July 11, 1939. E. E. RIEBER 2,165,508

APPLICATOR

Filed Oct. 1, 1937

Fig. 1

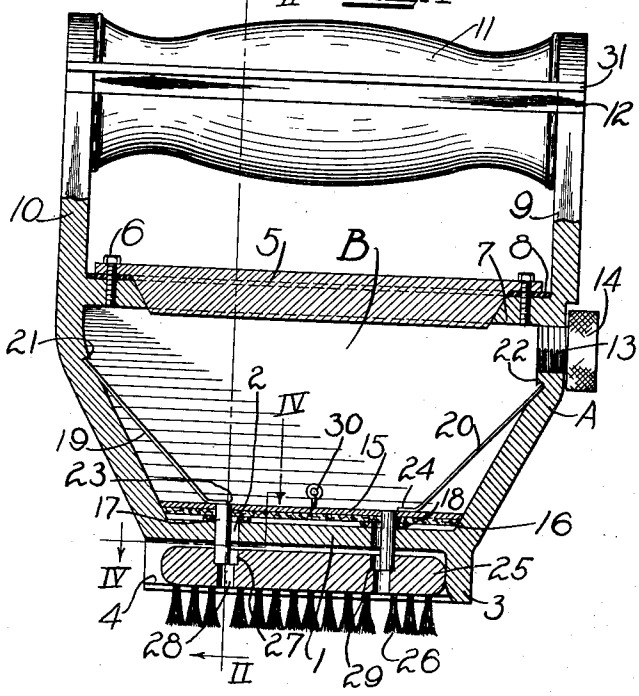


Fig. 2

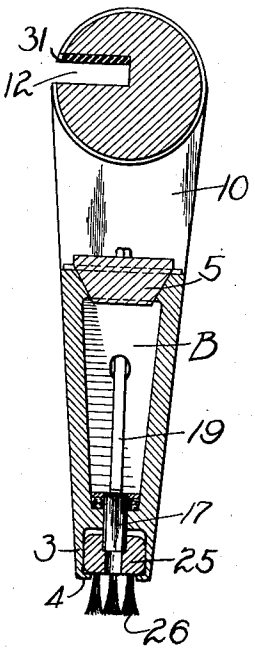


Fig. 3

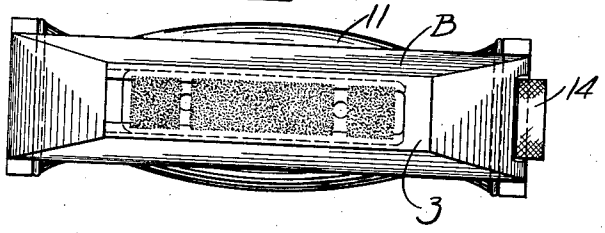
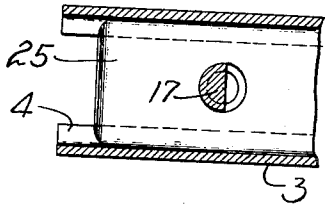


Fig. 4



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2,165,508

APPLICATOR

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Application October 1, 1937, Serial No. 166,777

7 Claims. (Cl. 15—124)

The present invention relates to an applicator and has more particular reference to an appliance for the treatment of the scalp, although it is not limited to such use.

An object of the present invention is to provide an applicator in the nature of a fountain device, adapted for hand use in connection with scalp treatments.

Another object of the present invention is to provide a scalp treating appliance provided with a liquid chamber, and whereby a brush or other suitable scalp treating tool may be removably supported for use, together with a valve means opened by pressure of the tool against a scalp, so that liquid may flow onto the scalp to be worked into the pores by the manipulation of the tool.

A further object of the present invention is to to provide an applicator of the fountain type for scalp treatment, having a bristle brush, whereby vigorous treatment may be given without injury or discomfort to the scalp.

A still further object of the present invention is to provide a fountain type applicator equipped with a removable scalp treating member whereby the member may be removed and replaced by another member, without impairment of the fountain function.

