April 9, 1940. L. T. SAWYER 2,196,815

HAIR RETAINING COMB

Filed April 2, 1938 2 Sheets-Sheet 1

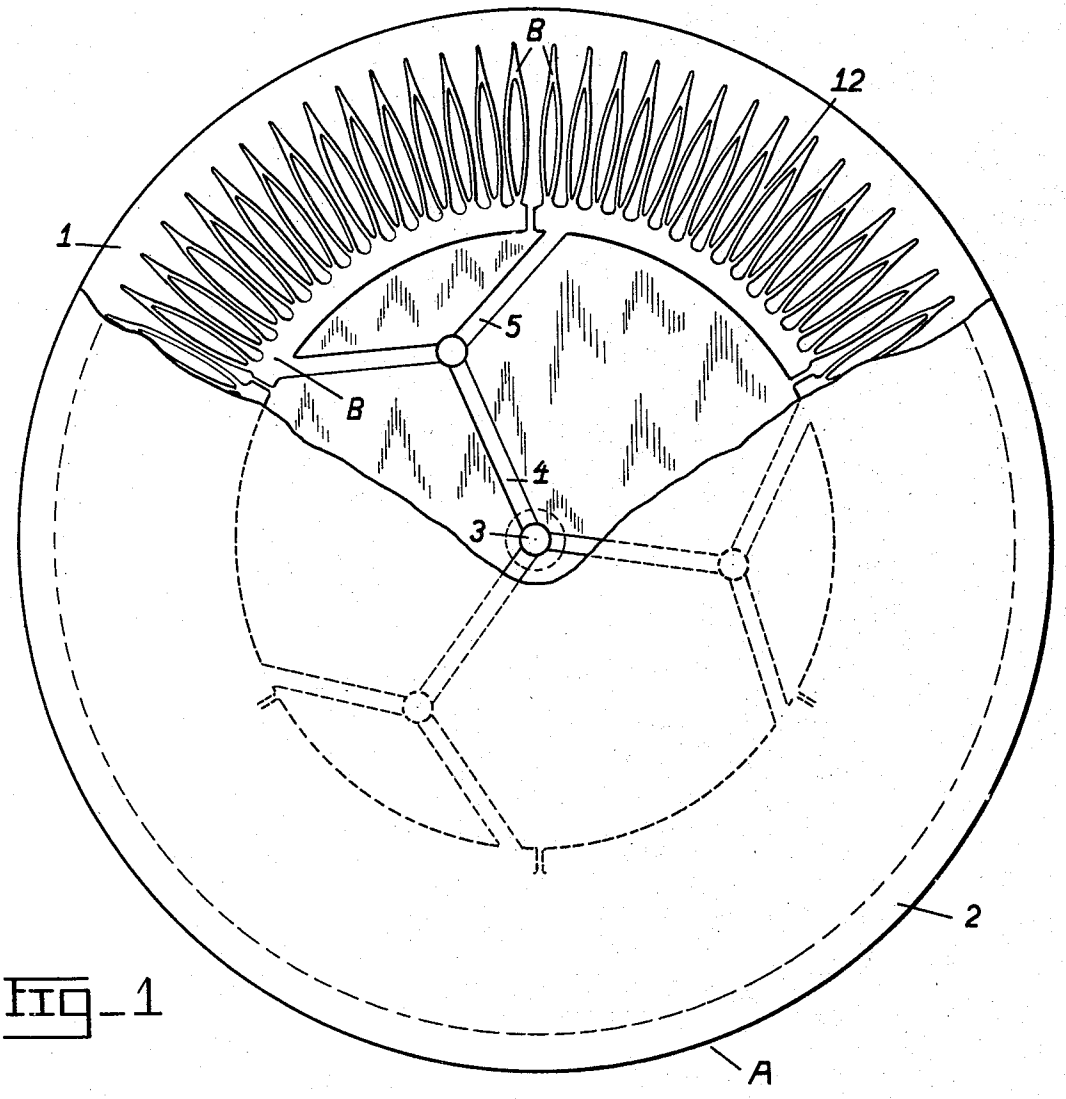


Fig_1

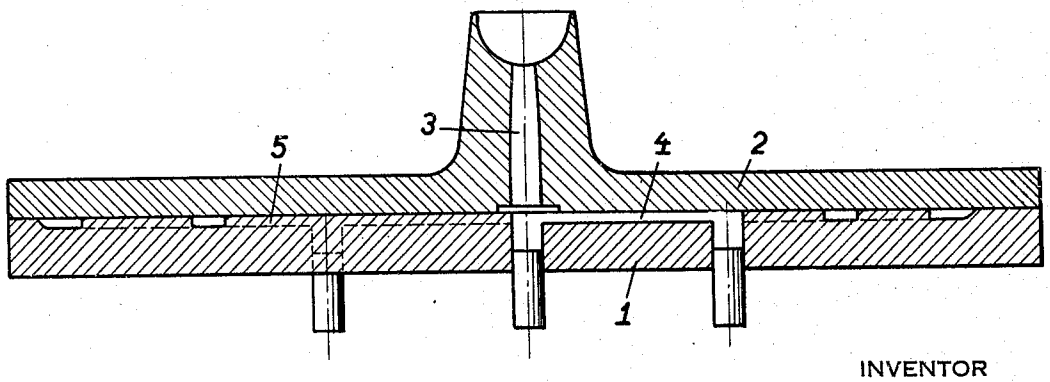


Fig_2

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Filed April 2, 1938 2 Sheets-Sheet 2

