The present invention relates to a centrifugal machine for cleaning substantially flat surfaces, such as paved domestic yards and similar areas, comprising a container intended to contain a cleansing liquid, and at least one rotary rubbing device towards the centre of which this liquid is supplied by gravity, to be then distributed over the surface to be cleaned by the centrifugal action due to the rotation of the rubbing means.

An important object of this invention is to provide, in a floor washing machine of the kind above mentioned, a rotary collector comprising a coned lip normally contacting the floor and entirely surrounding the rubbing device, a filter carried by a revolving intermediate drum, and so arranged that the liquid collected by the said coned lip is conveyed into the filter and throughout out the same under the action of the centrifugal force. Means are provided for conveying to the container the filtered cleansing liquid flowing from the filter.

Many embodiments of the invention, with various types of rubbing arrangements, are illustrated by way of example in the accompanying drawings, in which:

Fig. 1 is a diametral sectional view of a floor washing machine.

Fig. 2 is a cross sectional view, on a larger scale, of a collector device partly broken away.

Fig. 3 is an elevational view of a rubbing arrangement for the machine shown in Fig. 1.

Figs. 4, 5 and 6 illustrate a second embodiment of the invention, Fig. 4 being a diametral section similar to Fig. 1, Fig. 5 a large-scale sectional view of the collector device partly broken away, and Fig. 6, a top plan view of a driving crown-piece with one of the resilient clips hinging the said crown-piece to an intermediate drum and a rotary drum represented on Fig. 4.

Fig. 7 illustrates a third embodiment of the invention and is a diametral sectional view similar to Fig. 1.

The machine according to the invention is intended for the cleaning and the upkeep of house yards and similar paved or tiled areas, by means of hot soapy water for example. It comprises a rotary drum having an aperture 40 at the bottom thereof. This drum is actuated by an electric motor enclosed in a casing 2, the shaft of the motor having at its lower end a friction roller 3, engaging a friction ring 4 fixed to the periphery of the drum 1. In the embodiment according to Figure 1, the casing 2, to which is articulated the handle of the machine, not shown, is formed with an arm 5, into which is screwed a hollow pivot 6, concentric with the drum and serving as a guide for an internal sleeve 7. The fixed pivot 6 carries the inner races of two ball bearings 8, the outer races of which are mounted in the hub 9 of the drum.

The sleeve 7 is welded at its lower edge to a sheet-metal container 19, of generally toroidal form, which is coaxial with the pivot 6, and has a central depression 26, occupied by the hub 9 of the drum. The bottom of the container 19, in which a central flow orifice 22 is formed, has under its lower face a valve seat 23, co-operating with a cr births metal diaphragm 24, which is pressed resiliently against the seat. The diaphragm 24 is held at its edge in a fixing ring 25. At its upper end the sleeve 7 has an internally screw-threaded part 21 into which is screwed an obturating member 26, rigid with a projecting knob 27 on the arm 5. The obturating member 26 has an axial bore serving as a guide for a rod 28, at the end of which is pinned a regulating lever 29. The rod 28 also has a collar 30 formed with a helical incline 31 arranged under a corresponding incline provided in the lower extremity of the obturating member 26. A sealing washer 32 surrounds the rod 28 at the outlet from the obturating member, and a rubber ring 46 hermetically seals the joint between the obturating member 26 and the sleeve 7.

The container 19 is provided with an oblique rubber collecting tube 33, the end of which, having a thin conical edge (to be seen in Figure 1) projects into an annular gutter part 18, formed in the wall 17 of the rotary drum 1.

It will be observed that the container 19 can easily be removed from under the rotary drum 1, after unscrewing and removing the obturating member 26 with the knob 27, the rod 28 and the members depending thereon. If the drum 1 is then raised vertically, the container 19 is automatically disengaged by the sliding of the pivot 6 on the sleeve 7.

