

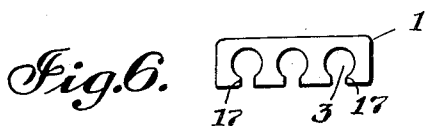
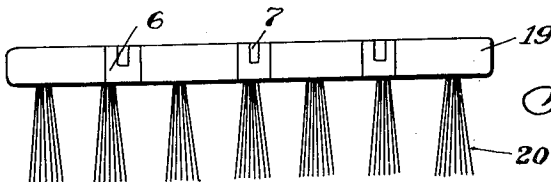
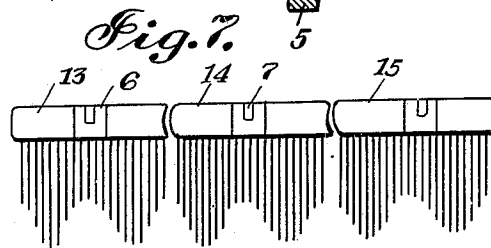
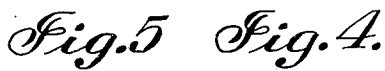
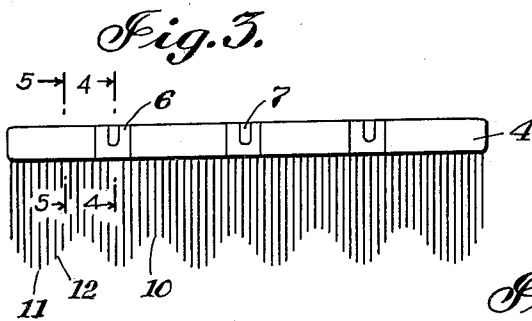
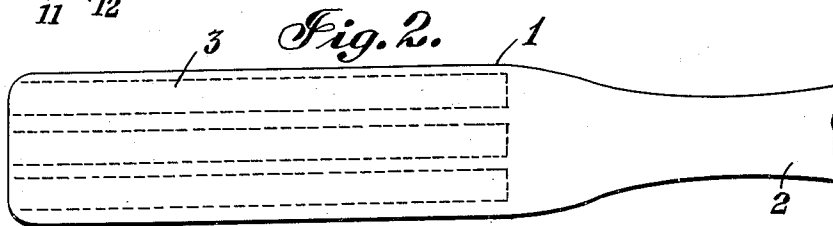
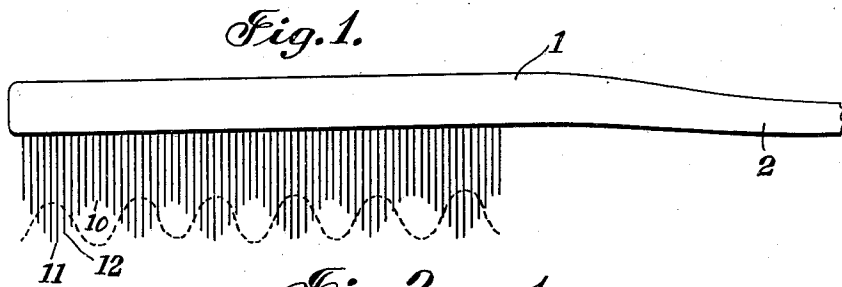
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COMB

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COMB

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11 Claims. (Cl. 132--11)

1

This invention relates to combs.

The great number of comb constructions provided with straight, bent, oblique and otherwise shaped teeth proves that the customary combs do not satisfactorily comply with the requirements which arise in hair combing practice. On the other hand it is obvious that the many suggestions which have been made to remedy existing deficiencies did not eliminate the drawbacks of the hitherto customary combs. The only exception where combs of which the teeth are otherwise shaped than straight have been introduced into practical use relates to combs provided with undulated teeth exclusively used for wave-setting purposes.

The main disadvantage of customary combs resides therein that they are unelastic and that the teeth have an equal length. Due to entire lack of or due to insufficient elasticity the rigid teeth exert onto the scalp a considerable pricking and scratching action; individuals who have a sensitive scalp therefore cannot effect proper combing. As the teeth are equally long, no adjustment or equalizing action is obtainable; if the comb meets resistance at any portion of the scalp the hair will be torn out as no provision is made to permit a temporary lessening of the pull.

It is a generally known experience that after an energetic combing the combs always carry torn-out hair.

Attempts have been made to eliminate the drawbacks of customary combs by the use of specifically shaped brushes.

This, however, is a mistaken procedure because the typical functions of a comb cannot be replaced by a brush and vice versa.

