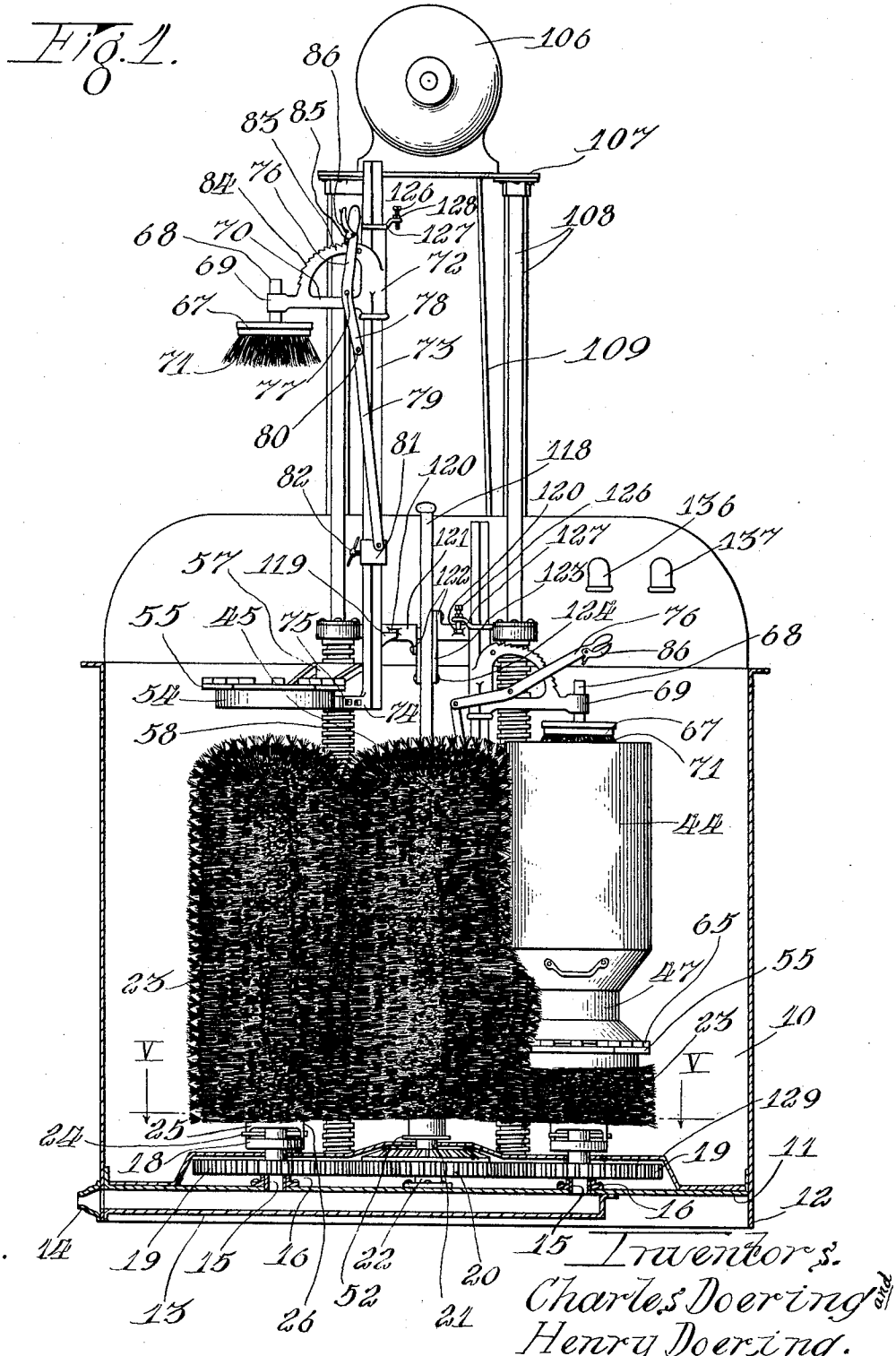
May 29, 1934. C. DOERING ET AL 1,960,530

RECEPTACLE CLEANSING MACHINE

Filed Dec. 10, 1928 5 Sheets-Sheet 1

Fig. 1.



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RECEPTACLE CLEANSING MACHINE

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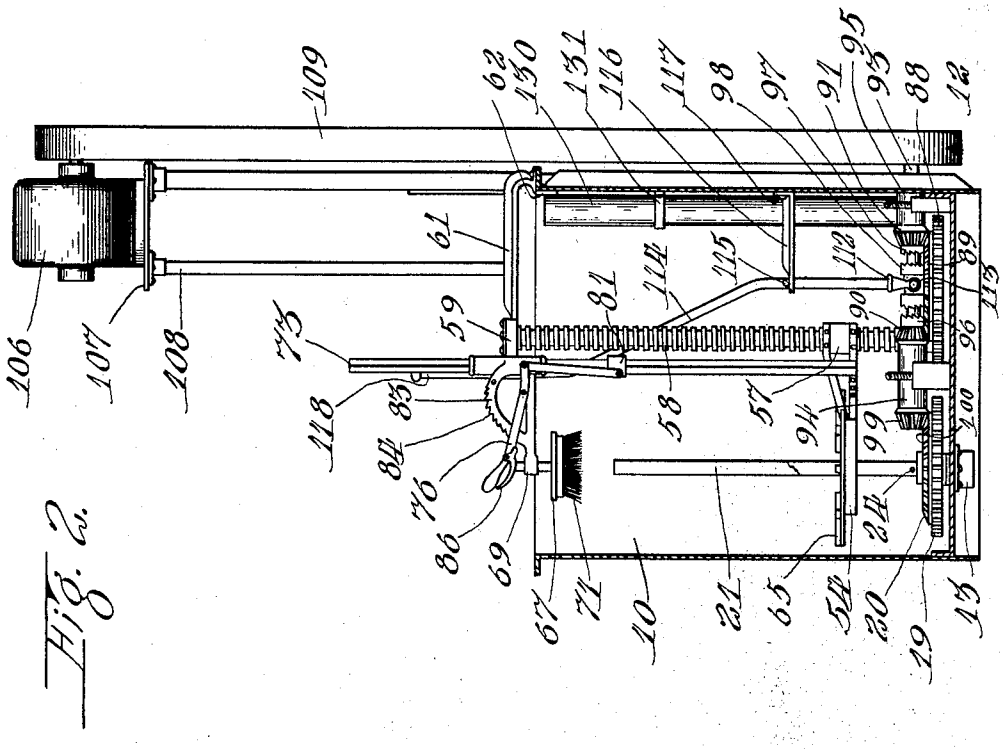