The supporting arm 5 is secured to a protective cap 45 partly covering the rotary drum, this cap being provided at its lower edge with a rubber ring 107 intended for damping possible percussions of the floor washing machine against any rigid member.

The slightly coned wall of the rotary drum 1 has a lower external flange 109 provided with peripheral notches 45 in some of which are engaged four resilient hinging clips 10 on the opposite ends of two perpendicular diameters of drum 1. A hooked portion 10d of the clips is engaged in the notches 45 the bottom of which is adapted
to provide by its upper and lower ends a radially extending abutment means 65' engaged by said hooked portion 102 (Fig. 1). These clips 10 are adapted to transmit a rotary motion to an intermediate drum 112 opened at both ends and to a liquid collecting device 212—215 later to be described.

Each one of the hinging clips has an horizontal part 10a, disposed between two right-angle bends and jammed in a notch 200 of the intermediate drum. These notches have such a shape that the intermediate drum is hung onto the abutments 65' of the rotary drum 1 by means of the clips when the machine is laid over the floor. The clip 10 inwardly extends in a second substantially horizontal portion 10b, the end of which is rigidly locked with a disc 201 having a central, cylindrical hollow part 202 and, in the flat wall thereof, a radial opening 203 in which the portion 10b of the clip can yield. Each one of the clips 10 has a radially extending actuating tab 10c for the purpose of disconnecting the intermediate drum 112 from the rotary drum 1.

A lock crown-piece 204 is fastened onto the cylindrical hollow part 202 by means of bolts 205.

On these bolts is hooked by means of upstanding lugs 185 acting as hooks, a flat ring 206 carrying a centrally perforated lining sheet 207, the under face of which is furnished with rubbing and somewhat abrasive sectors 208 made of sand-paper.

The intermediate drum 112 carries on its inner wall, a removable cardboard jacket 209, frictionally driven. An accordion-pleated filter 210, the folds of which are of helicoidal shape, is adhesively secured to the bottom of the jacket 209. Underneath this filter, there are strips 211 belonging to a conical supporting member 212 for the collector. Said strips are adhesively secured, by their outer face 199 to the jacket 209 and have a bent, part 212 (Figure 2), set out from the intermediate drum 112, which part 212 can easily be put out of shape, so that the supporting member of the collector is able to take an oblique position with respect to the intermediary drum 112. The jacket has a coned lower edge 214 for the recovery of the liquid.

The liquid-collecting lip 215 is made of flexible thermoplastic material and has upper lugs shaped to mate in notches or sockets 216 of the supporting member 212.

When the machine is running with a cleaning liquid, the drops are thrown off from the external surface of the collector 212—215, by the centrifugal force and recovered by the edge 214; then they ascend between the strips 211 and attain the main liquid mass flowing into the bottom of the filter.

The helicoidal folding of the filter facilitates the circulation of the liquid up to the top of said filter.

To replace the collector and filter, when polluted after a cleansing work, the operator only needs to unlock the clips 10 from the flange 165 of rotary drum 1, by depressing the actuating tabs 10c of the rotary drum. The intermediate drum 112 remains on the floor; the cardboard jacket 209 together with filter 210 and collector 212—215, can then be removed from said intermediate drum by axilary displacement.

The machine herebefore described operates in the following manner: In order to fill the container 18 with cleaning liquid, the knob 27 is turned from right to left so that it carries along with it the obturating member 26 and the rod 28 with its handle 29. After unscrewing, these different members are removed in a single piece and the sleeve 7 is uncovered at the top. All that is then needed is to introduce the flow tube 4 into the abutment 65' of the tank 18, the lower flow orifice 22 of which is then automatically closed by the valve 23, 25.

After filling, the knob 27, together with the obturating member 25, is screwed on again into the screw-threaded part 21 of the sleeve 7, which effects the closure of the container 19.

The machine having been placed on the floor to be cleaned, the handle 29 for regulating the feed is turned in order to determine the opening of the valve, due to the descending axial displacement of the rod 28 under the action of the rotary helical inclined 31 in contact with the fixed inclined at the base of the obturating member 23. The cleaning liquid then flows into the circular space at the centre of the sectors 203.

