April 13, 1954 K. C. FAY 2,674,758

HAIRBRUSH

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Fig. 1.

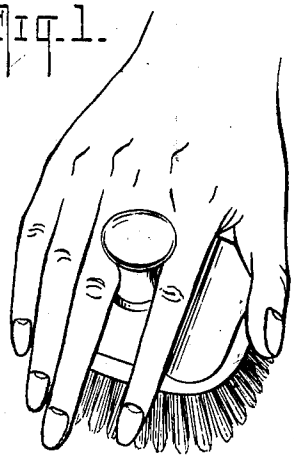


Fig. 2.

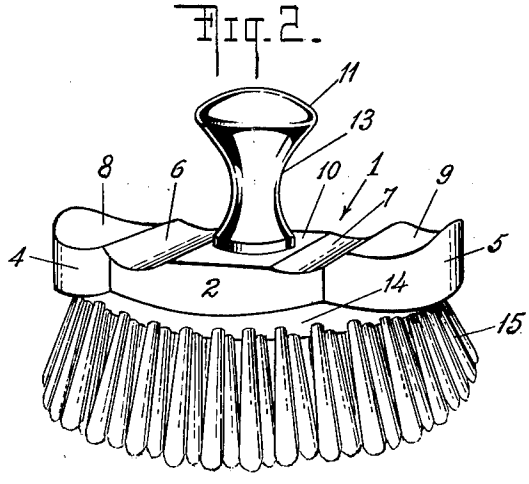


Fig. 3.

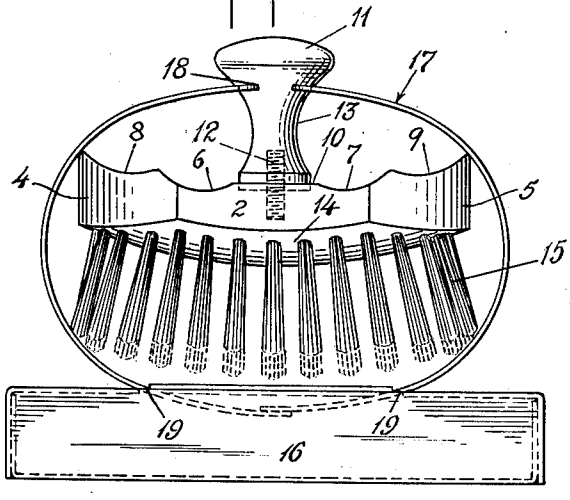
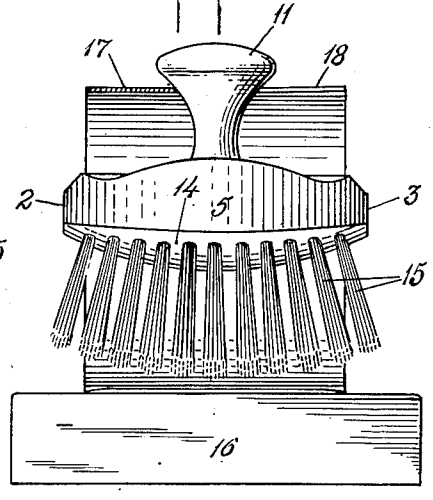


Fig. 4.



WITNESS

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HAIRBRUSH

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10 Claims. (Cl. 15—160)

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This invention relates to hairbrushes and has for its principal object the provision of an improved form of hairbrush which can be utilized with a minimum of effort and which is capable of thoroughly brushing the hair and stimulating the scalp during the brushing operation.

Other objects as well as the advantages and novel features of construction of the invention will become apparent after a perusal of the following description when read in connection with the accompanying drawings, in which Fig. 1 is a perspective view illustrating the manner of grasping a brush, embodying the invention. Fig. 2 is a perspective side view of the brush per se; Fig. 3 is a side elevational view of the brush and the holder therefor, and Fig. 4 is an end elevational view of the parts shown in Fig. 3.

