

F. G. AGRELL.
 SOAP DISPENSING MACHINE.
 APPLICATION FILED JUNE 14, 1907.

969,829.

Patented Sept. 13, 1910.

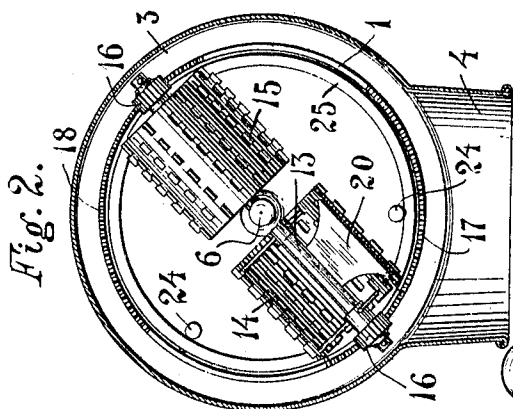


Fig. 5.

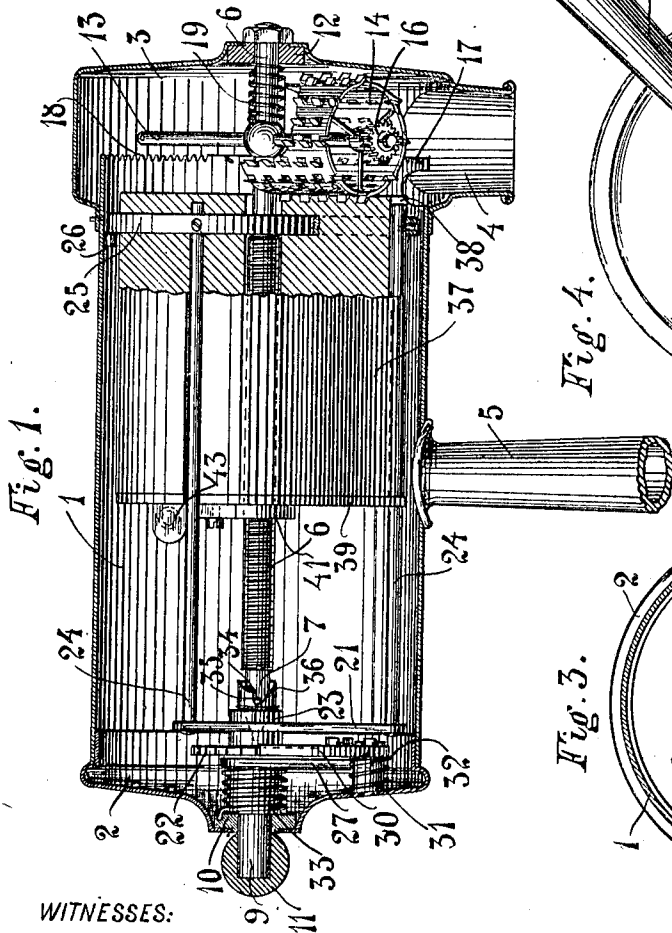
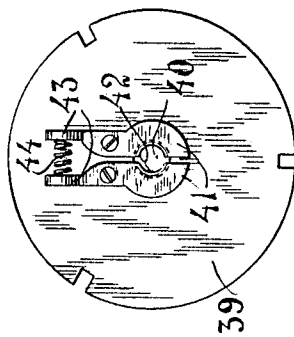


Fig. 4.

