This invention relates to a cleaning device and more particularly to a device for cleaning paint applicators such as brushes, rollers and the like.

This application is a continuation-in-part of application Serial No. 115,763, filed June 8, 1961, now abandoned.

It has been common practice to clean paint brushes by suspending them in a container filled with a solvent or detergent and then cleaning with water after the solvent or detergent action is completed. Any agitation has been accomplished by manually moving the brushes through the solution in the container. A flocked or velcro type flocked cover is removed and placed in the solvent and then washed.

The present invention is directed to a device in which the applicators, whether they be brushes or rollers are suspended in the cleaning solution and are agitated therein and can be moved in their suspended position from one container to the other having different cleaning solutions therein. The device is adaptable for cleaning the entire paint roller without removing the cover.

An object of this invention is to provide a device in which paint brushes and rollers can be suspended in a cleaning solution and manually agitated therein in such a manner that the entire assembly can be removed from one cleaning solution to another.

Other objects of the invention will be obvious from the attached drawings in which

FIGURE 1 is an elevational view in section showing the device of my invention with paint brushes positioned therein;

FIGURE 2 is a top plan view of the device shown in FIGURE 1; and

FIGURE 3 shows the same type container with a conventional roll applicator suspended therein.

Referring to FIGURE 1 there is shown a container 2 of the bucket type, which is preferably made of spun aluminum so as to avoid a seam along the side and in the area where the side wall and the bottom adjoin. It will be understood, of course, that other types of containers may be utilized satisfactorily in carrying out this invention. A bottom support member 3 rests on the circular bottom of the container 2. The dimensions of the support member 3 are sufficient to support substantially the entire diameter of the container. The ends of the support 3 are rounded at 4 to conform to the arc of the wall of the container. An upstanding bearing stud 5 is attached to the center of the support 3 by means of a screw 6. The support 3 is so shaped that the ends 7 are bent slightly downwardly so that the central portion 8 of the support 3 is raised above the bottom 9 of the container a distance sufficient to prevent the head 10 of the screw 6 from engaging the bottom of the container. In the embodiment here illustrated the support 3 has adjustable ends 11 secured thereto by means of the clamping screws 12 passing through slots 13 in the support 3 and being in threaded engagement with the end 11. With this arrangement the screws 12 can be loosened and the ends 11 raised in or out as the case may be to conform to the size of the container 2.

A top support 14 spans the top of the container 2 across a diameter preferably parallel to the bottom support 3. This top support 14 is secured to the container by means of screws 15 which pass through the rolled head 16 which forms the upper lip of the container. The upper support 14 is provided with a central notch 17 extending from the one side to the center of the support. This notch is preferably at an angle of ninety degrees with respect to the long dimension of the top support 14.

The brushes to be cleaned are secured to a shaft 18 by means of a bolt 19 and thumb screws 20. The bolt passes through the brushes and a hole in the shaft 18. The shaft 18 is hollow to receive the stud 21 secured to the bottom support 3. The longitudinal opening 21 in the center of the shaft is sufficiently large to receive the stud 25 with a minimum of friction. The stud 35 is provided with a shoulder 22 on which the bottom surface 23 of the shaft 18 is supported.

