United States Patent [19]

Welter

[11] **3,763,516**

[45] **Oct. 9, 1973**

[54] **CAR WASHING BRUSH**

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[21] Appl. No.: **189,538**

[52] **U.S. Cl.** **15/182**

[51] **Int. Cl.** **A46b 7/10,** A46d 1/00

[58] **Field of Search** 15/179, 180, 181, 15/182, 183

[56] **References Cited**

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[57] **ABSTRACT**

Bristle-holding channels spiralled around a hollow cylindrical core are held in spaced turns by peening the core to deform the portions of the core between the turns outwardly to create a rib portion positioned between the turns of the channel. In another embodiment, an adhesive in unhardened state is placed on a core in beads extending along the core and a channel is then wound tightly on the core forcing the adhesive out from under the channel, and to form spacing ribs between the turns of the channel, and the ribs are then hardened.

3 Claims, 5 Drawing Figures

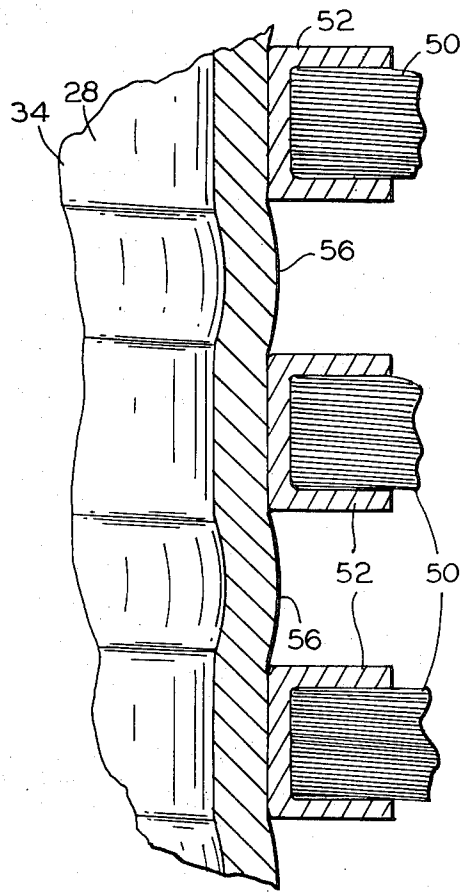


FIG. 1

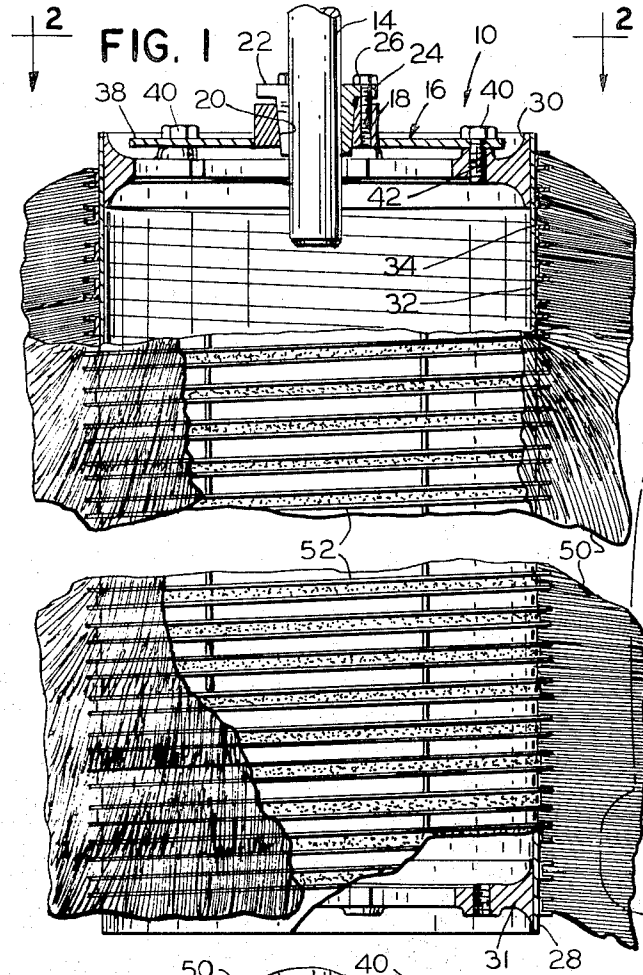
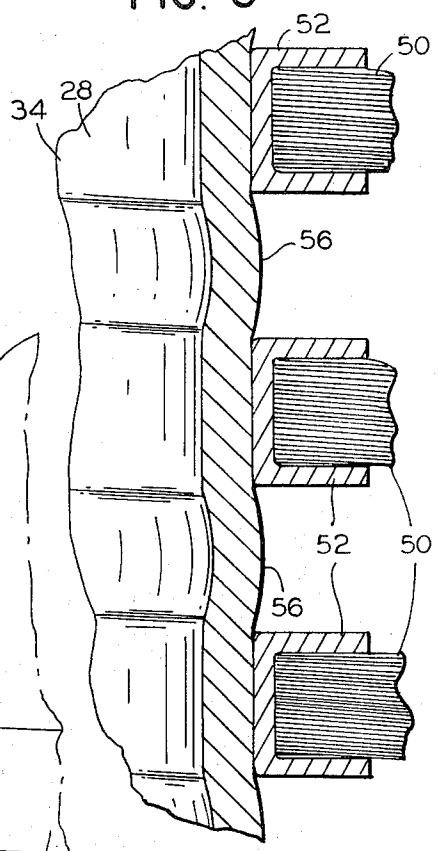