The operator then starts the motor 2, which makes the drum 1 rotate, this movement of rotation being transmitted through the clips 10 to the intermediate drum 112 owing to the recesses 45 of the rotary drum 1, in which the clips 15 are engaged. The rubbing arrangement 208, while rotating, imparts to the liquid a rotary movement, which gives rise to a centrifugal component forcing the liquid to the base of the collecting lip 215. The inclination of this collecting lip causes the ascent of the liquid thereon with increasing speed and its projection to the base of the filter 210, which is traversed through the action of the centrifugal force. On leaving the filter the filtered liquid accumulates in the gutter 16 and participates to a certain extent in the rotation of the drum. It is then caught up by the recovery scoop 33 fixed to the container and directed along the arc of a spiral. This scoop then brings the liquid back to the container 18.

The second embodiment shown in Figures 4 to 6 comprises an electric motor, the casing 2 of which is formed with an arm 5 carrying a hollow pivot 6, concentric with a rotary drum 1 adapted to be driven by the friction roller 3 engaging friction ring 4 on the periphery of drum 1. The pivot 6, serving as a guide for an internal sleeve 7, carries the inner races of two ball-bearings 8, the outer-races of which are mounted in the hub 9 of the drum 1.

The sleeve 7 is welded at its lower edge to a container 18 which is coaxial with the pivot 6 and has a central depression occupied by the said hub 9. The bottom of the container 19 is apertured at 22 and carries under its lower face a valve seat 23 cooperating with a cruciform diaphragm 24, resiliently pressed against the seat and held on its edge in a fixing ring 25.

At its upper end the sleeve 7 has an internally screw-threaded part 21 into which is screwed an obturating member 25, rigid with a projecting knob 27 on the arm 5. The obturating member 26 has an axial bore serving as a guide for a rod 28, at the end of which is pinned a regulating lever 29. The rod 28 also has a collar 30 formed with a helical inclined 31 arranged under a corresponding inclined bridge provided in the lower extremity of the obturating member 26. A sealing washer 32 surrounds the rod 26 at the outlet from the obturating member, and a rubber ring 46 hermetically seals the joints between the obturating member 26 and the sleeve 7.

The container 19 is provided with an oblique rubber collecting scoop 33, the end of which, having a thin conical edge, projects into an annular...
gutter part 18, formed in the wall 17 of the rotary drum 1.

5 All members and parts hereinbefore described are similar to those indicated by the same numerals referring to Fig. 1.

However, the second embodiment shown in Figures 4 to 6 is different from the first one in that the liquid collecting lip made of flexible material, is mounted on a heavy rigid ring, which can be placed aslant in respect of the rotary drum, according to the shape of the surface to be cleaned.

Each resilient clip 10 has a strip 118, cut out in the clip and inwardly bent back in order to be resiliently passed into a peripheral hole 519 of intermediate drum 112, so that the pressure being sufficient to insure the driving and holding up of the Intermediate drum when the machine is being raised up.

The resilient clips 10, which are used to drive the intermediate drum 112, have many bends and their lower end is fastened to an inner plate 306, comprising a central hollow part 301 for the flowing out of the cleansing liquid. The portion 106 of the clip can give way in a radial opening 320 of the plate. Two gudgeons 302 connect this plate to a cork crown-piece 303 having a peripheral groove 304 in which are pressed resilient fastening hooks 305, riveted onto an annular sheet 306 provided with metal shavings 307 useful for rubbing the floor 300 to be cleaned.

The thin liquid-collecting lip 40, made of rubber, is set between a bearing surface of a heavy ring 308 and setting strips 308 provided on a thin band 310, forced onto the heavy ring 308, 310.

