July 15, 1947. V. JACKEL 2,424,036

BRUSH AND COMB STERILIZER

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Fig. 1.

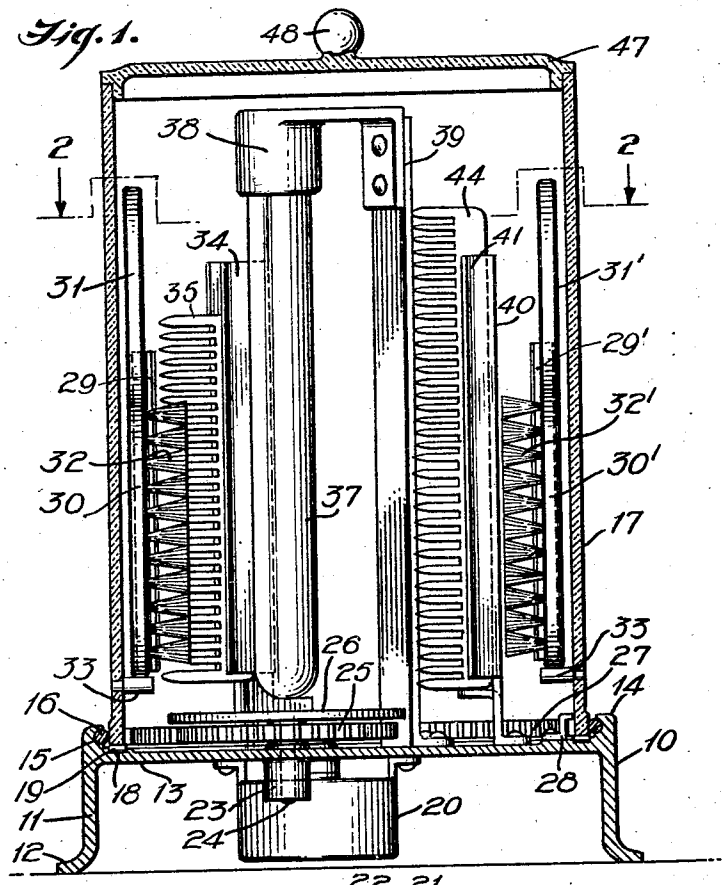


Fig. 2.

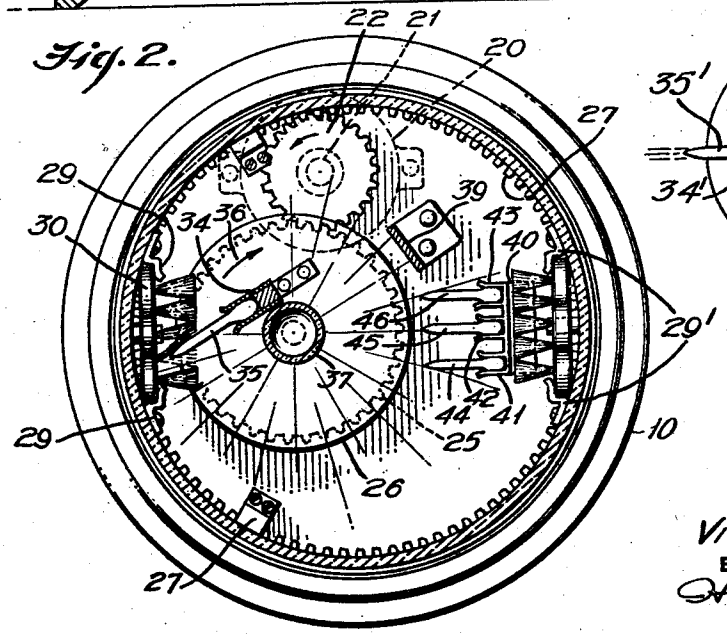
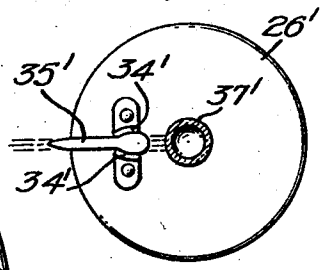


Fig. 3.



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BRUSH AND COMB STERILIZER

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20 Claims. (Cl. 21—82)

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This invention relates to sterilizers adapted for use in sterilizing brushes and combs in barber shops, hair dressing establishments as well as in the homes. More particularly, the invention deals with an apparatus of this kind wherein an ultra-violet or similar bulb is mounted in a casing in such manner as to expose the rays emanating from the bulb to the bristles of a brush and to a comb to sterilize the comb before use thereof. Still more particularly, the invention deals with an apparatus having means for combing and otherwise separating the bristles of a brush to allow the light rays to penetrate to the base of the brush bristles in efficiently sterilizing the brush. The novel features of the invention will be best understood from the following descriptions when taken together with the accompanying drawing in which certain embodiments of the invention are disclosed and in which the separate parts are designated by suitable reference characters in each of the views; and in which:

Fig. 1 is a sectional view through an apparatus made according to my invention, with parts of the construction shown in elevation and omitting electric wiring.

