Aug. 26, 1969 M. McCULLOUGH 3,463,170

TREATMENT COMB

Filed Oct. 25, 1968

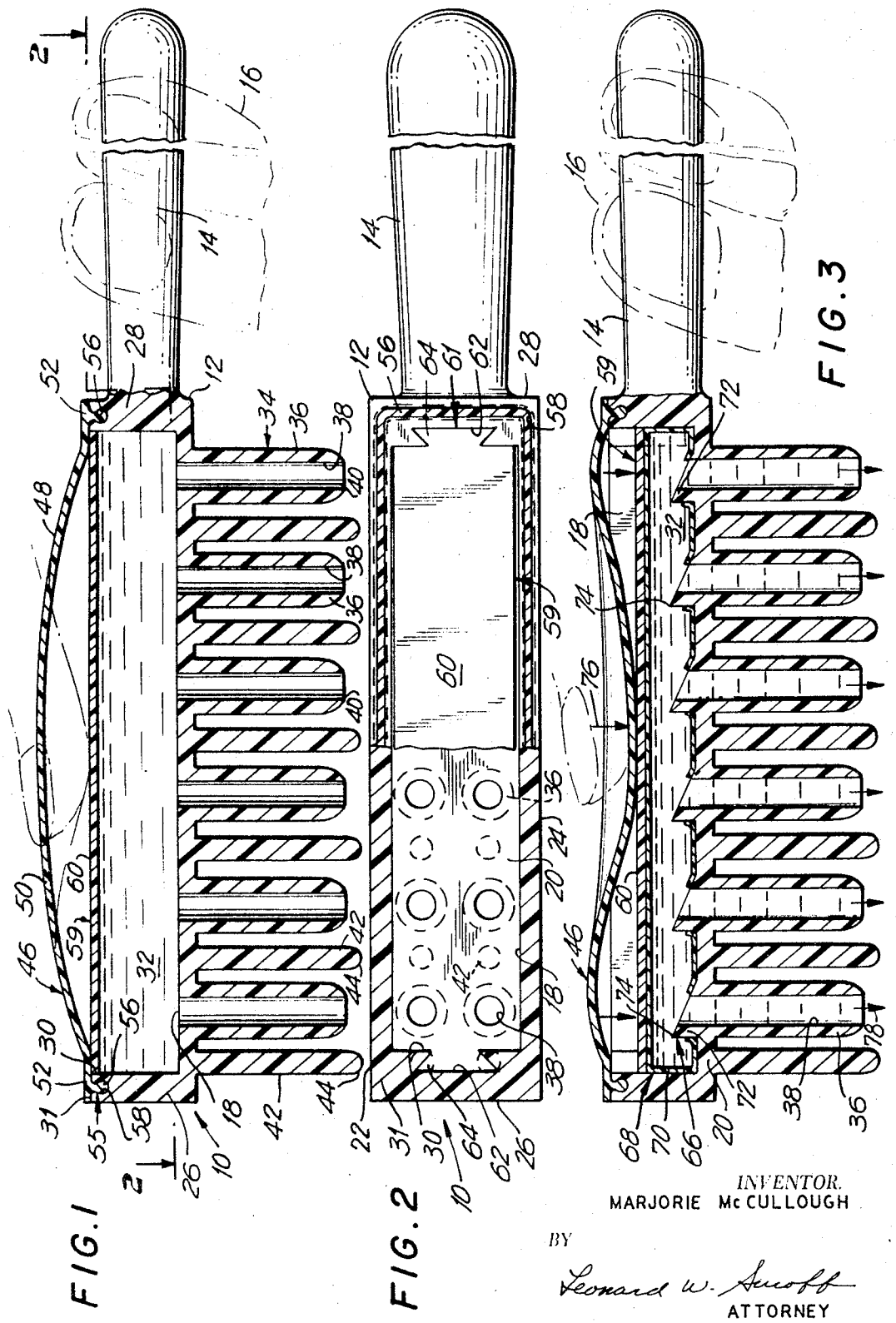


FIG. 1

FIG. 2

FIG. 3

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United States Patent Office 3,463,170 Patented Aug. 26, 1969

3,463,170

TREATMENT COMB

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Filed Oct. 25, 1968, Ser. No. 770,567
Int. Cl. A45d 24/22
U.S. Cl. 132—113 3 Claims

ABSTRACT OF THE DISCLOSURE

A treating comb adapted to apply treating solutions in selected quantities to the scalp or hair of the user having a handle and body portion, with bristles and hollow teeth depending from the body portion and a reservoir in the body portion for containing the hair treatment fluid, said fluid being actuated for application by means of a pressure plate movably mounted in the reservoir, said pressure plate being moved by pressure applied on the body portion of the comb.