The latter carries vertical pins 311 loosely engaged in notches 312 of plate 300, which thus, can drive the heavy ring in rotary motion, whilst the heavy ring can be placed aslant in respect of the rotary drum. The pins 311 and corresponding notches 312 of plate 300 are relatively rockable, and torque transmitting means.

The intermediate drum 112 has a lower rear-entrance edge 166 which is intended to recover the liquid which is centrifugally thrown from the collector 45. Besides, this edge 166 prevents the heavy ring 308 from falling down, when the machine is lifted over the surface to be cleaned.

A pleated filter 210 is engaged in the intermediate drum 112 by the interposition of a removable flange jacket 260; the bottom of this filter resting upon the rear-entrance edge 166.

In the third embodiment, a diametral section of which is shown in Fig. 7, the shaft of the electric motor carries a driving friction roller 3 engaging a rubber ring 4 fixed to the periphery of the rotary drum 1.

The pivot 6, serving as a guide for an internal sleeve 7, carries the inner races of two ball bearings 8, the outer races of which are mounted in the hub 9 of the drum 1.

The sleeve 7 is welded at its lower edge to a container 18 which is coaxial with the pivot 6 and has a central depression occupied by the said hub 8. The bottom of the container 18 is apertured at 22 and carries under its lower face a valve seat 23, cooperating with a cruciform diaphragm 24, resiliently pressed against the seat and held on its edge in a fixing ring 25.

The device for filling the container 19 with cleaning liquid and for adjusting the flow of the same into the central apertured portion of the rubbing arrangement 205 is identical with that of the first and second embodiments (Figs. 1 and 4). This device therefore will not be specifically described with respect to the third embodiment of the machine.

In a like manner, the container 18 is provided with a recovering scoop 33 the outer end of which projects into an annular gutter 18 at the top of the inner wall 17 of rotary drum 1.

The motor casing 2 is fastened to an arm 106 having a perforation in which is engaged the hollow pivot 6 coaxial with the rotary drum 1 and provided with a shoulder 61. On the upper threaded end 62 of pivot 6 is screwed a guiding sleeve 101 also used as a nut for fastening the said pivot to the arm 106 by co-operation with the shoulder 61. The sleeve 101 is provided with a thrust-flange 102 and constitutes a stationary axis of rotation for a driving knob 103, the hollow cylindrical portion of which is provided with a large pitched external threading 104.

The rotary drum 1 is partly overlapped by a protective cap 105, the central part of which is fastened to a nut 106 having a large pitch in threading engagement with threaded part 104.

A spiral spring 116 is arranged, under the action of an initial torsional strain, between knob 103 and nut 106. The outer end of the spiral spring 116 is fastened to the rim 63 of the knob, the inner end, to the nut; the direction of the torque exerted by the spring 116 upon the knob 103 and the arrangement of the helical threading 104 are such that the said spring 116 aims to hold the nut 106 and the cap 105 in the highest position shown in Fig. 7. The cap 105 carries on its peripheral wall, a damping band 107, and its lower edge 108 is useful as a disconnecting means for an intermediate drum 112 as will hereinafter be explained.

This cap 105 is provided with a cut-out part 15 partially and loosely surrounding the motor casing 2 so as to guide the axial displacements of the said cap.

The slightly coned wall of rotary drum 1 has a lower flange 169 provided with peripheral notches 45 in some of which are engaged four resilient hitching clips 10, on the opposite ends of two perpendicular diameters. A hooked portion 106 of the clips is engaged in the notches 45 the bottom of which is adapted to provide by its upper and lower ends a radially extending abutment means 45’ engaged by said hooked portion 106 (Fig. 1). These clips 10 are also intended to bear a crown-piece 204 by means of a cylindrical, flanged, hollow member 202 and bolts 205. The crown-piece 204 is provided on its under face with rubbing sectors 208, as described with reference to Fig. 1.

Each one of the hitching clips 10 has the shape disclosed with respect to the first embodiment of the machine (Fig. 1). However, it is to be noted that the resilient clips 10 have their outer actuating tab 106 extending across the path of the lower edge 108 of the movable cap 105.

