

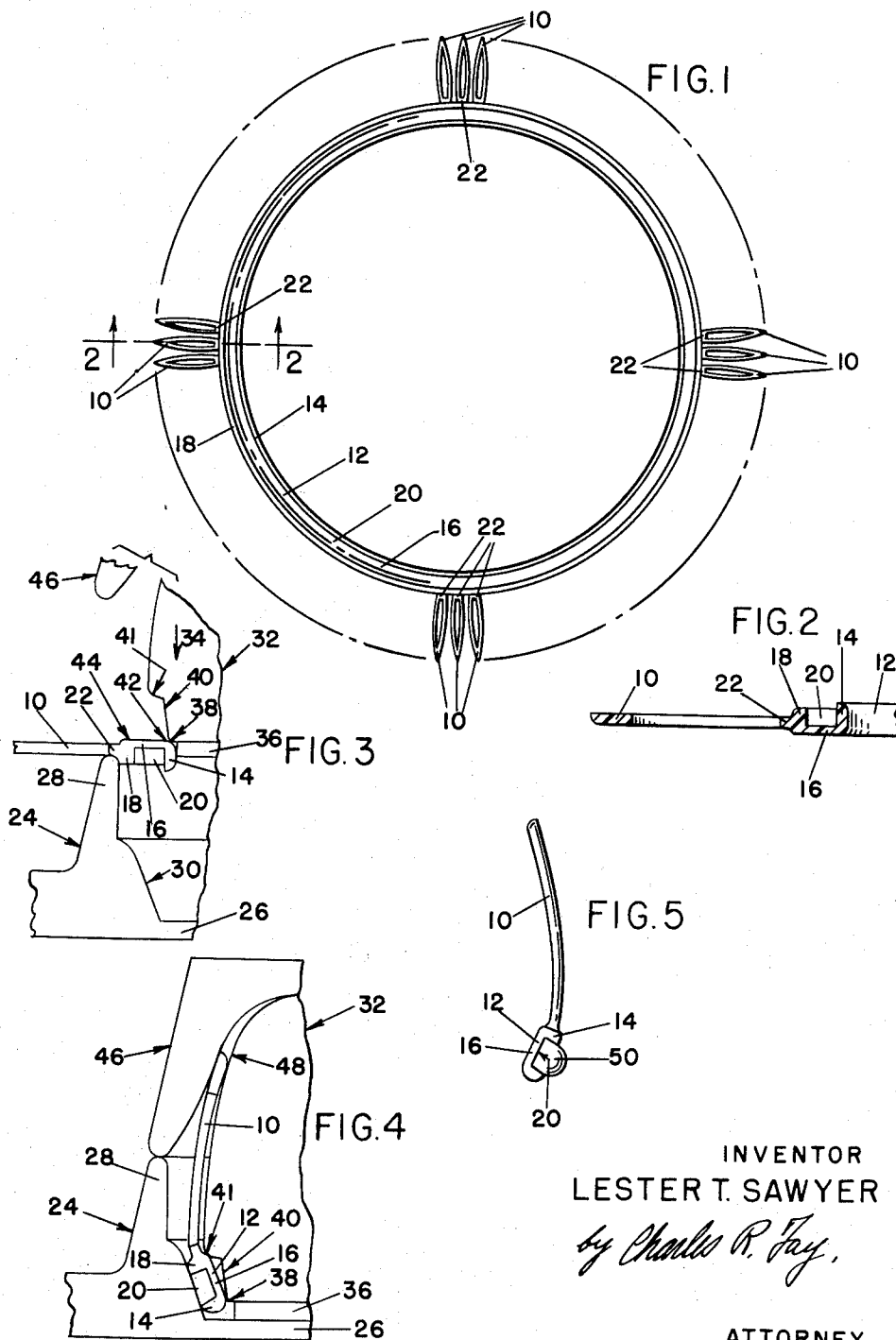
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HAIR RETAINING COMB AND METHOD OF MAKING THE SAME

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HAIR RETAINING COMB AND METHOD OF MAKING THE SAME

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2 Claims. (Cl. 18—34)

This is a division of my prior application Serial No. 70,066 filed November 17, 1960.