In the drawings, the numeral 1 designates generally the brush back which is provided with two straight sides 2, 3 and two rounded ends 4, 5. The back 1 has an overall length of approximately three inches and a width between the sides 2, 3 of approximately two and one-half inches. The length of the straight sides is about one and one-half inches and the ends 4, 5 each define an arc of a circle having a radius of approximately one and one-quarter inches. It will thus be seen that the area of the back 1 is such that it can readily and comfortably be held in the cupped hand of a user. The back 1 may be made of any suitable material, but is preferably made of a thermoplastic material, as the latter can be readily cleaned and will not become distorted by moisture or weather conditions. Provided on the upper surface of the back at right angles to the sides 2, 3 thereof, are a pair of spaced, parallelly arranged grooves 6, 7 which extend throughout the entire width of the back 1. The grooves 6, 7 are spaced apart approximately three-quarters of an inch and are each approximately one-half an inch wide; the bottoms of such grooves being of shallow, curved contour, in section. It will thus be seen that the grooves 6, 7 will readily and comfortably receive the index and second fingers of the user, as is illustrated in Fig. 1 of the drawings. It will also be noted from Figs. 2 and 3 of the drawings, that the outer edges of grooves 6, 7 are substantially higher than the inner edges thereof for a purpose which will hereinafter become more clear. The outer edges of grooves 6 and 7 form the inner edges of a pair of outer, spaced grooves 8, 9 which extend in parallel relation to grooves 6 and 7 at the outer end portions of the back 1. The grooves 8, 9 are as wide as grooves 6, 7 and also have bottoms which are of

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shallow, curved contour, in cross-section. Like grooves 6 and 7, the outer edges of grooves 8, 9 are higher than the inner edges thereof.

Intermediate grooves 6 and 7 and located centrally of the transverse central portion 10 of the back 1 is a metal knob 11 whose base is seated in a circular recess provided in such portion and which may be secured to the back in any suitable manner, as by means of a stud 12. The diameter of the base of knob 11 is slightly less than the distance between grooves 6 and 7 so that the base substantially spans such space. The intermediate portion 13 of knob 11 being hyperbolic in vertical section flares outwardly at the top of the knob. The height of the intermediate portion 13 is such, approximately one inch, that when the index and second fingers are positioned in grooves 6 and 7 with the knob 11 therebetween in the manner shown in Fig. 1 of the drawings, the tops of such fingers will come under the upper end of such portion. When so positioned, the tendency of the fingers will be to use the flared top of intermediate portion 13 of knob 11 as a backing or brace and to press down on the grooves 6 and 7, thus assuring a firm grip on and accurate control of the back. This downward pressure created by the knob 11 on the back 1 through the fingers and grooves 6, 7 is made more positive by the fact that the outer edges of such grooves are higher than the inner edges thereof, thus locking the fingers against spreading movement and giving to the user a greater sense of firmness and control. This firmness and control of the brush is enhanced by the user positioning the third finger in either grooves 8 or 9 depending upon whether the brush is held in the right or left hand, and placing the thumb and little finger around the circular ends 4 and 5 of the back 1. The raised edge of the used groove 8 or 9 will maintain the finger positioned therein in proper relation on the back 1. It will thus be seen that the knob 11, grooves 6 and 7, groove 8 or 9 and rounded ends 4 and 5 of the back enable the user to obtain a very firm grip on the back of the brush with very little effort of the fingers and at the same time, have the feeling that the brush is under perfect control at all times. This method of gripping the brush also enables the user to brush the hair with relatively little wrist motion, as such brushing action may be accomplished solely through movement of the fingers and a twisting motion of the entire forearm, which movements are more natural and less tiring than by brushing with a wrist motion, as is necessary with brushes provided with projecting handles.

