Jan. 7, 1941. G. A. SMITH 2,228,091

HAIR-CLEANING DEVICE

Filed May 1, 1939 2 Sheets-Sheet 1

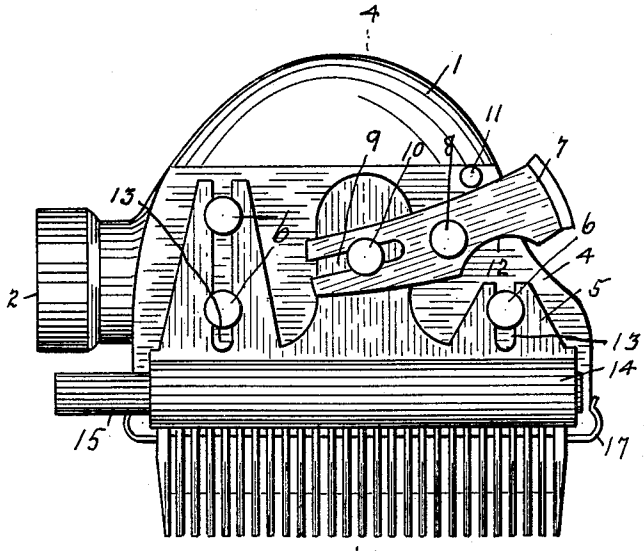


Fig. 1.

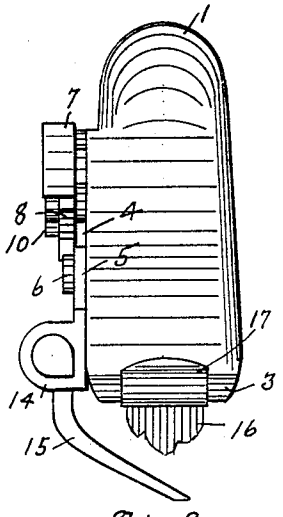


Fig. 2.

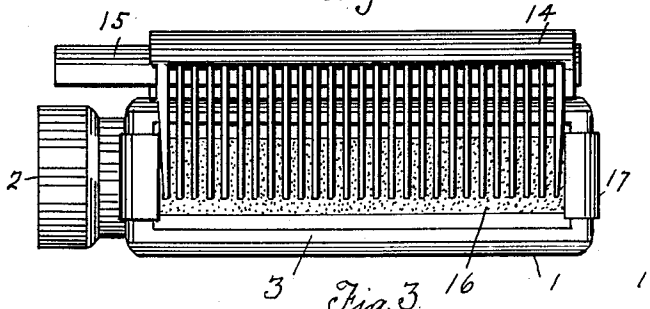


Fig. 3.

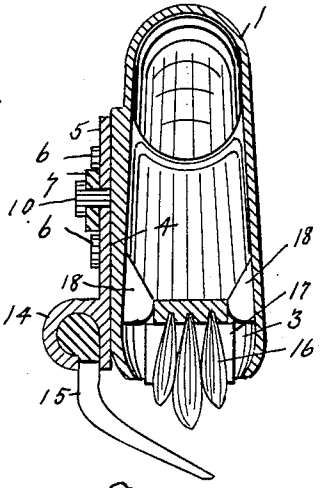


Fig. 4.

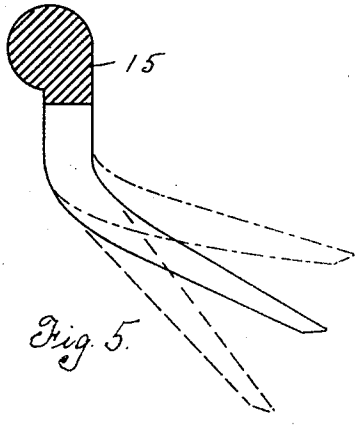


Fig. 5.

INVENTOR.
George A. Smith
BY
Chapman Ferguson
ATTORNEY.