Fig. 2.

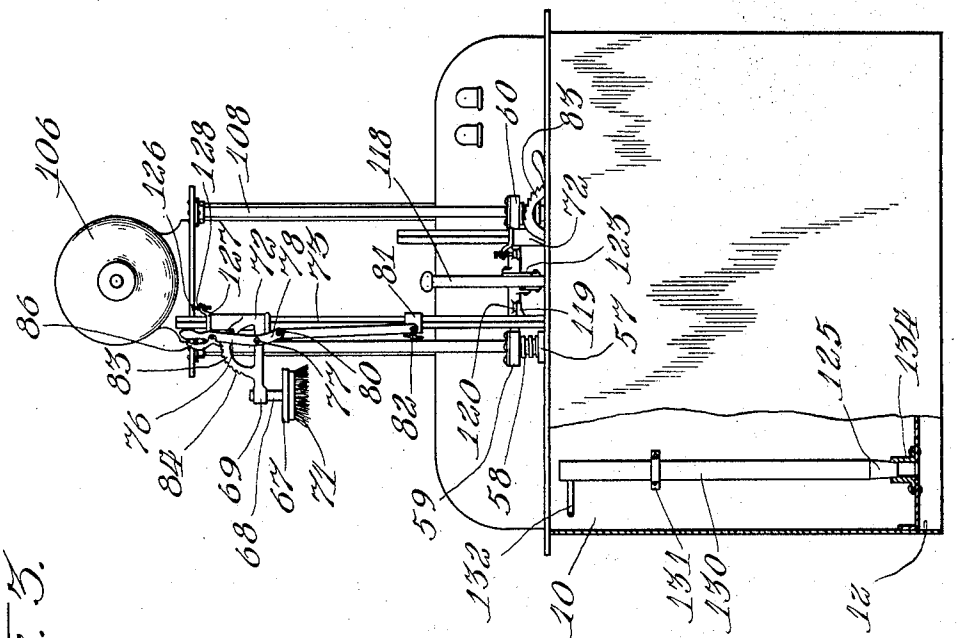


Fig. 5.

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May 29, 1934. C. DOERING ET AL 1,960,530

RECEPTACLE CLEANSING MACHINE

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Fig. 4.

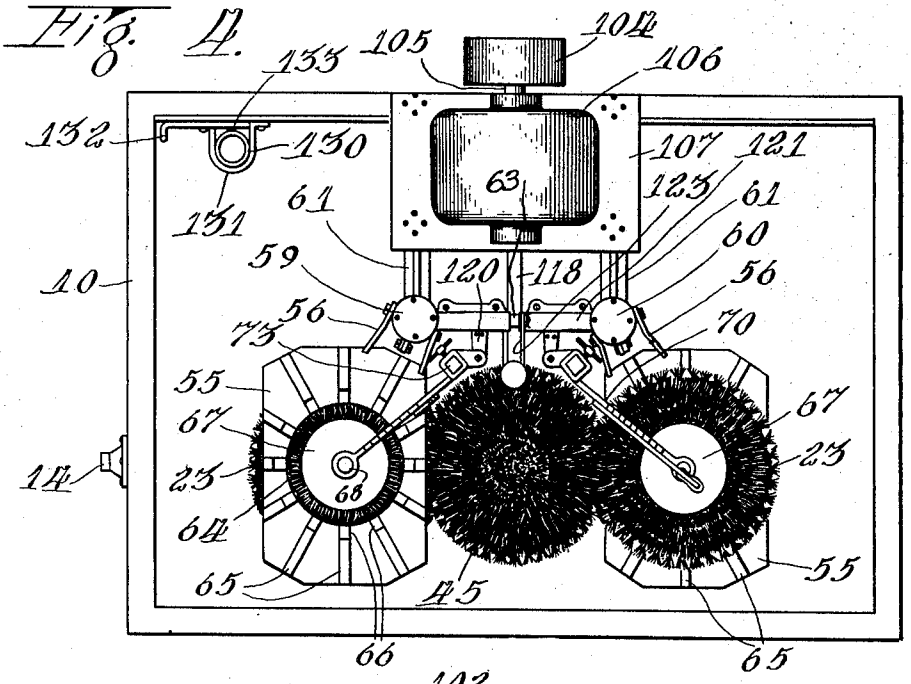
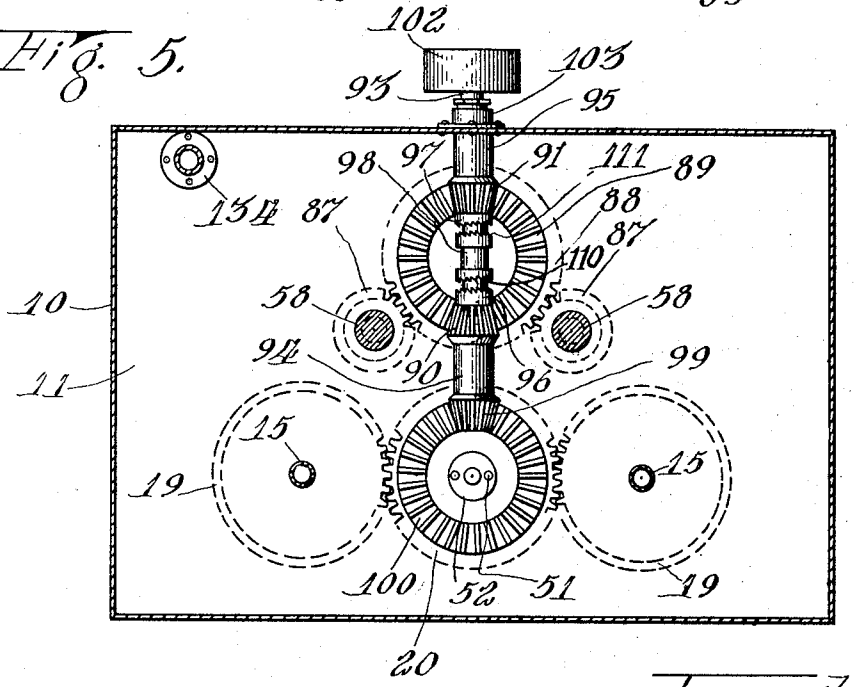


