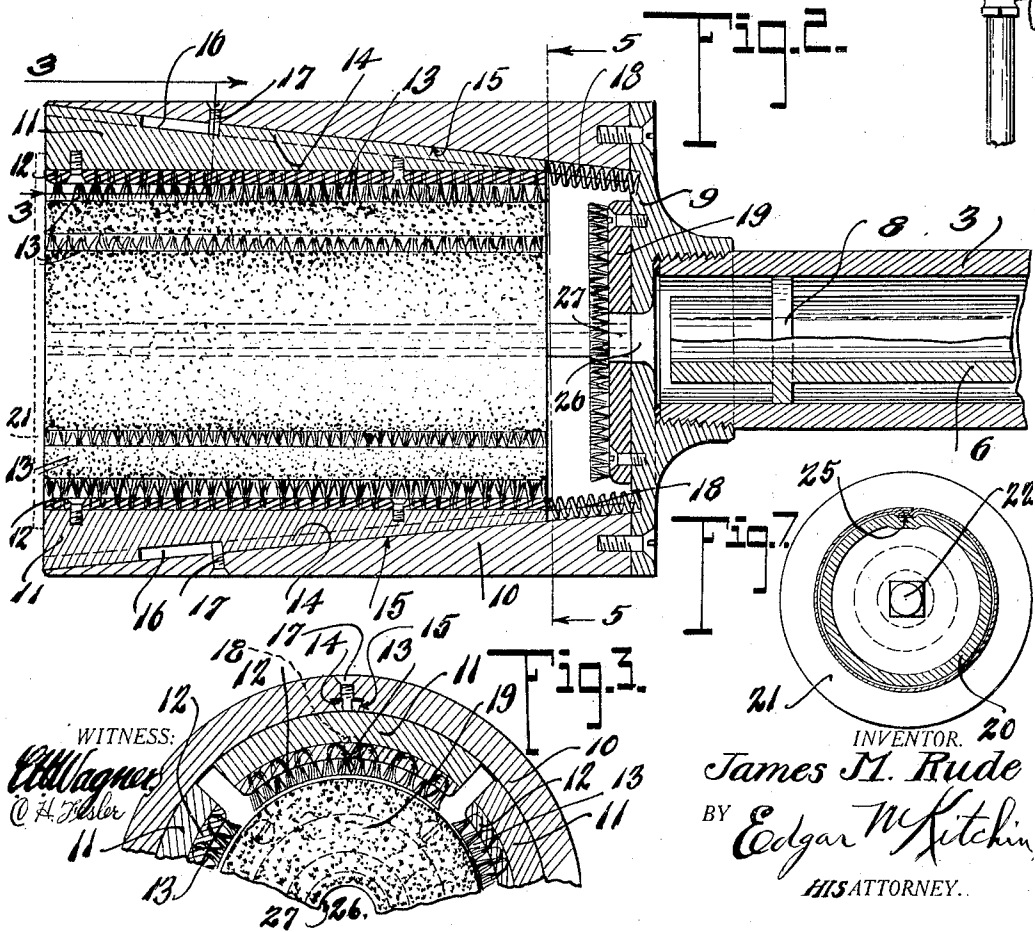
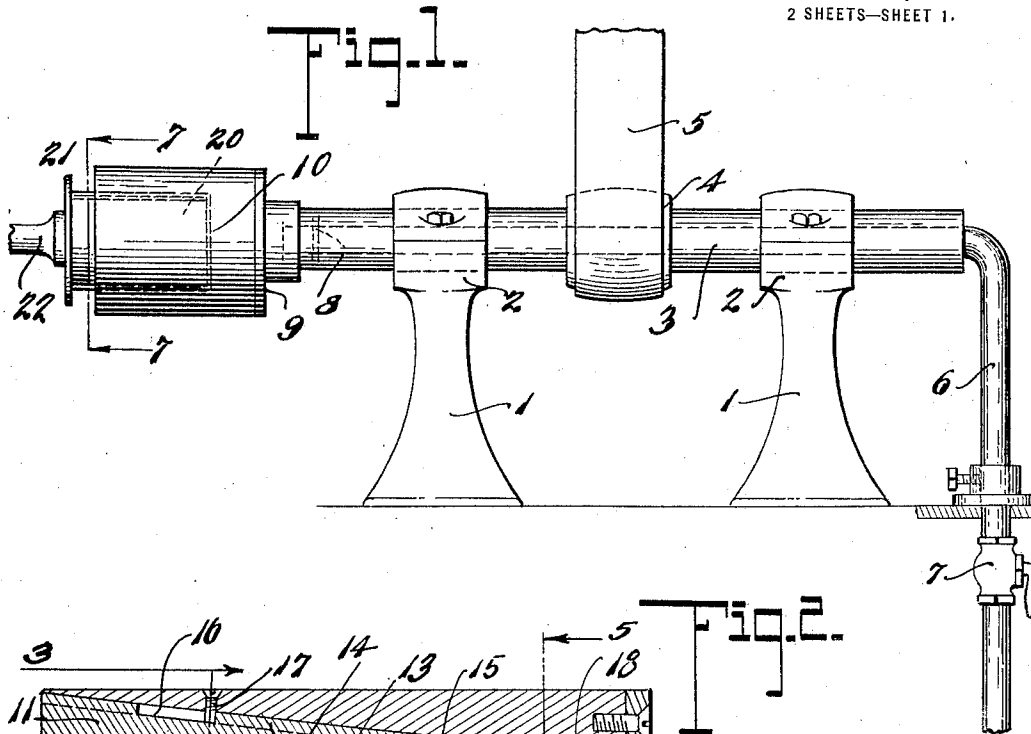