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HAIR-CLEANING DEVICE

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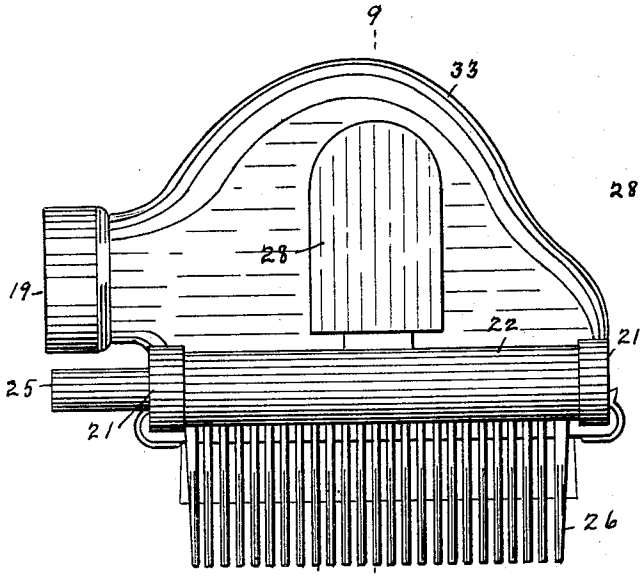


Fig. 6.

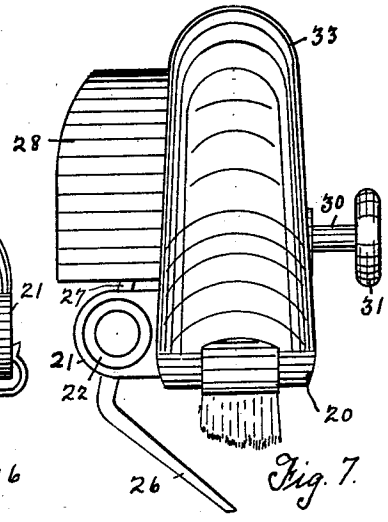


Fig. 7.

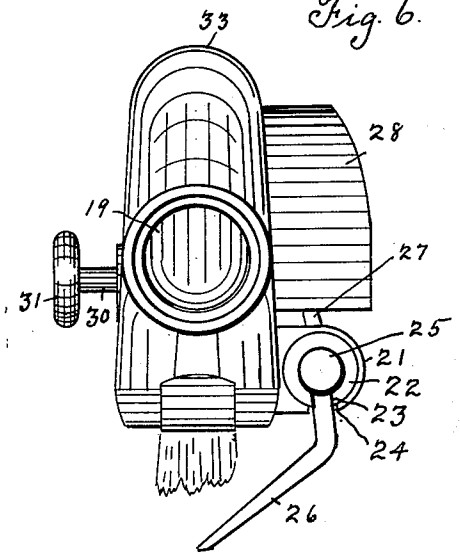


Fig. 8.

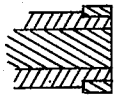


Fig. 10.

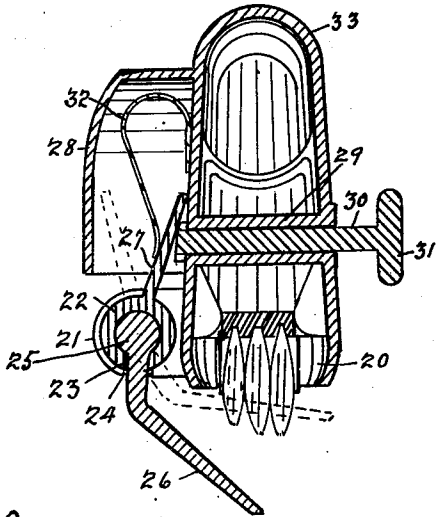


Fig. 9.

INVENTOR.
George A. Smith
BY
Chapin & Ferguson
ATTORNEY.

Patented Jan. 7, 1941 2,228,091

UNITED STATES PATENT OFFICE

2,228,091

HAIR-CLEANING DEVICE

George A. Smith, Baltimore, Md.

Application May 1, 1939, Serial No. 271,194

9 Claims. (Cl. 128—297)

This invention relates to a device for cleaning the hair and is a modification of my invention, application for patent for which was filed by me on June 28, 1938, Serial No. 215,671.

