

[54] **BRUSH CONSTRUCTION**

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[52] U.S. Cl.....15/182, 29/125

[51] Int. Cl.....A46b 3/16

[58] Field of Search ..15/179, 181, 182, 183; 29/123, 29/124, 125

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[57]

ABSTRACT

A pair of tubes having filament strip securing clips secured thereto by rivets are mounted on hubs secured to a driving shaft. The hubs have keying slots receiving the heads of the rivets to key the tubes to the hubs.

7 Claims, 3 Drawing Figures

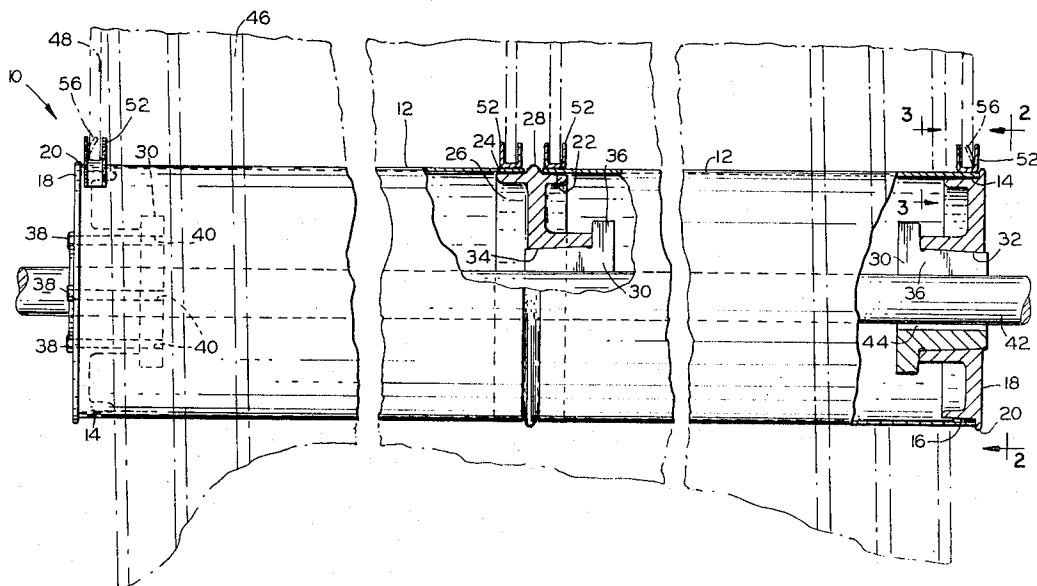


FIG. 1

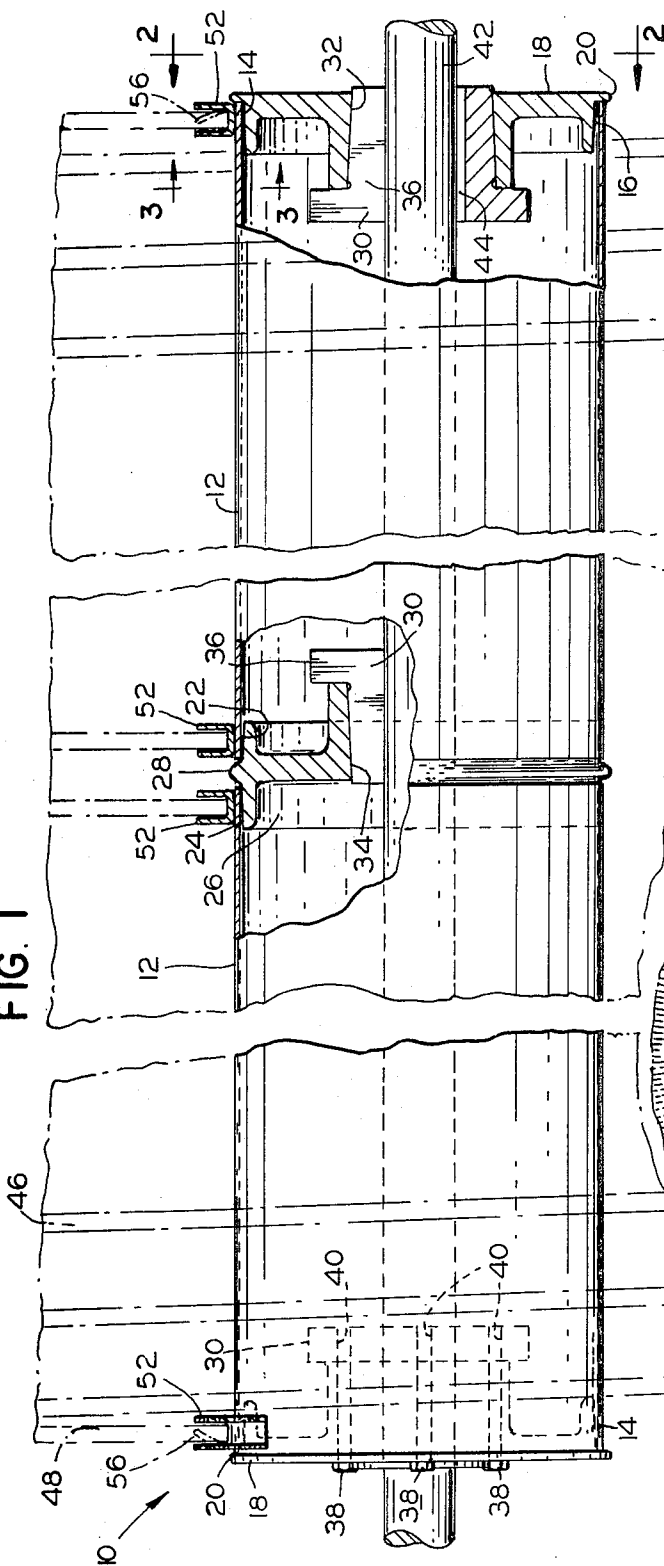


FIG. 3

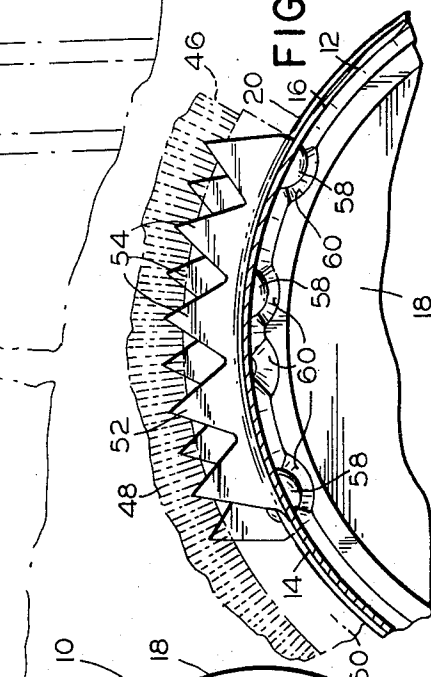
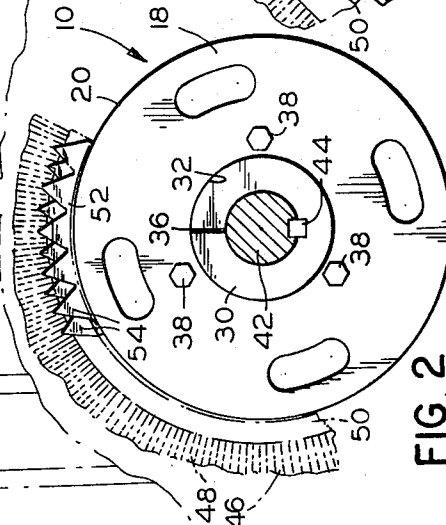


FIG. 2



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BRUSH CONSTRUCTION

DESCRIPTION

This invention relates to an improved brush construction and more particularly to an improved, replaceable brush.

An object of the invention is to provide a new and improved brush construction.

Another object of the invention is to provide a new and improved replaceable brush.

Another object of the invention is to provide a brush construction having replaceable sleeves provided with attachment clips secured thereto by rivets, the heads of which fit into keying slots in hubs mounted on a shaft.

In the drawings:

FIG. 1 is a side elevation view, partially broken away, of a brush core assembly;

FIG. 2 is an end view taken on line 2—2 of FIG. 1; and

FIG. 3 is a vertical sectional view taken along line 3—3 in FIG. 1.

Referring now in detail to the drawings, an improved brush construction 10 forming one embodiment of the invention includes tubes 12 mounted at their outer ends 14 over tapered portions or sleeves 16 of end hubs 18. In assembly the tube ends 14 are drawn up tight against flanges 20 of end hubs 18. Inner or adjacent ends 22 of the tubes 12 are mounted over tapered portions 24 of a center hub 26. A bead or flange 78 is provided as a stop for ends 22. Taper lock bushings 30 fit in tapered bores 32 and 34 in the hubs 18 and 26. Each bushing 30 is provided with a slit 36 to cause it to be clamped tightly on drive shaft 42 when capscrews 38 are threaded into tapped bores 40. The brush construction 15 is driven by the shaft 42. A key 44 may be provided but usually is not necessary.

