April 20, 1954 F. K. NOMIYA 2,675,572

ANNULAR BRUSH

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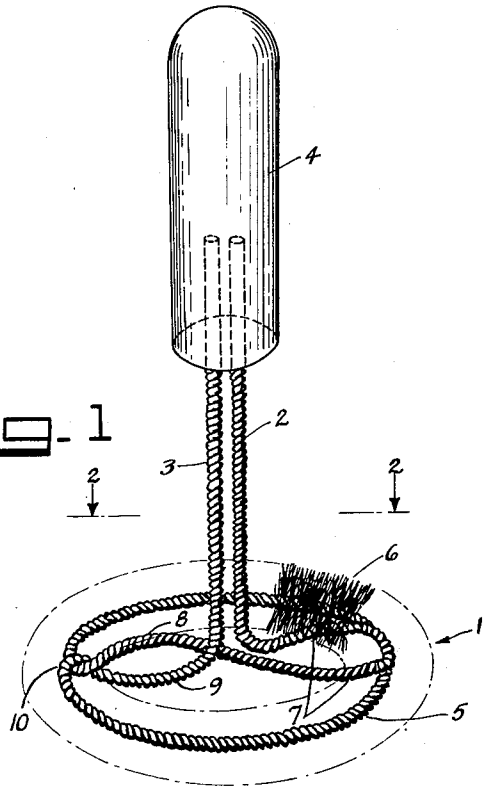


Fig. 1

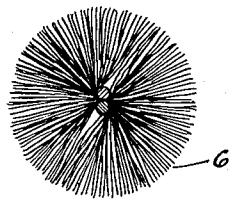


Fig. 3

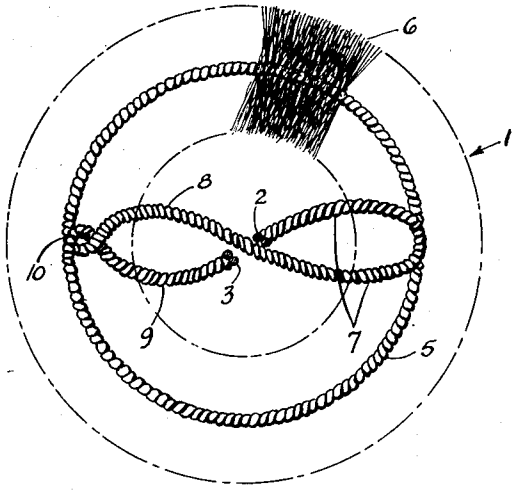


Fig. 2

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ANNULAR BRUSH

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1 Claim. (Cl. 15—164)

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This invention relates to brushes, and has for one of its objects the provision of an annular brush having an annular body of bristles that project radially and which body is supported from the handle in a manner that insures against detrimental distortion of the brush when in use.

Another object of the invention is the provision of an annular brush having an annular body of bristles with the center of the body substantially open to permit dirt and foreign material to pass through the same and which brush is provided with a handle extending axially of the body and at one side thereof.

Heretofore brushes intended for use in cleaning cylindrical, or generally cylindrical vessels, or shallow circular pans, have normally been generally U-shaped with the handle projecting from one side of the U. Usually in brushes of the type having the bristles secured between twisted wires, the ends of the U have been extended to either form a handle or for securement of the handle thereto. In many instances, it is practically impossible to use the conventional brushes in cylindrical vessels, either because the vessel is too deep and one of its sides interferes with the handle, or because the largest side of the brush cannot be flat on the bottom, and contact between the brush and the bottom or lower corner of the vessel is only with the bristles at the tip end of the brush.

Also in conventional brushes that have heretofore attempted to make arcuately extending bodies at the end of a handle for use in cylindrical or substantially cylindrical vessels, the outer end of the brush or brush body is unsupported and a cleaning pressure cannot be applied without permanently bending the body.

One of the objects of the present invention is the provision of a brush that has none of the above objections and that is cheap and easy to make and string, and which brush will readily reach the curved lower corner of a cylindrical vessel at any side of the latter and that may be rotated on its central axis with the application of appreciable pressure without injury to the brush or detrimental distortion thereof.

Insofar as the present brush is concerned, the provision of an annular brush with an axially extending handle, and which brush is adapted to simultaneously clean the bottom and the sides of a vessel along its lower corner and along the line of the juncture between said sides and bottom with the minimum of effort and with maximum efficiency is another object of the invention.

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Other objects and advantages will appear in the description and in the drawings.

In the drawings, Fig. 1 is a perspective view of the brush with the twisted wire support for the same clearly emphasized to show the structure of the support.

Fig. 2 is a sectional view as seen from line 2—2 of Fig. 1.

Fig. 3 is an enlarged sectional view taken through one side of the annular body of bristles to indicate the radial directions of the bristles.

In the preferred form of the invention the brush head, generally designated 1 is annularly shaped and is formed from a single length of twisted wire.

The opposite end portions 2, 3 of the said wire (two wires twisted together form the one length of wire) may extend substantially parallel into one end of a handle 4 in which they are securely held. The handle 4 shown herein is elongated so as to extend longitudinally of the end portions 2, 3, although it is to be understood that for certain uses the handle may be of another shape.

Intermediate the end portions 2, 3 of said single length of wire, the latter is formed to provide an annular support 5 for bristles 6.

These bristles are held between the two wires that are twisted together to form the single length having end portions 2, 3, and the bristles project radially from two sides of the portion 5. Thus an annular torus-shaped, centrally open, body of bristles is provided.

Between end portions 2, 3 of the brush and the annular portion 5, portion 2 is formed to provide a laterally projecting loop 7 that extends over one side of the annular support 5, and the end of this loop opposite the end that connects with portion 2 is then extended, as at 8, to the side of the annular support 5 that is opposite that over which loop 7 extends and integrally connects with one end of said portion 5.

The lower end of the portion 3 extends laterally as at 9 to the point where the portion 8 connects with the annular portion 5, where it joins the other end of said annular portion.

Where portions 8, 9 join the end of the portion of the wire forming the annular brush support, they may be twisted together as indicated at 10 in the drawings.

Only the circular or annular section 5 of the length of wire need have the bristles 6, and the remainder may be bare. The bristles themselves may be of any material suitable for brushes and for whatever use the brush is intended.

By the foregoing structure, it is seen that the

brush is well balanced since the handle is coaxial with the annular body of the brush. The entire lower side of the annular body of bristles may be readily placed flat on the bottom of a vessel with equal pressure at points around the body. The loop 7 supports the side of the body opposite its connection with portions 8, 9, and these latter portions also strengthen the head.

When in a vessel and on the bottom, as above mentioned, the brush can be given a rotary movement or a revolvable movement, and the corners of the vessel will be cleaned as well as the sides adjacent said lower corners.

Any foreign material will readily pass through the center of the annular brush at opposite sides of the loop 7 or portions 8, 9, or they may pass through the loops provided by these portions.

I claim:

A brush comprising a length of wire formed to provide an annular support for bristles, bristles projecting radially outwardly from said support at all points around the same and in all directions normal to the axis of said wire to form a torus-shaped brush, one end portion of said wire extending radially inwardly from a point on said support to a point adjacent the central axis of said support and then axially thereof, the other end portion of said wire extending generally diametrically across said support from said first mentioned point to the opposite side of said support and in engagement with the latter and back to a point adjacent said central axis and axially thereof alongside said first mentioned portion to form a handle.

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