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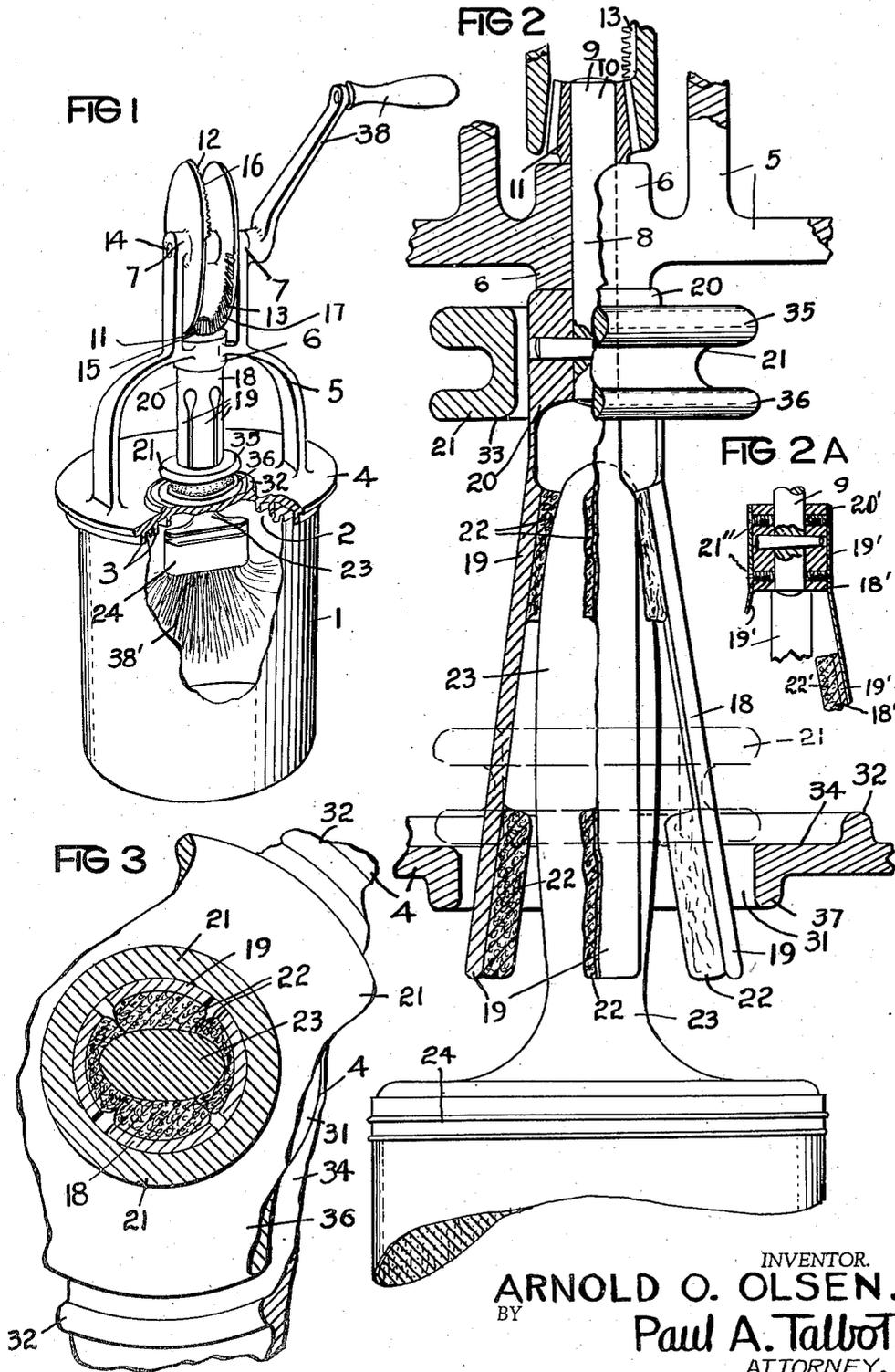
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BRUSH CLEANING DEVICE

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2 Sheets-Sheet 1



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## BRUSH CLEANING DEVICE

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My invention relates to a device particularly adapted to cleaning paint brushes in a paint can.

Among the purposes and objects of my invention are to provide:

A brush rotator which may be quickly applied to the standard paint can.

A quickly adjusted chuck or holder for handles, etc., having a wide variety of sizes and shapes.

A brush rotating means which alternates the direction of motion at certain intervals.

A handy, convenient painter's accessory.

A resilient holder and reverse motion shock absorber.

A clutch and adjusting means for it which also closes the top of the can to prevent splashing.

A spray proof can closure and brush holding spindle for revolving the brush in the can.

I accomplish the above and other objects by the construction herein set forth and shown in the accompanying drawings forming a part hereof, in which:

Fig. 1 is a perspective view showing one of the applications of my device.

Fig. 2 is fragmentary detail of the spindle and clutch.

Fig. 2A is a fragmentary detail of a modification of one of the jaws of the clutch.

Fig. 3 is a detail cross section at 3—3 Fig. 4.

Fig. 4 is a fragmentary cross section of the cover.

Fig. 5 is an elevation of one of the segmental gears.

