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No. 638,804.

Patented Dec. 12, 1899.

F. G. FOWLER.  
SHAVING LATHER.

(Application filed Nov. 28, 1894.)

(Model.)

Fig. 1.

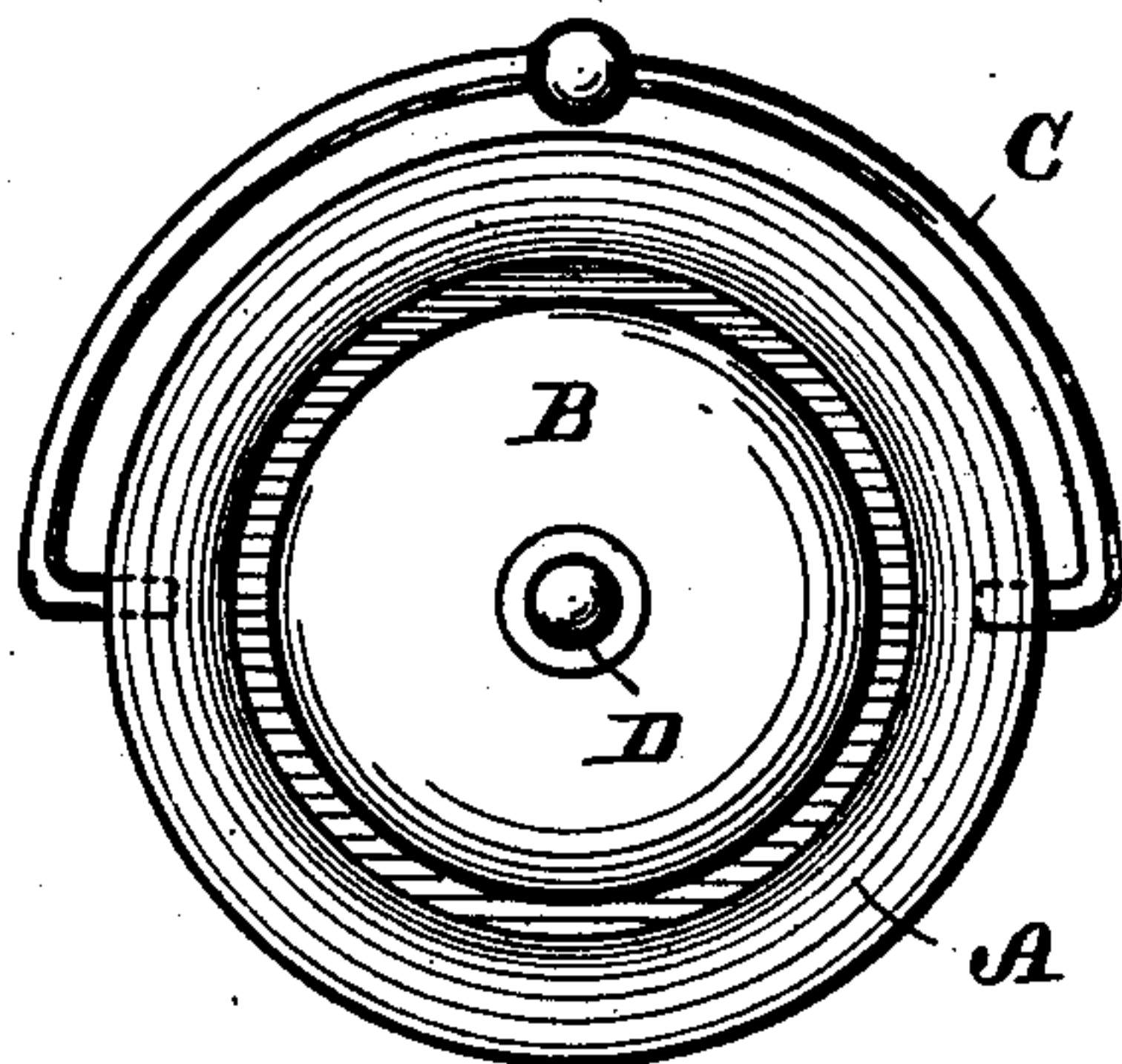


Fig. 2.