A button 205 is frictionally introduced inside the intermediate drum 112. A rotary collecting ring is provided with a plant lip 215 in contact with the surface of the floor 300 to be cleaned and has a set of strips 211 adhesively secured to the jacket 209.

An accordion-pleated filter 113 is located above the collector 215 and frictionally fitted inside the jacket 209.

When the operator wants to replace the cleaning attachments in the intermediate drum 112,
he turns the knob 103 against the action of spring 116, so as to produce an axial, downwards extending displacement of the protective cap 105, the lower edge 103 of which depresses the actuating tabs 158 of the hitching clips 15. By acting on the table 108 the descending cap 105 disconnects the intermediate drum 112 together with the collector 212-215 from the rotary drum 1. As soon as the operator releases knob 103, the spring 116, promoting a screwing of the guiding sleeve 161 in the nut 163, brings the cap 105 back to its upper position by an axial displacement. The spring 116 then produces a rotation of the knob 103 in a direction contrary to that which had brought about the coming down of cap 105.

Owing to the plurality of notches 45, it becomes easy, after replacing the cleaning attachments, to dispose the rotary drum in an angular position in which the clips 10 are hitched in four such notches and permit, then to set in rotation the intermediate drum 112.

What I claim as my invention is:

1. A centrifugal machine for cleaning a substantially flat surface, comprising an electric motor journalled in a casing (2), a supporting arm rigid with said motor casing and having a fastening perforation, a hollow pivot (6) fastened in said perforation, a downwardly opening rotary drum adapted to be rotated around said hollow pivot, torque transmitting means (3, 4) disposed between the electric motor and the rotary drum; an intermediate drum having an aperture on both ends thereof and located in said opening of the rotary drum, a crown-piece carrying a rubbing arrangement; a driving disc centrally perforated and provided with peripheral notches, said disc being fastened to the crown-piece; resilient clips hitched onto the rotary drum as well as to the intermediate drum, the one end of said clips being fixed to the driving disc; a heavy ring with a conical surface and peripheralslots loosely inserted in said notches of the driving disc; a thin band forced onto the heavy ring and provided with setting strips; a coned collecting lip of flexible matter, set between the coned surface of the heavy ring and said strips, the heavy ring to get along with the collecting lip entirely surrounding the rubbing arrangement and located substantially inside said aperture of the intermediate drum; a cleaning liquid container (18) fastened to the supporting arm, means for conveying to said container the liquid flowing into said collecting lip and said intermediate drum through the action of the centrifugal force, said container having a closable outlet port substantially located on the common axis of the rubbing arrangement and the collector.

2. A centrifugal machine for cleaning a substantially flat surface, comprising an electric motor journalled in a casing (2), a supporting arm rigid with said motor casing and having a fastening perforation, a hollow pivot (6) fastened in said perforation, a downwardly opening rotary drum adapted to be rotated around said hollow pivot, torque transmitting means (3, 4) disposed between the electric motor and the rotary drum; an intermediate drum the both ends of which are open, concentrically disposed inside the rotary drum, said intermediate drum having a coned re-entrant edge, a crown-piece carrying a rubbing arrangement, a centrally perforated driving plate fastened to said crown-piece, resilient cranked clips hitched to the lower edge of said rotary drum and to the intermediate drum, the one end of said clips being rigid with said driving plate, a heavy ring provided with a collecting lip made of flexible matter and surrounding said rubbing arrangement, the maximum diameter of said heavy ring being substantially greater than the opening diameter of said re-entrant edge of the intermediate drum, means coupling said heavy ring to said driving plate, said coupling means consisting of relatively rockable elements so as to allow the heavy ring, resting on the surface to be cleaned, to place itself at last in respect to said intermediate drum; a cleansing liquid container (18) fastened to the supporting arm, means for conveying to said container, the liquid flowing into said collecting lip and said intermediate drum through the action of the centrifugal force, said container having a closable outlet port substantially located on the common axis of the rubbing arrangement and the collecting lip.