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RECEPTACLE CLEANING BRUSH.
APPLICATION FILED MAR. 4, 1918.

1,362,822.

Patented Dec. 21, 1920.

2 SHEETS—SHEET 1.

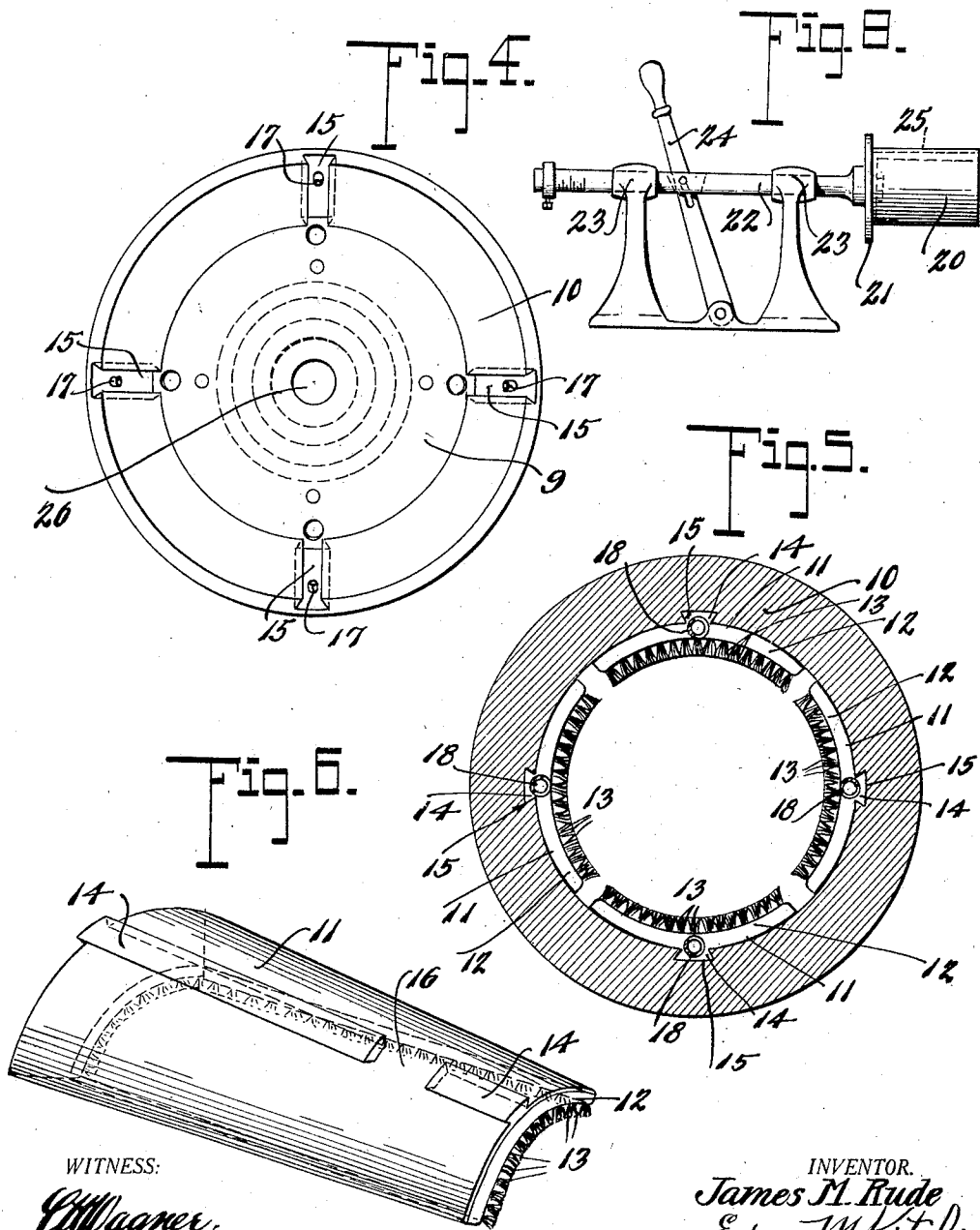


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WITNESS:

Ed. Wagner.
C. H. Zeller

INVENTOR.
James M. Rude
BY *Edgar M. Kitchin*

HIS ATTORNEY.