Fig. 5.



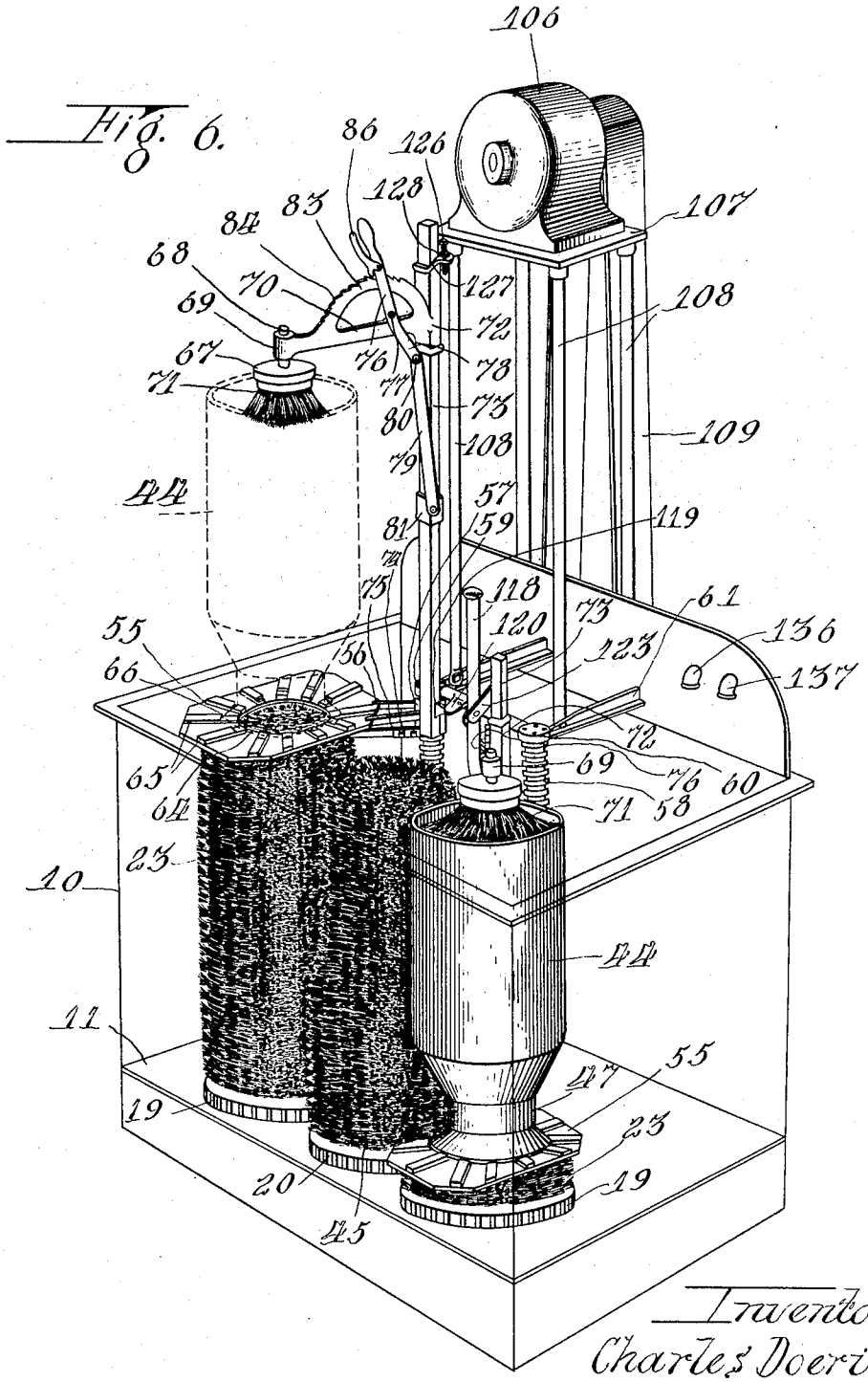
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RECEPTACLE CLEANSING MACHINE

Filed Dec. 10, 1928 5 Sheets-Sheet 4

Fig. 6.



