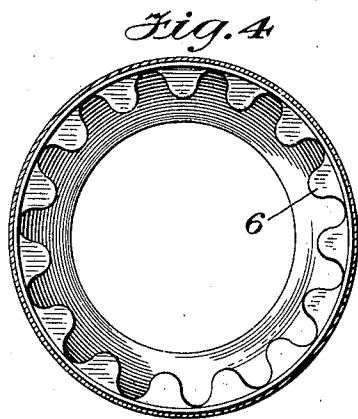
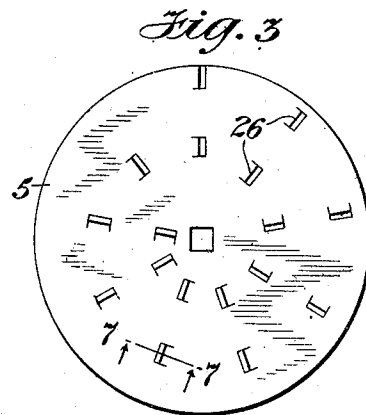
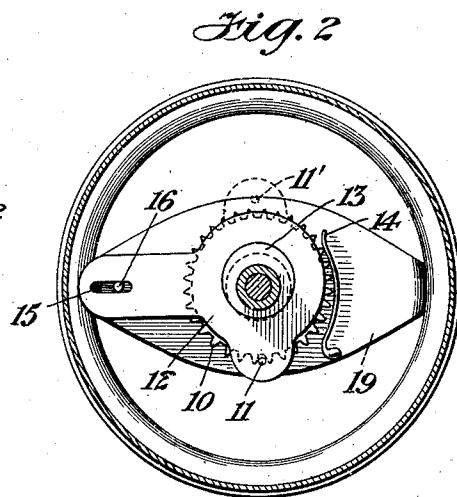
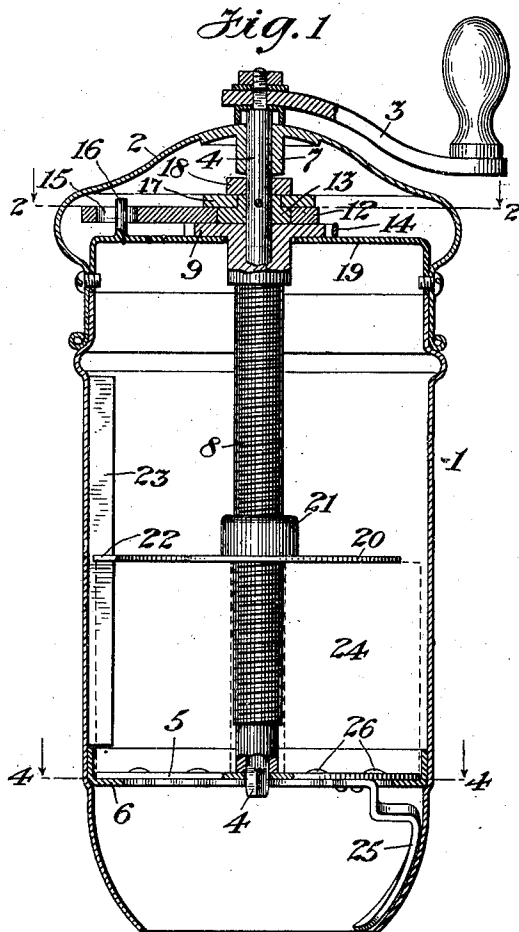


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SOAP DISPENSING MACHINE.

APPLICATION FILED MAR. 15, 1906. RENEWED NOV. 29, 1910.

983,318.

Patented Feb. 7, 1911.



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UNITED STATES PATENT OFFICE.

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SOAP-DISPENSING MACHINE.

983,318.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE F. SHAVER, a citizen of the United States, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Soap-Dispensing Machines, of which the following is a specification.

This invention relates to a device which is primarily designed as a toilet fixture adapted for the use in connection with wash basins for the purpose of supplying soap in such a form that it may be readily and economically used and is intended to do away with the use of a cake of soap in the ordinary manner in the hand.

