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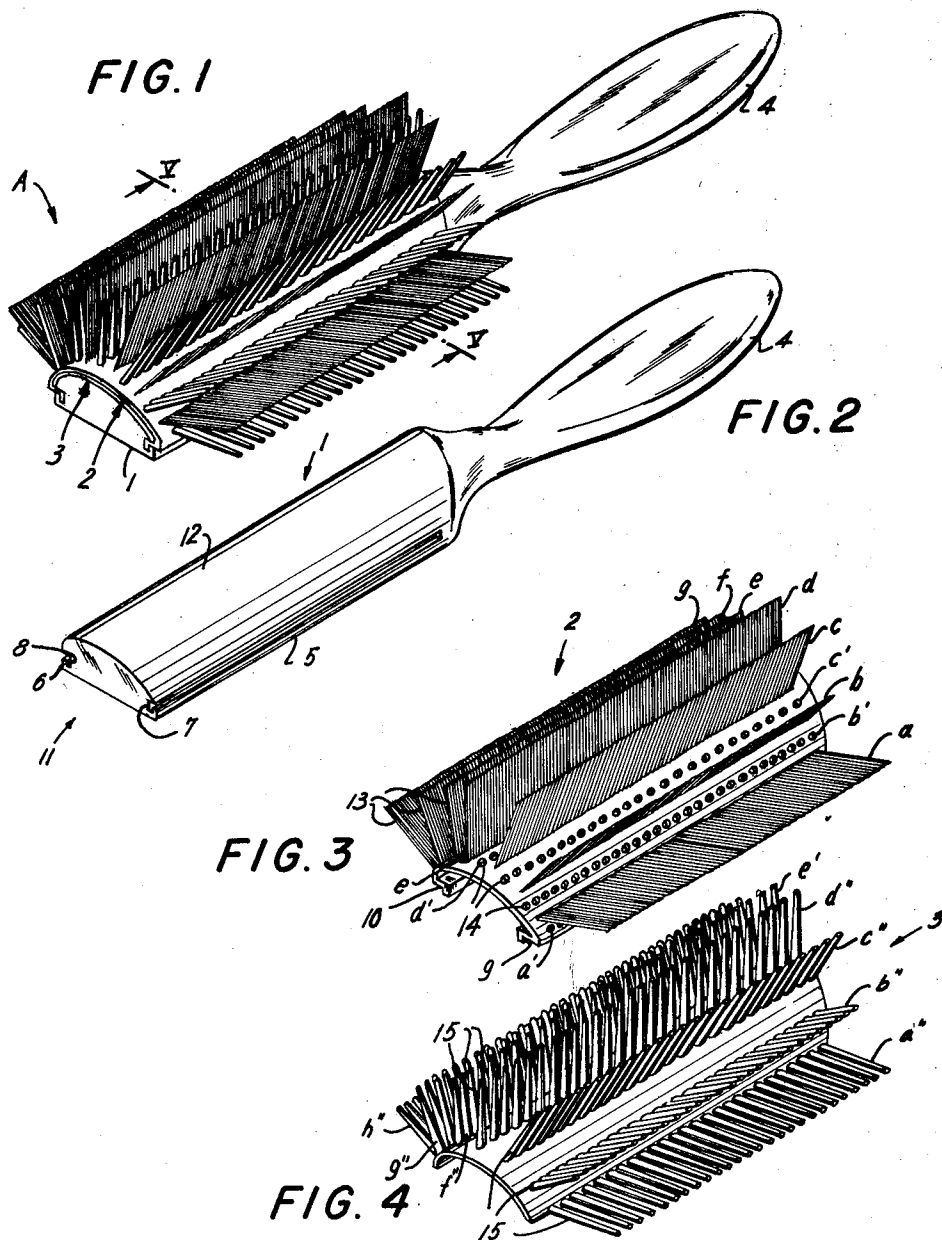
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3,128,487

COMPOSITE BRUSH

Filed Feb. 19, 1962

2 Sheets-Sheet 1



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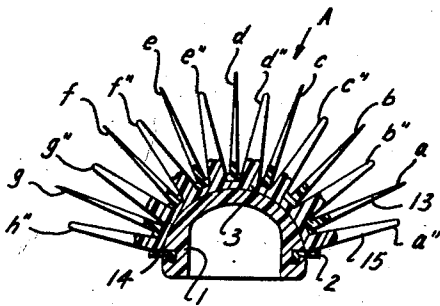


FIG. 5

FIG. 6

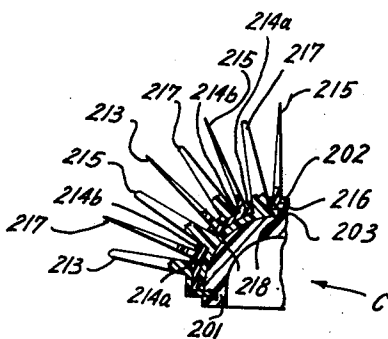
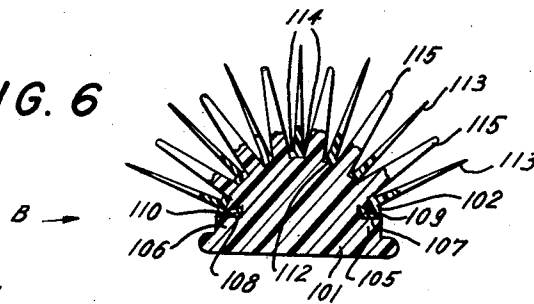
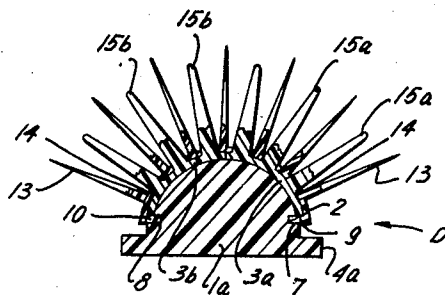


FIG. 7

FIG. 8



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3,128,487

COMPOSITE BRUSH

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The present invention relates to brushes in general, and more particularly to a composite brush which comprises two or more types of hairs, bristles or teeth.

An important object of the invention is to provide a brush wherein softer bristles are combined with stiffer bristles or teeth in such a way that the brushing, combing, or scrubbing action of stiffer bristles is immediately followed by the brushing action of softer or more pliable bristles to bring about an improved brushing effect.

Another object of the invention is to provide a composite brush of the just outlined characteristics which is especially suited for use as a hair brush in that the skin-invigorating and hair-combing action of stiffer bristles is combined with the hair-smoothing action of the softer bristles.

A further object of the invention is to provide a composite brush in which the bristles may be separated from the back support to facilitate cleaning thereof or to replace worn out bristles by a new set of bristles.

An additional object of the instant invention is to provide a composite brush which is of eye-pleasing appearance in that different types of and/or differently colored bristles may be assembled in a novel way to increase the sales appeal of the ultimate product.

A concomitant object of the invention is to provide a novel attachment for the back support of a brush.

Still another object of the invention is to provide an attachment of the just outlined characteristics which may be manufactured in any desired color or shape so as to be connectable with differently dimensioned and/or configured back supports and to form composite brushes or combination brushes and combs of the above outlined characteristics.

With the above objects in view, the invention resides in the provision of a composite brush or combination brush and comb comprising at least two bristle carriers one of which is formed with apertures or perforations for the bristles of the other carrier so that the bristles of the one carrier penetrate through and extend between the bristles of the other carrier. The one carrier may assume the form of a handgrip member or each of the carriers may assume the form of a substantially sheet like bristly structure with one thereof preferably detachably connected to a separate handgrip member or back support.

The novel features which are considered as characteristic of the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following detailed description of certain specific embodiments with reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of a composite brush which embodies one form of my invention;

FIG. 2 is a perspective view of a back support which forms part of the composite brush shown in FIG. 1;

FIG. 3 is a perspective view of an apertured bristle carrier which forms part of the brush shown in FIG. 1 and which is detachably connectable to the back support of FIG. 2;

FIG. 4 is a perspective view of a second bristle carrier whose bristles may extend through the apertures of the carrier shown in FIG. 3 and which forms part of the composite brush shown in FIG. 1;

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FIG. 5 is an enlarged transverse section as seen in the direction of arrows from the line V—V of FIG. 1;

FIG. 6 is a transverse section through a slightly modified composite brush wherein the back support constitutes one of the bristle carriers;

FIG. 7 is a fragmentary transverse section through a different composite brush which comprises three bristle carriers; and

FIG. 8 is a transverse section through a further brush which again comprises three bristle carriers but wherein two of the carriers are arranged side-by-side rather than within each other.

Referring now in greater detail to the illustrated embodiments, and first to FIG. 1, there is shown a composite brush A which comprises a back support 11 and an attachment including an outer bristle carrier or panel 2 and an inner bristle carrier or panel 3. The brush A is assumed to constitute a hair brush or a combined brush and comb and its back support 1 is provided with an elongated handle or handgrip means 4 which is integral therewith and which extends from one of its longitudinal ends. The entire brush is assumed to consist of synthetic plastic material and, in order to enhance its appearance, the individual components of this brush are preferably made of differently colored substances. For example, the back support 1 may consist of transparent or translucent polystyrene, the inner panel 3 may consist of transparent or translucent alkatene, and the outer panel 2 may consist of black alkatene plastic.

The back support 1 comprises two spaced parallel edge portions 5, 6 (FIG. 2) which are respectively formed with open L-shaped grooves or channels 7, 8 so as to accommodate parallel L-shaped edge portions or tongues 9, 10 of the outer panel 2 (see FIG. 3) when the brush A is assembled in the manner shown in FIGS. 1 and 5. The grooves 7, 8 open into the front end face of the back support 1 and terminate close to the rear end of the back support so that the tongues 9, 10 may be received therein by slipping the panel 2 onto the back support in the direction indicated in FIG. 2 by the arrow 11. The grooves 7, 8 and the tongues 9, 10 together constitute means for detachably securing the panels 2, 3 to the back support. The back support is formed with a transversely arched convex supporting surface 12 which extends between the grooves 7, 8 and which abuts against the inner side of the inner panel 3 when the brush A is fully assembled.

The outer bristle carrier or panel 2 is shown in greater detail in FIG. 3. It comprises a plurality of bristles 13 which project from its outer side and which are arranged in spaced rows *a—g* extending in parallelism with each other and with the tongues 9, 10. These rows of bristles 13 alternate with parallel rows *a'—h'* of apertures or holes 14 which extend between the inner and outer sides of the panel 2. The roots of the bristles 13 are integral with the sheet-like main body portion of the panel 2 and these bristles are assumed to be comparatively soft and pliable. The entire panel 2 is preferably at least slightly elastic and hence flexible so that it may be deformed in order to follow the outlines of the supporting surface 12.

The inner bristle carrier or panel 3 (FIG. 4) is preferably at least slightly elastic or flexible, and its outer side is provided with eight spaced parallel rows *a''—h''* of comparatively stiff bristles or comb teeth 15 so that these rows of bristles or teeth 15 may pass through the respective rows *a'—h'* of apertures 14 in a manner as illustrated in FIG. 5. The roots of the bristles 15 are integral with the sheet-like main body portion of the panel 3.

The brush A is assembled as follows:

In the first step, the bristles or teeth 15 are passed through the respective apertures 14 so that the attach-

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ment including the panels 2, 3 is completely assembled, i.e. the outer side of the inner panel 3 is then adjacent to the inner side of the outer panel 2. In the next step, the tongues 9, 10 are respectively introduced into the grooves 7, 8 and the brush is assembled by moving the tongues in the direction indicated by the arrow 11. Since the material of the panel 2 is at least slightly elastic, the tongues 9, 10 may be at least slightly compressed during movement into and thereupon retained by friction in their respective grooves. If desired, the outer side of the panel 3 and/or the inner side of the panel 2 may be coated with a suitable adhesive substance so that the panels may form a unitary non-separable attachment which is slipped onto or off the supporting surface 12 of the back support 1.

Of course, the bristles 13, 15 and the apertures 14 may be arranged in a number of ways so as to form different eye-pleasing and/or utilitarian patterns. For example, the rows of bristles 13, 15 and the rows of apertures 14 may extend transversely between the edge portions 5, 6 of the back support 1, they may extend diagonally across the supporting surface 12, they may form rectangular or otherwise configured fields of bristles and apertures, and so forth. In the embodiment of FIGS. 1 to 5, the apertures 14 are circular, the stiffer bristles or teeth 15 are of circular cross section, and the softer bristles 13 are comparatively flat. The brush A may be utilized as a combination brush and comb in that the combing, scrubbing and massaging action of the stiffer bristles or teeth 15 is combined with the smoothing or brushing action of the softer bristles 13. The main body portion of the outer panel 2 may be somewhat more flexible than the main body portion of the inner panel 3 so that the outer panel may be more readily deformed and flexed preparatory to and during introduction of bristles or teeth 15 into the respective apertures 14, as well as during subsequent introduction of the tongues 9, 10 into the respective grooves of the back support 1.

The inner panel 3 need not be attached to the back support since it is safely retained by engagement of its bristles or teeth 15 with the walls bounding the apertures 14 and by being received between the supporting surface 12 and the inner side of the outer panel. The back support 1 may be rigid or it may consist of deformable plastic material.

FIG. 6 illustrates a greatly simplified composite brush or combination brush and comb B which comprises a first bristle carrier or back support 101 and a second bristle carrier or panel 102 whose dovetailed edge portions or tongues 109, 110 are respectively received in dovetailed grooves 107, 108 provided in the edge portions 105, 106 of the back support. The latter comprises a plurality of rows of bristles 115 which extend from its exposed side or supporting surface 112 and which project through aligned apertures 114 formed in the panel 102. The rows of apertures 114 and of bristles 115 alternate with rows of bristles 113 which are integral with and project from the outer side of the panel 102. It will be noted that the inner side of the panel 102 abuts against and is supported by the surface 112, and that the bristles 115 project between the bristles 113, i.e. beyond the outer side of the panel 102. It is preferred to construct the brush B in such a way that, if one set of bristles is to be stiffer than the other set, the bristles 115 are stiffer because it is more convenient to pass comparatively stiff bristles or teeth 115 through the apertures 114. The tongues 109, 110 and the grooves 107, 108 may but need not extend in the longitudinal direction of the back support 101 and these tongues and grooves may but need not be parallel with the rows of bristles 113, 115. If it is desired to replace the panel 102 by a new one, the user forcibly withdraws the tongues 109, 110 from the respective grooves and thereupon moves the panel 102 away from the supporting surface 112. A new panel is applied by reversing the just described procedure.

Referring to FIG. 7, there is shown a composite brush

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C which comprises a back support 201, an outermost bristle carrier or panel 202, an innermost bristle carrier or panel 203, and a median or intermediate bristle carrier or panel 216. The outermost panel 202 is provided with outwardly extending bristles 213 and with two groups of apertures 214a, 214b. The apertures 214a, 214b are arranged in adjacent parallel rows and each pair of rows of apertures 214a, 214b alternates with a row of bristles 213. The apertures 214a receive the bristles 217 of the median panel 216, and this latter panel is formed with a group of apertures 218 which are aligned with the apertures 214b. The innermost panel 203 is provided with bristles 215 which extend through aligned apertures 218, 214b and beyond the outer side of the outermost panel 202. Thus, when the brush C is fully assembled, the rows of bristles 213, 217 and 215 alternate with each other. The advantage of this brush is that the bristles may produce eye-pleasing effects if the panels 202, 203, 216 consist of differently colored plastic material.

Referring finally to FIG. 8, there is shown a composite brush D which is similar to the brush A of FIGS. 1 to 5 excepting that the inner bristle carrier or panel is divided into two equal bristle carriers or panels 3a, 3b and that the back support 1a simultaneously constitutes the handgrip means of the brush. The panels 3a, 3b are placed side-by-side and are respectively provided with outwardly projecting bristles 15a, 15b which extend through apertures 14 formed in the outer bristle carrier or panel 2. The bristles 15a, 15b project beyond the outer side of the panel 2 and between the latter's bristles 13. The color of the bristles 15a is preferably different from the color of the bristles 15b and/or 13.