The top of the shaft 18 has an extension 24 which is received in the notch 17. The two slideable members 25 are attached to the top support 14 by means of screws 26 which pass through slots 27 in the members 25. Each of these members 25 is provided with an opening 28 which is of a width equal to the diameter of extension 24 and is of a depth slightly greater than one-half the diameter of extension 24. These two openings 28 are at right angles to the notch 17. When the shaft extension 24 is in position in the notch 17, the sliding members 25 are pushed toward one another until their edges 29 abut. In this position the screws 25 are tightened, clamping the two slideable members to the top support 14, holding the shaft 18 in substantially vertical position in the center of the container 2. In order to insure that the sliding members 25 will not become loose due to continual rotating of the shaft 18 there are provided two studs 30, one in each sliding member which are threaded to each sliding member 25 and enter into holes in the top support 14. The arrangement is such that when the sliding members 25 are in abutting relationship the holes in the sliding members 25 and the top support 14 are in alignment so that the studs 30 enter the openings in the support 14 and prevent movement of the sliding members 25. A device such as a hand crank 31 is attached to the top of the shaft extension 24 for turning the shaft and the brushes 32 attached thereto. The brushes should be preferably so positioned that the longitudinal axis through the handle of the brush is not parallel to the shaft 18 but is at a relatively wide angle with respect to the axis, so that as the brush handle revolves the brush will travel through a wide arc in the solution. The brushes are prevented from assuming a position parallel to the shaft 18 by means of collars 33 located between the brushes 32 and the shaft 18. These collars are provided with sharp tines 34 which penetrate the wood part of the brush handle. When the thumb screws 20 are tightened on the bolt 19 they clamp the brushes 32 thereon and this clamping action prevents the collars 33 from turning on the bolt 19. With this arrangement the brushes can be oriented at the proper angle and tightened in that position so as to attain the optimum benefit of the path of travel of the brushes in the cleaning solution.

The top support 14 is also provided with a pivoted support 35 which is attached to the support for rotary motion with respect thereto by means of a stud 36. This support has an upstanding member 37 which is substantially the same size as the stud 35 attached to the bottom support 3. When the brushes are removed from the solution, the support 35 is pivoted one hundred and eighty degrees from the position shown in FIGURE 1 and the shaft 18 is placed over the upstanding member 37 so that the assembly is supported in this manner over the container permitting the cleaning solution to be drained from the brushes back into the container. In the modification shown in FIGURE 3, the same device is used for suspending a conventional paint roller in cleaning solution by placing the shaft 38 of the handle supporting portion of the roller in the notch 17 and sliding the members 25 into position surrounding the shaft 38 holding the same firmly.
in position in the center of the container. The sliding members 25 are then locked in this position by means of the locking stud 30. This device can then be actuated by merely turning the handle 39 between the palms of the hands.

In operation, the brushes to be cleaned are attached to the hollow shaft 18 by means of the bolt and thumb screw assembly 19 and 20 and the brushes are rotated about the bolt 19 until the longitudinal axis through the handle is at a relatively wide angle with respect to the shaft 18. When the brushes have assumed this position the thumb screws 20 are tightened so that the times 34 of the collars 33 penetrate the wood of the handle and hold the brushes at this angle. The bottom support 3 is then tipped slightly to one side so that the bottom of the shaft 18 can be placed over the stud 5. This can be accomplished by merely pushing the stud 5 with the bottom of the shaft 18 until the two are in proper axial alignment for placing the shaft over the stud. When the shaft is so positioned, the entire assembly is rotated about the pivot point provided by the bottom support 3 until the central shaft 18 is in a vertical position with the extension 24 in the center of the notch 17. Slidable members 25 are then moved in a direction parallel to the longitudinal dimension of the top support 14 until they abut one another and allow the openings 25 therein surrounding extensions 24 and forming a top bearing thereof. The sliding members 25 are locked in this position by means of the studs 30. The cleaning solution is then poured into the container and the brushes are agitated therein by means of turning a hand crank 51 for a sufficient time to remove the paint from the brushes.

The supporting shaft 18 is then removed by sliding the members 25 away from one another permitting the extension 24 to be removed from the notch 17 and rotating the shaft 18 about the pivot point formed by the bottom support 3 a sufficient distance to allow the brush assembly to be lifted past the top support 14. At this time the pivoted support 35 is rotated one hundred eighty degrees about the stud 35 and the shaft 18 is placed over the upstanding member 37 and in this position the cleaning solution remaining in the brushes can drain back into the container.

Similar containers can be provided with other types of solution and the assembly of the shaft 18 with the brushes and the handle can be placed in another container in the same manner as described. In those cases where only one container is intended, different cleaning solutions can be used in the same container sequentially until the proper degree of cleaning is effected.

