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(54) **Method of brush manufacture.**

(57) A method of manufacturing brushes wherein two brush tapes which may be formed in accordance with the teachings of our U.K. Patent No. 1457074 or our Patent Application No. 7901230 or our Patent Application No. are arranged adjacent each other and held in this relationship by means of a bead of synthetic resinous material running along one side edge of the tapes. This bead may be extruded around the adjacent edges of the tapes or if beads of plastics material are already present on the tapes, may be formed by fusing the two beads together. There may be more than two adjacent tapes which may be arranged side-by-side or at an angle to each other or spaced apart and the construction of the tapes can be the same or different. Furthermore, one or more barrier layers may be located between the tapes.

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"METHOD OF BRUSH MANUFACTURE"

This invention relates to a method of manufacturing brushes.

5 In our U.K. Patent No.1457074, a method of manufacturing brush components is disclosed wherein a plurality of endless bristle filaments are folded into a zig-zag formation and held in that position by means of threads knitted into the zig-zag, the resultant tape then being slit centrally and having plastics locking beads
10 extruded onto it either before or after slitting. In our subsequent co-pending U.K. Patent Application No.7901230 further methods of brush construction are disclosed wherein beads of plastics material are extruded onto aligned bristle elements held between endless haul-off belts. It is
15 also possible to manufacture brush components by taking a tow of endless bristle elements and weaving this with a suitable warp yarn to provide a woven fabric which subsequently has plastics beads extruded onto it transverse to the tow wefts and is slit into brush component tapes. The
20 longitudinally extending knitted or woven brush component, with or without its extruded plastics beads, and the components formed by the methods disclosed in our said Patent Application No.7901230, will hereinafter be referred to as brush tapes.

25 The present invention seeks to provide an improved method of manufacturing brushes, which method incorporates the use of brush tapes as described above.

According to the present invention, we provide a method of manufacturing a brush component wherein at least
30 two brush tapes having a plurality of aligned bristles are arranged adjacent each other and are held in this relationship by means of a bead of synthetic resinous material running along one side edge of the tapes, the said bead acting as an anchoring device for securing the
35 brush component in a brush holder.

In one construction, for example, if the tapes are knitted or woven tapes, the two tapes can be held in abutting side-by-side relationship and have the bead

extruded along their abutting side edges. Alternatively,
if the tapes are formed by a different method and/or
already have beads along their side edges, then the
existing beads along their side edges can be fused
5 together to provide a single anchoring bead.

If desired, several tapes may be arranged in
side-by-side relationship and these may be of similar or
of different construction. For example, the tapes may be
formed of the same or different bristle components or
10 they may be of different densities or thickness or the
bristles or tows or bundles into which they are formed
may be of different diameter.

In order to strengthen the brush component, a
carrier may be incorporated in the bead and this may be
15 in the form of a coated or uncoated wire or textile
filament. If a wire is provided, this will mean that
if the component is bent to a particular shape, it will
maintain that shape.

In a particular embodiment of this invention, one or
20 more barrier layers, e.g. cloths or impervious membranes
may be incorporated into the component. The membrane can
be a single sheet of plastics material located between the
two tapes, e.g. a polymeric sheet which would fuse with
the material of the bead, or, alternatively, a plurality
25 of individual overlapping membranes could be provided.
If desired, the membrane may be pre-formed into a generally
pleated construction and by spacing the two brush tapes
slightly apart, the pleated membrane can then be
accommodated between the tapes. Obviously, the closer
30 together the tapes are located, the more the bristles on
each side of the tape will be accommodated in the
indentations provided by the pleats. With such a
construction, the resultant brush component would not lose
any of its flexibility in the longitudinal direction and
35 could be flexed easily about its bead, and if an
impervious membrane is used, the brush could be largely
waterproof.

If desired, the two or more tapes making up the

brush component could be orientated relative to each other so that instead of lying side-by-side, they are inclined to each other with only the edges of the tapes to which the bead is applied being adjacent each other.

5 . Alternatively, the tapes could be slightly spaced apart.