Before entering into a description of the specific features of my invention and as conducing to a clearer understanding of some of the objects thereof, it may here be noted that the indiscriminate use of cakes of toilet soap is for hygienic reasons extremely undesirable, and especially is this true in places partaking of a public character, as diseases of a serious nature often result by reason of the contamination of soap used therein. For the above and other reasons it is desirable that the cake of soap used in such places be kept from contact with the hands of the users and one of the remedial methods proposed is to provide a machine capable of dispensing the soap from a bar or cake in a comminuted state whereby the soap is not only maintained free from contagion but is reduced to such a form as to lather more freely and readily. To the end, therefore, of eliminating the objection specified and securing the above and other advantages, I have provided a simple and efficient machine which is adapted to supply soap in the form of thin narrow strips or shavings from a cake of soap placed in the machine.

It has been found by many experiments with soap in various forms that when the soap is cut or shaved into thin narrow strips or shavings the same dissolve or are reduced to lather very readily and a much smaller quantity is necessary than in any other form, as the entire amount shaved off is dissolved and used, resulting in a greater economy in the use of the soap. In order to produce such shavings from the soap cake continuously as the comminuting device or cutter is operated it is necessary that

the soap cake be fed positively and constantly toward the cutter in order to prevent the same merely scraping the surface of the soap cake at times.

The object in this invention is to provide a device which may be embodied in an efficient machine of simple and durable construction which may be easily operated to supply soap shavings such as described.

The various features of the device will be more fully described in connection with the drawings accompanying this specification.

Figure 1 is a side elevation in section of a soap shaving device showing the interior construction of the same. Fig. 2 is a sectional plan view of the feeding device taken on the line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a plan view of the comminuting device or cutter. Fig. 4 is a sectional plan view taken on line 4—4 of Fig. 1, looking in the direction of the arrows, showing the cutter support or bearing.

In the soap comminuting device which I have chosen to illustrate my invention I have shown a cylindrical container 1 provided with a suitable cover 2. This cover may be so constructed as to fit tightly in place and may also be provided with a suitable lock if desired. A handle and lever 3 is attached to an operating spindle 4. This operating spindle is connected with the cutter 5, as will be more fully described hereinafter.

The cutter is supported in the container by means of a ring shaped member attached to the container and having inwardly extending projections providing a support or bearing upon which the cutter 5 is rotated. The object of providing a number of separate projections instead of a continuous bearing surface is to allow the soap shaved off to pass through the openings at the outer edge of the cutter between the projections forming the support. A portion of these particles of soap will be carried over the upper surface of these projections by the movement of the cutter and so lubricate the bearing surface automatically as the cutter is rotated. A continuous bearing surface would entirely close the openings in this portion of the cutter and prevent the soap from passing through the same, preventing the operation of the cutting edges located over this bearing surface. Two objects are thus

attained by providing a non-continuous bearing surface for the cutter, namely, automatic lubrication and the full operation of the entire cutter on the soap, resulting in a compact and efficient device for the purpose described.

The cutter 5, shown in plan view, Fig. 3, is preferably formed from a circular disk of metal by punching a series of narrow slots in the disk. A cutting edge is formed on one side of each of these slots and the same is then curved slightly above the surface of the disk. These cutting edges may be located in any desired arrangement, the object being to have adjacent cutting edges overlap so that the entire surface of the cake of soap is shaved or cut uniformly as the cutter is rotated. One arrangement of these cutting edges which has been found to give good results is shown in Fig. 3. In this arrangement the slots are in the form of a spiral extending from the central portion of the disk to the circumference and each of the cutting edges extends radially from the center of the disk.

In order to insure a positive feeding of the soap to the comminuting device or cutter 5 I have provided a mechanism within the container 1 operated from the spindle 4 which operates the cutter 5, and which consequently does not require attention on the part of the operator but operates automatically and positively to feed the soap to the comminuting device or cutter.

A cylindrical shaft 8, which I have designated as a feeding spindle, fits over the operating shaft 4. This feeding shaft is provided at its upper end with a flanged portion 9 having one or more projections or teeth 10. These projections are adapted to be engaged successively by one or more pins, such as 11 and 11', or other suitable co-operating portions of the eccentric strap 12. An eccentric 13 is secured to and operated by the spindle 4. A flat spring, such as 14, may be so positioned as to press against the flanged portion of the feeding shaft and act as a brake to prevent rotation of the same except when engaged by the eccentric strap.