Fig. 2 is a section on the line 2—2 of Fig. 1; and

Fig. 3 is a view similar to Fig. 2 showing only a part of the construction and showing a modification.

In Fig. 1 of the drawing I have shown at 10 a base or standard, comprising an annular tubular wall portion 11 having an outwardly flared circumferential lower end 12. The base 10 includes an inwardly set top wall 13, forming on the wall 11 a raised annular rim 14 having a recess 15 for supporting an annular split ring or the like 16 to provide a guide and bearing for a tubular casing 17.

The wall 13 has adjacent the wall 11 an annular recess 18 in which is supported rollers or a roller bearing, as at 19, upon which the lower end of the sleeve or casing 17 rests.

Supported on the bottom wall 13 within the base is an electric motor 20, the shaft 21 of which extends upwardly through the wall 13 and has a gear 22 secured thereto. The wall 13 also has a bearing portion 23 supporting a shaft 24 to which is secured a gear 25 and a table or platform 26. The casing or sleeve 17 at the lower end thereof has an internal gear 27 which meshes with the gear 22, said gear 22 also meshing with the gear 25. The gearing is such that the table or platform 26 will rotate two revolutions during each complete revolution of the casing 17.

The casing 17 may be formed of any suitable

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material, but is preferably constructed of a translucent or transparent plastic material so that the interior of the casing and the articles therein are visible externally thereof. Secured to the wall 13 are a few retainer clips 28 for engaging the gear portion 27 of the casing 17 to retain this casing against accidental displacement. The clips are accessible through the top of the casing for removal as and when it may be desired to detach the casing 17 from the base 10.

Secured to opposed walls of the casing 17 are pairs of spring retainer strips as at 29—29', of such dimensions as to support the back 30 of a brush, with the handle 31 of the brush extending upwardly and the bristles 32 extending inwardly. The above references are applied to the brush shown at the left of Figs. 1 and 2 and for distinction the brush shown at the right of Fig. 2 will have the references 30'—31' and 32'. Secured to the casing 17 near the lower end thereof are inwardly extending stops 33—33' to limit downward movement of the brushes when placed in the casing.

Secured to the table 26 is an upwardly extending U-shaped spring clip or channel member 34, in which a tooth or combing element 35 is adapted to be securely mounted and firmly held. In the construction shown in Fig. 1, this bracket and the combing element therein is supported at an angle to the disc and directed away from the direction of rotation of the disc, which is rotated in the direction of the arrow 36 of Fig. 2.

In Fig. 3 I have shown a modified form of construction and in this figure, 26' represents a disc, 34' a spring clip or support similar to the support 34 and 35' a combing element similar to the combing element 35. In this figure, the combing element is arranged radially with respect to the axis of the disc and to the center of an ultra-violet or similar tube 37 which is supported centrally with respect to the axis of the disc 26 and extends upwardly in the direction of the upper end of the casing and is coupled with a suitable socket 38. The socket 38 is supported upon the bottom wall 13 by a suitable bracket construction as at 39.

Also supported on the wall 13 and extending upwardly into the casing 17 is a comb supporting member 40 having three spring sockets as at 41, 42 and 43, the sockets being in the form of elongated channels and are adapted to support three combs, as at 44, 45 and 46, note Fig. 2 of the drawing.

Arranged upon the top of the casing 17 is a cover 47 having centrally thereof a suitable han-

dle 48. Upon removal of the cover, the brushes and combs can be quickly placed in or removed from the apparatus.

In practice, two brushes and one or more of the combs 44, 45 and 46 are placed in the chamber of the casing 17 with the current to the motor shut off. The motor is then started and as the casing 17 rotates in an anti-clockwise direction, as viewed in Fig. 2, the combing element 35 is rotated in a clockwise direction and so timed with the movement of the casing as to pass the combing element 35 through the bristles 32, 32' of the brushes as said brushes move across the combing element. This method of procedure will operate to support the bristles and allow the light rays emanating from the bulb 37 to penetrate deeply in the brush bristles and perform the sterilizing functions thereon. Brushes and combs can be sterilized in a short period of treatment, that is to say, from a half-minute to one or two minutes. Light rays emanating from the bulb 37 also extend to the combs supported in the casing in stationary position and render the combs sterile.