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May 29, 1934. C. DOERING ET AL 1,960,530

RECEPTACLE CLEANSING MACHINE

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Fig. 11.

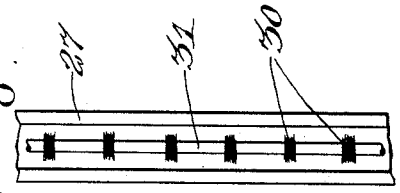


Fig. 10.

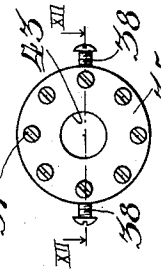


Fig. 12.

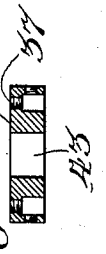


Fig. 16.

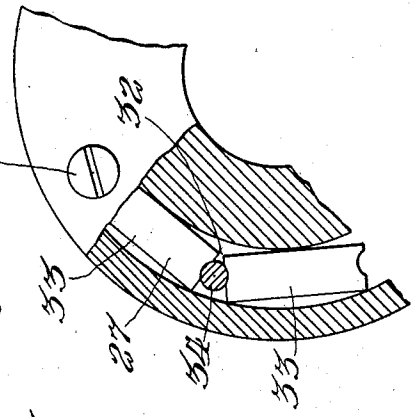


Fig. 9.

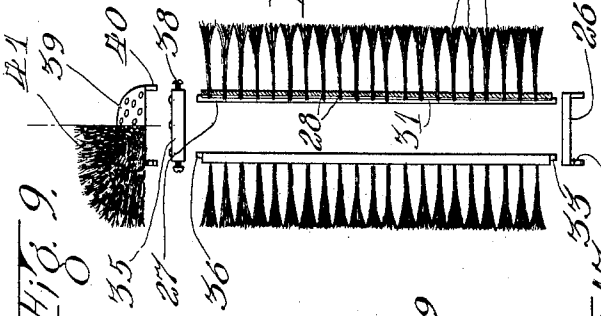


Fig. 15.

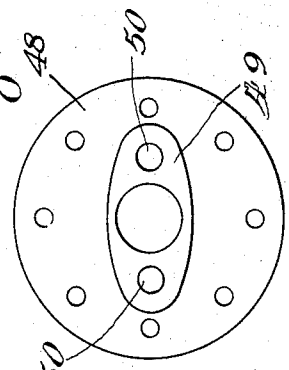


Fig. 8.

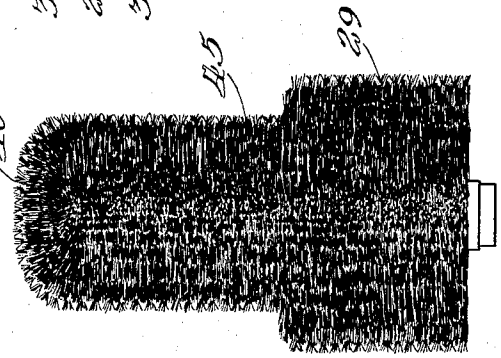


Fig. 13.

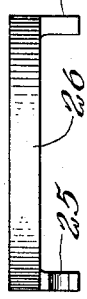


Fig. 14.

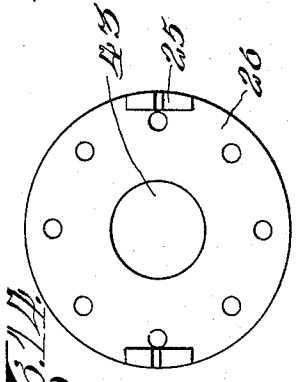
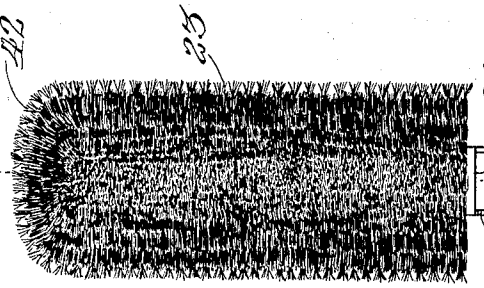


Fig. 7.



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Patented May 29, 1934

1,960,530

UNITED STATES PATENT OFFICE

1,960,530

RECEPTACLE CLEANSING MACHINE

Charles Doering and Henry Doering,
Chicago, Ill.

Application December 10, 1928, Serial No. 324,968

10 Claims. (Cl. 15—70)

This invention relates to cleansing machines and more particularly to receptacle cleansing devices, although certain features thereof may be employed with equal advantage for other purposes.

It contemplates more especially the provision of means for abrasively cleansing surfaces to remove all foreign substances therefrom without entailing much labor, expense and time.

Receptacles of every type must be cleansed in order to enable the repeated use thereof; however, known cleansing expedients are ineffective and not altogether satisfactory for receptacles employed for confining edible substances therein. The subjection of such articles or receptacles to steam, water and other cleansing mediums without any abrasive application is not productive of the degree of cleanliness required thereof, especially of milk cans and kindred receptacles.

Moreover, known cleansing devices are intricate, expensive and require much space in the use thereof, this being an important consideration in commercial enterprises where great numbers of receptacles are employed daily. The coagulated deposits in milk cans and similarly used receptacles are incapable of complete removal without abrasive cleansing. The extreme sanitary requirements therefor render known cleansing methods impracticable and very inefficient.

One object of the present invention is to simplify the construction and improve the operation of devices of the character mentioned.

Another object is the provision of abrasive cleansing means for application to the surfaces of a receptacle without entailing much labor and time.

Still another object is the provision of novel means for cleansing receptacles for an automatically controlled duration enabling substitution of receptacles at predetermined intervals without manual regulation.