The invention has for a further object the provision of a scalp treating device of the fountain type having a plurality of liquid outlets normally closed by a single valve member, together with a scalp treating member or tool movably carried by the device and operatively connected to the single valve member to unseat the valve member when the device is pressed against a scalp.

Reference herein to a device of the fountain type is meant to include any suitable hand manipulated instrument for use in scalp treatment in applying liquid to a scalp at the roots of the hair.

The above, other, and further objects of the present invention will be apparent from the following description and accompanying drawing.

The accompanying drawing illustrates an embodiment of the present invention, and the views thereof are as follows:

Figure 1 is a view, partially in side elevation and partially in vertical section, with the parts in normal position, that is with the scalp treating tool or member projected and with the ports through the reservoir bottom closed.

Figure 2 is a vertical sectional view through the appliance of Figure 1, taken substantially in the plane indicated by line II—II of Figure 1.

Figure 3 is a bottom plan view.

Figure 4 is a fragmental, enlarged, horizontal, sectional view taken substantially in the plane indicated by the line IV—IV of Figure 1.

The drawing will now be explained.

The form of applicator chosen for exemplification of the present invention contemplates a body member A, which preferably is of moldable material, such as "Bakelite" or other material suitable for the purpose of manufacturing the device in quantity lots at reasonable manufacturing costs.

The body A is shown as of general oblong form, in plan, with a portion of the body having a bottom 1 provided with ports 2, with a flange or skirt 3 projecting below the bottom along two sides at one end thereof to provide a lateral opening for a tool, the side flanges of the flange 3 being formed with inturned ledges 4, for a purpose to be later explained.

The body A is formed with a reservoir B for containing liquid to be discharged through the bottom and onto a scalp. The reservoir B is normally closed by an elongated lid 5 suitably secured in place by bolts or like fastening means 6.

Interposed between the lid 5 and the top wall portion 7 of the reservoir, is a suitable sealing gasket 8.

Rising from the top 7 of the reservoir are uprights 9 and 10 adapted to receive between them a handle 11, which is contoured exteriorly to afford a comfortable grip by a hand of an operator.

The handle 11 and the ends of the uprights 9 and 10 are shown as provided with an elongated slot 12 having a rubber facing 31 along the upper margin of the slot, serving as a pocket for a hand comb, in the event the operator uses a hand comb in connection with a scalp treatment, the slot affording a convenient place for temporary disposal of a comb during the time the applicator is in use.

For supplying liquid to the interior of the reservoir B, an end wall of the same is apertured at 13, which aperture is closed by a threaded plug 14.

The ports 2 through the bottom 1 of the reservoir are preferably cylindrical.

For normally closing the ports to liquid flow, valve means are provided.

The preferred form of valve means includes a single plate 15 contoured to fit the lower portion of the reservoir B, and secured to the lower face of the plate is a layer of absorbent material, such as felt, designated at 16.

Suitably secured to the plate 15, by welding, swedging, or the like, are pins 17, there being as many pins as there are ports, the pins arranged to extend through the ports 2 in the bottom of

the reservoir. Preferably, the pins 17 are semi-cylindrical in shape, to allow liquid flow through the ports.

There may be attached to the under side of the felt layer 16, annular discs 18, or washers, of felt or like material, arranged to seat about the ports.

The plate 15 constitutes a single member forming valve means for normally closing the ports 2 to liquid flow.

For maintaining the valve member 13 in port closing relationship, spring means are utilized.

The form of spring means shown for accomplishing this purpose includes two flat springs 19 and 20, the upper ends of which are engaged in notches 21 and 22 respectively formed in the interiors of the end walls of the reservoir, and the lower ends of the springs are bent and secured by welding or the like to the plate 15, the bent ends of the springs being indicated at 23 and 24.

The valve member 15 and its springs may be applied in position, in the interior of the reservoir B, by removing the lid 5, applying the plate to the inside of the bottom 1, with the pins 17 through the ports, and then snapping the upper ends of the springs 19 and 20 into their notches, the springs thus being put under strain to cause them to function to normally close the ports.

