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SEPARABLE BRUSHES

Filed April 21, 1958

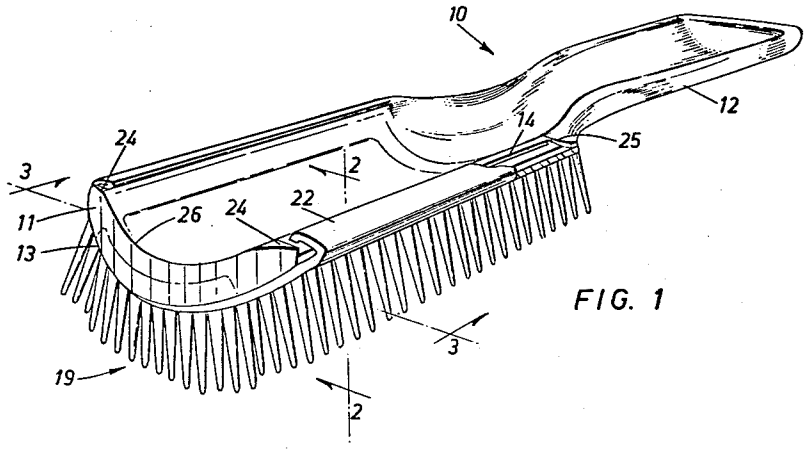


FIG. 1

FIG. 2

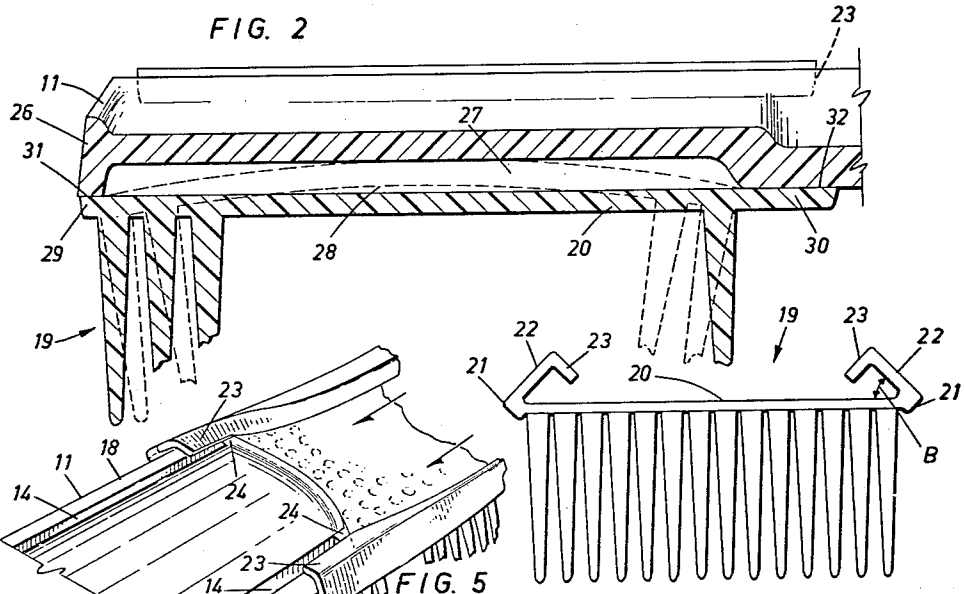


FIG. 5

FIG. 4

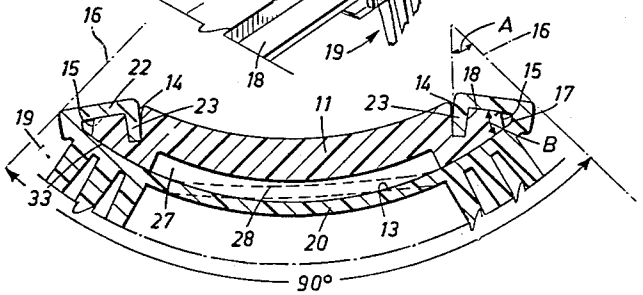


FIG. 3

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SEPARABLE BRUSHES

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1 Claim. (Cl. 15—176)

This invention relates to improvements in brushes of the separable type and particularly to an improved brush structure of this class in which the brush part is securely locked to the handle during use and prevented from sliding thereon.

Prior brushes of the class considered herein are exemplified by the brush disclosed in United States Patent No. 2,795,807 dated June 18, 1957, in which an elongated base member having an arcuate transversely curved supporting surface embodies longitudinal side grooves on the terminus of an arcuate surface of greater than 180 degrees extent. The resilient bristle member including a sheet portion and beading along the edges of the sheet portion is slidable onto the arcuate surface for insertion of the beaded portion into the grooves. The sheet portion loosely extends about the arcuate surface on the base member to provide for a cushioning or resilient effect of the sheet member when mounted on the base member. The sheet member is not therefore tensioned and is held solely on the base member by friction of the beaded portions in the longitudinal grooves of the base member. During usage the beaded portions tend to loosen in the grooves. Ordinarily therefore, unless great care is taken in the production of such prior art articles or in any case after some continued usage of such articles of the prior art, the beaded portions may slide too freely within the grooves and permit the bristle member to come free of the base member during use.

It is the main object of the invention to overcome the particular disadvantages of prior constructions of brushes of the class defined herein.

