

April 7, 1936.

S. THIESEN

2,036,840

COMB CLEANING DEVICE

Filed April 19, 1934

2 Sheets-Sheet 1

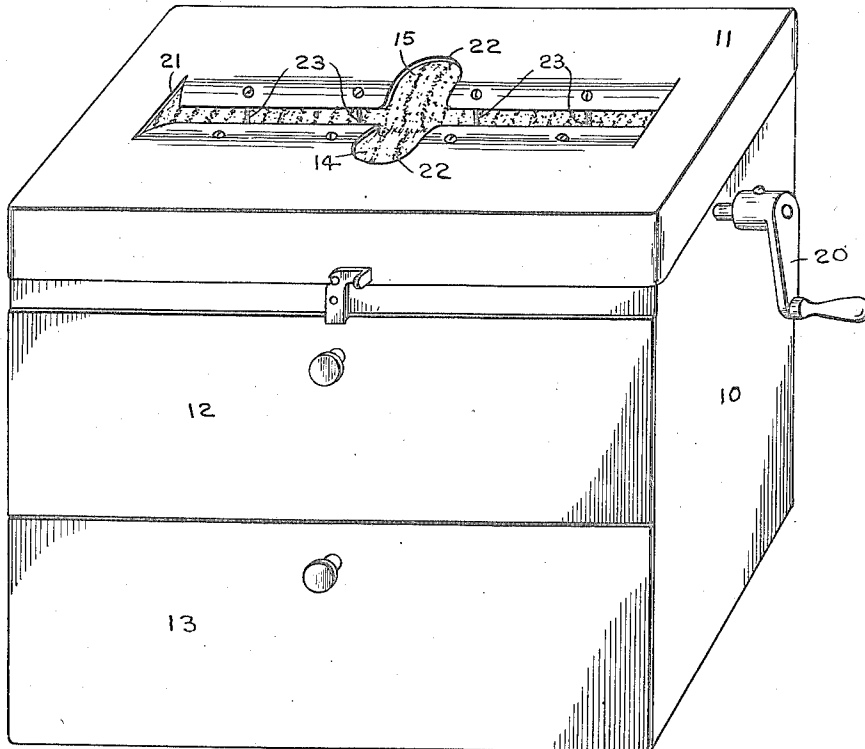


Fig-1

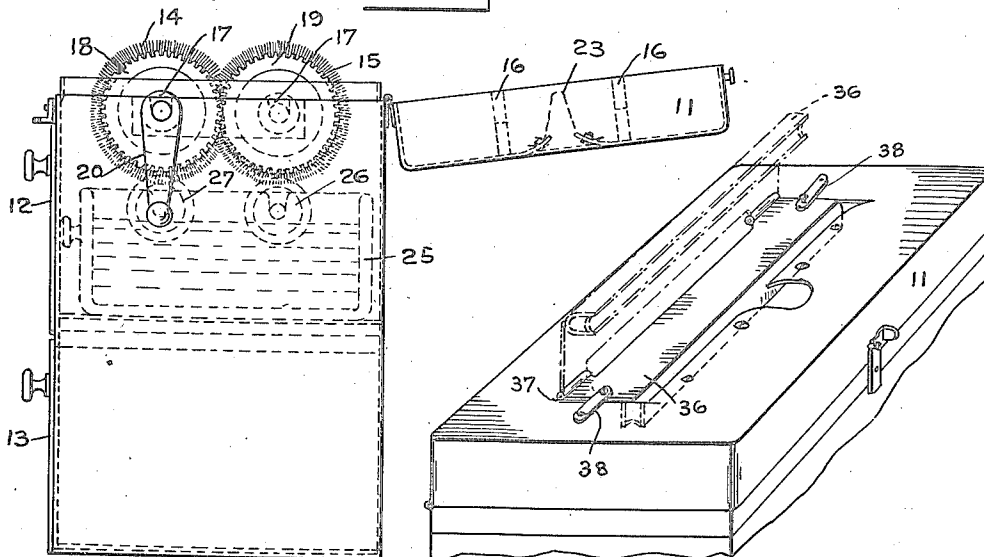


Fig-2

Fig-3

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2 Sheets-Sheet 2

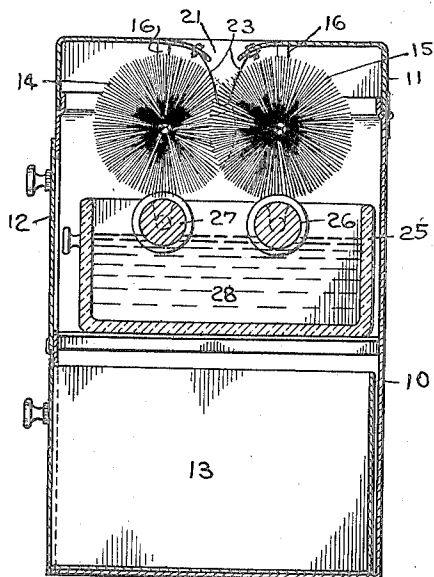


Fig-3

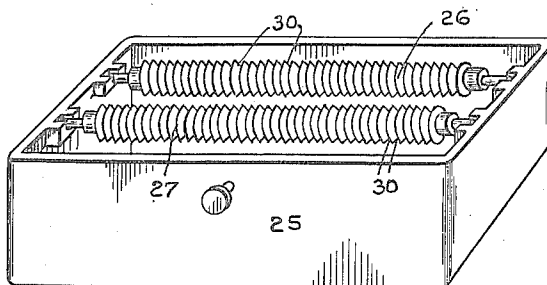


Fig-5

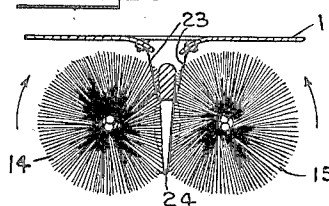


Fig-6

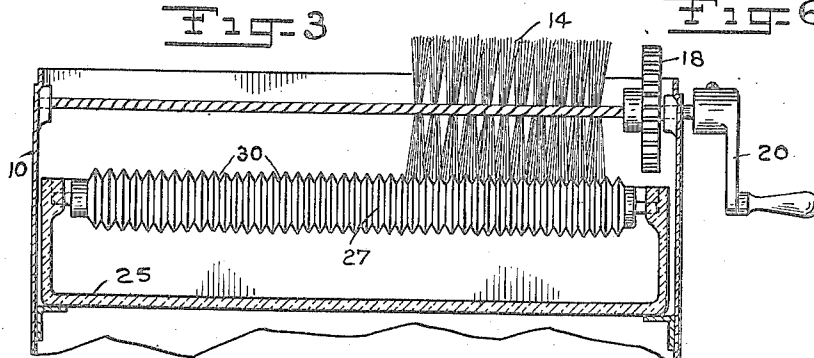


Fig-4

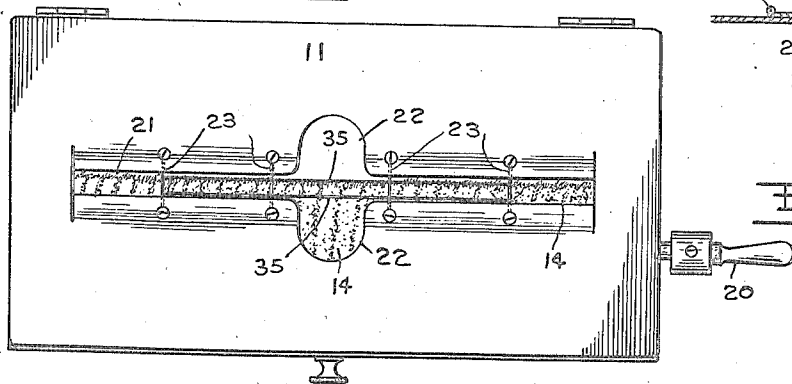


Fig-7

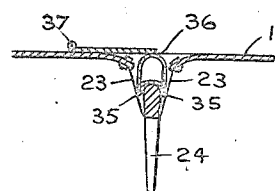


Fig-8

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COMB CLEANING DEVICE

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Application April 19, 1934, Serial No. 721,277

3 Claims. (Cl. 15—39)

The present improvements relate, in general, to cleaning devices and more particularly to devices for cleaning tonsorial implements such as combs and the like.

A primary object of the improvements is to provide an improved mechanism for cleaning combs, either with wet or dry means.

Another object is to provide a novel mechanism for applying disinfectant or other liquid to the comb to be cleansed.

A further object is to provide an improved arrangement of brushes and comb holding means. In devices of this character, it is desirable that the brushes be relatively stiff, whether employed with or without a lotion, and it is therefore an object of the improvements to provide a device wherein the brushes will be moistened, only when in actual use, and one wherein the life of the brushes is prolonged. A novel moisture transfer means, for conveying liquid from the source to the brushes, constitutes a further object of the invention.

Further objects are to provide an improved type of moistening roller, a novel arrangement for impelling the moistening roller, and means for facilitating separation of the rollers, brushes, etc., for readily cleaning same.

Another object of the improvements is to regulate and control the application of moisture to the brushes so that an excessive amount will not be carried to the brushes.

A further object is to provide a novel structure having rotary brushes for cleaning a comb, wherein the brushes may be rotated in either direction and the comb is held in position among the bristles of the brushes at all times.