3. A centrifugal floor washing machine comprising an electric motor journalled in a casing, a supporting arm rigid with said motor casing and having a fastening perforation, a hollow pivot fastened in said perforation, a rotary drum having an aperture in the bottom thereof and adapted to be rotated around said hollow pivot, torque transmitting means disposed between the electric motor and the rotary drum, an intermediate drum partly covered by the rotary drum, said intermediate drum having a substantially circular lower opening, a liquid collector extending entirely around the axis of said pivot and disposed substantially inside said lower opening but in space relation to said intermediate drum, said collector having an inclined lip normally contacting the floor, a crown-piece concentrically disposed within said collector and provided with a rubbing arrangement, a filter removable carried by said intermediate drum above said collector, said intermediate drum being provided with notches, resilient clips hitched onto said rotary drum and engaged in the notches of said intermediate drum, the inner part of said clips being connected to said crown piece so as to rotate the same means connecting said clips and said collector to rotate the same, a cleaning liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum through the action of the centrifugal force, said container having a closable outlet port located substantially on the common axis of the rubbing arrangement and the collector.

4. A centrifugal floor washing machine as claimed in claim 3, wherein said rotary drum has a lower peripheral flange provided with axial notches in which said resilient clips are normally engaged, said rotary drum also carrying radially extending abutment means, said clips comprising a hooked portion normally engaged by said abutment and a generally radially protruding, actuating tab, so that said resilient clips together with said intermediate drum can be yodlingly released from the rotary drum through an axial thrusting down upon the actuating tabs of said resilient clips.

5. A centrifugal floor machine comprising an electric motor journalled in a casing, a supporting arm rigid with said motor casing and having a fastening perforation, a hollow pivot fastened in said perforation, a rotary drum having an aperture in the bottom thereof and adapted to be rotated around said hollow pivot, torque transmitting means disposed between the electric motor and the rotary drum, an intermediate drum partly covered by the rotary drum; said intermediate drum having an inclined lower edge forming a
circular opening, a jacket of flexible material frictionally mounted inside the peripheral wall of said intermediate drum, an annular liquid collector having an inclined lip in contact with the surface to be cleansed, said liquid collector being provided with external lips secured to said flexible jacket, a crown piece concentrically disposed within said collector and provided with a rubbing arrangement, a filter removably carried by said jacket and intermediate drum above said collector means for conveying to said filter the liquid flowing from the collector through the action of the centrifugal force; said intermediate drum being provided with notches; resilient clips hitched onto said rotary drum and engaged in the notches of said intermediate drum, the inner part of said clips being connected to said crown piece so as to rotate the same, a cleansing liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum through the action of the centrifugal force, said container having a closable outlet port substantially located on the common axis of the rubbing arrangement and the collector.

6. A centrifugal floor washing machine comprising an electric motor journaled in a casing, a supporting arm rigid with said casing and having a fastening perforation, a hollow pivot fastened in said perforation, a rotary drum having an aperture in its bottom thereof and adapted to be rotated around said hollow pivot, torque transmitting means disposed between the electric motor and said rotary drum, a movable cap overlapping the rotary drum and provided with a central nut, said cap having disconnecting means, a centrally open rotatable operating knob mounted on said hollow pivot and provided with a threaded sleeve in threaded engagement with said central nut, a double thrust member fastened on said hollow pivot to prevent relative axial displacement of the operating knob, whereby a rotation of said operating knob causes an axial motion of said cap, an intermediate drum covered and surrounded by the rotary drum, said intermediate drum having peripheral notches and a circular lower opening, a liquid collector extending entirely around the axis of said pivot and disposed inside lower opening in spaced relation to said intermediate drum, flexible means connecting said intermediate drum and said cap to rotate the same, said collector having an inclined lip normally contactable with a floor, a crown piece concentrically disposed within said collector and provided with a rubbing arrangement, a filter removably carried by said intermediate drum above said collector, resilient clips hitched on said rotary drum and coacting with said notched intermediate drum to drive the same, said clips being connected to said crown piece and having an outer actuating tab extending across the path of said disconnecting means of the cap, so that the latter can release said intermediate drum from the rotary drum by pushing down said tab, a cleansing liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum and the filter through the action of centrifugal force, said container having a closable outlet port located substantially on the common axis of the rubbing arrangement and the collector.