The eccentric strap 12 is provided with an arm extending from one side thereof having a slot 15 which engages a fixed guide or pin 16. This causes a reciprocating motion of this portion of the eccentric strap when the eccentric 13 is rotated while the pins 11 travel in elliptical paths. These pins 11 and 11' are so positioned on the eccentric strap that they will engage successively the toothed projections during a portion of their travel and so impart an intermittent rotary movement to the feeding shaft 8. The number and location of these engaging pins on the eccentric strap will be determined by the amount of rotary move-

ment required for the feeding shaft to each rotation of the operating spindle and a number of these pins may be placed in the eccentric strap in such positions that as one pin is passing out of engagement with a tooth a second pin is passing into engagement and thus a continuous rotation of the feeding shaft may be provided if desired.

In feeding ordinary soap against the cutter one pin, as shown in full lines at 11 in Fig. 2 which will advance the feeding shaft one tooth for each revolution of the driving spindle, will be sufficient but if it is desired to produce a faster feed a second pin may be placed on the opposite side of the eccentric strap, as shown in the dotted outline at 11'. The eccentric in the drawings in Fig. 2 is shown in the extreme position with the pin on one side in engagement and the pin on the opposite side out of engagement with their respective teeth.

Suitable collars, such as 17 and 18, may be provided to hold the eccentric strap in place. These collars fit loosely on the eccentric 13 and the operating spindle 4, as shown in Fig. 1.

The flanged portion 9 of the feeding shaft 8 furnishes a support for the eccentric and strap and is itself supported by means of a suitable support, such as 19, which is preferably secured to the cover of the container. The object of supporting the feeding device and operating shaft from the cover is to provide for the removal of the same with the cover to allow the soap to be placed into the container. The lower end of the operating spindle 4 is squared and enters a square hole in the cutter 5, thus providing a simple and separable connection.

The feeding shaft 8 is threaded and upon this threaded portion rides a follower 20 which may have a hub 21 providing an increased bearing surface in which the threaded portion of the feeding shaft 8 operates. The follower 20 is provided with a projection 22 at one side thereof which engages a projecting web or fin 23 attached to the container 1. This prevents the follower from rotating with the feeding shaft and this web also engages the cake of soap holding the same in operative position and preventing it from rotating with the cutter. The lower portion of the feeding shaft may be reduced in diameter sufficiently to remove the threads and so prevent the same from operating the follower when it reaches this point, which might cause damage to the machine if allowed to feed too far. When this point is reached the cover is removed and the follower run back to its upper position on the feeding shaft and a new cake of soap placed into the machine. The cake of soap is preferably cylindrical in form having a central opening therein providing for the feeding shaft 8 and a recess or slot

at one side adapted to engage the retaining fin 23.

As the feeding shaft 8 is slowly turned by the operation of the eccentric as above explained the follower 20 will be moved downward and force the cake of soap, shown at 24 in dotted outline, against the cutter 5, thus providing a positive feeding device which supplies the soap in a constant amount to the cutter, resulting in a uniform product of soap shavings being delivered as the machine is operated.

In order to prevent the accumulation of soap shavings in the lower portion of the container below the cutter I have provided a scraper 25 which may be attached to the cutter 5 and rotates with the same around the inner surface of the lower portion of the container removing the soap shavings which may collect therein. Various forms of scraping devices may be used for this purpose but the one herein shown has been found to provide a very simple and efficient means for accomplishing the desired results.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention designed without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative merely of an operative embodiment of my invention and not in a limiting sense.

What I claim is:

1. In a soap dispensing machine, in combination, a container provided in its lower portion with an annular serrated shelf, a cutting disk rotatively mounted therein above said shelf, said disk being adapted to support a cake of soap, an operating spindle extending through said cake and having a positive engagement with said disk, a screw threaded feed member, a follower threaded thereon and adapted to hold said cake in engagement with said cutting disk, and means interposed between said screw threaded feed member and said spindle adapted to effect a partial rotation of the former during a full rotative movement of the latter whereby the follower will be given a step by step movement and the cake of soap similarly moved toward said cutting disk.

2. In a soap dispensing machine, in combination, a container adapted to receive a cake of soap, a cutting disk supported for rotation in the lower portion of said container and adapted in turn to support said cake of soap, a spindle extending longitudinally of said container through said cake of soap and having operative engagement with said cutting disk and adapted to rotate the same, a follower for forcing said cake of soap into engagement with said cutting disk,

a feed member having threaded engagement with said follower, and means interposed between said feed member and said spindle for imparting a partial rotation to said feed member during each complete rotation of said spindle.

3. In a soap dispensing machine, in combination, a container for a cake of soap, said container having in its lower portion a plurality of inwardly extending projections, a cutting disk rotatively mounted upon said projections, a spindle extending longitudinally of said container through an opening provided in said cake of soap and having an operative engagement with said cutting disk, a threaded feed shaft carrying said follower, and means interposed between said spindle and said feed shaft for giving the latter a partial revolution for every complete revolution of the former.