A further object is the provision of a device capable of simultaneously handling a plurality of receptacles with the exercise of minimum manual labor.

A still further object is the provision of a cleansing device capable of adjustment to accommodate receptacles of various sizes to effect the cleansing of all surfaces thereof.

Still a further object is the provision of abrasive cleansing means capable of simultaneous application to the interior and exterior of receptacles to effect the cleansing thereof with a minimum labor, time and supervision.

Other objects and advantages will appear from the following description of an illustrative embodiment of the present invention.

In the drawings:

Figure 1 is a sectional view in elevation of a device embodying features of the present invention.

Figure 2 is a side elevation in section of the device disclosed in Figure 1 with certain parts removed.

Figure 3 is a front view in elevation of the device disclosed in Figure 1 with a portion of the tank removed to clarify the showing.

Figure 4 is a plan view of the device disclosed in Figure 1.

Figure 5 is a sectional view taken substantially along line V—V of Figure 1.

Figure 6 is a perspective view of the device disclosed in Figure 1 with certain parts omitted showing receptacles in the process of being cleansed.

Figure 7 is a view in elevation of an end brush employed in connection with the device disclosed in Figure 1.

Figure 8 is a view in elevation of the center brush used in conjunction with the brush disclosed in Figure 7.

Figure 9 is a sectional view of an end brush taken along line IX—IX of Figure 7.

Figure 10 is a plan view of the brush engaging cap disclosed in Figure 9.

Figure 11 is an enlarged detail of a brush segment disclosed in Figure 9.

Figure 12 is a sectional view taken substantially along line XII—XII of Figure 10.

Figure 13 is a view in elevation of the bottom brush engaging cap shown in Figure 7.

Figure 14 is a bottom plan view of the collar disclosed in Figure 13.

Figure 15 is a plan view of the bottom brush assembly collar employed in connection with the center brush.

Figure 16 is a fragmentary sectional view of the assembly collar disclosed in Figure 13.

The structure selected for illustration comprises a fluid confining frame or tank 10 having the bottom 11 thereof disposed at a point above the tank sustaining edge 12 to permit the accommodation of a waste drain 13 therebeneath. The waste drain 13 communicates with an outlet 14 associated with the side of the tank 10. A pair of spaced tubular shafts 15 are vertically journalled in flanged bearings 16 which are riveted or otherwise secured to the tank bottom 11, the shafts 15 extending upwardly to a point below the surface of the water confined beneath the

flanged upper edge of the tank 10. It is to be noted that the tubular shafts 15 communicate with the drain 13 to permit overflow water confined in the tank 10 to drain through the shafts 15 to the waste outlet 14.

The shafts 15 carry collars 18 proximate to the tank bottom 11 but spaced therefrom sufficiently to carry spur gears 19 in mesh with a correspondingly shaped gear 20 fixed to a vertical shaft 21 journalled in an end bearing 22 intermediate the shafts 15 to impart opposed rotation thereto. The shafts 15 carry brushes 23 preferably of cylindrical configuration to conform with the interior of receptacles, there being pins 24 projecting through the shafts 15 just above the collars 18 to engage opposed slotted tongues 25. The tongues 25 are integrally or otherwise secured to a collar 26 which serves to retain the segments of the brushes 23 in assembled association.

The brushes 23 preferably comprise circumferentially spaced channel bars 27 having conical apertures 28 provided in the channel thereof, they being in longitudinal spaced relation to receive bristles 29 therethrough. The bristles 29 are bent upon themselves along a transverse median line and then forced through the apertures 28 so that the looped ends 30 thereof will project within the channel of the bars 27 to receive a securing rod 31 therethrough. The rod 31 serves to prevent the removal of the bristles 29 which are pulled outwardly after the insertion of the rod 31 in the channel of the bars 27 to project radially in cylindrical formation.

With this arrangement the bristles 29 can be replaced responsive to wear thereon by dismantling the channel bars 27 which are held in circumferential spaced relation at the bottom thereof by the collars 26 having an annular groove 32 in the face thereof to receive the reduced extremities 33 of the channel bars 27. Any suitable fasteners such as screws 34 project through the collar 26 for threaded engagement with the lateral faces of adjacent channel bars 27. The other extremities of the channel bars 27 are held together by a similarly shaped collar 35 adapted to receive the reduced upper extremities 36 of the channel bars 27 therein, these being secured together by means of screw fasteners 37 in the manner described in connection with the bottom brush assembly collar 26.

It is to be noted that the top collar 35 carries opposed studs 38 to receive a perforated head 39 having opposed slotted tongues 40 formed thereon to enable the detachable association thereof to the top assembly plate 35. Bristles 41 are formed in the head 39 in a manner similar to the association of the bristles 29 with the channel bars 27; however the bristles 41 are so shaped to impart a spherical end or top face 42 to the brushes 23. The assembly collars 35 are provided with axially disposed apertures 43 which communicate with the interior of the shafts 15 for enabling the seepage or flow of water therethrough to the drain chamber 13 for discharge through the drain outlet 14. It will be apparent that the brushes 23 will rotate in unison with the shafts 15 in corresponding directions, they being, in this instance, of such configuration as to receive an inverted milk can or other receptacle 44 thereon to thoroughly cleanse the entire interior thereof.