Brush strips 46 are spirally wound around the sleeves 12, the ends of bristles 48 being held in metal channels 50. The ends of the channels 50 are held in clips 52 mounted at the outer ends 14 of the tubes 12. The clips are of a channel shape, the sides of which are formed as saw teeth 54 which are crimped over the channels 50 as at 56 (FIG. 1) to lock the end portions of the channels 50 in place to the sleeves. The clips 52 are secured to the tubes 12 by rivets 58 which have heads keying into tapered keyways 60 in the tapered portions 16 of the hubs 18 and 26, thus preventing any slippage between parts of core assembly.

In assembling the brush construction, the bushings 30 and the righthand hub 18, as viewed in FIG. 1, are placed on the shaft 42. The capscrews 38 then are inserted in the righthand hub and bushing and are tightened to lock the bushing on the shaft against both rotary and longitudinal movement relative to the shaft. The righthand sleeve 12 then is pushed partially onto the righthand hub 18. The hub 26 is placed partly on the bushing 30 and partially in the righthand sleeve. Then the lefthand sleeve 12 is placed on the shaft and pushed partially onto the hub 26, and the lefthand bushing 30 is placed on the shaft and the lefthand hub 18 is placed partially on that bushing and partially in the lefthand sleeve.

The capscrews 38 then are screwed into the lefthand bushing to pull the lefthand hub tightly onto that bushing to lock the bushing on the shaft against movement relative to the shaft, and to push the sleeves 12 tightly

onto the tapered hubs 18 and 26, push the tapered hub 26 tightly onto the middle bushing 30 and push the lefthand hub 18 tightly into the lefthand sleeve.

There are four of the tapered keyways 60 in each of the mounting portions of the hubs 18 and 26 and the keyways are so spaced as to receive the three heads of the rivets 58 whether the middle rivet head is closer to either of the outer rivets, which are so spaced at opposite ends of the sleeves. Thus, the sleeves can be turned end for end and still be accommodated by the keyways.

It can be seen that additional tubes 12 and center hubs 26 can be used to arrive at any desired length of brush. Also, the hub 26, middle bushing 30 and one of the sleeves 12 can be omitted to make the brush a single sleeve length.

I claim:

1. In combination,

a brush sleeve,

driving hub means having a keyway,

a brush strip,

brush strip anchoring means comprising a channel-like clip,

and fastener means comprising a rivet securing the anchoring means to the sleeve and having a head portion projecting into the keyway to key the sleeve to the hub means.

2. In combination,

a brush sleeve,

driving hub means having a keyway,

a brush strip,

brush strip anchoring means,

and fastener means comprising a rivet securing the anchoring means to the sleeve and having a head portion projecting into the keyway to key the sleeve to the hub means.

3. In a brush construction,

a strip including bristles and base holding the bristles, a sleeve,

anchor means for securing at least the end portions of the base to the sleeve,

and keying means fixed to the interior of the sleeve and comprising rivets securing the anchor means to the sleeve and having heads adapted to serve as keys and projecting into the interior of the sleeve.

4. The brush construction of claim 3 wherein the anchor means comprises a plurality of clips having tabs which are bent over the base.

5. In brush construction,

a first hub having a tapered, flanged drum portion and a tapered bore,

a second hub having a tapered, flanged drum portion and a tapered bore,

a sleeve extending onto the drum portions,

pulling means pulling the drum portions into the end portions of the sleeve,

and split tapered bushings adapted to wedgingly enter the tapered bores,

the pulling means also serving to pull the bushings into the hubs means pulling the bushings onto the hubs.

6. In a brush construction,

a sleeve,

a strip including bristles and a base holding the bristles and wound on the sleeve,

a clip fastened to the base,

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a plurality of rivets fastening the clip to the sleeve and spaced apart around the periphery of the sleeve and having heads projecting into the sleeve, and a hub having a drum portion provided with keyways spaced apart and receiving the heads of the rivets in keying engagement. 5

7. In a brush construction,
a shaft having a keyway,
a split bushing fitting on the shaft and having a

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tapered exterior and an interior keyway opposite the split,
a key in the keyways,
a hub having an outer drum portion and tapered bore wedgingly receiving the bushing and clamping the bushing tightly on the shaft,
and brush sleeve mounted on the hub.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,694,844 Dated October 3, 1972

Inventor(s) JEFF R. WELTER

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 2, line 50, after "In" insert --a--;

Column 2, line 61, after "hubs" insert a period (.) and
cancel remainder of the line;

Column 2, line 62, cancel "hubs."

Signed and sealed this 13th day of February 1973.

(SEAL)
Attest:

EDWARD M. FLETCHER, JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents