July 14, 1964 J. P. DU BOIS 3,140,499

SELF-CLEANING HAIR BRUSHES

Filed Dec. 14, 1962 2 Sheets-Sheet 1

Fig. 1

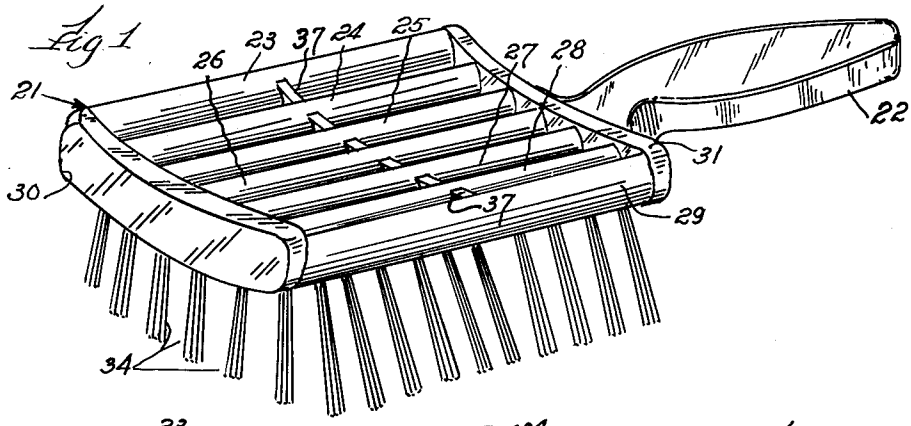


Fig. 2.

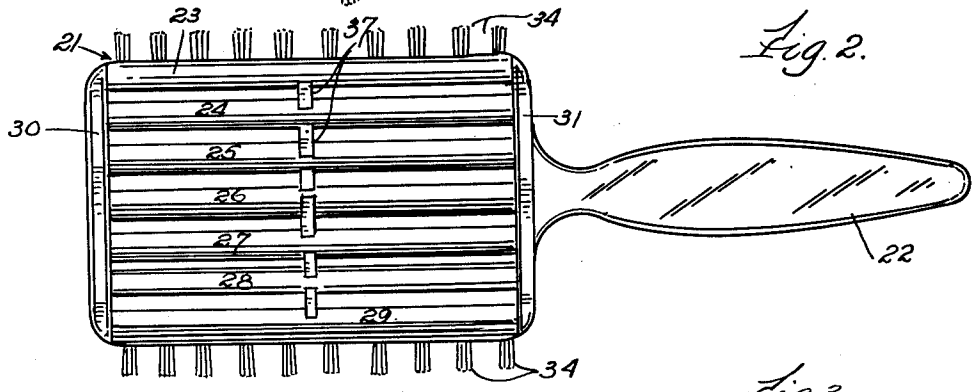


Fig. 3.

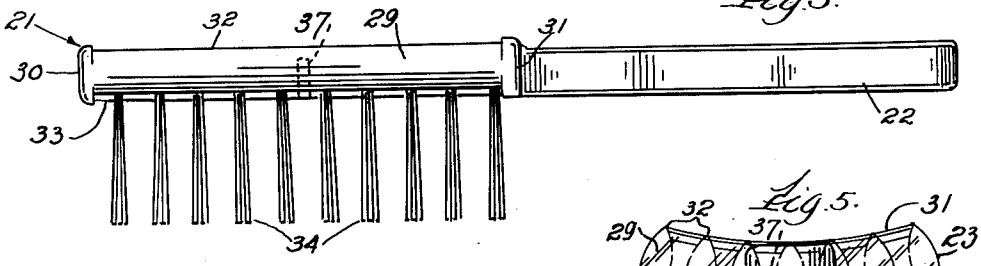


Fig. 4.

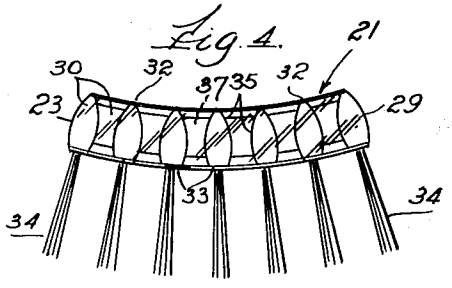
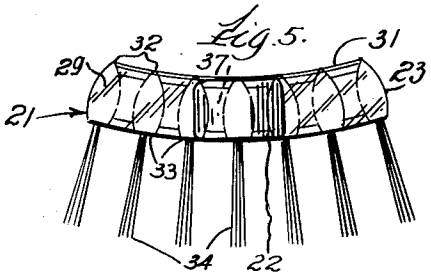


Fig. 5.



INVENTOR.
Jean P. DuBois,
BY Robert H. Wendt.
Attorney.

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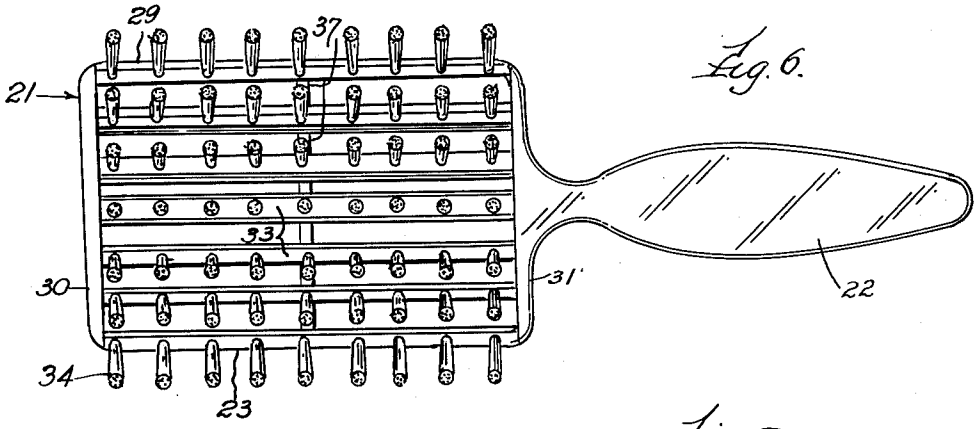


Fig. 6.

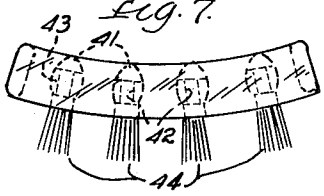
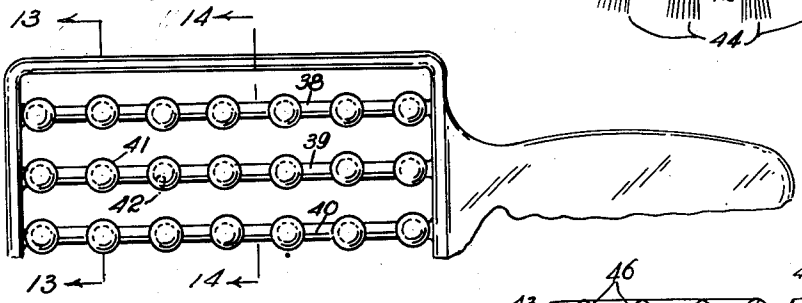


Fig. 7.

Fig. 8



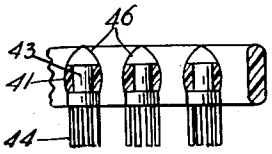


Fig. 13.

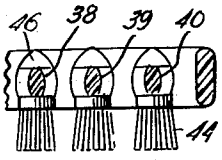


Fig. 14.

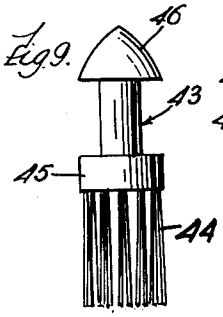


Fig. 9.

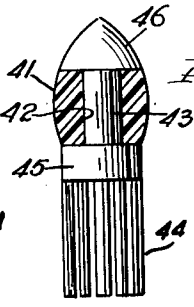


Fig. 11.

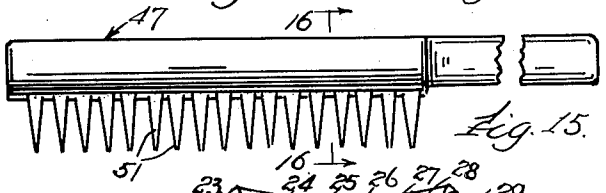


Fig. 15.

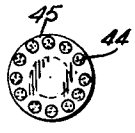


Fig. 10.

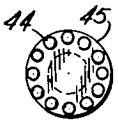


Fig. 12.

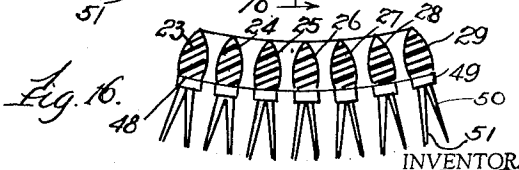


Fig. 16.

INVENTOR.
Jean P. DuBois,
BY Robert H. Hendt.
Attorney.

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3,140,499

SELF-CLEANING HAIR BRUSHES

Jean P. Du Bois, 4660 Dobson St., Skokie, Ill.

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1 Claim. (Cl. 15—160)

The present invention relates to self-cleaning hair brushes, and is particularly concerned with hair brushes adapted to be cleaned by subjecting the brush to a stream of high pressure water from the ordinary water faucet of the city supply.

One of the objects of the invention is the provision of an improved hair brush which has its bristles mounted in a plurality of lonigtudinally extending bristle-supporting members spaced from each other sufficiently to permit the water supplied by any water faucet to flush through the brush along the bristles, carrying away all the hair and other foreign material which might be carried by the bristles.

Another object is the provision of an improved hair brush in which the bristle-supporting members are spaced from each other and made elliptical in cross section or streamlined to permit the easier and unimpeded access of the water stream to the bristles to remove the hair and other foreign material and effect a quick cleaning of the hair brush.

Another object is the provision of a plurality of improved modifications, including the mounting of the bristles upon a plurality of plugs which may be inserted in preformed apertures in which, when the plug with its head has been passed through the aperture, the head expands outside the top of the brush and automatically secures the plugs and bristles to the brush body.

Another object of the invention is the provision of an improved brush provided with extruded conical bristles which are peculiarly adapted to be employed for massaging the scalp.

Another object is the provision of improved hair brushes which are simple in construction, which have a minimum number of parts, which may be economically manufactured, and which may be easily cleaned.

Other objects and advantages of the invention will be apparent from the following description and the accompanying drawings, in which similar characters of reference indicate similar parts throughout the several views.

Referring to the two sheets of drawings accompanying this specification,

FIG. 1 is a view in perspective of a hair brush embodying the invention;

FIG. 2 is a top plan view;

FIG. 3 is a side elevational view taken from the bottom of FIG. 2;

FIG. 4 is an end elevational view taken from the left of FIG. 3;

FIG. 5 is an end elevational view taken from the right of FIG. 3;

FIG. 6 is a bottom plan view;

FIG. 7 is an end view taken from the left of the brush of FIG. 8;

FIG. 8 is a fragmentary top plan view of a modification;

FIG. 9 is a side elevational view of a plastic plug supporting bristles as used in the brush of FIG. 8;

FIG. 10 is a bottom plan view of FIG. 9;

FIG. 11 is a fragmentary sectional view of one of the plugs of FIG. 9 when installed in the brush of FIG. 8;

FIG. 12 is a bottom plan view of FIG. 11;

FIG. 13 is a fragmentary sectional view taken on the plane of the line **13—13** of FIG. 8, looking in the direction of the arrows;

FIG. 14 is a fragmentary sectional view taken on the plane of the line **14—14** of FIG. 8, looking in the direction of the arrows;

FIG. 15 is a side elevational view of a modified form of brush having conical bristles;

FIG. 16 is a sectional view taken on the plane of the line **16—16** of FIG. 15, looking in the direction of the arrows.

Referring to FIGS. 1–6, **21** indicates in its entirety a hair brush embodying the invention. The brush comprises a plastic frame **21** having a longitudinally extending handle **22**; and the frame **21** has a plurality of longitudinally extending bristle-supporting members **23, 24, 25, 26, 27, 28, 29**.

The bristle-supporting members are carried by and integrally joined to the end frame members **30, 31**; and the entire frame may be molded out of a suitable plastic, such as plastic resin, for example. The bristle-supporting members **23–29** are preferably elliptical in shape, having a pointed upper edge **32** and a blunt lower face **33**, the lower face **33** supporting the embedded or molded bristles **34**.

The lateral surfaces **35, 35** of the bristle-supporting members **23–29** are streamlined and widely spaced from each other to permit the free passage of the water through the body and into contact with the downwardly projecting bristles **34**.

Any suitable form of bristles may be employed; but the bristles are preferably molded plastic.

37 indicates integral molded plastic braces extending between the bristle-supporting members and increasing the rigidity of the frame.

The end frame members **30, 31** are preferably curved convexly on the bottom and concavely on the top, causing the bristles **34** to diverge from each other at the bottom and further facilitating the cleaning of the bristles upon the passage of the water from the faucet.

A hot water faucet is also preferably employed, which melts the oils and other cosmetic products that may have been applied to the hair by means of the brush.

Referring to FIG. 8, this is a fragmentary top plan view of a modification in which the longitudinally extending ribs **38, 39, 40** are formed with a plurality of cylindrical integral formations **41**, each having a free bore **42** for receiving a plastic plug **43**, which supports the bristles.

The plastic plugs have the bristles **44** embedded in a cylindrical plastic member **45**; and the bristles may be extruded in the formation of the plugs **43**, which carry a pointed head **46**.

It should be understood that FIGS. 9–12 are enlarged; and the bristles may be made of any degree of fineness.

The assembly of the plugs and bristles with the brush of FIG. 8 may be accomplished by forcing the pointed head **46** through each of the bores **42**, whereupon the heads **46** expand on the upper end of the bore **42**, anchoring the bristle plugs in the brush.

Between the cylindrical enlargements **41** on the bristle-supporting members **38–40** these bristle-supporting members may be made narrower and streamlined to pass the water more readily.

Referring to FIG. 15, this is a modification in which the brush is indicated in its entirety by the numeral **47**; and the brush has the same streamlined bristle-supporting members **23–29**, which are provided with lower flat surfaces **48**, to which a strip **49** is cemented by a suitable cement, such as a plastic cement.

Each disc **49** supports a plurality of conical diverging bristles **50, 51**; and this type of brush is particularly adapted to be used in massaging the scalp, as the bristles, while still resilient and bendable, are stiffer than bristles employed in the brushes of FIGS. 1–6.

The operation of the present brushes is as follows: When the brush is employed upon the hair or for massaging the scalp, certain hair dressing or cosmetics applied

to the scalp or hair may adhere to the bristles and strands of hair become entangled or retained by the bristles.

The present brushes may be cleaned by running hot water from a water faucet on the top of the brush, the hot water passing freely through the slots between the bristle-supporting members and engaging the bristles to drive off the hair and melt any products which may have adhered to the bristles.

It is unnecessary to use a comb to clean the bristles.

While I have illustrated a preferred embodiment of my invention, many modifications may be made without departing from the spirit of the invention, and I do not wish to be limited to the precise details of construction set forth, but desire to avail myself of all changes within the scope of the appended claim.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:

A hair brush constructed and arranged to be self-cleaning when subjected to an upper stream of hot water under pressure from a faucet, comprising a molded plastic handle integrally secured to a molded rectangular frame, said frame having a pair of end frame members, said end frame members being joined by a pair of side frame members and by a plurality of longitudinally extending bristle supporting members, substantially parallel to said side frame members and similar in cross-sectional shape to said side frame members, the said side frame members and bristle supporting members being supported at their ends by the end frame members to form a brush having

a generally concave back and the front thereof being generally convex, and each of said side frame members and said bristle supporting members being substantially elliptically shaped in cross-section, and formed with a flat bottom, and supporting in the bottoms thereof, a plurality of groups of diverging bristles, and the groups diverging from each other laterally, each of said bristle supporting members having a pointed upper edge, and being spaced from each other to pass the stream of water freely, and to clear the bristles of hair and foreign material.

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