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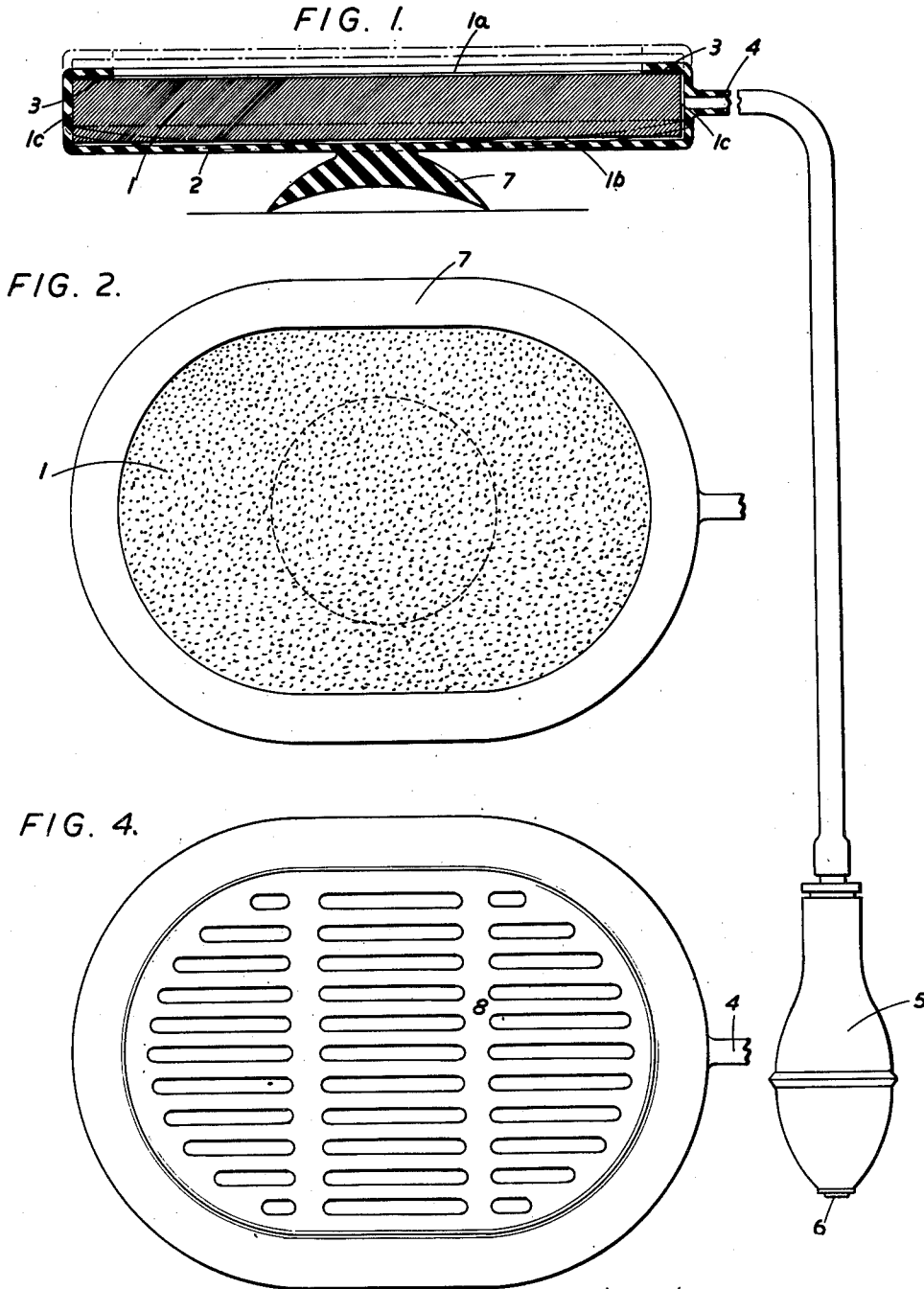
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2,601,225

DEVICE FOR USE IN WASHING THE HAIR

Filed April 8, 1950

2 SHEETS—SHEET 1



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2 SHEETS—SHEET 2

FIG. 3.