Removably supported below the bottom 1 of the device, and resting on the ledges 4 of the flange 3, is a suitable scalp treating tool.

The tool here illustrated is of brush form and includes a back 25, with groups of bristles 26 secured in it and projecting below the flanges 4 for engaging the scalp of a patient. The height of the back 25 is less than than the vertical distance between the flanges 4 and the lower surface of the bottom 1 of the reservoir, to allow limited vertical movement of the back in this space.

Registering with the ports 2 through the bottom 1 of the reservoir, are openings through the back. These openings are preferably of two diameters.

The upper portions of the openings, that is the bores 27, are of substantially the same diameter as the ports 2, and the lower ports, that is the bores 28, are of less diameter. The junction of the bores 27 and 28 form flat annular shoulders 29 which serve as seats for the lower ends of the pins 17, when the tool is in place.

The construction of the parts is such that when a tool is in place below the bottom 1, and the single valve member 15 is in port closing position, the pins 17 engage against the shoulders 29 to normally hold the tool away from the bottom 1 of the reservoir, that is, hold it against the flanges 4.

The tool illustrated may be removed and replaced by another tool, by removing the lid 5, and with a suitable instrument, such as a hook, engaging an eye 30 secured to the plate 15, and raising it against the action of the springs 19 and 20 until the pins 17 clear the back 25 of the tool, whereupon the tool may be slid out of the device by a sliding movement to the left, as viewed in Figures 1 and 3. Another tool may be applied by sliding it into place, while the pins 17 are raised as described. After another tool has been applied, or the same tool installed, the valve member 15 is permitted to seat, and the lid 5 is secured in place, whereupon the device is ready for use.

In using the device, the operator grasps the handle 11 with one hand and presses the tool against the scalp of the patient, first having filled the reservoir B with suitable liquid for scalp treatment.

Manipulation of the device over the scalp of a patient will necessarily cause relative movement between the tool and the device, so that the tool is moved upwardly towards the bottom 1 of the reservoir, which movement displaces the valve member 15 from closing position, permitting liquid to escape through the port 2, the bores in the back 25 of the tool, and onto the head or the scalp, whereupon the liquid is worked into the scalp by suitable massaging or other movements.

The utilization of the springs 19 and 20, acting against the plate, and the plate in turn bearing against the back 25 of the tool, through the instrumentality of the pins 17, constitutes a floating mounting for the tool, so that manipulation thereof over the scalp of the patient will be comfortable and will not injure the scalp.

The selection of material for the springs 19 and 20 may be such as to secure any degree of pressure desired against the scalp treating tool to provide for proper treatment. By reason of the fact that the scalp treating member is retained in position by engagement of the pins 17 with the member, enables movement of the appliance endwise or sidewise, without any possibility of displacement of the member from the device. The construction of the parts is such that the scalp treating tool or member is guided by the flange 3, in such manner as to prevent any undue tilting thereof in use.

The invention has been described herein more or less precisely as to details, yet it is to be understood that the invention is not to be limited thereby, as changes may be made in the arrangement and proportion of parts, and equivalents may be substituted, without departing from the spirit and scope of the invention.

The invention is claimed as follows:

1. In a scalp treatment appliance, the combination with a reservoir having a plurality of outlets, of a single plate valve member within said reservoir for normally closing all of said outlets, a scalp treating brush loosely supported in said appliance for movement towards and away from said outlets, said brush having ports through it, and pins working through said outlets and within said brush ports and operable by movement of the brush towards said outlets for unseating said plate valve member, the engagement of said pins in said brush ports serving as means for guiding said brush in its movement towards and away from said outlets.

2. In a scalp treating appliance, the combination of means providing a reservoir and an integral handle above said reservoir and extending along the length of the same, said reservoir having a bottom provided with outlets, a single plate overlying said bottom and all of said outlets, sealing means attached to the plate between it and said bottom to constitute valve means for closing said outlets, spring means acting against said plate to normally hold it against said bottom to close said outlets, a scalp treating member loosely carried by said appliance outwardly of and below said bottom for movement towards and away from said bottom, and pins secured to said plate and projecting through said outlets and contacting said member to normally maintain said member away from said bottom, the movement of said member towards said bottom occasioned by pressure of said appliance against a scalp moving said pins to unseat said plate to open said outlets to liquid flow.