Background of the invention

The present invention relates generally to a hair treatment comb adapted for applying treating solutions to the hair and particularly to such a device in which the treatment solution may be equally applied through the bristles thereof.

Although a number of hair treating devices have been proposed for use with a treating solution they have generally been of the electrically driven type in which it is necessary to utilize electrical energy, and also have been of a type in which the supply has been situated in the handle of the comb making it bulky and difficult to handle. In addition, due to the structures of the prior art devices there is no assurance that the hollow teeth through which the treating solutions pass will be equally dispensed from each one thereby having the difficulty of over-applying the treating solutions to the hair and scalp in certain areas while an insufficient amount is applied in others. These, and many other devices offered to the public intended for uniform application of treating solutions have failed to give complete satisfaction. In general, they tend to feed the solution either too rapidly or too slowly, or to deliver it unevenly or they may be subject to still other disadvantages.

Objectives of the invention

An object of the present invention is the provision of an improved comb combination for treatment of the hair.

Another object of the present invention is a comb structure that permits the application of a hair treatment solution or the like to the hair evenly and in predetermined measured amount.

Another object of the present invention is to permit the user to manually control the rate of flow of the quantity of the treating solution being applied.

Another object of the present invention is to provide a comb structure in which capsules of prepackaged hair treating solutions may be placed therein and dispensed therefrom.

Other objects and features of the invention will be apparent as the description proceeds.

Brief description of the drawings

Although the characteristic features of this invention will be particularly pointed out in the claims, the invention itself, and the manner in which it may be made and used, may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part hereof, wherein like reference numerals refer to like parts throughout the several views and in which:

FIG. 1 is a view, partly in section and partly in elevation, showing the structure of the comb device embodying the invention;

FIG. 2 is an elevational view, partly in section, looking in direction of line 2—2 on FIG. 1; and

FIG. 3 is a view similar to FIG. 1, showing another form of the present invention.

Description of preferred embodiments of the invention

The form of the invention shown in FIGS. 1 and 2 comprises a hair treatment comb indicated generally by the reference character **10** which includes a body portion **12** having a handle **14** at one end adapted to be held in place by the user **16** and a treatment fluid receiving chamber means or reservoir **18** formed in the body portion **12** as defined by the bottom wall **20** substantially vertical side walls **22** and **24**, and end walls **26** and **28** to form the open end **30** of the chamber **18** extending from the top surface **31** of the body portion **12**. The chamber **18** is adapted to receive any desired treating solution **32**, such as hair tint, bleach, lotion, hair setting solution or the like which may be introduced into contact with the hair and then almost concomitantly distributed into a uniform contact with the hair at the point of application by a general wrist turning and stroking motion as required.

Applicating means

Applicating means **34** is provided in order to apply the treating solution **32** contained in the chamber **18** to the hair or scalp of the user, and may include a plurality of open ended teeth **36** extending from the bottom wall **20** of the body portion **12** and having an axially extending aperture or passageway **38** in communicating relationship from its end **40** to the reservoir **18**. As seen in FIG. 2, the hollow tubular teeth **36** extend in longitudinal and transverse rows in spaced apart relationship to each other.

In addition a plurality of rigid bristles **42** also extend from the bottom wall **20** of the body portion **12** and at substantially right angle thereto and terminate in a rounded tip **44** and which bristles **42** are longer in length than the open end teeth **36**. The body portion **12**, teeth **36** and bristles **42** may be injection molded or otherwise integrally formed of synthetic material such as nylon or the like plastic, or if desired may be manufactured of the same or different plastic and metallic parts and assembled together.

Closure and sealing means

Closure means **46** is provided to close off the chamber **18** and includes a cover **48** of resilient flexible material such that it may be deformed by the pressure applied by the finger of the user for reasons hereafter described. The cover **48** includes a flexible membrane central portion **50** terminating in a peripheral skirt **52** integrally formed therewith. The cover **48** may be removably secured to the body portion **12** in a number of conventional ways such that it closes off the opening **30** in the body portion **12**. For certain treating fluids, depending on the viscosity and the method of dispensing same from the chamber it has been found desirable to provide sealing means **55** between the closure means **46** and the body portion **12** to prevent the escape of the treating solution from therebetween. Extending from the underside surface **54** of the cover at the peripheral skirt **52** is a continuous sealing bead adapted to be seated in a peripheral groove **58** extending around the body portion **12** and terminating in its top surface **31**. The fit between the peripheral bead **56** and mating groove **58** is such as to provide snap fit en-

gagement and facilitate removal of the closure means **46** when the chamber **18** has to be supplied with additional treating solution **32** and reclosed when refilled.