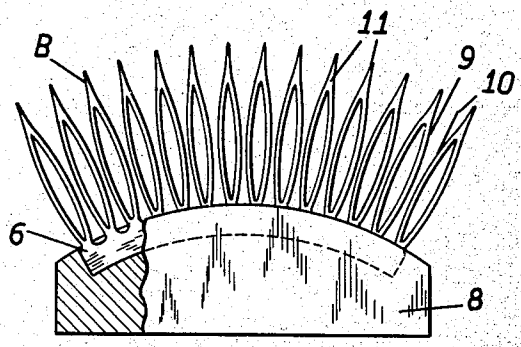


Fig_3

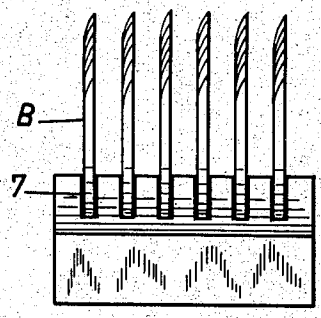


Fig_4

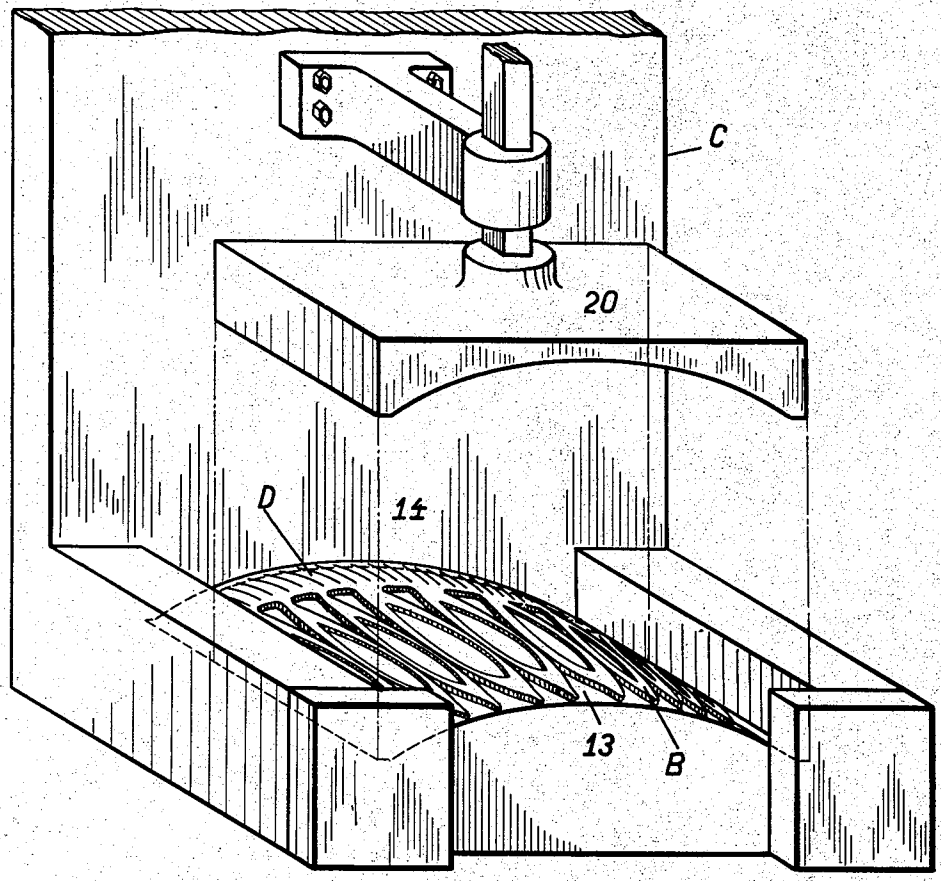


Fig_5

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UNITED STATES PATENT OFFICE

2,196,815

HAIR RETAINING COMB

Lester T. Sawyer, Fitchburg, Mass.

