May 31, 1932. M. ANDIS 1,860,643

COMB PLATE AND METHOD OF MANUFACTURING THE SAME

Filed Jan. 26, 1931

FIG. 1.

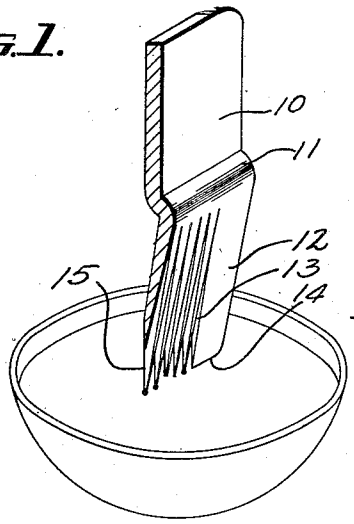


FIG. 2.

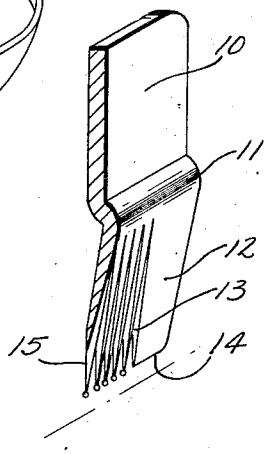


FIG. 3.

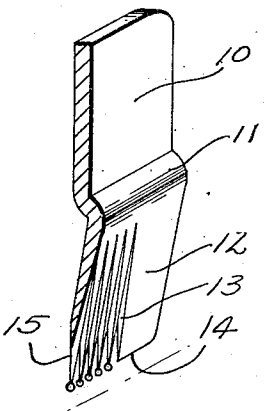
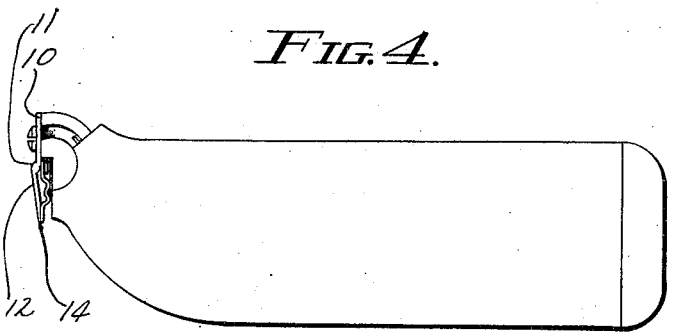


FIG. 4.



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UNITED STATES PATENT OFFICE

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COMB PLATE AND METHOD OF MANUFACTURING THE SAME

Application filed January 26, 1931. Serial No. 511,170.

My invention relates to improvements in comb plates for hair clipping and shaving devices and processes of manufacturing the same.

The object of my invention is to provide a comb plate in which the toothed portion may be ground to razor-like thinness, and the extreme tips of the points of the teeth provided with knobs preferably of a spherical form to prevent the points from penetrating the skin during a clipping operation.

A further object is to provide a method whereby the knobs may be formed upon the points of the teeth after the grinding operation. From a commercial standpoint it is not possible otherwise to form such knobs within limitations of permissible expense, but I have discovered that by first cutting the teeth, then grinding the blade to the desired degree of thinness, and then dipping the points of the teeth in metal of low fusibility, the molten metal may be made to adhere to the points of the teeth in the form of drops which solidify to form such knobs.

In the drawings:

Figure 1 is an isometric view of a fragment of a comb plate as it appears subsequent to the milling and grinding operation and the initial dipping operation.

Figure 2 is a similar view showing the comb plate as it appears after a second dipping operation.

Figure 3 is a similar view showing the comb plate after the final dipping operation.

Figure 4 is a view of the comb plate and clipping blade as they appear in shaving assembly.

The comb plate shown in the drawings is of the usual form having a flat connecting portion 10 to facilitate attachment to the clipper casing, a downwardly offset shoulder portion 11 and the blade portion 12, the latter being milled to form grooves 13 on its under side which progressively increase in depth toward the forward margin 14 of the comb. The upper side of the plate is then ground away until the deeper portions of the grooves 13 are exposed, thereby forming teeth 15, the points of which are exceedingly thin, preferably about .003″ to .005″ in thickness, the thickness of the points of the teeth being exaggerated in the drawings for the sake of clearness of illustration.

The margin 14 of the blade is then dipped into molten metal to a depth just sufficient to allow drops of such material to adhere to the points of the teeth. The blade is instantly removed to allow the adherent liquid to solidify, whereupon the operation is repeated and an additional coating of the molten material accumulates upon the solidified surfaces. This dipping of the points of the teeth and the alternate solidification of the adherent material may thus be repeated until knobs of the desired diameter are produced.

Enamel (porcelain), lead, or other material fusing at a low temperature relatively to the steel of which the blade is composed may be melted and used to form the knobs in the manner above described, and by instantly removing the points of the teeth after immersing them in the molten material no injury results to the blade or its teeth through loss of temper, distortion or otherwise. It will, of course, be understood that the blade will be so held that the points of the teeth will be parallel with the surface of the liquid during the dipping operation. Upon completion of the dipping operation the comb plate will be ready for use.

It will of course be understood that these comb plates are to be used in connection with power driven clippers of the general type disclosed in my former Patent No. 1,671,265, dated May 29, 1928, in which a movable toothed blade is vibrated or rapidly reciprocated upon the upper surface of the comb plate near the points of its teeth. When employed for shaving purposes, the comb plate and clipper blade assembly will be supported as indicated in Figure 4, and as more fully set forth and described in a companion application bearing even date herewith.

It is not material whether the knobs are completely spherical, semi-spherical or otherwise shaped, it being obvious that after forming the spherical knobs, portions may be ground or cut away if desired. But ordinarily the spherical form will be preferred.

I claim:

1. A method of forming comb plates for hair clippers consisting in preparing a blank having the general form of the plate, milling one side thereof to form grooves which progressively increase in depth toward one margin, grinding the other side of the blank to remove the ungrooved material from the more deeply grooved marginal portion whereby a blade is formed through which the grooves extend to provide teeth along said margin, and then momentarily and repeatedly dipping the points of the teeth in molten material of relatively low fusibility and cooling them in the intervals between dipping operations to provide the teeth with minute knobs composed of successive layers of material of relatively low fusibility without impairing the temper of the teeth.

2. The method of forming comb plates for hair clippers consisting in shaping, milling and grinding the plate to the form of a blade of the desired thickness having milled teeth along its working margin the end portions of which teeth are of razor like thinness, dipping the extreme points of the teeth in molten material of low fusibility, instantly removing the teeth and allowing the adherent material to solidify, and then repeating the dipping and removing operations until knobs are produced upon the points of the teeth of the desired diameters, without impairing the temper of the teeth.

3. A comb plate for hair clippers having teeth along one margin provided with knobs on their extremities composed of a series of coverings fused together and composed of material of relatively low fusibility as compared with the teeth.

4. A comb plate for hair clippers having tempered shearing teeth of razor-like thinness and sharpness provided with spherically rounded knobs on their points, said knobs being composed of multiple layers of untempered material.

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