A satisfactory and hygienic conditioning of the scalp hair requires a combined treatment by combing and brushing. It is the function of the brush to massage the scalp, to remove dandruff, dust and the like, to keep the pores open, to incite blood circulation and to improve hair growth; the comb, however, cleans and straightens the hair itself, brings it in the desired shape; in other words makes the coiffure.

It therefore is an important object of the invention to provide a comb which is sufficiently elastic, flexible and yielding to prevent pricking and scratching of the scalp, which compensates for resistance occurring during the combing of the hair and therefore obviates tearing-out of the same from the scalp.

It is a further important object of this invention to adapt the combs to the various and changeable requirements of the hair combing procedure; scalp hair which has not been combed for a

2

longer period needs a different type of combing than scalp hair which receives continuous attendance; wet hair must be combed in a different manner than dry hair; even the moisture content of the air has an influence on the selection of the correct combing method.

It is another important object of this invention to vary and particularly to increase or reduce the working capacity and the working area of the combs in accordance with the above stated changing requirements.

It is also an object of the invention to create a combination of a comb and a brush which actually and fully corresponds to the operating requirements of both utensils.

It is a further object of the invention to greatly extend the lifetime of the combs without a reduction of their full working capacity.

It is also an object of the invention to provide a comb which can be simply and cheaply produced, can be easily and completely cleaned and can be manufactured from any suitable material.

Further objects and advantages of my invention will become apparent as this specification proceeds.

The invention is by way of example illustrated in the attached drawings.

In the drawings,

Fig. 1 is a vertical partly broken side elevation of my comb,

Fig. 2 is a top view of the same,

Fig. 3 is a side elevation of those comb elements which characterize the invention,

Fig. 4 is a vertical sectional elevation on line 4 to 4 of Fig. 3 on an enlarged scale,

Fig. 5 is a vertical sectional elevation on line 5 to 5 of Fig. 3 on an enlarged scale,

Fig. 6 is a front view of the comb,

Fig. 7 is a side elevation of a further modification of the invention.

Fig. 8 is a sectional elevation similar to that of Fig. 5 with the spring on an enlarged scale.

Fig. 9 is a side elevation similar to that of Fig. 3 showing the elements for use of the invention as a combination comb and brush.

My new comb is provided with one or with a plurality of teeth banks or rows; the teeth banks are supported in a back or holder provided with a handle 2. Teeth holder 1 has longitudinally extending bores 3, in the present modification of the invention three bores 3 are provided; however, the number of these bores may be varied.

The bores accommodate the tooth carriers or in the case of a combination comb and brush the tooth and the bristle carriers.

3

The carriers 4 have the same shape as the bores 3; they have in the present case a circular cross section; at the lower side the carriers are provided with an extension 5 to secure the proper introduction into the bores 3; the walls enclosing the bores are provided with shoulders 17 and a slot is formed by the shoulders into which the extension 5 protrudes when the teeth carrier 4 is entered into the bores.

Fig. 9 illustrates the application of this invention to a tool for the combined use as a comb and as a brush. The teeth carriers are here replaced by carriers 19 provided with bristles 20.

In order to resiliently mount the tooth or the bristle carriers in holder 1 the following arrangement has been provided. The circular carriers 4, 19 are at spaced intervals provided with straight sides 6 by cutting-off on both sides a portion of their circumferential thickness, see Fig. 8; transverse recesses 7 are provided in these laterally flattened portions 6. Springs 8 are inserted into these recesses 7; the springs abut and press with their ends tightly against the inner wall of the bores 3 and against the inner walls of the recesses 7; they therefore secure a resilient mounting of the carriers 4, 19 in the recesses 7. The carriers 4, 19 are located in the bores 3 with a small play; therefore a rotation of the carriers is obtained which, however, is limited by the resilient pressure exerted by the springs against the walls of the recesses 7. During the passage of the comb or brush through the hair the teeth 10-12 of the comb or the bristle tufts 20 of the brush are therefore adapted to yield in the transverse direction and the scratching of the scalp caused by rigid attachment of the teeth to the comb is prevented.

The tooth carriers 4 are after their introduction into longitudinal bores 3 solidly anchored in the holder 1, but may yield in the working direction of the comb; this will eliminate the previously stated disadvantages of customary combs, such as the tearing-out of hair or injuries to the scalp caused by the rigid teeth; the teeth yield without being bent or twisted.

Another important feature of the invention is the particular and novel configuration of the teeth.

The invention provides alternating short teeth 10 and long teeth 11 and intermediary teeth 12 having a length which varies between that of teeth 10 and 11.

The change of the length of the teeth within the individual banks may be staggered in relation to each other as indicated by the dotted line in Fig. 1 which denominates the next adjacent row of teeth to that shown in full lines.