For example, the bristles 15a, 15b may be sufficiently stiff to act as the teeth of a comb, and the bristles 13 are then at least slightly softer so as to smooth the hair which is being combed by the teeth 15a, 15b. The manner in which the tongues 9, 10 of the outer panel 2 are retained in the grooves 7, 8 is the same as described in connection with FIGS. 1 and 5. The back support 1a comprises a handle 4a so that this back support actually constitutes the handgrip means of the brush D.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic and specific aspects of this invention and, therefore such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. In a composite brush, in combination, a first panel having an inner side, an outer side, a first and a second group of apertures extending between said inner side and said outer side, and a plurality of bristles projecting from said outer side; a second panel having an inner side, an outer side adjacent to the inner side of said first panel, a plurality of apertures aligned with the first group of apertures in said first panel, and a plurality of bristles extending through the second group of apertures in said first panel and projecting beyond the outer side and between the bristles of said first panel; and a third panel having a side adjacent to the inner side of said second panel, and a plurality of bristles extending through the aligned apertures of said first and second panels and projecting beyond the outer side and between the bristles of said first panel.

2. A composite brush comprising, in combination, a first panel having a pair of spaced parallel edge portions, an inner side, an outer side, a first and a second group of apertures extending between said inner side and said outer side, and a plurality of bristles projecting from said outer side; a second panel having an inner side, and outer side adjacent to the inner side of said first panel, a plurality

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of apertures aligned with the first group of apertures in said first panel, and a plurality of bristles extending through the second group of apertures in said first panel and projecting beyond the outer side and between the bristles of said first panel; a third panel having an inner side, an outer side adjacent to the inner side of said second panel, and a plurality of bristles extending through the aligned apertures of said first and second panels and projecting beyond the outer side and between the bristles of said first panel; a back support having a supporting surface adjacent to the inner side of said third panel and a pair of spaced parallel edge portions respectively adjacent to the edge portions of said first panel; and means provided on the edge portions of said first panel and of said back support for detachably connecting said first panel with said back support whereby the second and third panels are automatically retained between the inner side of said first panel and the supporting surface of said back support.

3. A composite brush comprising, in combination, an outer bristle carrier having an inner side and an outer side and apertures extending between said inner side and said outer side, and a plurality of separate bristles projecting from said outer side; an inner bristle carrier having an outer side adjacent to the inner side of said outer bristle carrier and having an inner side turned away from said outer bristle carrier and a plurality of separate bristles each extending through one of said apertures in said outer bristle carrier and projecting beyond the outer side and between the bristles of said outer carrier; a combined support and handle member having a handle portion and a supporting portion, said supporting portion having a surface adapted to support the inner side of said inner bristle carrier; easily detachable attaching means provided on said outer bristle carrier along the edges thereof and being outwardly spaced from said inner bristle carrier; and complementary attaching means provided on said supporting portion of said combined support and handle and cooperating with said first men-

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tioned attaching means for easily detachably attaching said outer carrier only to said supporting portion so that said inner carrier is retained on said supporting portion of said combined support and handle by said outer bristle carrier without being directly secured to said supporting portion of said combined support and handle and whereby said inner bristle carrier can be removed together with said outer bristle carrier from said combined support and handle by detaching said easily detachable attaching means on said outer bristle carrier from the complementary attaching means on said supporting portion of said combined support and handle.

4. A composite brush as set forth in claim 3, wherein said inner bristle carrier comprises a plurality of panels.

5. A composite brush as set forth in claim 3, wherein at least one of said bristle carriers consists of flexible elastic material.

6. A composite brush as set forth in claim 3, wherein the bristles of one of said carriers are stiffer than the bristles of the other carrier.

7. A composite brush as set forth in claim 3, wherein said supporting surface is of convex shape and wherein each of said bristle carriers consists of sheet-like synthetic plastic material.

8. A composite brush as set forth in claim 3, wherein the bristles of each carrier are disposed in parallel rows and wherein the rows of bristles of the inner carrier alternate with the rows of bristles of the outer carrier.

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