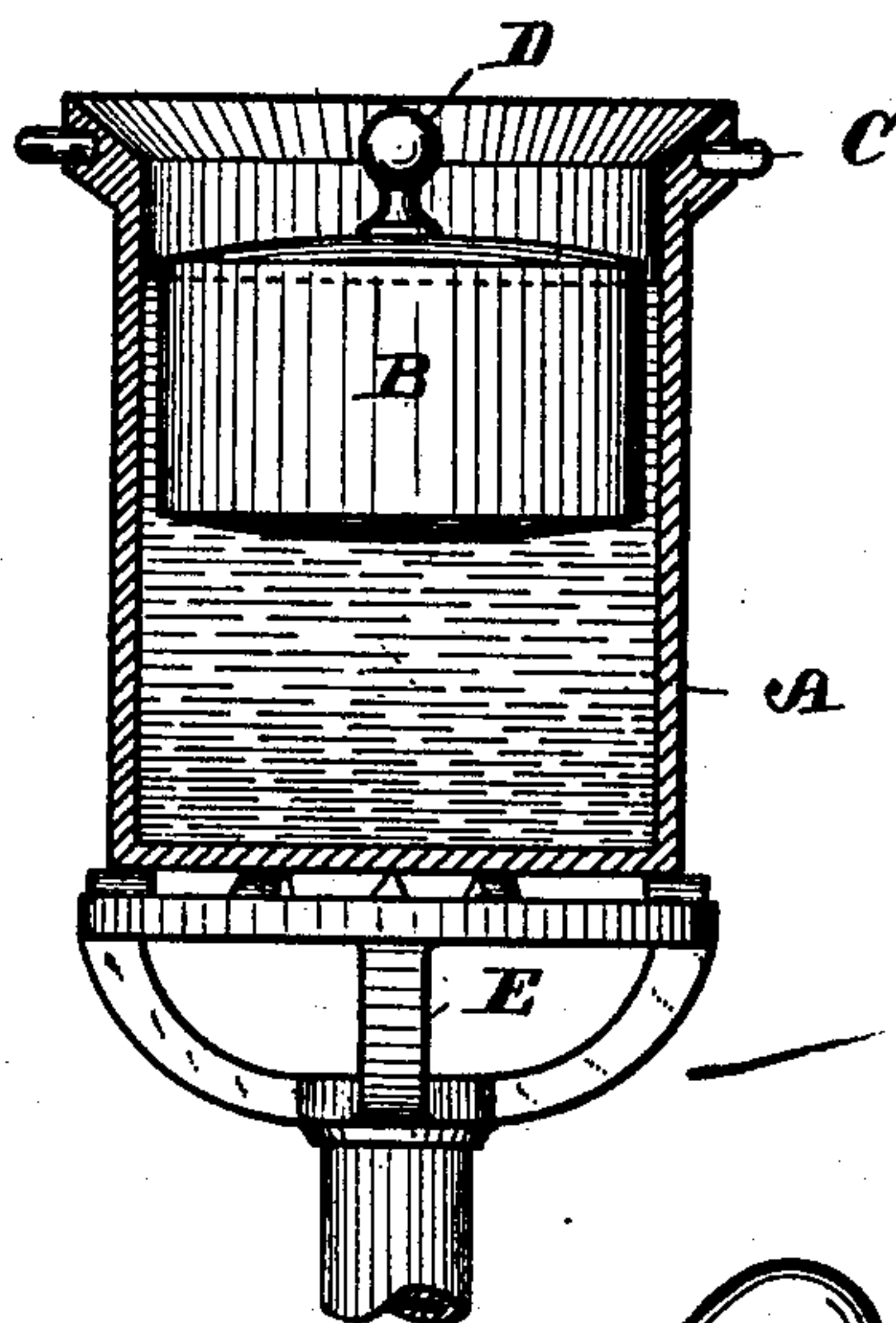