It will be noted from a comparison of Figs. 2, 3 and 4 that the under surface 14 of back 1 is convex in contour and curved in two directions from end to end, and from side to side, the radius of curvature of the surface from side to side being less than the radius of curvature of such surface from end to end. I have found that when surface 14 is so configured within certain limitations and the tufts 15 of bristles disposed at right angles to tangents of such surface, the tufts of bristles will, during the brushing operation, penetrate readily through the hair, be brought automatically and progressively into contact with the scalp and will permit a complete coverage of the brush during each brushing stroke. In order to accomplish these purposes, I have found that the plane defined by the outer ends of the tufts of bristles should conform to the average curvature of the human scalp and that such tufts should extend inwardly from the concave side of such plane at right angles to tangents of the latter. In other words, the surface 14 should be a curved surface having a radius of curvature in an end to end direction of not less than 1⅜ inches and having a radius of curvature in a side to side direction of not less than ¾ inch. I have found that best results are obtained if the radius of curvature of the surface 14 in an end to end direction is about 3¾ inches and not less than 1⅜ inches nor more than 4¾ inches, and if the radius of curvature of surface 14 in a side to side direction is about 2½ inches and not less than ¾ inch nor more than 3½ inches. The tufts 15 of bristles which are all of the same length, are each disposed at right angles to a tangent at the place on such surface 14 from which such tufts project. Thus, the outer ends of the tufts 15 are curved in a manner similar to surface 14 as can be seen from a comparison of Figs. 3 and 4. Preferably, the tufts 15 are arranged in parallel rows which extend from end to end of the brush in parallelism with sides 2 and 3 thereof, and from side to side of the brush transversely of such sides. The bristles of which the tufts 15 are constituted may be made of any suitable material or synthetic fibers or combinations thereof.

It will be understood from the foregoing, that in the use of the brush, it is held in the user's hand in the manner indicated in Fig. 1 of the drawings, with the knob 11 positioned between the index and second fingers and the latter positioned in the conformable finger grooves 6, 7. The third finger will be positioned in either of grooves 8 or 9 and the thumb and little finger placed around the circular ends 4, 5, of the brush. The brush therefore will be supported entirely by the fingers of the user's hand and may readily be moved relative to the palm of the hand by moving the fingers as a unit. In whichever position the brush is held by the fingers relative to the palm, a firm grip will be retained on the back thereof because of the pressure exerted by the index and second fingers on the grooves 6, 7 by reason of their contact with knob 11, the outer edges of such grooves, the groove 8 or 9 and its outer edge and the engagement of the thumb and little fingers with the rounded ends 4, 5. This grip is so secure, that the user has perfect control over the brush and may readily and surely move it in an arc in line with the user's hand by means of the fingers or in an arc at right angles to such first movement by a twisting motion of the forearm or in an arc produced by a combination of such motions. These motions are natural and are easily performed, enabling the brush to be used readily to brush the hair in any direction from the back, front or crown of the scalp. Because of the firm grip afforded on the brush back, such brushing operation may be made as vigorously as desired without effort. By reason of the curvature of the under surface 14 and the arrangement of the tufts 15 thereon, the bristles will penetrate immediately to the scalp, giving maximum penetration, and during the brushing motions, will massage and stimulate the scalp and thoroughly brush each strand of hair. Due also to such construction of the surface 14 and the arrangement of the tufts 15 thereon, every bristle tuft will contact with the scalp and hair thus assuring a thorough massaging and brushing operation on the scalp and hair of the user. As a result of such coverage and action of the instant brush, there will be provided better scalp stimulation and correct circulation, and the brush will maintain the hair in a cleaner condition.

The brush of the instant invention is compact and because it takes up little space can be carried easily in handbags or overnight kits. When not in use in the home it may be placed in a container such as shown in Figs. 3 and 4 and which comprises a hollow base 16 having in its upper surface, a pair of transverse slots 19 through which extends an oval-shaped member 17 having a width approximately equal to the width of back 1 intermediate the sides 2, 3 thereof. The oval-shaped or ring member 17 may be made of any suitable material, such as a thermoplastic material. Provided on the upper central portion of member 17 is a keyhole slot 18 which extends transversely of member 17 and has its inner circular portion disposed midway between the sides of member 17. Thus, the back may be placed in suspended relation within member 17, by moving the shank 13 of knob 11 into the slot 18 until it is positioned in the circular portion of such slot and then permitting the top of such knob to rest on the exterior surface of member 17. When so suspended and the sides 2, 3 arranged in parallelism with the side edges of base 16, the brush will be substantially entirely enclosed by member 17 which will protect it from dust and powder. Due to the suspended condition of the brush and the configuration of member 17, the bristles will be protected against damage and will readily dry after washing.