UNITED STATES PATENT OFFICE.

JAMES M. RUDE, OF COVINGTON, KENTUCKY, ASSIGNOR TO CAN CONSERVATION COMPANY, OF LOUISVILLE, KENTUCKY, A CORPORATION OF DELAWARE.

RECEPTACLE-CLEANING BRUSH.

1,362,822.

Specification of Letters Patent.

Patented Dec. 21, 1920.

Application filed March 4, 1918. Serial No. 220,212.

To all whom it may concern:

Be it known that I, JAMES M. RUDE, a citizen of the United States, residing at Covington, in the county of Kenton and State of Kentucky, have invented certain new and useful Improvements in Receptacle-Cleansing Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the art of cleansing receptacles, and has for its object the cleansing of the exterior of such receptacles as cans and the like such as are customarily discarded after a single use.

With this and further objects in view as will in part hereinafter become apparent and in part be stated, the invention comprises certain novel constructions, combinations and arrangements of parts as subsequently specified and claimed.

In the accompanying drawings,—

Figure 1 is a view in side elevation of an apparatus embodying the features of the present invention, the mechanism for operating the receptacle sustaining mandrel being broken away.

Fig. 2 is an enlarged, detail, vertical, central section through a portion of the mechanism seen in Fig. 1.

Fig. 3 is a fragmentary, transverse section taken on the plane indicated by line 3—3 of Fig. 2.

Fig. 4 is an end view of the parts seen in Fig. 2, looking into the interior of the brush carrying housing with all the brushes omitted.

Fig. 5 is a transverse section taken on the plane indicated by line 5—5 of Fig. 2, and looking in the direction indicated by the arrows.

Fig. 6 is a detail, perspective view of one of the brush segments detached.

Fig. 7 is a transverse section taken on the plane indicated by line 7—7 of Fig. 1, and looking in the direction indicated by the arrows.

Fig. 8 is a view in side elevation of the receptacle sustaining mandrel and its operating parts.

Referring to the drawings by numerals, 1, 1 indicate supports for bearings 2, 2 in which is journaled a tubular shaft 3 having

a pulley 4 driven by a belt 5, or any other appropriate mechanism not illustrated. A cleansing fluid supply pipe 6 controlled by a valve 7 extends axially into and substantially throughout the length of the shaft 3. An annulus 8 surrounds the pipe 6 near the free end thereof for preventing back flow of the fluid along the shaft 3.

Threaded or otherwise appropriately detachably connected to the free end of shaft 3 is a supporting cap 9 to which is detachably connected a housing 10, which flares outwardly, that is, in a direction away from the support 9. The flare of the housing is substantially uniform throughout the length of the housing so that the interior of the housing may be properly described as conically bored. Arranged within the housing 10 are brush segments exteriorly conforming in taper to the taper of the bore of the housing and together presenting interiorly a cylindrical surface, each being in the shape of a segment at any cross section and tapering longitudinally from its outer end to its inner end. Each of said segments is made up of a segmental plate 11 to which is fixed the bristle-carrying plate 12 from which extend inwardly the tufts of bristles 13. Each segmental plate 11 is provided with a longitudinal undercut tongue or key 14 slidingly mounted in a correspondingly undercut groove 15 in the housing 10. A section of the tongue 14 is omitted for providing a longitudinal recess 16 in each segment 11, and a bolt or pin 17 is provided for each segment and threaded through the housing 10 in position to extend into the respective recess 16 so as to limit the extent of possible longitudinal movement of the brush segments. Each brush segment is pressed outwardly by a preferably coiled spring 18 connected to the supporting head 9 as by being anchored in sockets in the support. A disk-shaped brush 19 is detachably fixed to the support 9 in position for having its bristles extend into the cylindrical area surrounded by the brushes 12 when the said brushes are advanced sufficiently toward the support 9.