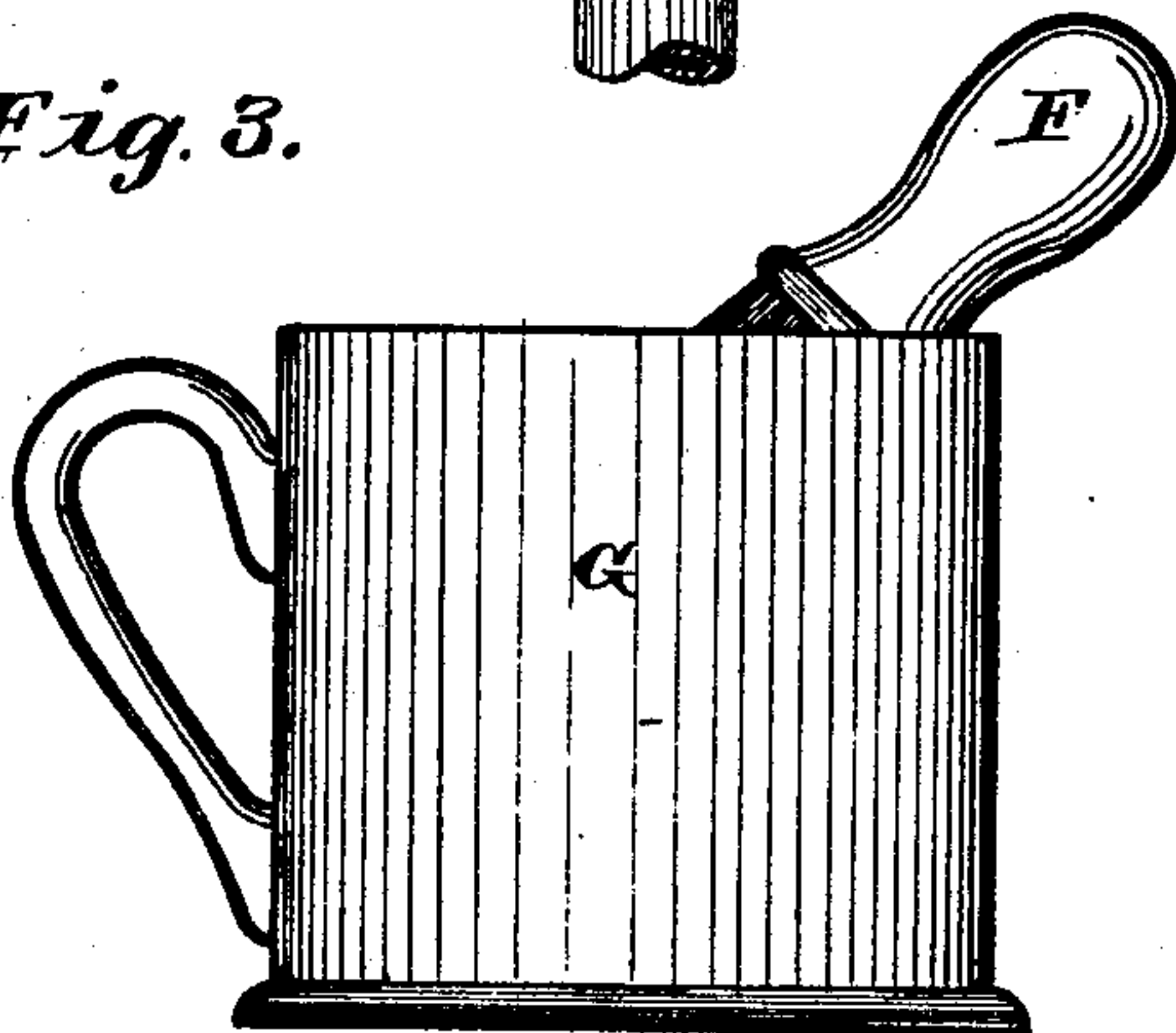