The differential length of the teeth has a great advantage; if the comb meets resistance caused by insufficiently loosened hair portions the entanglement forming hairs are gradually separated from each other due to the length variation of the teeth but not torn-out which would happen with the customary unyielding comb teeth of equal length. The above described shape of the comb teeth has the further advantage that they easily penetrate into the hair and therefore produce a more effective cleaning.

Whereas in accordance with the modification shown in Fig. 3, the teeth carrier 4 consists of one piece, a plurality of sections 13, 14, 15, forming one carrier is shown in Fig. 7.

In this case each section is independently resilient from the other; moreover, a replacement of

4

broken or damaged sections may be easily effected.

The advantages of my new comb which have been partly referred to are manifold.

The resilient support of the teeth eliminates injuries of the scalp and prevents the pricking and scratching of the same during use of the comb or of a combined comb and brush.

The varying length and the undulated shape of the working face of the comb produces a soft hair touch and prevents the tearing-out of the hair, the gradual increase of the length of the teeth prepares the hair strands for treatment with a following teeth sector.

By the mutual displacement in the adjacent banks of the undulated shape of the working face of the teeth, as indicated in Fig. 1, the longer teeth of the second bank, which is shown in dotted lines, take over or continue the work carried out by the teeth section 11 of the first row of teeth shown in full lines. The distribution of the combing work onto the individual teeth banks has proved to be extremely effective, particularly with respect to a softer treatment of the hair which therefore is not torn out. By changing the length of the teeth and the shape of the undulated working face the comb can be adjusted to differently reacting hair; for the first time a comb has been created where the differences of the hair structure and of the hair nature are considered.

As pointed out above, the lifetime of my comb or combined comb and brush is practically unlimited due to the possibility of an easy exchange of the individual teeth carriers and their sections.

By the use of a greater number of adjacent teeth carriers the hair treatment can be greatly intensified.

What I claim is:

1. A comb comprising a teeth holder, at least one row of teeth and a carrier for said row of teeth removably inserted in said holder, said carrier being subdivided in a plurality of sections.

2. A comb comprising a teeth holder, at least one row of teeth, at least one row of bristles, a rod-shaped carrier for said row of teeth and a rod-shaped carrier for said row of bristles removably and resiliently located in said holder, said carriers being subdivided in a plurality of sections.

3. A comb comprising a teeth holder, at least one longitudinal circular bore in said holder, a circular teeth carrier of a slightly smaller cross section than said bore removably inserted in the same, said carrier being provided with flattened portions, a recess in said flattened portions and a spring in said recess adapted to be compressed by the insertion of said teeth carrier into said bore.

4. A comb comprising a teeth holder, at least one longitudinal circular bore in said holder, said bore being open at the front end of said holder, the bore enclosing walls of said holder being shaped to form a longitudinal bottom slot, a circular teeth carrier of a slightly smaller cross section than said bore removably inserted in said bore, said carrier having a bottom extension adapted to protrude into said bottom slot, said carrier being provided with lateral flattened portions, a recess in said flattened portions and a spring in said recess adapted to be compressed upon in section of said teeth carrier into said bore.

5. A comb comprising a teeth holder, at least one row of teeth, a carrier for said teeth re-

5

movably carried by said holder, the teeth being shaped to form an undulated working face.

6. A comb comprising a teeth holder, a plurality of rows of teeth in said holder, carriers for said rows of teeth removably inserted in said holder, the teeth being shaped to form an undulated working face, the undulations being mutually staggered on the adjacent teeth rows.

7. A comb comprising a teeth holder, at least one bank of teeth, a carrier for said bank of teeth longitudinally removably and transversally rotatably inserted in said teeth holder and means to restrict the transversal rotation of said carrier.

8. A comb comprising a teeth holder, at least one bank of teeth, a carrier for said bank of teeth longitudinally removably and transversally rotatably inserted in said teeth holder and springs located in said teeth holder to resiliently restrict the transversal rotation of said carrier.

9. A comb comprising a teeth holder, at least one bank of teeth and a longitudinal bore in said holder to transversally rotatably accommodate said carrier, recesses in said rod-shaped carrier, springs located in said recesses to press against the inner wall of said bore and said carrier and to thereby restrict its transversal rotation.

10. A comb comprising a teeth holder, a plu-

6

rality of banks of teeth, carriers for said banks of teeth longitudinally removably and transversally rotatably located in said teeth holder, means located in said teeth holder to resiliently restrict the transversal rotation of said carriers, the length of the teeth of the individual banks being so controlled that an undulated line is formed by the teeth ends.

11. A comb comprising a teeth holder, at least one bank of teeth, a carrier for said bank of teeth longitudinally removably and transversally rotatably inserted in said teeth holder and resilient means to restrict the transversal rotation of said carrier.

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