While I have illustrated and hereinabove described a preferred embodiment of my invention, it will be apparent to those skilled in the art that various changes may be made therein without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user's hand to lie substantially flat thereon, means secured to the outer surface of said back and formed to be gripped between the inner ends of two fingers of the user's hand overlying such outer surface, said outer surface having finger conforming depressions on opposite sides of said means and extending from side to side of the back to limit the user's grip to two positions, the width of said back being such that when the user's fingers are placed in said depressions with said means inserted therebetween the ends thereof project beyond one side of the back, and the

length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand, the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than the radius of curvature of such undersurface from side to side of the back, and a plurality of bristle tufts arranged longitudinally of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

2. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user's hand to lie substantially flat thereon, means secured to the outer surface of said back and formed to be gripped between the inner ends of two fingers of the user's hand overlying such outer surface, said outer surface having finger conforming depressions on opposite sides of said means and extending from side to side of the back to limit the user's grip to two positions, the width of said back being such that when the user's fingers are placed in said depressions with said means inserted therebetween the ends thereof project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand, the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than 1⅜ inches and less than 4¾ inches and the radius of curvature of such undersurface from side to side of the back being greater than ¾ inch and less than 3½ inches, and a plurality of bristle tufts arranged longitudinally and transversely of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

3. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user's hand to lie substantially flat thereon, said back having straight side edges and rounded ends, a pair of spaced, shallow finger conforming grooves extending from one side edge to the other side edge of said back and adapted to receive the index and second fingers of a user and to limit the user's grip to two positions, a knob secured to said back intermediate said grooves, said knob being shaped to enable the user's fingers placed in said grooves to be interengaged in interlocked relation therewith and to use the same as a brace for applying pressure to said back, the width of said back being such that when the user's fingers are placed in said grooves with the knob inserted therebetween the ends thereof project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand, the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than the radius of curvature of such undersurface from side to side of the back, and a plurality of bristle tufts arranged longitudinally of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

4. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user's hand to lie substantially flat thereon, said back having straight side edges and rounded ends, a pair of spaced, shallow finger conforming grooves extending from one side edge to the other side edge of said back and adapted to receive the index and second fingers of a user and to limit the user's grip to two positions, a knob secured to said back intermediate said grooves, said knob being hyperbolic in cross-section and flaring outwardly at its upper end, and said grooves each having a bottom concaved from one side edge to the other thereof and the outer edge of each of said grooves being substantially higher than the inner edge thereof, whereby when the index and second fingers of the user are positioned in said grooves with said knob therebetween such fingers will be interengaged in interlocked relation with the intermediate portion of said knob and the tendency of such fingers will be to utilize the upper end of said knob as a brace to press down on the grooves to assure a firm grip the width of said back being such that when the user's fingers are placed in said grooves with the knob inserted therebetween the ends thereof project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand, the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than the radius of curvature of such undersurface from side to side of the back, and a plurality of bristle tufts arranged longitudinally of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said

tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

5. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user' hand to lie substantially flat thereon, said back having straight side edges and rounded ends, a pair of spaced, shallow finger conforming grooves extending from one side edge to the other side edge of said back and adapted to receive the index and second fingers of a user and to limit the user's grip to two positions, a knob secured to said back intermediate said grooves, said knob being shaped to enable the user's fingers placed in said grooves to interengage in interlocked relation therewith and to use the outer end of the same as a brace for applying pressure to said back, a second set of spaced finger receiving grooves arranged parallelly to said first mentioned grooves and extending across the rounded ends of said back, the width of said back being such that when the user's fingers are placed in said grooves with the knob inserted between the inner ends of the index and second fingers the ends of such fingers project beyond one side of the back, and the length of the back being greater than the width thereof and such that the back may be held between the thumb and little fingers of the user's hand, the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than the radius of curvature of such undersurface from side to side of the back, and a plurality of bristle tufts arranged longitudinally of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