Fig. 3.



Heater

Witnesses

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# UNITED STATES PATENT OFFICE.

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## SHAVING-LATHER.

SPECIFICATION forming part of Letters Patent No. 638,804, dated December 12, 1899.

Application filed November 28, 1894. Serial No. 530,289. (Model.)

*To all whom it may concern:*

Be it known that I, FRANK G. FOWLER, of Bridgeport, Connecticut, have invented certain new and useful Improvements Relating to Shaving-Lather; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to make, practice, and use the same.

10 The object of my invention is to produce a shaving-lather which is non-irritant to the skin, non-corrosive to the edge of a razor, and in no way detrimental to its texture, but protective of the same, whereby soreness of the face in shaving is avoided and a superior cutting edge may be maintained upon the razor with very little strapping for a considerable time and the operation of shaving expedited.

15 The edge of a razor as ordinarily formed is not represented by a straight line, but serrated, being provided with irregular projections approximating to "sickle-teeth" and of extreme minuteness. These projections, upon which the superior cutting qualities of a razor to a great extent depend, are peculiarly exposed to the action of corrosion, as they can be attacked on all sides.

20 Shaving-lather as ordinarily made is composed in part of water, which contains in occlusion and in solution various gaseous and volatile substances which are constituents of atmospheric air—such as oxygen, carbonic acid, and ammonia—and which exist diffused in the water in a free state, in which state they exhibit their most energetic corrosive and deteriorating action, and the failure of a razor to cut after being used in connection with ordinary lather for a short time is largely due to the corrosive and deteriorating action of such agents contained in the lather with which the delicate edge of the razor is brought in contact, which either converts it into an oxid or penetrates the pores of the steel, injuring or destroying the integrity of its texture. The edge of a razor is also impaired when not in use by corrosion caused by the condensation upon it of the vapor of the atmosphere occasioned by fluctuations in temperature. My invention obviates these difficulties. It embraces not only a product consisting of an improved shaving-lather which is devoid of dissolved oxygen and

other volatile corrosive substances and contains elements which are electropositive to steel, but also improved processes and apparatus by which shaving-lather is produced, all of which are particularly pointed out in the appended claims.

My invention is carried into effect, first, by expelling such volatile corrosive substances from the water with which the lather is formed by boiling and preventing their return by keeping the water substantially excluded from contact with the atmosphere and the portion that is not excluded under the influence of capillary attraction until the same is embodied in lather; second, in addition to expelling volatile corrosive substances from the water with which the lather is formed by boiling and preventing their return by the means above specified, I diffuse in the water a metallic dust which is electropositive to steel and has an affinity for oxygen, such as zinc-powder.

The apparatus required to carry my invention into practice will be understood by reference to the accompanying drawings, in which—

Figure 1 is a plan view of a portion of said apparatus. Fig. 2 is a sectional side elevation of Fig. 1. Fig. 3 represents a side elevation of a portion of said apparatus.

A is a cylindrical retaining vessel adapted to hold water and to resist and conduct heat and provided with a piston-float B, all constructed, preferably, either out of some metal that is electropositive to steel—as zinc, cadmium, or tin—or some substance that is neutral, as steel or iron, rather than out of any substance that is electronegative to steel, as copper or brass. The piston-float B is circular, hollow, and formed with convex heads, and has a specific gravity of about sixty per cent. of the specific gravity of water, and is of so large a diameter as will just admit of its moving up and down in the retaining vessel A without friction, and coming to the surface again when pressed down below the surface of the water and released. It thus leaves only a capillary space between its sides and the wall of the cylindrical vessel A. The retaining vessel A has a swiveling handle and the piston-float B a fixed handle for convenience of handling.



E represents a source of heat, adapted to heat the contents of the retaining-vessel A to a boiling temperature. It may be either a stove, gas-heater, electrical heater, or lamp, so that it possesses the requisite heating power.

F represents an ordinary lather-brush, and G a lather-cup.

The lather is prepared as follows:

First. A sufficient quantity of water having been introduced into the retaining vessel A, the piston-float B is placed thereon, so as to rest on it and substantially exclude the atmosphere from contact with its surface. The water is then boiled for a short time, which substantially expels the atmospheric air and free gases held in solution, including oxygen and carbonic acid, the same arising in bubbles, lifting the piston-float B and escaping into the atmosphere, while the piston-float B descends upon the water, when the boiling ceases and the water rises by the force of capillary attraction between the piston-float B and receiving vessel A. The retaining vessel A is then removed from the source of heat and the water retained, unimpaired by reabsorption of gases, until it is desired for use. The lather-brush F is then pressed upon the top of the piston-float B, causing it to sink sufficiently to permit the water to rise around it and saturate the lather-brush F, which is then withdrawn and applied to suitable shaving-soap in the lather-cup G and stirred and agitated to produce lather in the well-known manner.

