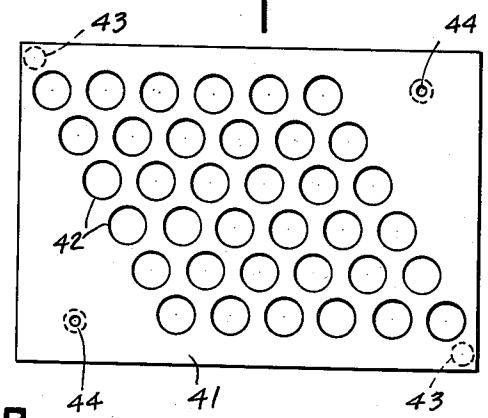
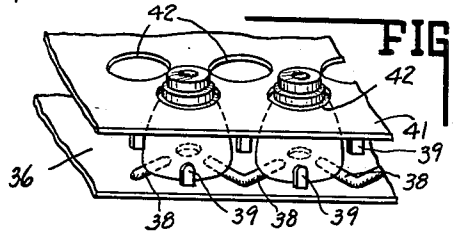


FIG. 7



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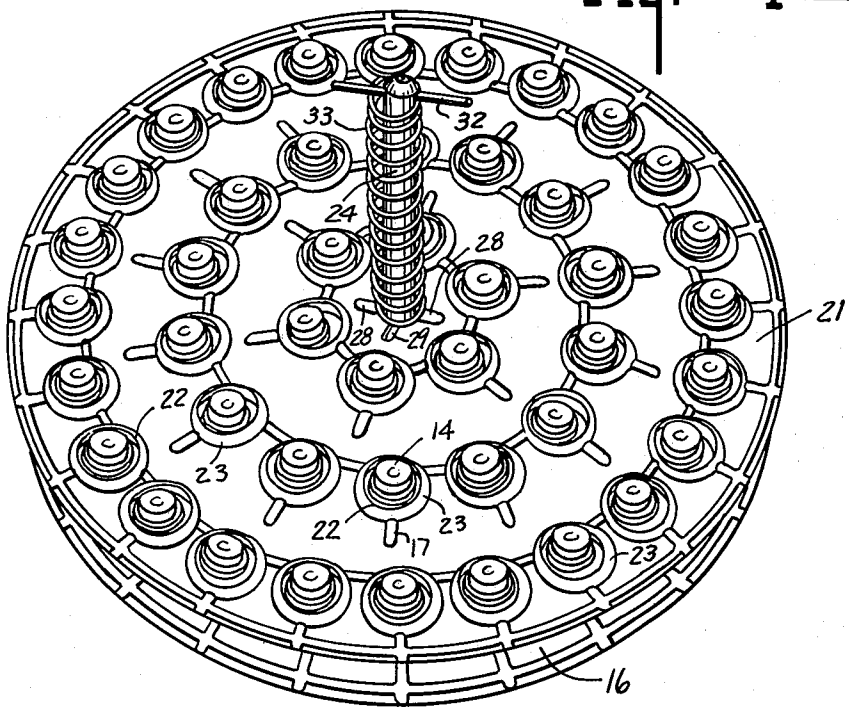
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FIG. 4



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COMMUNION CUP WASHING APPARATUS

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4 Claims. (Cl. 211—74)

This invention relates generally to an apparatus utilized in the washing of a positionally arranged series of small articles, such as communion cups, and in particular to an apparatus of this type which permits washing of the cups without disturbing their relative positions and without requiring handling of the cups.

Communion cups, utilized in certain forms of Christian church serives, are conventionally formed as small cups and made of glass or transparent plastic. The cups are symmetrically formed and are provided at their base with an axially extending boss or protrussion. In use, the cups are supported on a suitable tray having apertures therein receiving the protrusions on the cups and thereby holding them against sliding from the tray but permitting them to be freely lifted, individually, from the tray. The arrangement of the apertures in the tray, and therefore the arrangement of the cups thereon, may have various symbolic or decorative configurations. Since the cups must be washed and rinsed after use, it is desirable to provide a means whereby the cups may be removed, en masse, from the tray, moved through a washing and rinsing solution, and replaced on the tray without handling and without disturbing their relative positional relation.

It is, therefore, an object of the present invention to provide an apparatus for washing communion cups or the like whereby a plurality of cups may be simultaneously washed and rinsed without handling thereof.

A further object of the present invention is to provide an apparatus for washing communion cups or the like whereby a plurality of cups may be removed from their supporting tray, washed and rinsed, and then returned to the tray without disturbing the relative positional relation of the cups as required for proper mounting on the tray.

A further object of the present invention is to provide an apparatus of the type referred to above which permits the washing operation to be manually performed in a conventional fashion or which may be utilized in conjunction with an automatic dishwasher of conventional type.

A further object of the present invention is to provide an apparatus of the type referred to above wherein certain portions of the apparatus may be utilized for storing the cups in positionally arranged relation and ready for subsequent use.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims:

Fig. 1 is a perspective view of a tray provided with a portion of its complement of communion cups.