Pressure applying and mounting means

The construction of the present invention permits the equal distribution of the treating solution **32** through the passageways **38** of each of the respective teeth **36** such that when pressure is applied by the user through the closure means **46** an equal quantity flows from the end portions **40** of each tooth **36**. It is most desirable to be able to manually control the rate of flow of the treating solution **32** and be assured that equal amounts are dispensed from the respective teeth **36**. For example, if a hair bleach is applied by equal application to all parts of the hair, this results in an even coloring and a professional looking treatment. To obtain the equal distribution pressure applying means **59** is provided and may include a pressure plate **60** that extends across the entire open end **30** and within chamber **18** such that the treating solution **32** contained therein has a static force applied thereto of equal force to assure equal distribution through the respective passageways **38**.

Mounting means **61** is provided for mounting the pressure plate **60** to assure horizontal alignment and maintaining of equal pressure. One form of such mounting means **61** is illustrated in FIG. 2, in which a dovetail vertical groove **62** is provided in the end walls **26** and **28** and mating dovetail lip **64** is provided at their respective ends of the pressure plate **60**. In this way as the membrane portion **50** of the closure means **46** is depressed the vertical height of the pressure plate **60** continues to diminish until the bottom wall **20** is reached and at the time the reservoir **18** has to be replenished. To refill the chamber **18** the closure means **46** is removed and very easily a new supply of treating solution **32** is placed therein. Since the treating solution is generally very viscous it will not flow out through the apertures **38** in the teeth **36** unless the pressure is applied thereto but, if it is not of a very heavy viscous material then an adapter may be supplied (not shown) on which the comb **10** rests during the filling operation and thereafter it may be immediately used.

Another embodiment

FIG. 3 illustrates another embodiment of the invention which is quite similar to that illustrated in FIGS. 1 and 2, except that cutting means **66** is provided within the reservoir **18** such that the treating solution **32** may be contained within capsule means **68** which may be in the form of a predispensed package having a wall **70** which is frangible such that it is pierced by annular cutting blades **72** extending within the chamber **18** from the bottom wall **20** and each containing a cutting edge **74**. As shown the annular cutting blades **72** are in coaxial alignment with the passageways **38** of the teeth **36**.

In practice the capsule means **68** is inserted within the reservoir **18** when the closure means **46** and pressure applying means **59** are removed. When assembled as shown a static force is continually applied by the pressural contact of the pressure plate **60** as it is forced downwardly by the finger of the user **16** as the closure means **46** is deflected in the direction of arrows **76** such that the cutting edges **74** pierce the capsule wall **70** and the treating fluid **32** is free to flow out therefrom. The obvious advantage

of this type of construction is that the particular dispensing fluid may be prepackaged and available in combination with the comb for use in the home by the user for various purposes such that the comb is run through the hair and the solid bristles **42** engage either the hair or the scalp and the treating solution **32** is ejected in the direction of the arrows **78**. In this manner a variety of treating solutions may be prepackaged and sold for use.

Although illustrative embodiments of the invention have been described in detail herein with reference to the accompanying drawing, it is to be understood that the invention is not limited to those precise embodiments, and that various changes and modifications may be effected therein without departing from the scope or spirit of the invention.

I claim:

1. A hair treatment comb, comprising:

(A) a body portion having a handle at one end thereof, and means defining a chamber for containing a treating fluid in said body portion,

(B) applicating means extending from said body portion and including a plurality of teeth having passageways in communicating relationship with said chamber for dispensing said treating fluid therefrom,

(C) pressure applying means positioned in said chamber for engaging the treating fluid to obtain controlled dispensing of it from said chamber through said passageways, said pressure applying means including a pressure plate mounted across the open end of said chamber,

(D) means for mounting said pressure plate relative to said chamber means to permit vertical displacement thereof, wherein said mounting means includes mating portions in said chamber and on said pressure plate for vertical movement of said pressure plate within said chamber,

(E) closure means for closing the open end of said chamber, said closure means including a flexible portion adapted to be depressed into said chamber means for engagement with said applicating means for controlled dispensing of said treating fluid, and

(F) sealing means extending between said closure means and said body portion to prevent the escape of treating fluid from said chamber.

2. A hair treatment comb as defined in claim **1**, wherein said mounting means includes a vertically extending groove at opposite ends of said chamber means, and said pressure plate includes mating lips at each end thereof for movement within said groove.

3. A hair treatment comb as defined in claim **1**, and further including cutting means contained in said chamber to pierce a capsule containing the treating solution when positioned therein.

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