Other objects are to provide a sanitary comb cleaning device having increased efficiency and durability, while further objects and advantages may occur to those skilled in the art upon reference to the accompanying specification and drawings, in which—

Figure 1 is a perspective view illustrating one embodiment of the improvements;

Figure 2 is an end elevation of the device shown in Figure 1, with the cover laid back;

Figure 3 is a transverse section of the device shown in Figure 1;

Figure 4 is a longitudinal section of the device shown in Figure 1, with cover removed and parts of the brushes omitted for convenience;

Figure 5 is a perspective view of the liquid or lotion container;

Figure 6 is a sectional view of the overlapping brushes with a comb nested among them, in cleaning position;

Figure 7 is a top plan view of the device, showing only one brush, to illustrate its position relative to the slot, and illustrating a modified comb holder, with retainer parts omitted;

Figure 8 is a fragment, in section, of the modified form of Fig. 7, showing a comb in position, with the retainer thereover;

Figure 9 is a perspective of the modified form, with retainer.

Referring to the drawings, a support 10 in the form of a cabinet is provided for compactly and neatly housing the parts of the mechanism, although they may be suitably mounted in a frame, with or without a cabinet if desired. A hinged cover 11, downwardly swinging front closure 12 and storage drawer 13 complete the exterior make-up of the cabinet.

A pair of cylindrical brushes 14 and 15 are journaled for rotation in bearings mounted in the upper portion of the cabinet. On the left hand side (Fig. 4), these bearings are preferably of the U-shaped type so as to facilitate removal of the brushes when desired. Any desirable means for retaining the brushes in the bearings may be provided, as for example, posts 16, carried by one end of the cover 11, in register with the U-bearings 17, see Fig. 2. The opposite ends of the brushes are equipped with interengaging gears 18 and 19 and a crank or handle 20 is provided on the end of brush 14, which extends through the cabinet, so that both brushes may be simultaneously rotated.

As illustrated more particularly in Figs. 2, 3, and 6, the brushes are mounted so that they overlap, intermesh and interengage. This relation is maintained at all times when the brushes are idle or rotating.

The cover 11 is provided with an opening 21, having finger cut outs 22, which facilitate insertion and removal of the comb. The opening 21 is aligned with the overlapped bristles of the brushes, and has a comb holding means in the form of spaced wires 23 suspended at intervals along the opening and depending into and through the overlapped bristles so that when a comb is held thereby, it will be nested among the overlapped bristles. In this manner, the comb will always be accessible to the overlapped bristles, and the latter will contact the comb, and, penetrating the interstices, will project through to the opposite sides, thereby insuring

thorough access of both brushes to all parts of the comb.

As observed from the position of the comb 24, in Fig. 6, it is held in a vertically disposed nest of bristles defined by the overlapping of the brushes.

If it is desired to clean combs with dry brushes, the arrangement thus far described may be employed. The comb to be cleaned, is inserted in the opening 21, and the handle 20 turned, so that the brushes rotate in the direction of the arrows in Fig. 6. The grip of the brushes on the comb tend to drive it downward, but the comb is held by the members 23. This drag on the comb by the brushes, tends to loosen dirt and foreign matter thereon. After the comb has received this treatment, it may be ejected by turning the handle 20 in an opposite direction, whereupon the comb is elevated through the opening of the cover 11, whence it may be readily removed.

It is preferable, however, that moisture in the form of some disinfectant or other lotion, be applied to the brushes and combs. The present improvements accordingly provide an improved type of moistening means, wherein liquid is conveyed from a source in limited quantities.

A receptacle 25, preferably of glass, porcelain or the like, is removably mounted within the cabinet beneath the brushes. Idler rollers 26 and 27 are loosely journaled in the receptacle in such a manner as to be partly immersed in the disinfectant or other liquid 28. The receptacle is supported so that the rollers are aligned with and engaged by the brushes. This relation of parts is of primary importance, although the rollers and receptacle may be variously positioned with respect to the brushes, as for example, at either side thereof.

In operation, the rotation of the brushes, imparts a rotary movement to the rollers, whereby the latter bring up a limited amount of the liquid which is transferred to the tips of the brushes and thence conveyed to the comb. The continued rotation of the rollers obviously elevates more liquid to the brushes with the result that all the ends of the brushes are moistened.

It is significant that the brushes are wetted only when the parts are rotated. During intervals of idleness therefore, the brushes receive no liquid so that they do not become saturated or lose their rigidity. The brushes are therefore always out of direct contact with the source of liquid so that their life and efficiency is prolonged. Rigidity of the bristles, coupled with limited moisture, contribute to more efficient cleansing of the comb. In this fashion, the bristles do not rot or become curled and out of shape. Furthermore, the amount of liquid reaching the bristles and comb is controlled so that there is no excess of moisture applied to either.

