Aug. 10, 1954 B. A. WOOD 2,686,080

PROCESS OF IMPREGNATING A LIQUID WITH A SUBSTANCE MISCIBLE THEREWITH

Original Filed Dec. 26, 1945

FIG. 1

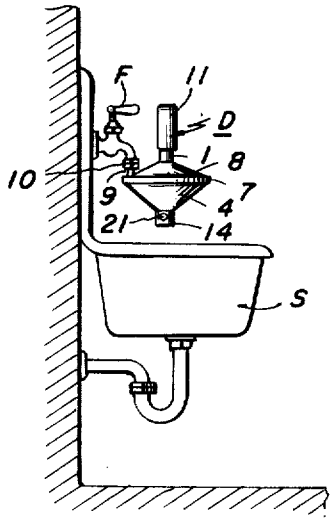


FIG. 2

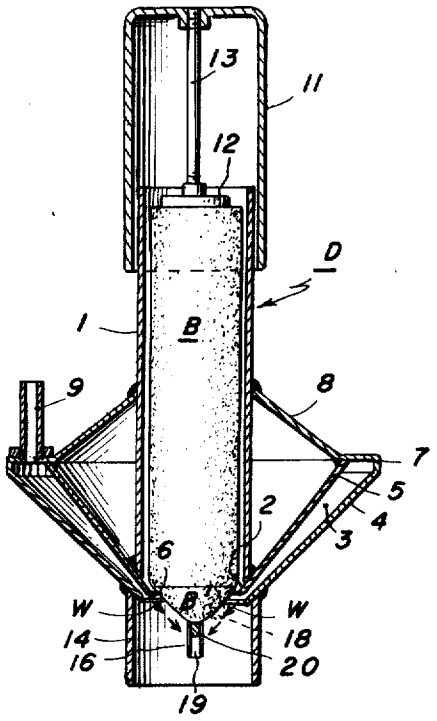


FIG. 3

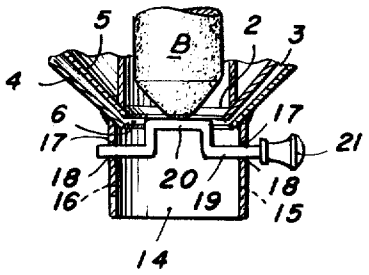
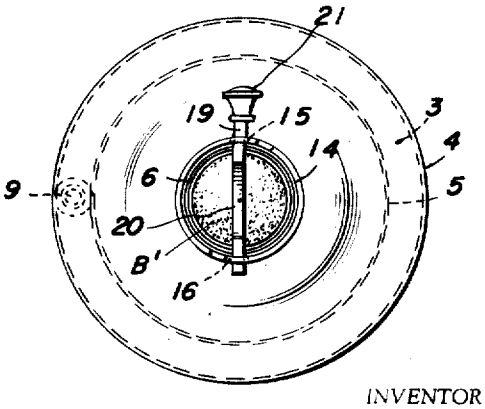


FIG. 4



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PROCESS OF IMPREGNATING A LIQUID WITH A SUBSTANCE MISCIBLE THEREWITH

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Original application December 26, 1945, Serial No. 637,265, now Patent No. 2,538,720, dated January 16, 1951. Divided and this application December 12, 1950, Serial No. 205,259

2 Claims. (Cl. 299—83)

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This application is a division of my copending application Serial Number 637,265 filed December 26, 1945, Patent Number 2,538,720 issued January 26, 1951.

My invention consists in a new and useful improvement in process of and apparatus for impregnating a liquid with a solute miscible therewith, and is intended more particularly for producing a soap solution for lavation by impinging a jet of water against a mass of soluble soap, thereby eroding the mass by dissolving the soap from the surface of the mass, the resulting soap solution flowing off for use. The particularly novel and useful feature of the invention is the character of the jet and the mass of solute and their peculiar relation. The mass has a suitable contour, as for example cylindric, and the jet is annular and co-axial relative to the mass. In the practice of my improved method, the mass is moved axially, preferably by gravity, into the area of jet operation so that the erosion of the mass by the jet occurs progressively axially of the mass. I have demonstrated by actual operation of a device embodying my invention, under ordinary working conditions of a restaurant utensil-cleaning sink, that the desired soap solution is produced efficiently and economically, the especially desirable feature being the economic, controlled consumption of the soap. A particularly desirable feature of my invention is the control provided, whereby the movement of the mass of soap relative to the water jet can be interrupted, thereby discontinuing the erosion of the mass, so that the water passes through the device untreated by the soap.