Cans or like receptacles are adapted to have their exteriors cleansed by being thrust endwise into the space surrounded by the brushes 12 so as to be engaged and operated upon by the brushes 12 and by the brush 19. To facilitate thrusting the receptacles into

operative relation with the brushes, a mandrel 20 is provided having at its rear end an annular flange 21 and being carried by a shaft 22. The shaft 22 is slidingly mounted in supports 23 and is engaged by an operating lever 24. The supports 23 and the shaft 22 at the point of engagement therewith are squared or keyed together otherwise in any appropriate manner so as to permit longitudinal shifting of the shaft while retaining the shaft against revolution. The mandrel 20 is provided with a longitudinal groove 25 positioned for receiving the usual interior bead formed by the longitudinal seam of a can or like receptacle. Thus a can applied on the mandrel 20 is held by the mandrel against revolution.

In operation, a can must, of course, have one end open to be so applied on the mandrel and when so mounted is designed to be advanced axially by movement of the lever 24 into the space surrounded by the brushes 12. The support 9 and housing 10 and brushes carried thereby are revolved as the can is advanced and when the flange 21 strikes the end of the segments 11 the further advance of the mandrel will effect a corresponding longitudinal movement of the segments 11. The resulting action is a contracting of the cylinder described by the brushes, so that the bristles of the brushes are brought into sufficiently close contact with the exterior surface of the can to insure thorough cleansing thereof. The advance of the can is continued until its bottom engages the bristles of brush 19 and is cleansed thereby.

The support 9 is formed with a central opening 26, and the brush 19 is formed with a registering aperture 27 for admitting the cleansing fluid supplied through the pipe 6. This fluid finds its way radially across the bottom of the can and along the several brushes 12. Passage-ways for the fluid are provided by the spaces between the edges of the segments 11. The said spaces are of sufficient area when the segments are in their outermost position, as seen in Fig. 2, to enable the segments to advance inwardly to the limit allowed by the stops 17. It should be observed of course, that the flange 21 is of a diameter sufficiently smaller than the diameter of the outer end of the bore of housing 10 to be free to travel within the housing to the limit of the stroke of the mandrel.

What I claim is:—

1. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of a longitudinally outwardly flaring housing, and a series of brushes arranged within the housing and each tapering conversely to the taper of the housing and adapted to revolve with the housing.

2. In mechanism for cleansing the exter-

riors of receptacles, the combination with a revolubly mounted support, of a longitudinally outwardly flaring housing, a series of brushes arranged within the housing and each tapering conversely to the taper of the housing, and means for moving the brushes outwardly along the housing, the brushes being adapted to revolve with the housing and to be moved longitudinally inward against the pressure of the outwardly moving means when a receptacle is being acted upon by the brushes.

3. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of a longitudinally outwardly flaring housing, a series of brushes arranged within the housing and each tapering conversely to the taper of the housing, means for moving the brushes outwardly along the housing, the brushes being adapted to revolve with the housing and to be moved longitudinally inward against the pressure of the outwardly moving means when a receptacle is being acted upon by the brushes; and means for limiting the longitudinal movement of the brushes.

4. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of an outwardly, longitudinally flaring housing, conversely tapered brushes slidingly mounted within and engaging the surface of said housing, and longitudinal tongue and groove connections between the brushes and the housing.

5. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of an outwardly, longitudinally flaring housing, conversely tapered brushes slidingly mounted within and engaging the surface of said housing, longitudinal tongue and groove connections between the brushes and the housing, and means for limiting the longitudinal movement of the brushes.

6. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of an outwardly longitudinally flaring housing, conversely tapered brushes slidingly mounted within and engaging the surface of said housing, and undercut tongue and groove connections between the brushes and the housing.

7. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted supporting disk, and a disk brush carried thereby, of a housing surrounding the disk brush and supported by the supporting disk, the said housing flaring longitudinally outwardly, a series of brushes slidingly mounted within the housing and conversely tapered for being shifted axially when moved longitudinally, the disk, brush and support being formed with a registering

passage for the admission of cleansing fluid to the housing, and means for supplying cleansing fluid to said passage.

8. In mechanism for cleansing the exteriors of receptacles, the combination with a revolubly mounted support, of an outwardly, longitudinally flaring housing, conversely tapering brushes slidingly mounted within and engaging the walls of the housing, and a longitudinally movable mandrel adapted to carry a receptacle for introducing the same within the brushes, and means on the mandrel adapted to engage and shift the brushes longitudinally during revolution of the housing for causing contraction of the brushes toward the receptacle.

9. In mechanism for cleansing the ex-

teriors of receptacles, the combination with revolubly mounted brushes adapted to surround a receptacle, of a non-revolubly mounted longitudinally movable mandrel positioned for advancing a receptacle into the space surrounded by the brushes, the mandrel being formed with a longitudinal groove for receiving a bead on a receptacle and retaining the receptacle against revolution under the action of the brushes.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES M. RUDE.

Witnesses:

C. H. FESLER,
EDGAR M. KITCHIN.