This invention relates to a new and improved hair retainer or comb and method for making the same, and to new and improved die parts by which the article is manufactured.

Reference is hereby made to my prior Patents Nos. 2,196,815 and 2,450,448. These patents disclose the practice of injection molding a circular or annular blank for forming a plurality of hair-retaining members in one piece. This molded blank member is generally flat and circular and in the present invention is provided with an innermost ring-like comb tooth back including a pair of upstanding spaced, concentric ribs defining between them an annular channel, the outermost of said ribs having thereon the teeth of the combs, which are generally boat-shaped and spaced. This blank is temporarily softened by any means desired, and in relatively plastic condition it is applied to a generally cylindrical forming block which is illustrated in Patent No. 2,450,448 but which in the present case is provided with certain new and improved characteristics. The flat blank is thereby formed into a generally cylindrical crown-like member which operation is effective to bring the boat-shaped teeth into desired proximity or contact in order to act as hair-retainers, after which the crown-like member is severed at selected points in order to convert the same into a plurality of combs.

In the present invention, the novelty resides in the formation of the blank as described above which is then placed over the generally cylindrical forming block, with the groove faced downwardly, and the cooperating forming block then being moved downwardly, catches the innermost circular edge of the novel blank, bringing it down into proximity with an outer forming block so that the groove now appears at the outer edge of the crown-like cylindrical member, said forming blocks, both inner and outer, being formed at their lower portions to provide that the ribbed part cylindrical crown is formed at an angle to the axis of the cylinder, and the inner rib is located to form the extreme back-edge of the comb, the groove being located inwardly thereof and the second rib then being located inwardly of the groove, the groove being provided at a distinct angle with respect to the teeth.

Other objects of the invention reside in the provision of a comb made by the above described method and die, which comb has a grooved back, the groove extending longitudinally in the back and having a bottom located at a distinct angle with respect to the general planes of the teeth of the comb, said groove forming a locating and holding means for ornaments such as jewels, etc. and holding the same much more efficiently than is the case with ordinary ornaments which are merely attached to a flat surface forming a part of the comb back.

The invention further relates to arrangements and combinations of parts which will be hereinafter described and more particularly set forth in the appended claims.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a plan view of an annular blank produced in accordance with the present invention;

FIG. 2 is a section on line 2—2 of FIG. 1 on an enlarged scale;

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FIG. 3 is a diagrammatic view illustrating the forming die about to operate to form the blank of FIG. 1 into a cylindrical member;

FIG. 4 is a view similar to FIG. 3 showing the die in closed position; and

FIG. 5 is an end view illustrating a finished comb.

As described in my patents above identified, the blank of FIG. 1 is produced by injection molding in a well known manner. This is shown in FIG. 1 wherein the open boat-shaped teeth have been indicated at 10 and it will be observed that these teeth do not touch each other, being molded more or less to extend radially from a member 12 which eventually acts as the backs for the combs when the latter have been severed from the cylinder to be described.

The essential characteristics of the present comb resides in the fact that the comb blank member 12 which is to form the backs of the individual combs comprises in the first place an inner upstanding rib member 14 which is of course integral with the rest of the blank, and it has a web member or the like 16 which merges into another rib 18 which does not extend quite as high as the top portion of the member 14, all as plainly shown in FIG. 2. Ribs 14 and 18 provide between them an annular groove 20, the teeth 10 extending out from the portion of the rib at 18 where it is reduced as at 22.