Second. When the water has been introduced into the retaining vessel A or before, there may be introduced therein an oxidizable metallic substance that is electropositive to steel in an impalpable powder, such as pulverulent zinc. The piston-float B is then inserted in the retaining vessel A, so as to rest on the water, and the above-detailed steps are gone through with as before.

It is immaterial whether the water be transferred from the receiving vessel A to the lather-cup G by the brush F or poured directly from the receiving vessel to the lather-cup.

It is not material that there should be an exact proportion of metallic dust introduced into the water in order to have it act beneficially. About one-half grain of dust to one hundred cubic centimeters of water will answer a good purpose; but it will also act beneficially if the amount is greater or less than that, its function being to obviate and neutralize the corrosive action of the limited amount of dissolved oxygen which may remain in the water after it has been boiled. Neither is it material how the metallic dust is obtained or introduced into the water, whether by rubbing the sides of the retaining vessel A and piston-float B (when made of a metal electropositive to steel) with emery-cloth and leaving the dust adhering thereto, which afterward impregnates the water, or by introducing metallic dust otherwise ob-

tained into the water, provided the dust is in a metallic state and electropositive to steel.

If the water has been retained some time, it is desirable that such as is contained in the capillary space between the retaining vessel A and piston-float B should be discarded before the lather is made by pressing down the piston-float B and pouring such water off.

After the lather-brush has been wet it is desirable that the lather be formed and applied to the face at once and the shaving proceeded with.

The piston-float B when constructed as shown and described prevents the reentry of oxygen into the water not only by almost excluding its surface from contact with the atmosphere, but there is this peculiar additional advantage: The thin film of water that intervenes between the retaining vessel A and piston-float B is under the influence of capillary attraction and in that condition exerts a very powerful resistance to the downward passage of the oxygen of the atmosphere into the water contained in the retaining vessel A, so that the same may be retained unimpaired a very considerable time till it is required for use or till any degree of temperature has been attained and the lather made hot, warm, or cold, as skill or choice of the user may dictate.

An advantage which the use of my lather confers over the ordinary lather is the saving of time and labor in shaving; the number of strokes in strapping being reduced from upward of one hundred on an average to about ten, the number of honings from once in three months to once in a year or more; the number of strokes in shaving from three or four hundred to about seventy-five, as the beard may be cut close by passing the razor with a long sweep across the face, and the time of shaving is reduced from fifteen to twenty minutes to about six, and there is no need of waiting for the beard to "soak" after lathering or strapping during shaving or shaving twice or more over the same surface.

I claim as my invention—

1. The process of producing shaving-lather consisting of steps as follows: first, expelling the oxygen and other corrosive or deleterious substances from the water with which the lather is to be made by boiling; second, preventing the return of the expelled elements by substantially excluding the atmosphere from contact with the surface of the water, and inducing capillary attraction in that portion of the water whose surface is not excluded; third, the formation of lather by stirring and agitating such water, at a suitable temperature, in contact with a suitable soap, all substantially as described and for the purpose set forth.

2. The process of producing shaving-lather consisting of steps as follows: first, impregnating the water with which the lather is to be formed with metallic dust which is elec-



tropositive to steel; second, expelling oxygen and other corrosive or deleterious substances from the water by boiling; third, preventing the return of the expelled elements by substantially excluding the atmosphere from contact with the surface of the water and inducing capillary attraction in that portion of the water whose surface is not excluded; fourth, the formation of lather by stirring and agitating such water, at a suitable temperature, in contact with a suitable soap, all substantially as described and for the purpose set forth.

3. In an apparatus for producing shaving-lather the combination of three elements: first, a vessel or receptacle A, adapted to hold water and conduct heat; second, a piston-float constructed hollow and of a suitable specific gravity less than water, adapted to withstand a boiling temperature and to move

up and down within said retaining vessel without practical friction, and of a size and shape adapted to leave between it and the inner wall of said vessel only so much of space as will be closed by the water under the influence of capillary attraction; third, a source of heat adapted to readily produce a boiling temperature in said retaining vessel, all arranged and operating substantially as set forth.

4. As a new and improved product, shaving-lather, the constituents of which are a suitable soap, metallic dust of a quality electropositive to steel, and water of suitable temperature and devoid of dissolved oxygen and carbonic acid.

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Witnesses:

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CHAS. S. EVANS.

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