FIG. 3



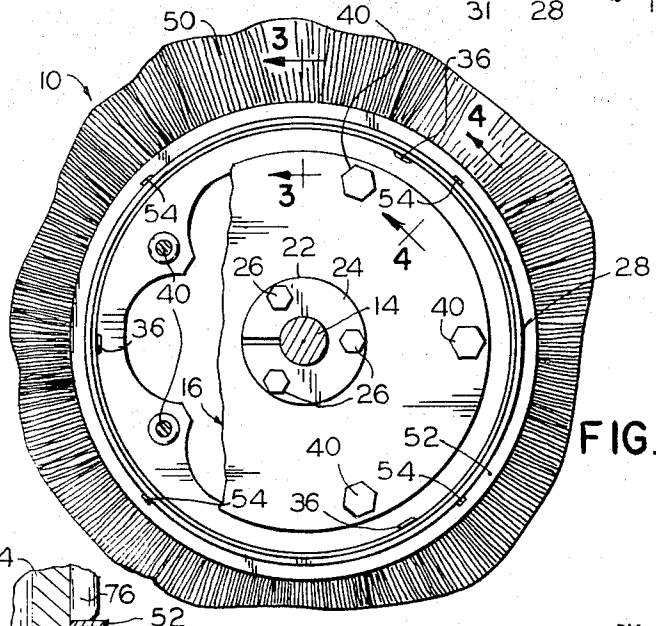
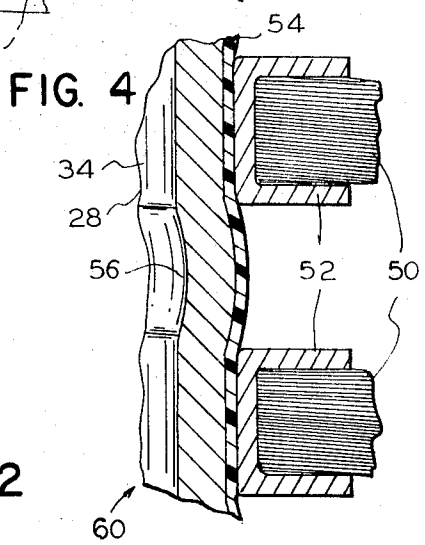


FIG. 2

FIG. 4



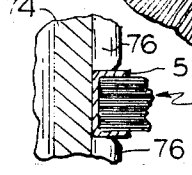


FIG. 5

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CAR WASHING BRUSH

This invention relates to car washing brushes, and more particularly to improved spiral brushes.

Another object of the invention is to provide new and improved car washing brushes.

Another object of the invention is to provide new and improved spiral brushes.

A further object of the invention is to provide a spiral brush having a hollow core in which a spiral rib is spun outwardly between spaced turns of a spiral bristle-holding member on the periphery of the core.