Application April 2, 1938, Serial No. 199,641

3 Claims. (Cl. 132—20)

This invention relates to hair retaining combs having contiguous bulging portions on teeth which resiliently engage and grip the hair both to hold the comb in place and to enable the comb to hold the hair in place.

An object of the invention is to improve such a construction beyond the accomplishment disclosed in my prior Patent No. 1,684,362, granted September 11, 1928.

A still further object of the invention is to provide a method and apparatus for the commercial manufacture of such combs with convenience and dispatch.

Ordinary combs when finished comprise an alternating series of teeth and open spaces so that the open spaces permit the ready molding of the finished comb. The type of comb contemplated by the present invention requires that the teeth substantially contact at their gripper portions, which precludes the use of the ordinary methods of manufacture.

In general I propose to make first a sub-article of manufacture in which the supporting back portion of the comb is curved, preferably arcuate, with the gripping teeth flaring out of its convex edge. To produce this sub-article conveniently I mold it out of any suitable comb material, such as Bakelite or other material such as pyroxylin, but preferably such material as may be molded and has resilience when cold and bendability or flexibility, as distinguished from resilience, when heated.

The above and further objects of the invention will better be understood by reference to the following specification which should be read, for purposes of illustration, in connection with the accompanying drawings. The claims are directed to this disclosure solely for purposes of illustration.

In the drawings:

Fig. 1 shows in plan a mold and indicates molded sub-articles of manufacture under my invention;

Fig. 2 is a vertical elevation partly in diametrical cross-section of the structure of Fig. 1;

Fig. 3 shows one of the sub-structures in combination with a heater block for transforming it into a finished comb, the view being in front elevation;

Fig. 4 is a view of the same in side elevation;

Fig. 5 is a perspective view of a converter for finishing the combs.

A standard multi-part mold A preferably of steel comprising a base 1 and a top 2 conforming to usual injector molding requirements has preferably suitably formed in the upper face of the base 1 cut-outs to provide a complete circle of arcuate comb formations B with sprew passages 3, 4 and 5 arranged in accordance with good molding practice. The mold is filled in any suitable manner, as by injection under pressure, with the selected comb material. After the combs have solidified sufficiently the mold is opened and the sub-structure B come out as an entirety simulating a wheel, the sprew material is cut loose so that the sub-articles of manufacture B are substantially as shown in Figs. 3 and 4 in which they are shown inserted with their supporting back portions 6 resting in sockets or notches 7 of a heated softening block 8. Here it should be noted that contiguous bulging portions 9 and 10 of the teeth 11 are out of contact and that the spaces therebetween are sufficient to accommodate the partitions 12 of mold A.

When the supporting back portion 6 had been softened by heat enough to be flexible a sub-comb B is placed on the saddle 13 of former C and the supportnig back portion 6 is forced against the flat rear wall 14 to straighten it out causing the bulging portions 9 and 10 of contiguous teeth substantially to contact with one another and, if desired, to contact enough slightly to compress the bulging portions of the teeth which are resilient.

With a sub-comb B pressed against the flat back wall 14 the cylindrical former 20 is pushed down to bend the supporting back portion into the desired cylindrical form. The former C is not heated and serves to chill the comb worked on and to set it so that it is no longer flexible, as distinguished from resilient.

Although I prefer to mold the sub-articles of manufacture B it is conceivable that they might be die stamped out of sheet material to complete the initial form shown in Figs. 1, 3 and 4.

Although the finished comb is preferably cylindrical as indicated for the finished comb D in Fig. 5, it should be borne in mind that the radius of curvature of the cylindrical surface 13 may be anything desired, even up to infinity when it would be flat. It should be noted that initially in the sub-formation B the convexity of the supporting back portion is on the edge from which the teeth project and flare while in the finished comb this convexity is eliminated so that the supporting back portion 6 is straight in the plane at right angles to the teeth 11. This is true regardless of whether the cylindrical shape shown

in Fig. 5 is imparted to the finished comb or not.

What I claim is:

1. In the fabrication of gripping combs, a sub-article of manufacture comprising a plurality of molded comb blanks having demarked but interconnected backs with said backs having their inner terminal edges shaped and arranged substantially in the arc of a circle and each said back having outwardly and substantially radially extending out of contact comb-teeth at least some of which are bulging teeth.

2. The structure as defined in claim 1 further characterized by the fact that a sufficient number of said comb blanks are arranged and interconnected to form an annular structure.

3. The construction as defined in claim 1 further characterized by the fact that one face of said sub-article of manufacture lies substantially in a flat plane and said comb blanks form a circular ring.

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