The exterior of the receptacle 44 is cleansed by means of a brush 45 formed of segmental bristles 29 which are secured to channel bars 27 in the manner described in connection with the end or interior cleansing brushes 23. The brush 45 carries a detachable top 46 similar to the bristle tops 42, and the lower portion thereof preferably has the bristles of greater length than the remainder of the brush 45 to thoroughly cleanse the neck 47 and other irregular portions of the receptacle 44. It is apparent that the contour and configuration of the brushes may be varied within a wide range to effectively cleanse all surfaces or receptacles of any shape or contour. The bottom assembly collar 48 of the brush 45 carries an elliptical hub 49 which has diametrically aligned countersunk holes 50 provided therein to cooperate with spaced vertically projecting pins 51 carried by a brush supporting collar 52 secured to the intermediate or center shaft 21 for preventing relative rotation between the brush 45 and the shaft 21 which rotates in a direction opposed to the rotation of the end brushes 23.

As a consequence, receptacles 44 received on the end brushes 23 will rotate in contact therewith for movement contra to the rotation of the brush 45, thereby abrasively cleansing the interior and exterior walls of the receptacle 44 simultaneously. It is worthy of note that the shaft rotating gears are of such size and ratio as to impart rotation to the brush 45 at a speed exceeding the rotation of the end brushes 23, thereby creating a slight slip relative to the exterior surface of the receptacles 44 to more effectively cleanse the surfaces thereof. In order to impart longitudinal movement to the receptacles 44 simultaneous with the rotation thereof in conjunction with the brushes 23, means are provided to feed the receptacles along a predetermined line of travel between the end and intermediate brushes 23 and 45, respectively.

To this end, receptacle sustaining members 54 comprising rectangular platforms 55 are secured by furcated brackets 56 to sleeves 57 which are interiorly threaded to cooperate with correspondingly threaded feed screws 58 journalled vertically in the tank 10 by means of vertical end bearings 59 and 60. The bearings 59 and 60 are supported by brackets 61 extending rearwardly to terminate in downwardly extending extensions 62 secured to the rear wall of the tank 10. As shown, the end bearings 59 and 60 are spaced inwardly of the shafts 15 and rearwardly thereof for maintenance in position by means of rods 63 disposed therebetween. It will be noted that the feed screws 58 have the sleeves 57 in threaded engagement therewith in opposed positions so that the receptacle sustaining platforms 55 will alternate in their vertical movement responsive to rotation of the feed screws 58 which impart vertical movement thereto in opposed directions.

The platforms 55 are provided with central apertures 64 which receive the end brushes 23 therethrough so that the receptacle mouth may be positioned thereon. The receptacles 44 move longitudinally of the brushes for entrance to the interior thereof through the apertures 64 of the sustaining platforms 54. In order to maintain the receptacles in position against lateral displacement without interfering with the rotation thereof, the sustaining platforms 55 are provided with radially disposed ribs 65 preferably of wood which terminate in depressed portions 66 to receive the mouth of the receptacle thereon, thereby preventing lateral displacement and permitting rotation with minimum friction. The receptacles are held upon the platform 59 by means of retaining members 67 which, in this

instance, are of circular configuration. The retaining members 67 are supported in contact with the end face or bottom of the receptacles 44 by means of a stub shaft 68 secured to hubs 69 carried by quadrants 70.

It will be noted that the faces of the retaining members 67 confronting the sustaining platforms 64, in this instance two, are provided with bristles 71 which engages the bottom of the receptacles 44 to permit rotation thereof with the brushes 23, thereby abrasively cleansing the end receptacle surfaces incidental to the retention thereof on the sustaining platforms 54. The quadrants 70 each terminate in a tubular member or sleeve 72 integrally or otherwise secured thereto, the sleeves 72 being of tubular rectangular cross section to slide along a correspondingly shaped rod 73 which has the lower extremity thereof formed with flanges 74 to enable the attachment thereof to the receptacle sustaining platforms 54 by means of fasteners 75. In view thereof the receptacles 44 are sustained and retained between the platforms 54 and the confronting retaining members 67 surfaced with bristles 71.

In order to accommodate receptacles of varying lengths, the retaining members 67 are rendered adjustable with respect to their sustaining platforms 54. This is accomplished by means of a bell crank lever 76 which is pivoted to the quadrant 70 as at 77 with the lever arm 78 thereof pivoted to a link 79 as at 80. The link 79 is pivoted at the extremity thereof to a sleeve 81 which slides along the guiding rod 73, it being capable of fixed attachment thereto in any position therealong by means of a winged set screw 82. Pivotal movement of the lever 76 will raise or lower the receptacle retaining member 67 depending upon the positon thereof. To maintain the retaining member 67 in any predetermined position, the quadrant 70 is provided with an arcuate member 83 which has serrations or teeth 84 along the edge thereof to cooperate with a pawl 85 manipulated by a thumb lever 86 pivoted to the bell crank 76 near the extremity thereof. With this arrangement, the receptacle retaining members 67 can be caused to approach or recede from the sustaining platform 54 to accommodate receptacles of varying lengths within considerable range.

Movement is imparted to the receptacle sustaining and retaining instrumentalities simultaneous with the rotation of the brushes 23, 45 by means of gears 87 secured to the lower extremities of the feed screws 58 for mesh with a spur gear 88 journalled for rotation above the bottom 11 interiorly of the tank 10. A bevel gear 89 is secured to the lateral face of the spur gear 88 to rotate in unison therewith. The bevel gear 89 meshes with bevel pinions 90 and 91 which are rotatably mounted on shaft 93. The shaft 93 is journalled in bearings 94 and 95 to rotate relative to toothed clutch elements 96 and 97 fixed to pinions 90 and 91, respectively, and disposed in opposed relation to cooperate with a clutch mechanism 98. The clutch mechanism 98 is keyed to the shaft 93 for slidable movement therealong to engage either the clutch element 96 or 97 depending upon the direction of travel desired to impart to the receptacle sustaining and retaining members 54 and 67, which move in opposed directions longitudinally of the brushes 23.