Similar reference characters refer to similar parts throughout the several views of the drawing and in the specifications to follow.

My invention cleans the paint from the bristles of paint brushes by a whirling or centrifugal motion, by revolving the brush, first in one direction and then the other. The brush is dried by removing the device from the can in which the cleaning fluid is kept to an empty one where the motion is repeated.

In this, my disclosure, I have not attempted to show all the modifications which are possible to make within the scope and concept of my invention but rather to describe, in detail, a preferred form which may suggest modifications to one skilled in the art to which my invention pertains.

This disclosure is an embodiment of the principles underlying my invention and is intended as illustrative rather than to limit its scope.

Referring to the drawings, I have shown a can 1, such, for instance, as the compression top type of paint cans which are nearly universally used at this time, particularly in the sizes one gallon

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and less carried by hardware and paint stores. Snugly fitting the inner diameter of the opening 2 in the top of the can, I have provided the depending flange 3 which may be one of a plurality of such flanges secured to or formed integral with the cover plate or base 4. The several flanges 3 are suitable to engage the tops of paint cans of various sizes such as gallon, half gallon, quart, or any other size desired. My device may be constructed also in a number of sizes, each to suit a range of several sizes of paint cans.

The base 4 not only serves as a means detachably securing my device to the paint can but also serves to cover the can during operation to prevent paint or other liquid and/or pigment from being sprayed or thrown out. The base 4 also is provided with the frame 5 which supports the bearings 6 and 7 and the moving parts.

The vertical bearing 6 receives the journal 8 of the spindle 9, the upper end 10 of which is secured to the bevel pinion 11 which alternately meshes with the segmental racks 12 and 13 which are so disposed on the drive shaft 14 that one of said racks meshes on one side of said pinion; then after disengaging said pinion, the other rack engages the pinion on the opposite side, thereby causing the spindle to revolve first in one direction then in the opposite direction.

The same result is also obtainable by substituting friction surfaces for the teeth 15 of the pinion 11 and the teeth 16 and 17 of the segmental racks 12 and 13.

Secured to the spindle 9 at the end opposite the pinion 11 is the chuck 18 comprising the spring retracted arms 19 which normally diverge from the hub 20 when the chuck is open and are substantially parallel when the chuck is closed by forcing the slidable collar 21 down over the arms.

Each arm is preferably provided with the resilient pads 22 of neoprene-sponge or other suitable material which is adapted to withstand the oil and cleaning liquid which may be on the handle 23 of the brush 24 which may be held in the chuck and revolved by the mechanism described above.

In Fig. 2A I have shown the modified arms 19' as secured to the hub 20' by the screws 21'', thereby detachably securing the arms to the hub.

In Fig. 3, the handle 23 is shown as oval in cross section and this figure also shows how the resilience of the pads 22 compensates for such an irregular transverse shape. The pads likewise conform to the longitudinal variations of shape and size and also provide resiliency in absorbing

some of the shock of the sudden reversing of motion of the spindle 9 resulting from the alternate engagement of the segmental racks 12 and 13 with the pinion 11 or the modified friction devices and surfaces (not shown) which may be substituted for the pinion and segmental racks.

In Fig. 2A, I have shown a modification of the chuck 18' in which the arms 19' are shown detachably secured to the hub 20' by means of the screws 21''. The arms 19' may be flat springs and thus are detachably secured to the hub at one end and are permanently secured to the heavy, more rigid lower portion of the arms to which the resilient pads 22' are secured.

The collar 21 may, in some cases, be modified by being threaded and the arms also may be provided with threads to receive the threaded collar to assist in forcing the collar to clamp the arms on the brush handle or other device which is held in the chuck.

The base 4 is provided with the center aperture 31 which is of sufficient diameter to receive the arms 19 of the chuck when in their open position as may be seen by referring to Fig. 2 of the drawings. The collar at its lower position of travel over the arms of the chuck is partly shown in broken lines.

The base 4 is preferably provided with an upwardly projecting ridge 32 surrounding the collar 21 and catching any liquid or spray which may escape between the under face 33 of the collar and the top surface 34 of the base 4.

The collar is provided with the outward extending flange 35 which serves as a handle or knob for sliding the collar on the chuck arms and the lower flange 36 which serves as a cover over the aperture 31 as well as to provide the extended under surface 33 for the collar.

A downwardly projecting ridge 37 is provided around the aperture 31 to reduce the spray leakage through the aperture around the chuck and handle.

The bristles 38' of the brush 24, when revolved, are thrown outwardly as shown in Fig. 1 of the drawings, thus most effectively releasing the liquid and pigments in cleaning. The bristles return to their normal vertical position, then rub against each other and fly outwardly away from each other at each stop or reversal of the direction of travel of the revolving brush, chuck and spindle.

The drive shaft 14 is shown as being provided with a crank 38 or other means for revolving said shaft in one direction or both directions. The racks 12 and 13, however, will reverse the motion of the spindle 9 while the drive shaft continues to revolve in one direction. It is thus unnecessary to reverse the motion of the drive shaft such as by turning the crank in the opposite direction or obviously by providing other mechanical devices to revolve the drive shaft in one direction, then to revolve it in the opposite direction.