3. In a scalp treating appliance of the foun-

tain type, a casing forming a reservoir having a lower end of oblong form and having parts for movably receiving a scalp treating tool and for supporting said tool for limited movement towards and away from the reservoir bottom, said reservoir bottom having ports through it for liquid flow to the tool, a plate within said reservoir substantially coextensive with said bottom and constituting a single closure for all of said ports and carrying pins extending through the ports, a scalp treating tool having a back provided with openings through it in register with said ports which openings have bored portions to receive said pins, said tool displacing said valve with respect to said ports when said tool is moved toward said reservoir bottom on pressure of the appliance against a scalp, and spring means acting against said plate to normally hold it in port closing position and to maintain said tool away from the reservoir bottom.

4. In a fountain type scalp treating device, a liquid reservoir having a ported bottom, a scalp treating tool removably supported below said bottom for movement towards and away from said bottom, valve means within said reservoir normally in contact with said bottom for normally closing the ports in said bottom, said tool having flow openings through it in register with said ports, pins connected to said valve means and extending through said ports and into said flow openings in said tool to retain it in operative position, and said tool being removable from said device by disengaging said pins from said tool openings.

5. A scalp treating device of the fountain type comprising means providing a liquid containing chamber having a bottom with a plurality of outlet ports in it, a single plate within said chamber and constituting a valve member overlying and in contact with said bottom to normally close all of said ports to liquid flow, spring means within said chamber acting against said plate to normally hold it in port closing position, said device having a skirt below said bottom formed to provide a lateral entrance for a tool, said skirt being provided with inwardly directed ledge means for supporting a tool below said bottom, a scalp treating tool having a back provided with openings through it to register with said ports when said tool is in place within said skirt, pins connected to said plate and working in said ports and said back openings to maintain said tool openings in alignment with the ports and to move said plate to open the ports to flow when the tool is moved towards said bottom and normally effective to maintain said tool against said ledge means and away from said bottom by action of said spring against said plate, the cross-sectional areas of said pins being less than the cross-sectional areas of said ports and openings for allowing liquid flow through said ports and openings while maintaining alignment of said back openings with said ports, said back openings being formed with internal shoulders for engagement with the lower ends of said pins.

6. In a scalp treating device of the fountain type including means providing a liquid containing chamber having a bottom with a plurality of outlet ports in it, a single plate within said chamber and engaging said bottom to normally close all of said ports, a skirt extending below said bottom and formed to provide a lateral entrance for a tool, said skirt being provided with inwardly directed ledge means for supporting a tool below said bottom, a tool having a back provided with openings in register with said ports when said tool is in position in said skirt, pins working within said ports and back openings effective to normally maintain said tool against said ledge means and spaced from said bottom by reason of the action of said spring means against said plate, said pins having less cross-sectional areas than said ports and said openings to allow liquid flow through the same when the plate is moved to open said port by reason of the contact of said tool against a scalp.

7. A scalp treating device comprising means providing a liquid containing chamber having a bottom equipped with a plurality of outlet ports, a single plate substantially coextensive with and in contact with said bottom to normally close said ports to liquid passage, sealing means attached to the undersurface of said plate to directly engage said bottom, spring means acting against said plate to normally maintain it in port closing position, said device having a skirt below said bottom formed with a lateral opening for the insertion and removal of a tool, said skirt being provided with inwardly directed ledge means to support a tool, a tool within said skirt engaging said ledge means, pins attached to said plate and extending through said ports and into engagement with said tool to normally maintain said tool against said ledge means and away from said bottom, said tool having shoulder means to engage said pins to displace said plate when the tool is moved towards said bottom, said pins being constructed to allow liquid passage through said ports when said plate is displaced to open any of the ports to liquid flow, said pins engaging said tool to maintain the same against accidental displacement through the lateral opening in said skirt.

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