As shown, the shaft 93 carries a bevel pinion 99 which meshes with a bevel gear 100 secured to the lateral face of the spur gear 20, thereby imparting opposed rotation to the brushes 23 and 45 simultaneous with the reciprocal movement of the receptacle sustaining and retaining members 54 and 67, respectively, which feed the receptacles 44 between the brushes 23, 45 in opposed directions. Rotation is imparted to the shaft 92 by virtue of a pulley 102 secured to the extremity thereof projecting beyond the tank 10 through a water tight packed bearing 103. The pulley 102 is harnessed to a pulley 104 carried by the armature shaft 105 of an electrical motor 106 supported upon a platform 107 elevated by suitable standards 108 sustained in part by the brackets 61. The pulleys 102 and 104 are in alignment to receive a power transmitting belt 109 in frictional engagement with the peripheries thereof.

The longitudinal movement of the receptacles 44 is controlled between predetermined limits of travel by means of the clutch mechanism 98 which has opposed toothed faces 110 and 111 formed thereon to alternately engage the clutch elements 96 or 97, respectively. The engagement of the clutch mechanism 98 is controlled by a member 112 having furcations 113 thereon to engage the channelled portion thereof by means of pins projecting therethrough to enable pivotal movement with respect thereto. A lever 114 is secured to the member 112 for sliding the clutch mechanism 98 in either direction owing to a pin 115 which projects through the lever 114 for support on a bracket 116 projecting rearwardly to the rear wall of the container 10 for attachment thereto by means of a flange 117 through which suitable fasteners project.

As shown, the lever 114 is bent forwardly to define an extension 118 which projects beyond the mouth of the tank 10 to enable manipulation thereof by the attendant to engage either the clutch elements 96 or 97 depending upon the directional movement desired of the receptacles 44. The movement of the receptacles 44 is ordinarily controlled in that the instrumentalities are brought to a stop when any one of the receptacles 44 on either of the brushes 23 reaches an extreme upward position for replacement or substitution by another receptacle. This is controlled by stops 119 fixed to the guide rods 73 near the bottom thereof which cooperate with lugs 120 formed on sleeves 121 journaled on the rod 63 laterally of the hand lever 118 on both sides thereof.

It is to be noted that the sleeves 121 have ears 122 formed thereon adjacent the handle 118 in 180 degrees spaced relation with respect to each other to pivotally engage links 123 which in turn are pivotally secured to the lever 118 by means of pins 124 projecting entirely therethrough. The upward movement of the guide rod 73 with its receptacle sustaining member 54 will, therefore, cause the stop 119 to engage the under side of the lug 120 to move its respective sleeve 121 upwardly, thereby causing the approach of the lever 118 toward the forward wall of the tank 10 to throw the clutch 98 in neutral. The movement of the receptacles 44 is thus arrested to enable the removal of one or the other of the receptacles 44 which has reached its uppermost position of travel from the tank 10 which may be filled with water or any other cleansing medium. The receptacle that emerges from the water is removed by manipulating the lever 76 which causes the retaining member 67 to

recede from the sustaining platform 54 to permit removal and replacement instantaneously.

The retaining member 67 is then caused to approach the sustaining member 54 responsive to the positioning of a receptacle thereon, and the attendant then shifts the lever 118 to cause engagement of the other clutch element, thereby gradually immersing the replaced receptacle for movement on its end brush 23 disposed therebelow during the rotation thereof together with the receptacle 44. With the approach of the removed receptacle to its upward position, a safety stop 126 carried by a lug 127 formed on the sleeve 72 of the quadrant 70 engages the upper face of the other lug 120 on the other sleeve 121, thereby assisting in the shifting of the lever 118 or insuring the release of the clutch by either one or the other of the stops 119 or 126, respectively. In order that the release mechanism of each of the receptacle feeding means may be effective simultaneously, the stop 126 is adjustable by means of a nut 128, thereby enabling the lower and upward stops of the respective receptacle feeding mechanisms to operate simultaneously in releasing the power mechanism.

With this arrangement, a receptacle 44 is loaded on to sustaining platform 54 and retained thereon by the member 67 while the other receptacle is at its lower-most position of movement submersed in the liquid confined in the tank 10. The reciprocal movement of the feeding instrumentalities in opposite directions together with the novel arrangement of the brushes and the simultaneous transverse movement of the receptacles enables maximum effective cleansing without entailing much time and labor. It is obvious that any number of receptacle feeding mechanisms may be provided in a self contained unit; however the specific embodiment herein described illustrates the principle of abrasive cleansing of all the walls of a receptacle simultaneously and effectively in a double can capacity unit. The intermeshing gears and power instrumentalities are concealed by sheet metal casings 129 which may be of any segmental contour and shape to completely protect the moving instrumentalities from foreign substances contained in the cleansing medium.

With the entrance of the brushes 23 into the receptacles 44 caused by the approach thereof, the air confined therein escapes through the shafts 15 together with any overflow cleansing liquid for deposition in the drain chamber 13 to enable the discharge thereof through the exterior outlet 14. It will be noted that the debris and foreign substances will be carried to the surface of the water within the tank 10, and such is discharged in the overflow through the shafts 15. The discharge of the liquid confined in tank 10 is controlled by an overflow tube 130 slidable in a bearing 131 secured to the rearward wall of the tank 10, there being a lever 132 pivoted to the tank 10 for engagement with the overflow tube 130 as at 133 to effect the rise or descent thereof with respect to an outlet collar 134 which cooperates with the tapered extremity 125 of the tube 130. The outlet collar 134 is in communication with the chamber formed beneath the bottom 11 of the tank 10 by the sustaining edge 12. The cleansing fluid is supplied to the tank 10 by means of faucets 136 and 137 which may direct water of varying temperatures therein to fill the tank 10, and should commercial practice dictate sprays of water may be directed against the bottoms of the receptacles 44 during the rotation and ascension thereof to serve as a rinse therefor.