7. A centrifugal floor washing machine comprising an electric motor journaled in a casing, a supporting arm rigid with said motor casing and having a fastening perforation, a hollow pivot fastened in said perforation, a rotary drum having an aperture in the bottom thereof and adapted to be rotated around said hollow pivot, torque transmitting means disposed between the electric motor and the rotary drum, an intermediate drum partly covered by the rotary drum, said intermediate drum being opened at its ends, a jacket of flexible material removably mounted inside the intermediate drum, a helically shaped, pleated filter in said jacket, a collector fastened in the lower part of said jacket, said collector comprising a coned supporting member provided with flexible strips stuck onto the jacket, and having water sockets, a liquid collecting lip of thermoplastic material having hugs shaped to mate with the said sockets, a crown-piece concentrically mounted within said collector and provided with rubbing means at its under side, said intermediate drum being provided with notches, resilient clips hitched onto said rotary drum and engaged in the notches of said intermediate drum, the inner part of said clips being connected to said crown piece so as to rotate the same, a cleansing liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum through the action of the centrifugal force, said container having a closable outlet port located substantially on the common axis of the rubbing arrangement and the collector.

8. A centrifugal floor washing machine comprising a casing, an electric motor journaled in said casing, a supporting arm rigid with said casing and having a fastening perforation, a hollow pivot fastened in said perforation, a rotary drum having an aperture in its bottom thereof and adapted to be rotated around said hollow pivot, torque transmitting means disposed between the electric motor and the rotary drum, an intermediate drum partly covered by the rotary drum, said intermediate drum being opened at its ends, a jacket of flexible material removably mounted inside the intermediate drum, a helically shaped, pleated filter in said jacket, a collector fastened in the lower part of said jacket, said collector comprising a coned supporting member provided with flexible strips stuck onto the jacket, and having water sockets, a liquid collecting lip of thermoplastic material having hugs shaped to mate with the said sockets, a crown-piece concentrically mounted within said collector and provided with rubbing means at its under side, said intermediate drum being provided with notches, resilient clips hitched onto said rotary drum and engaged in the notches of said intermediate drum, the inner part of said clips being connected to said crown piece so as to rotate the same, a cleansing liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum and the filter through the action of centrifugal force, said container having a closable outlet port located substantially on the common axis of the rubbing arrangement and the collector.
drum being provided with peripheral axial notches and with radially extending abutments registering with said notches, an intermediate drum partly covered and surrounded by the rotary drum, said intermediate drum having a circular lower opening, a liquid collector disposed substantially inside said lower opening but in spaced relation to said intermediate drum, said collector having an inclined lip normally contactable with a floor, a crown-piece concentrically disposed within said collector and provided with a rubbing arrangement, a filter removably carried by said intermediate drum above said collector, said intermediate drum being provided with peripheral notches, resilient clips having a hooked portion hinged onto said radial abutments and engaged in said notches of the rotary drum, said clips being further engaged in the notches of said intermediate drum, torque transmitting means connecting said clips and said crown-piece, said clips having an actuating tab, radially extending outside said rotary drum, so that said resilient clips together with said intermediate drum can be yieldingly disconnected from the rotary drum through an axial thrusting down upon said actuating tabs, a cleansing liquid container fastened to the supporting arm, means for conveying to said container the liquid flowing into the intermediate drum through the action of centrifugal force, said container having a closable outlet port located substantially on the common axis of the rubbing arrangement and the collector.

WILLY ENGEL.

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