4. In a mechanism of the class described, in combination, a container adapted to receive a cake of soap, a comminuting device rotatively mounted within said container and adapted to sever material from the cake of soap, a spindle having an operative engagement with said comminuting device adapted to rotate the same, a feed shaft, a follower threaded upon said shaft, resting against said cake of soap and adapted when moved to feed the same against said comminuting device, an eccentric fixed upon said spindle, and means actuated by said eccentric during the rotation of said spindle and adapted to produce a step by step rotation of said feed shaft whereby the follower is moved and the cake of soap fed against the comminuting device.

5. In mechanism of the class described, in combination, a container adapted to receive a cake of soap, a comminuting device rotatably mounted within said container adapted to sever material from the cake of soap therein, a spindle having an operative engagement with said comminuting device adapted to rotate the same, a hollow feeding shaft positioned about said spindle, a follower threaded upon said shaft adapted when moved to feed the cake of soap against the comminuting device, said follower being held against rotation, an eccentric fixed upon said spindle, and means actuated by said eccentric during the rotation of said spindle adapted to produce a step-by-step rotation of said feeding shaft whereby said follower is moved and the cake of soap fed against the comminuting device.

6. In mechanism of the class described, the combination of a container adapted to receive a cake of soap, a comminuting device rotatably mounted within said container adapted when rotated to sever material from a cake of soap, a spindle operatively connected with said comminuting device and having means whereby the same

may be rotated, a hollow feeding shaft encircling said spindle, a follower, said feeding shaft being externally threaded to receive said follower, means for holding said
5 follower against rotation, a member having a plurality of teeth carried by said feeding shaft, and means actuated during a portion of each rotation of said spindle adapted to be carried into engagement with one of said
10 teeth thereby to rotate said feeding shaft and cause a movement of said follower.

7. In mechanism of the class described, the combination of a container adapted to receive a cake of soap, a comminuting device rotatably mounted within said container adapted when rotated to sever material from a cake of soap, a spindle operatively connected with said comminuting device and having means whereby the same
20 may be rotated, a hollow feeding shaft encircling said spindle, a follower, said feeding shaft being externally threaded to receive said follower, means for holding said follower against rotation, a member having
25 a plurality of teeth carried by said feeding shaft, an eccentric mounted upon said spindle, and a plate having one or more projections adapted when oscillated by said eccentric to engage a projection thereof with one
30 of said teeth and rotate said feeding shaft thereby causing a movement of said follower.

8. In a soap dispensing machine, in combination, a receptacle for a cake of soap,
35 a flat cutting disk positioned in said container, said cutting disk being provided with cutting edges and openings through which the particles of soap fall as cut from the cake, a ring-shaped support provided
40 with inwardly extending projections upon which said cutting disk is rotated, said projections extending under a portion of the cutting edges and openings of said cutting disk, and means for rotating said cutting
45 disk upon said support.

9. In mechanism of the class described, the combination with a container of a comminuting device rotatably mounted therein and having a plurality of radially-disposed cutting edges each of which is adapted to
50 sever particles from a cake of soap, a spindle operatively connected with said comminuting device adapted to rotate the same, a feeding shaft encircling said spindle, a follower threaded upon the exterior of said
55 feeding shaft adapted when moved to feed the cake of soap to said comminuting device, a toothed wheel secured to said feeding shaft, an oscillatory plate having one or more projections adapted to engage the
60 teeth of said wheel and cause thereby a rotation of said feeding shaft, and an eccentric fixed upon said spindle adapted to oscillate said plate whereby said feeding shaft is rotated and the follower moved
65 thereby.

10. In a soap dispensing machine, in combination, a container adapted to receive a cake of soap, a comminuting device adapted to engage said cake of soap, an operating
70 spindle extending longitudinally of said container through said cake of soap and adapted to cause a relative rotation between said cake of soap and said comminuting device, a follower for forcing said cake of
75 soap into engagement with said comminuting device, a feed member having threaded engagement with said follower, and means interposed between said feed member and said spindle for imparting a partial rotation
80 to said feed member during each complete rotation of said spindle.

Signed at New York in the county of New York and State of New York this 14th day of March A. D. 1906.

GEORGE F. SHAVER.

Witnesses:

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H. W. FORSYTH.