In order to form individual combs from this ring, it is formed into a cylinder or general cylinder and then the individual combs are cut from it more or less as described in my Patent No. 2,450,448. In the present case, however, the comb and the method are quite different from the prior art. There is provided a forming die which corresponds in many ways to that shown in my patent. In this case there is a die base member which is generally indicated at 24, this being annular and having itself a base 26, an upstanding annular forming member 28, and at the inner portion thereof near the base 26 there is an inclined surface 30 which extends downwardly and inwardly relative to the die part.

The comb blank is simply laid upside-down upon the upwardly extending rib-like annular member 28 and it is so formed that the rib 18 comes slightly within or approximately in line with the inner surface of the upstanding rib-like member 28, as clearly shown in FIG. 3, and of course the rib 14 extends even farther inwardly.

The upper die part is generally indicated at 32 and this member is brought down in the direction of the arrow 34 in FIG. 3 in order to form the comb into a cylinder as shown in FIG. 4. This causes the teeth to approach each other and substantially touch. The upper die part 32 is provided with a reduced portion 36 at the lowermost portion thereof, this reduced member being circular and forming a shoulder at 38. From the shoulder 38 the die member 32 proceeds along an outwardly and upwardly inclined line 40 which in general may be said to correspond to the surface at 30, but when the die parts come together as in FIG. 4, these surfaces are spaced.

As shown in FIG. 3, when the die part 32 starts to descend, the shoulder 38 just barely catches the reversed side of rib 14 as at 42, but in so doing causes the same to be moved downwardly to the FIG. 4 position. Part way down, the shoulder at 41 catches the back of the comb adjacent the rear portion of rib 18 in the area at 44 as shown in FIG. 4, and this provides a base by which the general back of the comb is held in position until it hardens in a slanted relationship as clearly shown in FIG. 4 with respect to the teeth thereof.

The teeth 10 are given the shape shown in FIG. 4 by means of a cover member which is generally indicated at 46 and which may in general be somewhat similar to that shown in my prior Patent No. 2,450,448. This

member is referred to as a "cover" or a "cap" and it brings the teeth 10 inwardly into contact with the upper surface 48 of the upper die part 32.

When the generally cylindrical member is removed from the dies, it may be then cut into a number of hair- 5 retaining combs, all of which have the general characteristics as shown in FIG. 5, wherein the groove at 20 is located on a very considerable general angle with respect to the teeth 10. The teeth 10 may be curved inwardly as shown or they may be made straight and each comb 10 is also preferably somewhat curved as is well known in the art. In any event, the ribs at 14 and 18 hold any ornamental device such as shown at 50 and by providing the groove for the ornamental stones or any other orna- 15 mental means which is utilized, the same are held much more efficiently and firmly than in prior art devices where the comb back is straight and in which there is no groove formed as in the present case.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein 20 disclosed, otherwise than as set forth in the claims, but what I claim is:

1. A die for converting a generally flat annular blank having an internal annular ring-like member which is solid and includes an inner rib, an outer rib, and an inter- 25 vening groove, with teeth on the outer ring, into a generally cylindrical or crown-like object, in which the general plane of the bottom of the groove is at an incline with respect to the general plane of the teeth, said mold comprising a base member having an upstanding annular 30

ridge and a vertical inner surface in the upper portion and a downwardly and inwardly directed inclined surface in the lower portion thereof, said surface also being annular, an upper cylindrical die member adapted to fit 5 into the ridge on the base member, said upper die member having a circumferential inwardly directed slanted surface conforming in general to the aforementioned inclined surface, and having means to engage the flat blank at the inner portion thereof and carry the same down to a point near the bottom of the lower member, the ridge 10 bending the teeth relatively upwardly with respect to said back member, said means including an annular shoulder adjacent the lower portion of the inwardly directed slanted surface area on the cylindrical member, said 15 shoulder being adapted to engage the innermost portion of said flat blank in order to catch it and force it downwardly.

2. The die as set forth in claim 1, wherein said means also includes another upwardly spaced shoulder for engaging the back of the ring-like member adjacent the inner rib but at the rear portion thereof to hold the same in position against the inclined surface on the base member during cooling.

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