While I have illustrated in the drawing filed herewith and have hereinafter fully described one specific embodiment of my invention, it is to be distinctly understood that I do not consider my invention limited to said specific embodiment but refer for the scope of my invention both as to the process and the apparatus to the claims appended hereto.

In the drawing:

Fig. 1 is a side elevation of a sink with the improved apparatus attached to the sink faucet.

Fig. 2 is a vertical section of the apparatus, the parts being adjusted to position the soap bar in the water jet.

Fig. 3 is a fragmentary vertical section, at right angles to the plane of Fig. 2, the parts being adjusted to position the soap bar out of the water jet.

Fig. 4 is a bottom plan view of the apparatus.

As illustrated in the drawing, the device D has

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a centrally disposed cylindrical casing 1 to receive the soap bar B therein, its lower end being formed with an inwardly extending peripheral flange 2 at an angle of approximately 45° to the vertical axis of the bar B. Suitably mounted concentric with the casing 1 is the annular water chamber 3 formed by the downwardly converging outer wall 4 and inner wall 5, the latter merging into the flange 2, and forming the annular nozzle 6. The water chamber 3 is closed by the annular cover plate 7 extending between the upper edges of the walls 4 and 5, and connected with the casing 1 by an annular skirt 8. The chamber 3 is provided with an inlet pipe 9 tapped into the cover 7 and having the coupling 10 for attachment to the faucet F of the sink S. A cap 11 is provided for the casing 1, with a follower 12 for the soap bar B, which may be adjustable by stem 13 threaded in the cap 11. A concentric nozzle 14 depends from the water chamber 3 and is provided with two vertical diametrical slots 15 and 16, each having a horizontal extension 17 with a shallow socket 18 at its end. The extensions 17 are oppositely turned from the slot 15 and 16. A rod 19 bridging the nozzle 14 is received in slots 15 and 16 and has an upwardly extending U-shaped portion 20 which the lower end B' of the soap bar B contacts when the bar B is placed in the container 1. The rod 19 has a suitable operating handle 21 on one end outside the nozzle 14.

From the foregoing description of the details of construction of my improved apparatus, its use and operation in the practice of my improved process will be obvious. When the apparatus D has been mounted on the faucet F of the sink S, as illustrated in Fig. 1, the coupling 10 being attached to the faucet F and thereby connecting the pipe 9 of the water chamber 3 with the faucet F, the soap bar B is placed in the casing 1 and the cap 11 is placed over the top of the casing 1, the follower 12 resting on the upper end of the bar B, and the lower end B' of the bar B resting on the U-shaped portion 20 of the rod 19. When, as shown in Fig. 2, the rod 19 is placed at the lower ends of the slots 15 and 16, the lower end B' of the bar B is positioned below the horizontal plane of the annular nozzle 6, and when water is supplied by the faucet F through pipe 9 to the water chamber 3, an annular jet is induced through nozzle 6 impinging upon the end B' of the bar B. Due to the conicity of the chamber 3 and nozzle 6, this jet of water, indicated by the arrows W, from the nozzle 6 is an inverted cone tending to erode the end B', dissolving the soap into the flow-

ing water, the soap solution flowing from the device D through the nozzle 14, for use. When, as shown in Fig. 3, the rod 19 is placed in sockets 18, the lower end B' of the bar B is positioned above the horizontal plane of the nozzle 6, and the flowing water passes through nozzle 6 and out of the nozzle 14 without impinging upon the end B' of the bar B, so that the water is untreated by the soap.

Having described my invention, what I claim is:

1. The process of producing a washing fluid by treating water with a cleaning substance, which comprises so placing upon a support a solid, cylindrical mass of a cleaning substance which is soluble in water that its longitudinal axis is vertical, eroding the lower end of said mass by applying the water to be treated, under pressure, to the periphery of said end, thereby causing the mass to descend by gravity, and dissolving the eroded substance into the water.

2. The process of alternatively supplying wash water and a mixture of wash water and a cleaning substance, which comprises so placing on a support a solid, cylindrical mass of a cleaning substance which is soluble in water that its longitudinal axis is vertical, lowering said mass by moving said support downwardly, eroding the lower end of said mass by applying a flow of water under pressure to the periphery of said end, thereby causing the mass to descend by gravity and the eroded substance to be dissolved in the water to supply a mixture of wash water and the substance, and raising said mass by moving said support upwardly to remove said end from said flow of water, to supply wash water.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,579,869	Klages	Apr. 6, 1926
1,664,736	Creamer et al.	Apr. 3, 1928
1,786,561	Collenburg	Dec. 20, 1930
2,224,355	Moller	Dec. 10, 1940
2,538,720	Wood	Jan. 16, 1951