It will be clear from the above that I have provided a device which will simplify the cleaning of paint brushes and which will be highly useful for cleaning brushes at the scene of a painting operation.

I claim:

1. A paint implement cleaning device of the type described, comprising a container for cleaning fluid, a support spanning the bottom of said container, a support spanning the top of said container which support has a shaft receiving opening located centrally thereof and a slot extending from said opening to one side edge of the support so as to enable movement of the shaft into and out of said opening transversely of said support, an upwardly extending projection on said bottom support, a shaft extending between said supports the lower end portion of which shaft is hollow and positioned over the projection on the bottom support, the opposite end of the shaft extending through the shaft receiving opening in the top support, a pair of sliding members disposed on either side of the shaft receiving opening in said top support, said sliding members being provided with edges shaped to surround said shaft so as to hold it in position in said top support, means for rotating said shaft, and means for attaching articles to be cleaned to said shaft.

2. A paint implement cleaning device of the type described, comprising a container for cleaning fluid, a support spanning the bottom of said container, a support spanning the top of said container which support has a shaft receiving opening located centrally thereof and a slot extending from said opening to one side edge of the support so as to enable movement of the shaft into and out of said opening transversely of said support, an upwardly extending projection on said bottom support, a shaft extending between said supports the lower end portion of which shaft is hollow and positioned over the projection on the bottom support, the opposite end of the shaft extending through the shaft receiving opening in the top support, a pair of sliding members disposed on either side of the shaft receiving opening in said top support, said sliding members being provided with edges shaped to surround said shaft so as to hold it in position in said top support, means for locking said sliding members in position about said shaft, means for rotating said shaft, and means for attaching articles to be cleaned to said shaft.

3. A paint implement cleaning device of the type described, comprising a container for cleaning fluid, a support spanning the bottom of said container, a support spanning the top of said container which support has a shaft receiving opening located centrally thereof and a slot extending from said opening to one side edge of the support so as to enable movement of the shaft into and out of said opening transversely of said support, an upwardly extending projection on said bottom support, a shaft extending between said supports and having one end thereof positioned over the projection on the bottom support, the opposite end of the shaft extending through the shaft receiving opening in the top support, a pair of sliding members disposed on either side of the shaft receiving opening in said top support, said sliding members being provided with edges shaped to surround said shaft to hold it in position in said top support, means for locking said sliding members in position about said shaft, means for rotating said shaft, and means for attaching articles to be cleaned to said shaft.

4. An attachment for a bucket and the like having an opening defining edge formation at its upper end; comprising an elongated support adapted to diemetrically span said edge formation which support has a shaft receiving opening arranged centrally thereof and a slot extending from said opening to one side edge of the support so as to enable movement of a shaft into and out of said opening transversely of said support; means for securing the ends of said support to said edge formation; and a pair of opposed shaft holding elements that are respectively slidable mounted for longitudinal movement on said support toward and from said shaft receiving opening between a shaft holding position and a shaft releasing position.

5. An attachment in accordance with claim 4; which includes means for maintaining said pair of elements in their shaft holding position on said support.

6. An attachment in accordance with claim 4; which includes a shaft that is adapted to be rotatably mounted vertically in said shaft receiving opening between said shaft holding elements in such a manner that the lower portion of the shaft is arranged to extend downwardly from the support into the bucket and the upper portion of the shaft is arranged to extend above the support; means for effecting rotation of the shaft; and means for separably securing to the lower shaft portion at least one paint brush.

7. An attachment for a bucket and the like having an opening defining edge formation at its upper end; com-
prising an elongated support adapted to diametrically span said edge formation which support has a shaft receiving opening arranged centrally thereof and a slot extending from said opening to one side edge of the support so as to enable movement of a shaft into and out of said opening transversely of said support; means for securing the ends of said support to said edge formation; and at least one shaft holding element that is slideably mounted for longitudinal movement on said support toward and from said shaft receiving opening between a shaft holding position and a shaft releasing position.