Various changes may be made in the embodiment of the invention herein specifically described without departing from or sacrificing any of the advantages thereof as defined in the appended claims.

We claim:

1. In a device of the character described, the combination with rotatable spaced brushes, of a brush disposed intermediate said spaced brushes for rotation in opposed directions therewith, receptacle sustaining means operatively associated with each of said spaced brushes, and means for simultaneously feeding said receptacle sustaining means along rectilinear paths in opposite directions to carry receptacles in cleansing contact with said spaced brushes and intermediate brush.

2. In a device of the character described, the combination with rotatable spaced brushes, of a brush disposed intermediate said spaced brushes for rotation in opposed directions therewith, means for sustaining inverted receptacles over said spaced brushes, and means for simultaneously feeding said sustaining means in rectilinear oppositely directed paths to carry the receptacles over said spaced brushes in exterior contact with said intermediate brush.

3. In a device of the character described, the combination with a tank for confining a cleansing liquid at a predetermined level, of rotatable spaced brushes therein, a brush disposed intermediate said spaced brushes for rotation in opposed directions therewith, a plurality of means for sustaining inverted receptacles over said spaced brushes, and means for feeding said sustaining means in oppositely directed rectilinear paths to alternately carry the receptacles over said brushes in exterior contact with said intermediate brush and for alternate emergence from the liquid in said tank to enable the substitution thereof.

4. In a device of the character described, the combination with rotatable spaced brushes, of a brush disposed intermediate said spaced brushes for rotation in opposed directions therewith, means for sustaining inverted receptacles over each of said spaced brushes, means for feeding said sustaining means in oppositely directed rectilinear paths to carry the receptacles over said brushes in exterior contact with said intermediate brush, and means for rendering said feeding means inactive at predetermined positions of receptacle travel to enable receptacle substitution.

5. In a device of the character described, the combination with a tank for confining a liquid at a predetermined level, rotatable spaced brushes submerged in said tank, a brush disposed intermediate said spaced brushes for rotation in opposed directions therewith, means for sustaining inverted receptacles over each of said spaced brushes, means for feeding said sustaining means in oppositely directed rectilinear paths to carry the receptacles over said brushes in exterior contact with said intermediate brush, and means for rendering said feeding means inactive at extreme position of receptacle travel to enable substitution of receptacles in their extreme upward emerged position.

6. The combination with a frame, of a brush vertically mounted on said frame, another brush disposed adjacent said first named brush to receive the walls of a receptacle therebetween during rectilinear travel of said receptacle, means for rotating said brushes in opposed directions, a

centrally apertured receptacle sustaining member movable along a rectilinear path to receive one of said brushes therethrough, a retaining member surfaced with bristles to confront said sustaining member for supporting a receptacle therebetween, and means for imparting rotary movement to said brushes and simultaneous rectilinear movement to said receptacle sustaining and retaining members.

7. The combination with a frame, of a brush vertically mounted on said frame, another brush disposed adjacent said first named brush to receive the walls of a receptacle therebetween during rectilinear travel of said receptacle, means for rotating said brushes in opposed directions, a centrally apertured receptacle sustaining member disposed in axial alignment with one of said brushes, means for imparting movement to said sustaining member along a rectilinear path to receive one of said brushes therethrough, a retaining member surfaced with bristles to confront said sustaining member for supporting a receptacle therebetween, and means for rendering said movement imparting means inactive at a predetermined position of receptacle travel to enable receptacle substitution.

8. The combination with a frame, of a brush vertically mounted on said frame, another brush disposed adjacent said first named brush to receive the walls of a receptacle therebetween during rectilinear travel of said receptacle, means for rotating said brushes in opposed directions, a centrally apertured receptacle sustaining member disposed in axial alignment with one of said brushes, means for imparting movement to said sustaining member along a rectilinear path to receive one of said brushes therethrough, a retaining member surfaced with bristles to confront said sustaining member for supporting a receptacle therebetween, means for rendering said movement imparting means inactive at a predetermined position of receptacle travel to enable receptacle substitution, and clutch means for initiating movement of said brushes and receptacle sustaining member.

9. The combination with a frame, of a brush vertically mounted on said frame, another brush disposed adjacent said first named brush to receive the walls of a receptacle therebetween during rectilinear travel of said receptacle, means for rotating said brushes in opposed directions, a centrally apertured receptacle sustaining member movable along a rectilinear path to receive one of said brushes therethrough, a retaining member surfaced with bristles to confront said sustaining member for supporting a receptacle therebetween, means for adjusting said retaining member with respect to said sustaining member to accommodate various sized receptacles therebetween, and means for imparting rotary movement to said brushes and simultaneous rectilinear movement to said receptacle sustaining and retaining members.

10. The combination with a frame, of a brush vertically mounted on said frame, another brush disposed adjacent said first named brush to receive the walls of a receptacle therebetween during rectilinear travel of said receptacle, means for rotating said brushes in opposed directions, a centrally apertured receptacle sustaining member disposed in axial alignment with one of said brushes, means for imparting movement to said sustaining member along a rectilinear path to receive one of said brushes therethrough, a retaining member surfaced with bristles to confront said sustaining member for supporting a receptacle therebetween, means for rendering said movement imparting means inactive at a predetermined position of receptacle travel to enable receptacle substitution, clutch means for initiating movement of said brushes and receptacle sustaining member, and a tank surrounding said brushes to effect the submersion thereof in water.

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