6. A hairbrush comprising a back of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the fingers of a user's hand to lie substantially flat thereon, said back having straight side edges and rounded ends, the outer surface of said back including a horizontal transverse central portion, a shallow finger conforming groove on each side of said central portion extending from one side edge of the back to the other side edge thereof and adapted to receive the index and second fingers of a user and to limit the user's grip to two positions, said grooves having a bottom concaved from one side edge to the other thereof and the outer edge of each of said side edges being substantially higher than the inner edge thereof and said central portion, a knob secured to said central portion intermediate the ends of the latter and being shaped to enable the user's fingers placed in said grooves to interengage in interlocked relation therewith and to use the outer end of the same as a brace for applying pressure to said back, a second set of finger conforming grooves formed in the rounded ends of said back, said second set of grooves each having a bottom concaved from one side edge to the other thereof and being as a whole higher than said central portion, the outer edges of said first mentioned grooves forming the inner edges of said second grooves and the outer edges of said second grooves being substantially higher than the inner edges thereof, the width of said back being such that when the user's fingers are placed in said grooves with the knob inserted between the inner ends of the index and second fingers the ends of the user's fingers project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little fingers of the user's hand the undersurface of said back being of convex shape and being curved in two directions, from end to end of the back and from side to side of the back, the radius of curvature of such undersurface from end to end of the back being greater than the radius of curvature of such undersurface from side to side of the back, and a plurality of bristle tufts arranged longitudinally of the back in substantially parallel rows and in spaced relation, said tufts all being of the same length and each being disposed at right angles to a tangent to such undersurface at the place from which such tuft projects, whereby the outer ends of all of said tufts are contained in a plane substantially conforming in contour to the contour of said undersurface and are thereby enabled to readily penetrate the hair to the scalp during the brushing operation.

7. A hairbrush comprising a back having an undersurface to which is secured a plurality of bristle tufts for use in brushing a user's hair, said back being of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable fingers of a user's hand to lie substantially flat thereon, means secured to the outer surface of said back and located within the area of such outer surface, said means being formed to be gripped between the inner ends of two fingers of the user's hand placed flat on such outer surface, said outer surface having finger conforming depressions placed on opposite sides of said means and adapted to receive the two fingers of the user's hands gripping such means, said depressions extending from side to side of the back to limit the user's placement of such two gripping fingers on the back and in firm gripping relation with such means to two positions, the width of said back being such that when the user's fingers are placed in said depressions with said means inserted therebetween the ends of the fingers project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand.

8. A hairbrush comprising a back having an undersurface to which is secured a plurality of bristle tufts for use in brushing a user's hair, said back being of a size as to be wholly contained in the hand of a user and having an outer surface configured to enable the index and second fingers of a user's hand to lie substantially flat thereon, a pair of spaced, substantially parallel, shallow finger conforming grooves located between the ends of said back and extending from one side edge to the other side edge of said back, said grooves being adapted to receive the index and second fingers of a user's hand and to limit such

placement of such two fingers on the back to two positions, a knob secured to said back between said grooves and being shaped to enable the user's fingers placed in said grooves to be engaged in interlocked relation therewith, said knob and said grooves cooperating to enable such two fingers to obtain a firm grip on said knob, the width of said back being such that when the user's two fingers are placed in said grooves with said knob interlocked therebetween the ends of such fingers project beyond one side of the back, and the length of the back being greater than the width thereof and such that the ends of the back may be held between the thumb and little finger of the user's hand.

9. A hairbrush such as claimed in claim 8 in which said knob is hyperbolic in cross-section and flares outwardly at its upper end and in which said grooves each have a bottom concaved from one side edge to the other and the outer edge of each of said grooves is higher than the inner edge thereof, whereby when the index and second fingers of the user's hand are positioned in such grooves such fingers will be interengaged in interlocked relation with the intermediate portion of said knob and the tendency of such fingers will be to utilize the upper end of said knob as a brace to press them down in the grooves and the higher outer edges of said grooves will cooperate in such action, thereby assuring a firm grip of such fingers on said back.

10. A hairbrush such as claimed in claim 9, including a second set of finger conforming grooves formed in the outer surface of said back at the end portions thereof so that said knob and said first set of finger grooves are located therebetween, said second set of grooves each having a bottom concaved from one side to the other thereof and being as a whole higher than the concaved bottoms of said first set of grooves, the outer edges of said second set of grooves being higher than the inner edges thereof and higher than the outer edges of said first set of grooves, the outer ends of said back being substantially thicker than the portion thereof to which said knob is secured.

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