With the construction shown in Figs. 1 and 2, light rays will extend to the brushes or bristles thereof, not only when the combine element 35 passes therethrough, but also as the brushes revolve around the bulb 37, which is supported in stationary position. By constructing the comb elements 35—35' of transparent plastic material or glass, the light rays may also pass through these combing elements and with the structure as seen in Fig. 3 of the drawing, when the combing elements are in the operation of passing through the bristles, the light rays may also extend through the teeth of the combing elements as will clearly appear from a consideration of Fig. 3 of the drawing.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A sterilizing apparatus of the character described comprising a base, a casing on said base, means for supporting a light bulb emanating predetermined rays within said casing in fixed position, means in the casing for supporting a brush to expose the bristles thereof inwardly in the casing to the bulb rays, a combing element mounted for engagement with the bristles of said brush, and means for actuating said element to move through the bristles of the brush in the operation of said apparatus.

2. A sterilizing apparatus of the character described comprising a base, a casing on said base, means for supporting a light bulb emanating predetermined rays within said casing in fixed position, means in the casing for supporting a brush to expose the bristles thereof inwardly in the casing to the bulb rays, a combing element mounted for engagement with the bristles of said brush, means for actuating said element to move through the bristles of the brush in the operation of said apparatus, said last named means comprising a motor supported in the base, and means driven by the motor for actuating said element.

3. A sterilizing apparatus of the character described comprising a base, a casing on said base, means for supporting a light bulb emanating predetermined rays within said casing in fixed position, means in the casing for supporting a brush to expose the bristles thereof inwardly in the casing to the bulb rays, a combing element mounted for engagement with the bristles of said brush,

means for actuating said element to move through the bristles of the brush in the operation of said apparatus, said last named means comprising a motor supported in the base, means driven by the motor for actuating said element, and means for fixedly and detachably supporting a comb in the casing for sterile treatment.

4. A sterilizing apparatus of the character described comprising a base, a casing on said base, mens for supporting a light bulb emanating predetermined rays within said casing in fixed position, means in the casing for supporting a brush to expose the bristles thereof inwardly in the casing to the bulb rays, a combing element mounted for engagement with the bristles of said brush, and means for moving said element and brush one with respect to the other in separating the bristles of the brush by said element.

5. A sterilizing apparatus of the character described comprising a base, a casing on said base, means for supporting a light bulb emanating predetermined rays within said casing in fixed position, means in the casing for supporting a brush to expose the bristles thereof inwardly in the casing to the bulb rays, a combing element mounted for engagement with the bristles of said brush, and means for moving said element and brush one with respect to the other in different directions in separating the bristles of the brush by said element.

6. A sterilizing apparatus of the class described comprising a base, a cylindrical casing rotatably mounted on said base, means for rotating said casing, means for detachably supporting a brush on the wall of the casing to expose the bristles of said brush inwardly, a tooth element, means supporting said element in the casing in position to engage and pass through the bristles of a brush supported in the casing in the rotation of said casing, a bulb socket, a sterilizing bulb attached to the socket and arranged vertically in the casing inwardly of a brush supported on said casing to direct rays to said bristles, the top of said casing being open, and a cover controlling said opening.

7. A sterilizing apparatus of the class described comprising a base, a cylindrical casing rotatably mounted on said base, means for rotating said casing, means for detachably supporting a brush on the wall of the casing to expose the bristles of said brush inwardly, a tooth element, means supporting said element in the casing in position to engage and pass through the bristles of a brush supported in the casing in the rotation of said casing, a bulb socket, a sterilizing bulb attached to the socket and arranged vertically in the casing inwardly of a brush supported on said casing to direct rays to said bristles, the top of said casing being open, a cover controlling said opening, the means supporting said element comprising a disc, and means rotating said disc in a direction opposite to the rotation of said casing.

8. A sterilizing apparatus of the class described comprising a base, a cylindrical casing rotatably mounted on said base, means for rotating said casing, means for detachably supporting a brush on the wall of the casing to expose the bristles of said brush inwardly, a tooth element, means supporting said element in the casing in position to engage and pass through the bristles of a brush supported in the casing in the rotation of said casing, a bulb socket, a sterilizing bulb attached to the socket and arranged vertically in the casing inwardly of a brush supported on said casing to direct rays to said bristles, the top of

said casing being open, a cover controlling said opening, the means supporting said element comprising a disc, means rotating said disc in a direction opposite to the rotation of said casing, and means in said casing for supporting other articles to be sterilized.