The object of the invention is to provide a device for removing dandruff and dust from the hair by means of suction. The device is intended to remove dandruff and dirt from the hair itself after the scalp has been previously cleaned by my massaging and hair cleaning device, patent application for which invention was filed by me on April 15, 1938, Serial No. 202,155.

A further object of the invention is to provide a suction head having a comb projecting therefrom which is adapted to pass through the hair and raise it close to the mouth of the suction head so that the particles of dust and dandruff that are in the hair will be drawn off through the said suction head, means being provided for adjusting the distance between the comb and the opening in the suction head, in order that it may be used equally well in either thick or thin, long or short, hair.

A further object is to produce the aforesaid adjustment between the comb and the opening in the suction head by the movement of the fingers during the operation of combing through the hair, so that exactly the proper pressure may be put on the hair to secure the best results in cleaning.

A further object is to provide a brush in the opening of the suction head so that when the hair is raised against the suction head it will be brushed out at the same time.

The invention consists of the novel construction and arrangement of the parts and combination of parts hereinafter more fully set forth in the following specification and pointed out in detail in the appended claims.

In the accompanying drawings:

Figure 1 is a side elevation of my invention.

Figure 2 is a front elevation of Figure 1.

Figure 3 is a bottom plan view of Figure 1.

Figure 4 is a section on the line 4—4 of Figure 1.

Figure 5 is an enlarged detail section of the comb, showing it with the teeth at different angles.

Figure 6 is a side elevation of a modification of my invention.

Figure 7 is a front elevation of Figure 6.

Figure 8 is a rear elevation of Figure 6.

Figure 9 is a section on the line 9—9 of Figure 6.

Figure 10 is a section showing the assembly of the movable comb holder, and the bearing supporting the same.

Referring to the accompanying drawings, forming part of this specification, and in which like reference numerals designate like parts throughout the several views thereof, 1 designates the suction head formed of light metal, or other suitable material, 2 an opening in said suction head for attaching to a suitable suction-producing mechanism, and 3 the mouth of the suction head. On one side of this suction head a flat surface 4 is provided, against which is fitted the movable comb holder 5 held against the flat surface by the pins 6. The lever 7 is pivoted at 8 to the flat surface 4 and is provided with an elongated slot 9 at its inner end in which the pin 10 on the comb holder 5 operates to permit the comb holder 5, and consequently the comb, to be raised and lowered. Another pin 11 on the flat surface 4 prevents the lever 7 from being raised too high while the cut-out portion 12 permits it to be depressed farther than otherwise would be possible. The pins 6 fit neatly in the slots 13 to allow free but smooth vertical movement of the comb holder 5. At the bottom of the comb holder 5 is an integral cylindrical flange 14 slotted at the bottom to receive the comb 15, and to hold it securely in the proper position relative thereto. Within the mouth 3 of the suction head 1 is fitted the brush 16, held in its proper position by the clamp 17 and guards 18 within the suction head. In Figure 5 is shown an enlarged section of the comb 15 with the teeth at different angles to illustrate how by modifying this angle the comb can be brought in to the proper position relative to the brush 16 for various types of hair.

In the modification of my invention shown in Figures 6, 7, 8, 9 and 10, instead of securing the adjustment of the comb in relation to the suction chamber by means of raising and lowering the comb from this opening, I accomplish this adjustment by pivoting the comb. I shall now describe in detail this modification. The numeral 33 designates the suction head, 19 the opening therein for attaching to the suction-producing mechanism, and 20 the mouth thereof. On the one side of the suction head 33 and at the bottom and either end thereof, are mounted two bearings 21. Held in position by these bearings is a cylinder 22, slotted at its bottom at 23. When the cylinder is in the proper position, this slot 23 will check with slot 24 in the rear bearing 21 to permit the insertion and removal of the comb 25. Fitted in the cylinder 22 is the comb 25, with the teeth 26 extending through the slot 23 therein.

The cylinder 22 is provided with an arm 27 which projects inside the guard 28 which is an integral part of the suction head 33. Extending across the inside of the suction head 33 is a cylindrical bearing 29 in which the reciprocal plunger 30 is mounted. This plunger 30 is provided at its outer end with the head 31 and its inner end impinges against the lever 27 which is held normally against the inner end of the plunger 30 by the spring 32, as shown in Figure 9 of the drawings.