While the periphery of the rollers may be smooth and will function in the foregoing manner, I prefer to provide interstices or recesses 30 in the periphery. These recesses may be of various forms so long as they carry the liquid by the natural affinity that it has for adhering and forming a film in such narrow, shallow depressions. In the illustrated embodiment, narrow shallow grooves have been provided, and as they pass through the liquid, a small amount adheres within the grooves and is carried up to the ends of the brushes. As illustrated, the brushes and rollers are mounted so that the ends of the brushes extend into and engage the walls of the

grooves, so that the liquid is thereby picked up. It is believed preferable to have the grooves about as deep as the thickness of the combs so that the ends of the brushes will be dampened to that extent, and the disinfectant or lotion will be applied to all parts of the comb. If desired, the rollers may be faced with rubber having depressions or projections providing interstices for holding a film of liquid. Furthermore, the surface of the roller may be reticulated.

In thus surfacing the rollers, a slightly greater amount of liquid is elevated and transferred, than in the case of the smooth rollers. All the bristles are thereby assured of being dampened, and should the rollers warp or sag, all the bristles will still be moistened.

It is noteworthy also that the traction between the brushes and rollers is improved by the recesses. The bristles engage the bottoms as well as the sides of the recesses and thereby insure rotation of the rollers. In the illustrated embodiment, the grooves are formed parallel to the direction of rotation, while certain of the bristles are mounted at an angle to the direction of rotation, whereby those bristles may engage the side walls of the grooves, and improve the traction.

It may be found desirable, to rotate the brushes in a direction opposite to that of the arrows in Fig. 6. As aforementioned, such manipulation of the brushes tends to eject the comb, but the operator may hold the comb down and in position with his hand. If this is not feasible, the modification of Figs. 7 to 9 may be employed. For convenience in illustration one part of this arrangement has been omitted in Fig. 7.

In this modification, the wires 23 support spaced wires 35 which are secured in position in any desired manner. As seen in Fig. 8, the comb is held between these wires, which prevent the brushes from canting it from the vertical, upon reverse rotation thereof. A retainer 36 is movably mounted on the cover 11 so as to be moved into and out of engagement with the comb 24. In the illustrated embodiment, this retainer is pivoted at 37 for swinging from full to dotted line position and vice versa. Pivoted clips 38 are provided for releasably holding the retainer 36 in operative position.

After the comb 24 is inserted, the retainer 36 may be secured in position whereupon the brushes may be rotated in a direction opposite to the arrows in Fig. 6. In this form it is obvious also, that the brushes may be rotated in either direction.

It will be understood that the structure of the modification of Figs. 7 to 9 is otherwise the same as that of Figs. 1 to 6. In Fig. 7, only one brush has been shown in order to illustrate and emphasize the position thereof relative to the opening 21 and to the wires. Companion brush 15, which has been omitted, is mounted in a similar relation.

In all forms of the improvements, the brushes are yieldably forced against the comb so that some bristles may bend and wipe the exterior thereof while others wipe the interior and project through the teeth. A thorough and complete cleansing of the comb is assured.

The various parts of the device are readily separable so that they may be taken out and cleaned from time to time.

The level of the comb holding means 23 may be adjusted to accommodate combs having a slight curve or other irregular contour. Various

other modifications of the improvements may be made without departing from the scope and purview of the invention.

I claim:

5 1. A comb cleaning device comprising a housing, a brush journaled in said housing, means for supporting a comb in contact with said brush, means for rotating said brush relative to said comb while in contact therewith, a receptacle having a liquid out of contact with said
10 brush and a roller partly immersed in said liquid and engaging said brush, said roller having a recessed peripheral surface.

2. A comb cleaning device comprising a support, a pair of oppositely disposed brushes
15 journaled in said support, means for supporting a comb in contact with said brushes, means for rotating said brushes relative to said comb while in contact therewith, a pair of grooved rollers,
20 one of which is disposed opposite each brush with

the bristles of the brushes within the grooves of the rollers, and a liquid well beneath said rollers for wetting same said brushes concurrently driving said rollers and deriving moisture from the grooves thereof.

3. In a comb cleaning device, a rotary brush, an idler roller opposite said brush, means for insuring rotation of said roller by the rotation of said brush, said means comprising circumferential grooves in the face of said roller, said
10 grooves being parallel to the direction of rotation, bristles in said brush arranged circumferentially and at an angle to the direction of rotation, said roller and brush being mounted with
15 the bristles and grooves in mesh, and with the bristles engaging the walls of the grooves whereby the rollers are driven by the bristles in the grooves.

STEPHEN THIESEN. 20