In both these constructions, a membrane may be provided between the tapes.

CLAIMS

1. A method of manufacturing a brush component wherein at least two brush tapes as hereinbefore defined and having a plurality of aligned bristles are arranged adjacent each other and are held in this relationship by means of a bead of synthetic resinous material running along one side edge of the tapes, the said bead acting as an anchoring device for securing the brush component in a brush holder.
2. A method according to claim 1 wherein the said at least two tapes are held in abutting side-by-side relationship and wherein the bead is extruded along their abutting side edges.
3. A method according to claim 1 wherein said tapes are provided with beads along their side edges and wherein these existing beads are fused together to provide a single anchoring bead.
4. A method according to claim 1, 2 or 3 wherein several tapes are arranged in side-by-side relationship.
5. A method according to any one of claims 1-4 wherein the tapes are of the same construction.
6. A method according to any one of claims 1-4 wherein the tapes are of different construction.
7. A method according to claim 6 wherein the tapes have different bristle components.
8. A method according to claim 6 or 7 wherein the tapes are of different densities.
9. A method according to claim 6, 7 or 8 wherein the tapes are of different thickness.
10. A method according to any one of claims 6-9 wherein the bristles are of different diameter.
11. A method according to any one of claims 6-10 wherein the tows or bundles into which the bristles are formed are of different diameter.
12. A method according to any one of the preceding claims wherein a strengthening carrier is incorporated into the bead.
13. A method according to claim 12 wherein the carrier

is a coated or uncoated wire.

14. A method according to any one of the preceding claims wherein one or more barrier layers is/are incorporated into the compartment.

5 15. A method according to claim 14 wherein the barrier layer is a single sheet of plastics material located between the two tapes.

16. A method according to claim 14 wherein the barrier layer is comprised of a plurality of individual overlapping
10 membranes.

17. A method according to claim 15 wherein the barrier layer is pre-formed into a generally pleated construction and respective bundles of bristle forming the tapes are located, one in each indentation provided by the pleats,
15 those bundles of one tape being accommodated on one side of the membrane and those of the other on the other side.

18. A method according to claim 1 or any of claims 3-17 when dependent on claim 1 wherein the two or more tapes making up the brush component are orientated relative to
20 each other so that instead of lying side-by-side, they are inclined to each other with only the edges of the tapes to which the bead is applied being adjacent each other.

19. A method according to claim 1 or any one of claims
25 3-17 when dependent on claim 1 wherein the tapes are slightly spaced apart and held together by a bridging bead.



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EUROPEAN SEARCH REPORT

0020114 Application number

EP 80 30 1732

DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
D	<u>GB - A - 1 457 074</u> (SCHLEGEL LTD.) * Figures 1,2 * --	1	A 46 D 1/00
D,E	<u>GB - A - 2 012 574</u> (SCHLEGEL LTD.) * Figures 1 to 12 * --	1	
A	<u>US - A - 3 533 124</u> (W. POLNAU) * Figure 4 * --	1	
A	<u>GB - A - 2 002 225</u> (SCHLEGEL LTD.) * Figures 3 to 5 * --	1-5	TECHNICAL FIELDS SEARCHED (Int.Cl. ³) A 46 B A 46 D
A	<u>FR - A - 2 392 297</u> (SOCIETE INDUS- TRIELLE ET FINANCIERE LE PROFIL) * Figures 2 to 10 * --	15-19	
A	<u>US - A - 3 351 387</u> (L.L. LECHENE) * Figures 1 to 6 * --	1	
A	<u>US - A - 3 353 200</u> (V.K. CHARVAT) * Claims 1 to 22 * --	2,3,10	CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons
A	<u>DE - B - 1 229 037</u> (THE OSBORN MANUFACTURING COMPANY) * Figures 1 to 8 * --	2,3	
A	<u>CH - A - 450 353</u> (W. BORN AG) * Figures 1 to 4 * ----	1-5	
☒ The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search The Hague		Date of completion of the search 14.08.1980	Examiner AUER