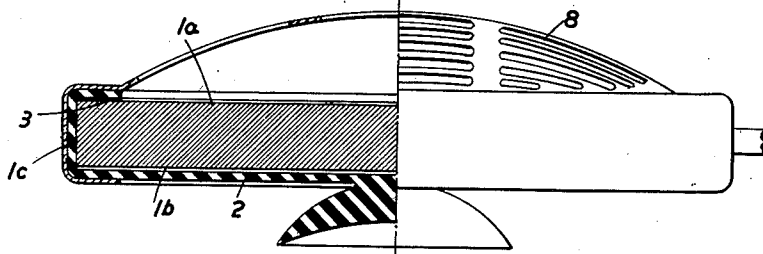
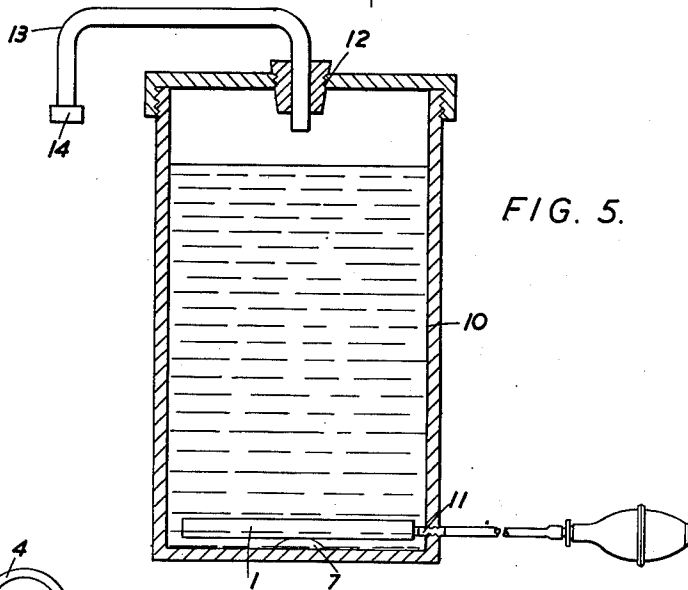


FIG. 5.

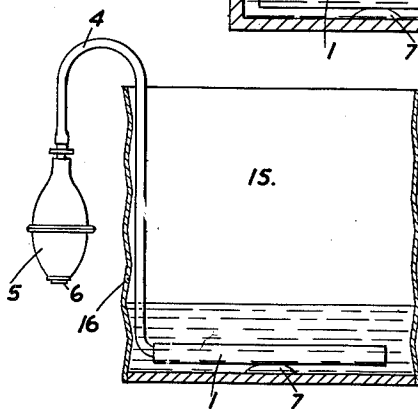


FIG. 6.

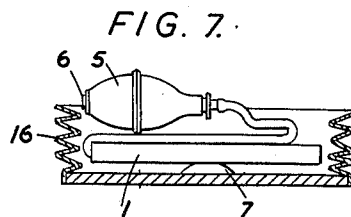


FIG. 7.

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DEVICE FOR USE IN WASHING THE HAIR

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2 Claims. (Cl. 261-122)

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This invention relates to the washing of the hair or hands and face and has for an object to provide a simple construction of device adapted for use at home or in the office or factory for producing a neutral foam replacing ordinary soap.

Foam forming devices have been made for many years for use for example in providing foam baths and consisting of a series of connected blocks of wood inserted in a bath of water to which has been added a foam forming medium such as saponin, air forced through the pores of the wood blocks producing a fine bubbled foam on the surface of the water.

A serious disadvantage of such devices consists in this that the wood shrinks when dry and if the device is used before the wood blocks have become swollen by immersion in water for a sufficient time the air leaks around the junction of the wood blocks and does not pass through the pores therein and foam is not formed.

In accordance with the present invention this great disadvantage is avoided and a device ready at all times for immediate use is provided by enclosing all but one surface of a porous wood block or plate in a rubber envelope or bag sealed air tight around the upper edge or upper surface of the wood block and connected by a rubber or other tube with the usual air bulb or the like. Since the free portion of the rubber envelope being elastic will absorb any contraction or expansion of the wood no breaking of the sealed joint between the rubber and the wood block is liable to occur and all the air passes through the block. The device is ready for use at all times without the need for any previous soaking of the wood blocks.

In its simplest form the device takes the form of a flat plate of wood suitably of circular or oval form cut so that the pores run at an angle of 45° to the surface from which the air is to pass. The plate is encased in a rubber envelope enclosing the back and sides and sealed over the edges of the remaining face and a rubber or other air supply pipe fitted with the usual rubber bulb is attached to the envelope. The space between the lower surface of the wood plate and the rubber envelope, on air being pumped by means of the rubber bulb acts as a valve avoiding the need for the usual additional valve on the rubber air bulb. In view of the tendency of wood to float in water the lower surface of the envelope is provided with a suction pad by which the device may be anchored by suction to the bottom of the vessel in which it is to be used.

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The invention is illustrated in the accompanying drawing in which Fig. 1 is a vertical section through a simple form of the device, the dotted lines indicating the position it occupies on introduction of air under pressure by means of the air bulb which is shown in elevation. Fig. 2 is a plan view of Fig. 1. Fig. 3 is a part section part elevation of the device shown in Figs. 1 and 2 but fitted with a cover plate and Fig. 4 a plan view of Fig. 3.

Fig. 5 is a vertical section of a vessel containing the device and arranged for delivering foam produced by the device for washing the hands or face.