Another object of the invention is to provide a brush having a cylindrical core with a bristle-holding member spiralled on the core in spaced turns and bunching an adhesive bead into spacing segments between the turns.

In the drawings

FIG. 1 is a side elevational view of a brush forming one embodiment of the invention;

FIG. 2 is a plan view taken along line 2—2 of FIG. 1;

FIG. 3 is a fragmentary sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is a fragmentary sectional view taken along line 4—4 of FIG. 2; and,

FIG. 5 is a fragmentary, vertical sectional view of a brush forming an alternate embodiment of the invention.

Referring now in detail to the drawings, a wrap-around brush **10** (FIG. 1) forming one embodiment of the invention and of a general type used in automatic car washes, is supported in its operating position to cleanse the side of a vehicle **12.** The brush is supported and rotated by a drive shaft **14** through a coupling **16** whose center hub **18** has a tapered bore **20** to receive a taper-lock bushing **22.** Flange **24** of the bushing is drawn down by the bolts **26** to tighten or wedge the bushing in the bore **20** to lock the assembly onto the drive shaft **14.** Both ends of the core **28** have identical hubs **30** and **31** welded to inside face **32** of a thin wall metal tube or cylinder **34,** the hub **30** being attached to a coupling **38** by capscrews **40** screwed into bores **42.** It can be seen by this design that the cores **10** may be reverse ended due to greater wearing of one end of the brush, by thereby adding additional life to the brush. This hanging design also has an advantage over present through-shaft mounted brushes, by being able to change the brushes rapidly, simply by loosening the screws **40** and slipping the brush **10** off. This reduces down time for the car wash.

Brush bristles **50** are clamped in a bristle-holding channel or bead **52,** which is tightly wound on the cylinder **34** in an even helix or spiral with adjacent turns of the channel uniformly spaced apart, the wall of the cylinder **34** being perfectly cylindrical at this time. The end portions of the channel are secured to the cylinder by welding or clamps. Then a spinning head (not shown) of the flail or peening type is moved into the cylinder and the cylinder is peened to form an outwardly protruding bead or rib **56** between the adjacent turns of the channel, and the rib locks the turns of the channel against moving along the cylinder **34,** which preferably is of aluminum.

EMBODIMENT OF FIG. 4

A brush **60** forming an alternate embodiment of the invention is identical to the brush **10** except that an adhesive **54** is applied to core **34** before the channel **52** is wound on the core and secured to the core, the adhesive serving to hold the turns of the channel in place.

EMBODIMENT OF FIG. 5

A bush **70** forming an alternate embodiment of the invention is like the brush **10** except that a tubular core or cylinder **74** is not peened or spun and adjacent turns of a bristle-holding channel or bead **52** are held in spaced positions by hardened adhesive ribs or beads **76.** In forming the brush **70,** the adhesive for the beads **76** is applied to the cylinder **74** in the form of beads or ribs extending along the cylinder and spaced around the cylinder. The channel **52** is wound tightly on and secured to the cylinder and squashes the unhardened adhesive into the beads or ribs **76.** The adhesive then is hardened to positively space the turns of the channel apart. The adhesive is preferably of the air curing type, and may be a rubber cement or a caulking compound.

What is claimed is:

1. In a car washing brush,
a cylindrical core,
a channel-like bristle-holding member secured to the periphery of the core in an open helix,
and spacer means engaging portions of the adjacent turns of the member to space them apart and comprising an adhesive securing the member to the core, the adhesive being in the form of a bead extending longitudinally relative to the core and being thickened between adjacent turns of the bristle-holding member.

2. The car washing brush of claim **1** wherein the adhesive is a hardened caulking compound.

3. In a car washing brush,
a generally cylindrical tubular metal core,
and a channel-like bristle-holding member secured to the periphery of the core in an open helix,
the helical portion of the core engaged by the bristle-holding member being flat transversely to the helix,
the helical portion of the core not engaged by the bristle-holding member being belled or convex outwardly and concave inwardly transverse to the helix so as to space apart the adjacent turns of the member, the core being substantially uniform in thickness throughout.

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