9. A sterilizing apparatus of the class described comprising a base, a cylindrical casing rotatably mounted on said base, means for rotating said casing, means for detachably supporting a brush on the wall of the casing to expose the bristles of said brush inwardly, a tooth element, means supporting said element in the casing in position to engage and pass through the bristles of a brush supported in the casing in the rotation of said casing, a bulb socket, a sterilizing bulb attached to the socket and arranged vertically in the casing inwardly of a brush supported on said casing to direct rays to said bristles, the top of said casing being open, a cover controlling said opening, the means supporting said element comprising a disc, means rotating said disc in a direction opposite to the rotation of said casing, and said tooth element being arranged on the base radially with respect to the axis of said bulb.

10. A sterilizing apparatus of the class described comprising a base, a cylindrical casing rotatably mounted on said base, means for rotating said casing, means for detachably supporting a brush on the wall of the casing to expose the bristles of said brush inwardly, a tooth element, means supporting said element in the casing in position to engage and pass through the bristles of a brush supported in the casing in the rotation of said casing, a bulb socket, a sterilizing bulb attached to the socket and arranged vertically in the casing inwardly of a brush supported on said casing to direct rays to said bristles, the top of said casing being open, a cover controlling said opening, the means supporting said element comprising a disc, means rotating said disc in a direction opposite to the rotation of said casing, said tooth element being arranged on the base radially with respect to the axis of said bulb, and said tooth element being composed of translucent material.

11. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, and means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein.

12. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein, and means on the base for fixedly supporting articles to be sterilized in said casing.

13. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein, means on the base for fixedly supporting articles to be sterilized in said casing, and means rotatable about the bulb supported in the casing for operatively engaging predetermined articles supported on the inner surface of said casing.

14. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein, means on the base for fixedly supporting articles to be sterilized in said casing, means rotatable about the bulb supported in the casing for operatively engaging predetermined articles supported on the inner surface of said casing, and said last named means comprising a disc rotatable in the base and a gear on said disc meshing with the gear on said motor shaft.

15. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein, means on the base for fixedly supporting articles to be sterilized in said casing, means rotatable about the bulb supported in the casing for operatively engaging predetermined articles supported on the inner surface of said casing, said last named means comprising a combing element, and means rotating said combing element in a direction opposite to the direction of rotation of said casing.

16. An apparatus of the class described comprising a base, an electric motor supported in the base, a tubular casing arranged on and extending upwardly from the base, an internal gear on the inner surface of said casing adjacent the base, a gear on the motor shaft operatively engaging said internal gear to rotate said casing, a bulb for emanating sterile rays, means on the base for supporting said bulb within said rotatable casing, means for detachably supporting articles to be sterilized on the inner surface of the casing to travel circumferentially around the bulb supported therein, means on the base for fixedly supporting articles to be sterilized in said casing, means rotatable about the bulb supported in the casing for operatively engaging predetermined articles supported on the inner surface of said casing, said last named means comprising

a combing element, means rotating said combing element in a direction opposite to the direction of rotation of said casing, and means for retaining the casing against accidental displacement from the base.

17. A brush sterilizer apparatus of the class described comprising a casing, means for detachably supporting a brush in the casing with the bristles of the brush projecting into the casing, a light bulb within the casing for emanating sterile rays, means supporting said bulb in the casing to expose the brush supported therein to said sterile rays, a toothed element, and means actuating said toothed element through the bristles of a brush supported in the casing to separate the bristles of the brush in assisting sterilization of said brush.

18. A brush sterilizer apparatus of the class described comprising a casing, means for detachably supporting a brush in the casing with the bristles of the brush projecting into the casing, a light bulb within the casing for emanating sterile rays, means supporting said bulb in the casing to expose the brush supported therein to said sterile rays, a toothed element, means actuating said toothed element through the bristles of a brush supported in the casing to separate the bristles of the brush in assisting sterilization of said brush, and means for supporting other articles in said casing for exposure to said bulb.

19. A brush sterilizer apparatus of the class described comprising a casing, means for detachably supporting a brush in the casing with the bristles of the brush projecting into the casing, a light bulb within the casing for emanating sterile rays, means supporting said bulb in the casing to expose the brush supported therein to said sterile rays, a toothed element, means actuating said toothed element through the bristles of a brush supported in the casing to separate the bristles of the brush in assisting sterilization of said brush, means for supporting other articles in said casing for exposure to said bulb, and said last named means comprising a spring clip for supporting a comb.

20. A brush sterilizer apparatus of the class described comprising a casing, means for detachably supporting a brush in the casing with the bristles of the brush projecting into the casing, a light bulb within the casing for emanating sterile rays, means supporting said bulb in the casing to expose the brush supported therein to said sterile rays, a toothed element, means actuating said toothed element through the bristles of a brush supported in the casing to separate the bristles of the brush in assisting sterilization of said brush, and said toothed element being translucent to permit transmission of light rays from the bulb therethrough to the bristles of the brush.

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