The size and relation of the parts may vary to suit the particular service to which my device may be suited.

The foregoing specifications of the preferred embodiment of my invention are, by this disclosure, a contribution to the better understanding of the following claims which set forth my invention and for which this is my Letters Patent.

I claim:

1. In a brush cleaner, a paint can for cleaning liquid and a base covering said can, said base having brush revolving means mounted thereon and means reversing said brush revolving means

and a center aperture, said brush revolving means comprising a spindle and a chuck having arms which extend downward through said center aperture and a collar slidable on the arms of the chuck to close said arms when in its lowered position, and resilient pads secured only within said arms compressible to conform to the brush handle when said collar is at its lowered position and to permit said collar to slide on the outside of said arms over said pads, a part of said pads being disposed below said base.

2. In a brush cleaner, a paint can and top opening therein for cleaning liquid and a base covering said opening, said base having brush revolving means mounted thereon and means reversing said brush revolving means and a center aperture, said revolving means comprising a spindle and chuck having arms which extend downwardly through said center aperture and a collar slidable on the arms of the chuck to close said arms when in its lowered position and resilient pads to grip the handle of the brush, said base having a downwardly extending flange to snugly fit the opening in the can, said chuck and the brush handle secured by said chuck extending above the top of said can.

3. In a brush cleaner, a paint can for cleaning liquid and a base covering said can, said base having brush revolving means mounted thereon and means reversing said brush revolving means and a center aperture, said brush revolving means comprising a spindle and chuck having arms which extend downwardly through said center aperture and a collar slidable on the arms of the chuck to close said arms and also to close said center aperture when in its lowered position.

4. In a brush cleaner, a paint can for cleaning liquid and a base covering said can, said base having brush revolving means mounted thereon and means reversing said brush revolving means and a center aperture, said brush revolving means comprising a spindle and chuck having arms which extend downwardly through said center aperture and a collar slidable on the arms of the chuck to close said arms and also to close said center aperture when in its lowered position, and resilient pads secured within said arms compressible to conform to a brush handle when said collar is at its lowered position, and an upwardly projecting ridge around said center aperture to cause leakage around said collar to drain back into said can.

5. In a brush cleaning device having a can for cleaning liquid and a cover and brush rotating means mounted thereon and an aperture in said cover through which the brush handle and said rotating means for the brush are free to rotate, said brush rotating means comprising a chuck engaging the handle of the brush and holding the top end of the handle above the top of said can, with the handle of the brush extending through said aperture, whereby the depth of the can may be less than the length of the brush and its handle.

6. In a brush cleaning device having a can for cleaning liquid and a cover and brush rotating means mounted thereon and an aperture in said cover through which the brush handle and rotating means for the brush are free to rotate, a chuck engaging the handle of the brush being rotated in said aperture in said cover, said chuck comprising a part of said rotating means and having arms movable to release or grip the handle of the brush while projecting through the said aperture.

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7. In a device for paint cans to clean brushes therein, a base having means depending therefrom to engage the tops of cans of various sizes, a chuck for engaging the handle of a brush which projects above the top of a can, revolving means mounted on said base for revolving said chuck and brush held therein, said chuck having its lower end below the top of said can and its upper end above the top of said can.

8. In a device for paint cans to clean brushes therein, a base having means depending therefrom to engage the tops of cans of various sizes, a chuck for engaging the handle of a brush which projects above the top of a can, revolving means mounted on said base for revolving said chuck and brush held therein, said chuck having its lower end below the top of said can and its upper end above the top of said can, a collar, arms for said chuck closed by said collar holding the lower ends of said arms fixed in a closed position to hold said brush handle while projecting above said can and compressible pads secured only to the inner surfaces of said arms enabling said collar to slide on the outer surfaces of said arms, a part of said pads being disposed below the top of said can.

9. In a device for cleaning paint brushes in which ordinary paint cans are supplied with cleaning fluid through their top openings, a cover for the can, said cover having brush holding and revolving means, said means holding the handle of the brush enabling the brush handle to extend from within the can to above the top of the can,

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said brush holding means extending downwardly through said cover.

10. In a device for cleaning paint brushes in which ordinary paint cans are supplied with cleaning fluid through their top openings, a cover for the can, said cover having brush holding and revolving means, said means holding the handle of the brush enabling the brush handle to extend from within the can to above the top of the can, said brush holding means extending downwardly through said cover, flange means depending from said cover snugly fitting into the top opening of the can to secure said cover to said can and means around said brush holding and revolving means to drain leakage back into the can.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,056,084	Bates	Mar. 18, 1913
1,133,613	Buss et al.	Mar. 30, 1915
1,202,432	Rozelle et al.	Oct. 24, 1916
1,305,902	Jaques	June 3, 1919
1,361,348	Pfisterer	Dec. 7, 1920
1,368,717	Gosar	Feb. 15, 1921
1,926,948	Iffland	Sept. 12, 1933
2,239,741	Schroder	Apr. 29, 1941
2,286,913	Kelly et al.	June 16, 1942
2,286,972	Nash	June 16, 1942