I shall now describe the operation of my invention, describing first the device shown in Figures 1, 2, 3, 4 and 5, and secondly, the modification shown in Figures 7, 8, 9 and 10. The device is first attached to a suitable suction-producing mechanism and after this has been started, the suction head 1 is grasped at the top by the hand with the forefinger resting on the lever 7. It is now drawn over the head with the teeth of the comb 15 passing through the hair which is brought into the proper contact with the brush 16 by depressing the lever 7. The teeth of the comb will raise the hair just tightly enough against the brush 16 to secure the best results, adjustment being possible during each stroke or movement by either depressing or raising the lever 7. To secure the best results when brushing through long hair, such as a woman's hair, it would be advisable to take a few strands at a time. In this manner, the entire head of hair could be brought across the open mouth of the suction chamber, thus removing all dirt and dandruff therein.

To use the modification of my invention, exactly the same procedure is pursued, except that the suction head is grasped in the hand in such a manner that the thumb will rest against the head 31 of the plunger. The teeth of the comb are raised against the brush by pressure upon the plunger and the operation is otherwise the same as that previously described.

It is obvious that similar results could be achieved by having the brush in the suction head adjustably mounted to permit changing its position relative to the comb. This could be done without departing from the spirit of my invention.

Having thus described my invention, what I claim is:

1. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism, a comb holder at one side of said head adjacent the mouth thereof, a comb removably fitted in said holder and having its teeth projecting therefrom across the mouth of the suction head, and means for operating the comb when the device is being operated to regulate the free space between the projecting teeth and the mouth of the suction head.

2. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism, a comb holder movably connected at one side of said suction head, a comb removably fitted in said holder and having its teeth projecting therefrom across the mouth of the suction head, and means to raise and lower the comb holder to adjust the distance of the teeth from the mouth of the suction head.

3. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism and having a mouth therein, a comb holder on the suction head at one side of the mouth thereof and having a slot therein, a comb removably fitted in said comb holder and having its teeth projecting through said slot, and means for adjusting the comb to change the position of the teeth relative to the mouth of the suction head.

4. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism and having a mouth therein, a comb holder adjustably secured to said suction head and having a cylindrical slotted flange thereon, a comb removably fitted in said cylindrical slotted flange and having its teeth projecting through said slot in said flange, and means for moving said comb holder to adjust the teeth of the comb relative to the mouth of the suction head while the device is being operated.

5. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism, a comb mounted on one side of said head with the teeth extending across the mouth thereof, and means for adjusting the comb to change the position and angle of the comb teeth with relation to the mouth of the suction head.

6. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism and having a mouth therein provided with a contracted opening, a comb holder on the suction head at one side of the mouth thereof and having a slot therein, a comb removably fitted in said comb holder and having its teeth projecting through said slot, and means for adjusting the comb to change the position of the teeth relative to the mouth of the suction head.

7. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism and having a mouth therein, a comb holder reciprocally mounted at one side of said head and having a slot therein and an arm projecting therefrom, a comb removably fitted in said comb holder and having its teeth projecting through said slot, and a plunger mounted in said suction head and adapted to cooperate with said arm to adjust the comb to change the position and angle of the comb teeth with relation to the mouth of the suction head.

8. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism, a comb holder movably attached to the suction head, means for fitting a comb in the comb holder, an actuating member movably attached to the suction head and connected with or abutting the movable comb holder, and means for transmitting through the actuating member motion to the comb holder to change the position of the teeth of the comb relative to the mouth of the suction head.

9. The combination with a suction head adapted to be connected to a suitable suction-producing mechanism and having taperingly contracted side walls terminating in a mouth, a brush removably fitted in the mouth, and guides on the end walls of the suction head to center the brush, the tapering side walls contracting the area of the mouth to approximately the area required by the bristles of the brush and also the open space remaining at the sides of the back of the brush in the interior of the suction head.

GEORGE A. SMITH.