Figs. 6 and 7 show an arrangement suitable for use by travellers in which the device is carried in a collapsible container, Fig. 6 showing the container in erected position, and Fig. 7 showing it in collapsed condition for ease of transport.

Referring to the drawings and particularly to Figs. 1 and 2, 1 denotes a block or plate of wood cut so that the fine pores in the wood are inclined substantially at an angle of 45° to the major plane of the plate.

The plate 1 is shown of rectangular section and has two flat sides 1a, 1b, joined by an edge 1c which is of oval outline in plan view.

The plate is enclosed on one face or side 1b and on its edge 1c by a rubber envelope or bag 2 and is sealed as at 3 to the second face or side 1a around its periphery by rubber or other suitable cement so as to make a good and permanent air seal completely surrounding the periphery of the plate 1, and leaving the large central area of the side 1a exposed.

A flexible tube 4 is secured to the envelope 2 on the edge 1c as shown in the drawing and is attached at its other end to a bulb 5 having an air valve 6 so that when the bulb is squeezed the valve 6 closes in known manner and air is forced into the lower side of the rubber bag 2. Since the edges of the latter are sealed to the plate 1 at 3 the air fills the space between the plate and the bag. As the air can only escape through the pores of the wood, it passes into the foam producing liquid from the exposed upper side 1a of the plate in the form of microscopically sized bubbles.

A rubber suction cup 7 is secured to the underside of the envelope 2 so that the device as a whole can be temporarily attached to the liquid container in which the foam is to be formed.

In the form shown in Figs. 3 and 4 the device is enclosed in a metal cover 8 formed with perforations and shaped to provide a space above the

surface 1a of the plate. As shown, the cover fits closely over the rubber around the rim of the plate and may be screwed to the plate.

In use of the device shown in Figs. 1 to 4 and 6 and 7 for washing the hair, the device is secured in a basin or the like to which cold water and a small quantity of saponin or like foam-forming medium is added and air is pumped through the elastic pores of the block by means of the rubber bulb or the like until a large amount of microscopic foam is created. The solution in the basin is now drained off leaving only fine bubbled foam in the basin and hot water is added to basin so as to produce a warm foam.

The warm bubbles are rubbed into the head, the water contained in the foam exerting a dirt dissolving action and a cleansing action in the pores of the hair. The cleansing action which is purely mechanical or physical and is due to the bursting of the air bubbles is assisted by the air of the foam. The pores of the hair being clean allow the oxygen of the air to reach the roots of the hair and stimulate the roots, nerves and pigment bodies.

By rubbing the hair with the hand or a brush the foam is destroyed and not increased as in washing with soap, the air bubbles burst and the remaining liquid flows off having formed an emulsion with the grease contained in the pores taking with it the dissolved dirt and grease. The hair may then be dried in known manner without further rinsing.

In the arrangement for washing the hands shown in Fig. 5 the device is secured to the bottom of a vessel 10 a tube 11 extending to the envelope 2 being sealed liquid tight in the wall of the vessel. A removable lid 11 for the vessel has a plug 12 through which extends a delivery pipe 13 terminating in a nozzle 14. Foam formed by forcing air through the foam forming device is forced through the pipe 13 and nozzle 14 and can be applied at the nozzle for washing the hands and face.

As shown in Figs. 6 and 7 the device may be used with a collapsible vessel 15 with walls 16 of concertina form. In use of the device as shown in Fig. 6 the walls 16 are extended to form a vessel to which water and saponin may be added. The device is used as in the same manner as the construction shown in the other figures. When the device is not in use the walls 16 can be collapsed and the whole arranged in a small compass as shown in Fig. 7.

I claim:

1. A device for use in forming foam when submerged in water containing saponin in solution comprising a plate of wood cut to provide opposite faces with the pores in the wood extending at 45° to such faces, an elastic envelope covering and surrounding one face and the periphery of the wood plate and covering a part of the opposite face and sealed to said latter face, a perforate casing spaced from the free surface of the plate and having a flange, said envelope being clamped in part between the wood plate and the flange on said perforate casing, and means for supplying air under pressure to the envelope to ensure its passage through the pores of the wood.

2. A device for use in forming foam when submerged in water containing saponin in solution comprising a plate of wood cut to provide opposite faces with the pores in the wood extending at 45° to such faces, an elastic envelope covering and surrounding one face and the periphery of the wood plate and covering a part of the opposite face and sealed to said latter face, a perforate casing spaced from the exposed surface of the plate and having a flange, said envelope being clamped in part between the wood plate and the flange on said perforate casing, a suction device secured to the envelope for anchoring the foam forming device in submerged condition, and means for supplying air under pressure to the envelope and to ensure its passage through the pores of the wood and through the perforate casing.

NICHOLAS SANDOR.

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