It is another object of the invention to provide a separable brush structure in which the bristle member sheet is positively tensioned over the base member arcuate surface and is retained in locked position thereon by reason of sheet tensioning and in which end wall portions are provided in the base member for restraining the sheet against endwise movement on the base member during use.

Other objects of the invention will be appreciated by the study of the following specification taken in conjunction with the accompanying drawings.

In the drawings:

Figure 1 is a perspective view of an improved separable brush structure according to the invention.

Figure 2 is a partial sectional view on the line 2—2 of Figure 1.

Figure 3 is a sectional view on the line 3—3 of Figure 1.

Figure 4 is an end view of the bristle element of this invention in its normal unflexed position.

Figure 5 is a partial perspective view illustrating the manner of inserting the base member of the handle portion of the brush of the invention into the bristle member.

In the drawings the improved separable brush construction of the invention comprises a handle portion **10** including a base member **11** and a handle part **12**. The base member **11** is of elongated form having a transversely convex arcuate contour or surface **13** of substantially 90 degrees of arcuate extent as shown in Figure 3. Two parallel spaced apart longitudinally extending grooves **14** are located inwardly of the lateral arcuate extent, that is the side longitudinal edges **15**, of the base member and extend in the base member toward the arcuate surface thereof at an angle A of about 45 degrees from a geometric radius **16** extending to the ends **17** of the arcuate supporting surface **13**.

Clamping surfaces **18** extend on the base member from each locking groove **14** thereof outwardly geometrically to intersect the arc of the supporting surface at an included angle B of about 45 degrees and substantially at the ends of said arc.

A bristle member **19** embodies a substantially normally flat resilient tensionable supporting sheet **20** preferably formed of polyethylene of a size, that is, of a length and width, adapted to overlie or cover the arcuate surface **13** of the base member **11**. The supporting sheet **20** has parallel longitudinally extending side terminal edges **21** substantially from which the longitudinal clamping flanges **22** extend inwardly at an included angle of about 45 degrees thereby corresponding to the angle B. Clamping flange **22** in each case is adapted to engage the clamping surfaces **18** of the base member.

A longitudinally extending locking flange **23** of predetermined length is provided on each clamping flange **22** and defines an inward terminus therefor extending at an angle of about 90 degrees therefrom toward the sheet **20**. The base member as seen in Figure 1 embodies end wall portions **24** and **25** defining the longitudinal extent of the locking grooves **14** to a dimension accommodating the locking flange **23**. Accordingly the locking grooves of the base member are of a predetermined length adapted to accommodate the locking flanges of the bristle member and to restrain the latter from longitudinal sliding motion therein.

In use the base member, as indicated in Figure 5 in which the perspective view thereof looks downwardly toward the outer end **26** of the base member the bristle member sheet **20**, is caused to slide over the base member due to the flexible nature of the clamping and locking flanges **22** and **23** thereof riding over the end wall portions **24**. When the support sheet **20** of the bristle member arrives in the position indicated in Figure 2 relative to the base member **11** the locking flanges **23** will seat within the locking grooves **14**. The tensioning of the sheet **20** necessary to enable the locking function to be accomplished by reason of the geometry, that is the relative position of the grooves and arcuate supporting surface, is accomplished by providing an air cushion recess **27** within the arcuate surface **13** to permit flexing of the sheet **20** over a flexing portion **28** thereof illustrated in Figure 2. It will be realized therefore that in the assembly positions illustrated in Figure 5, the sheet **20** when moved to the region of the recess **27** enables the locking flanges **23** to be fully inserted within the locking grooves **14** while continuing sliding assembly. In final assembly both ends **29** and **30** of the sheet **20** are fully supported by full arcuate surfaces **31** and **32** of the base member while a cushioning or flange portion **28** is partially unsupported therebetween except over the arcuate edge portions **33** extending longitudinally and defining the side limits of the cushioning recess **27**.

It is intended that the present disclosure should not be considered in any limiting sense other than that of the following claim having regard to the art.

What we claim as our invention is:

A brush comprising in combination: an elongated base member; a brush element supporting surface on said base member of transversely convex arcuate contour of substantially 90 degrees of arcuate extent; two parallel spaced

apart longitudinally extending locking grooves of predetermined length in said base member located inwardly of the lateral arcuate extent of said supporting surface and extending in said base member toward the arcuate surface thereof substantially at an angle of about 45 degrees, respectively, from a geometric radius extending to the respective end of the arc of said supporting surface; a clamping surface on said base member extending from each locking groove thereof outwardly geometrically to intersect the arc of said surface at an included angle of about 45 degrees; a bristle member including a substantially normally flat resilient tensionable supporting sheet adapted to cover said arcuate surface of said base member and having parallel longitudinally extending side terminal edges; a longitudinal clamping flange extending inwardly from each side edge of said sheet at an included angle of about 45 degrees and adapted to engage a clamping surface of said base member; a longitudinally extending locking flange of substantially said predetermined length on each clamping flange defining an inward terminus therefor and extending at an

angle of about 90 degrees therefrom towards said sheet and insertable into said locking grooves of said base member to tensionably clamp said sheet on the latter and restraining said sheet against longitudinal movement on said base member; an air cushion recess in the supporting surface of said base member extending longitudinally thereof a distance less than the length of said supporting sheet when clamped thereon and adapted for resilient flexing of said sheet thereinto; and integral rigid end wall portions on said base member at each end of each said locking groove defining the longitudinal extent of each locking groove.

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