Fig. 2 is a top plan view of the transfer plate.

Fig. 3 is a fragmentary sectional view showing the transfer plate and holding plate in assembled relation.

Fig. 4 is a perspective view of the transfer plate, holding plate and the cups in assembled relation.

Fig. 5 is a top plan view of the transfer plate utilized in a modified form of the present invention.

Fig. 6 is a top plan view of a holding plate utilized in a modified form of the present invention.

Fig. 7 is a fragmentary perspective view of the modified form of the present invention in assembled relation.

Referring initially to Fig. 1, there is shown generally at **10** a circular tray carrying a plate **11** adjacent its upper margin. The plate **11** is provided with several series of circularly arranged apertures **12**. As will be evident from Fig. 1, each of the apertures is adapted to accommodate a communion cup as indicated at **13**. The detail of the cups is shown in Fig. 3, wherein it will be noted that they are provided with an extending base portion in the form of a circular boss **14**. The apertures in the tray are sized so that they receive this base portion of the cups, which are thereby restrained from sliding out of position on the tray.

After the cups have fulfilled their function in a church service and are replaced on the tray, they may be removed therefrom by means of a transfer plate now to be described. The transfer plate is indicated at **16** in Fig. 2 and is formed of a relatively thin sheet metal such as aluminum. The transfer plate is stamped so as to have formed therein various circumferential and radial stiffening ribs **17**, and is further provided with a plurality of series of circularly arranged apertures **18**, the apertures being arranged so as to correspond to the arrangement of the apertures in the tray **10**. Each of the apertures in the transfer plate is provided with an inwardly dished margin **19**.

The transfer plate is utilized to remove the cups from the tray by placing it in overlying relation thereto with the margin **19** of each of its apertures extending into the open ends of the cups as shown in Fig. 3 (the cups and the transfer plate **16** there appearing, however, in inverted position). The transfer plate and tray may then be grasped as a unit and inverted. Subsequent removal of the tray then leaves the cups deposited in inverted position upon the transfer plate. The cups are retained on the transfer plate disposed in the same relative positional relation as on the tray and are not handled during this operation.

The assembly is completed by utilizing a holding plate **21**, shown in Fig. 3. The holding plate may be identical in configuration to the transfer plate previously described, and is provided with apertures **22** bounded by dished margins **23**. As may be seen in Fig. 3, the holding plate is positioned in overlying relation to the transfer plate, the apertures **22** being sized to accommodate the lower portion of the cups.

A suitable means is provided for clamping the holding plate in relation to the transfer plate with the cups therebetween. This holding means takes the form of a shaft **24** extending through central, aligned openings **26** and **27** in the holding plate and transfer plate, respectively. As may best be seen in Fig. 2, the openings **26** and **27** are each provided with elongated indentations **28** and, at right angles thereto elongated slots **29**.

The slots **29** permit the passage therethrough of a pin **31** mounted transversely on the shaft **24**. The shaft, at one of its ends, protrudes substantially beyond the plane of the plates and carries a second transverse pin **32**. The pin **32** serves to seat a compression spring **33** which surrounds the shaft and bears against the holding plate **21**. From the foregoing it will be evident that the shaft may be inserted through the openings **26** and **27** and then retained in place by rotating the shaft 90° to seat the pin **31** in the indentations **28**. When thus assembled, the spring **33** is under compression and urges the plates against the cups.

The plates and cups are shown assembled in Fig. 4, and it will be evident therefrom that the protruding portion of the shaft **24** may serve as a handle whereby the

assembly may be immersed and agitated within a suitable washing solution and then rinsed. It will be further evident that this process requires no handling of the cups and that their positional relation is maintained.

To return the cups to the tray, the shaft 24 is removed and subsequently the holding tray 21 is removed from the cups. The tray 10 is then placed in inverted position over the cups, and the tray, cups and transfer plate returned to upright position as a unit. The transfer plate may then be removed, leaving the cups properly positioned on the tray and ready for use.

It will be evident that, in lieu of manual washing, the assembly shown in Fig. 4 might be inserted in the washing compartment of a conventional automatic dishwasher. If the cups are to be stored, the assembly shown in Fig. 4 provides a convenient means for stowing the cups in inverted position, so as not to collect dust on their interior surfaces. When so stored the cups are retained in proper relative position for accommodation on the tray when they are to be used.

A modified form of the present invention is shown in Figs. 5, 6 and 7. The plates which are components of this form of the invention are adapted for use with a tray (not shown) which has cup receiving apertures thereon arranged in a quadrilateral or diamond shaped configuration. The transfer plate 36 may be generally rectangular in configuration with apertures 37 of reduced size symmetrically arranged therein. As may best be seen in Fig. 7, each of the apertures 37 has adjacent thereto radially extending, elongated humps or protrusions 38. Symmetrically arranged adjacent the apertures are upstanding tongues 39 struck from the plate.

As previously described with reference to Figs. 1, 2 and 3, the cups may be removed from the tray by positioning the transfer plate 36 in overlying relation thereto with the tongues 39 extending from the transfer plate serving to extend between the outer surfaces of adjacent cups. The tray and transfer plate may then be inverted and the tray removed, leaving the cups in inverted position upon the transfer plate.

A holding plate 41 shown in Fig. 6 has apertures 42 therein arranged to conform to the positional arrangement of the apertures 37 in the transfer plate. The holding plate is provided with cylindrical spacers 43 depending from opposite corners thereof, the central openings in two of the spacers 43 being adapted to receive screws (not shown) having suitably knurled heads thereon which are turned into the diagonally opposite, threaded openings 44 in the transfer plate 36.

As may be seen in Fig. 7, holding plate 41 may be placed in overlying relation to the transfer plate 36 with the extending base portion of the cups received within the apertures 42. The two plates may then be clamped together by the knurled screws previously referred to, the spacers 43 being sized so as to limit the compressive force which may be exerted on the cups. When so assembled the plates may be grasped at their corners and immersed in suitable washing and rinsing solutions. It will be noted that liquid will be admitted to the interior of the cups when the assembly is immersed through the apertures 37 in the transfer plate and, since the cups rest upon the protrusions 38, liquid will also be admitted to the cups adjacent their outer rim.

The cups may be returned to the tray in the same fashion as described with reference to Figs. 1, 2 and 3. That is, the holding plate may be removed and replaced by the tray in inverted position. The tray and transfer plate may then be returned as a unit to upright position. subsequent removal of the transfer plate will leave the cups in proper relation on the tray.

While the invention has been disclosed and described in some detail in the drawings and foregoing description, they are to be considered as illustrative and not restrictive in character, as other modifications may readily suggest themselves to persons skilled in this art and within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. An apparatus for washing communion cups or the like adapted to be used with a tray having positionally arranged apertures therein for receiving the base portion of the cups, said apparatus comprising means for removing the cups from said tray without altering the relative positional relation thereof and without requiring handling of the cups, said means comprising a transfer plate having apertures therein adapted to register with said tray apertures, elements on said transfer plate adapted to extend into the open ends of said cups whereby said transfer plate may be placed in overlying relation to said tray and said tray and plate inverted to deposit said cups on said transfer plate, a holding plate having apertures therein sized to accommodate the base portion of said cups and registering with said transfer plate apertures, and means for removably clamping said holding plate in overlying relation to said transfer plate with said cups disposed therebetween, said means comprising a shaft extending through aligned openings in said plates and protruding substantially beyond the plane thereof, a resilient means carried on said shaft and acting against one of said plates to retain said cups and plates in assembled relation, the protruding portion of said shaft providing a handle whereby the assembly formed by said cups and plates may be immersed in a washing solution or otherwise processed without requiring handling of said cups.

2. An apparatus for washing communion cups or the like adapted to be used with a tray having positionally arranged apertures therein for receiving the base portion of the cups, said apparatus comprising means for removing the cups from said tray without altering the relative positional relation thereof and without requiring handling of the cups, said means comprising a transfer plate having apertures therein adapted to register with said tray apertures, elements on said transfer plate adapted to extend into the open ends of said cups whereby said transfer plate may be placed in overlying relation to said tray and said tray and plate inverted to deposit said cups on said transfer plate, a holding plate having apertures therein sized to accommodate the base portion of said cups and registering with said transfer plate apertures, and means for removably clamping said holding plate in overlying relation to said transfer plate with said cups disposed therebetween whereby the assembly formed by said cups and plates may be immersed in a washing solution or otherwise processed without requiring handling of said cups.

3. An apparatus for washing communion cups or the like adapted to be used with a tray having positionally arranged apertures therein for receiving the base portion of the cups, said apparatus comprising a transfer plate having apertures therein adapted to register with said tray apertures, elements on said transfer plate adapted to abut said cups and maintain their spacing whereby said transfer plate may be placed in overlying relation to said tray and said tray and plate inverted to deposit said cups on said transfer plate, a holding plate having apertures therein sized to accommodate the base portion of said cups and registering with said transfer plate apertures, and means for removably clamping said holding plate in overlying relation to said transfer plate with said cups disposed therebetween, said means including spacers extending between said plates for limiting the compressive stresses placed on the cups, the assembly formed by said cups and plates being thereby immersible in washing and rinsing solutions without requiring handling of said cups.

4. An apparatus for washing communion cups or the like adapted to be used with a tray having positionally arranged apertures therein for receiving the base portion of the cups, said apparatus comprising a transfer plate hav-

ing apertures therein adapted to register with said tray apertures, elements on said transfer plate adapted to abut said cups and maintain their spacing whereby said transfer plate may be placed in overlying relation to said tray and said tray and plate inverted to deposit said cups on said transfer plate, a holding plate having apertures therein sized to accommodate the base portion of said cups and registering with said transfer plate apertures, and means for removably clamping said holding plate in overlying relation to said transfer plate with said cups disposed therebetween whereby the assembly formed by said cups and plates may be immersed in a washing solution or otherwise processed without requiring handling of said cups.

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