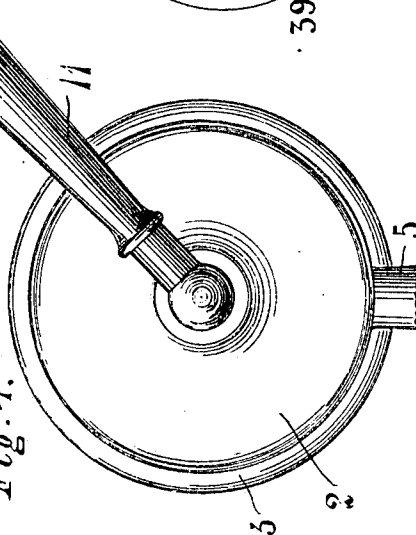
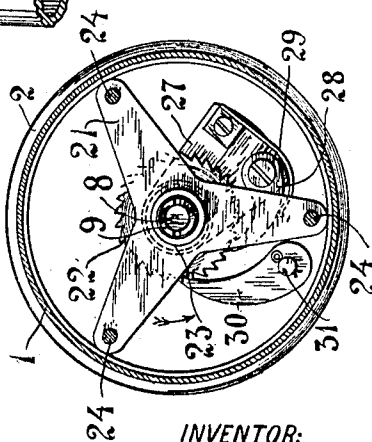


Fig. 3.



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SOAP-DISPENSING MACHINE.

969,829.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed June 14, 1907. Serial No. 379,026.

To all whom it may concern:

Be it known that I, FRANS GUNNAR AGRELL, a subject of the King of Sweden, and a resident of Stockholm, Sweden, have invented certain new and useful Improvements in Soap-Dispensing Machines, of which the following is a specification.

This invention relates to devices particularly adapted for dispensing soap and having certain novel means whereby a simple and brief movement of the operating mechanism will cause the soap to issue from the device in a comminuted form which is readily dissolved and formed into lather.

An essential feature of a machine embodying the present invention resides in the provision of certain advantageous means for limiting the movement of certain cutting devices employed for comminuting the soap, and returning said devices to normal positions, combined with mechanism for rendering the cutting devices inoperative during their return movement. The object of the structure just mentioned is to prevent waste of the soap such as is incidental to mechanisms where a considerable continuous movement of the cutting devices may be caused by the exercise of little or no effort.

I employ a cylindrical cutter which has a double movement, one rotating and the other advancing the same over the surface of the soap, and certain peculiar mechanism hereinafter claimed for coöperation with the cutters.

The cake of soap rests against one row of cutting edges of the drum and is constantly fed against the same, this being possible on account of the relatively slow speed of the advancing movement as compared with the rotating cutting movement.

In the accompanying drawings, like parts have been given similar reference numbers.

Figure 1 shows a sectional side elevation of the device. Fig. 2 is a sectional elevation of one end of the device showing the arrangement of the cutters. Fig. 3 is a sectional elevation of the other end of the device showing means for holding the soap and feeding the same to the cutters. Fig. 4 is an exterior end elevation showing the operating handle. Fig. 5 is a detail view of the feeding disk.

Referring now to the parts of the device in detail; at 1 is shown a cylindrical container having one end, 2, fixed in position

thereon and the other end, 3, removable. The end 3 has a mouthpiece 4 through which the soap falls into the hand. A suitable support, one end of which is shown at 5, is provided for fastening the device in any desirable place, such as to a washstand.

A central main axis or shaft 6 is positioned in the container and is separably connected at one end, 7, in a recess 8 to a shorter shaft 9 which is carried in a suitable bearing 10 in the fixed end 2 of the container. A lever or handle 11 is secured to the outer end of this shaft 9 for turning the same. The other end of the shaft 6 is supported in a suitable bearing 12 in the removable end 3 of the container. Mounted upon the shaft 6 near this end is a cross shaft 13. Rotatably mounted upon said cross shaft 13 are two cutting cylinders 14 and 15, each provided with pinions 16 for rotating the same. Normally said pinions ride upon racks 17—18, which may be formed on the end of the cylindrical container 1, and these pinions held against said racks by the spring 19. In Fig. 1 one of the cutters has been removed from its shaft 13 in order to show this construction.

The cutting cylinders 14 and 15 are provided with rows of cutting edges projecting from the cylindrical surface thereof, which may be made by punching up portions of the wall leaving an opening in front of each edge so that the soap cut by said edge may pass through and enter the cylinder. To prevent the soap when cut from collecting and sticking to the inner walls of the cylinders, a cleaner 20 is attached to the shaft 13. The ends of the cylinder are open so that the soap may easily fall out of the cylinders and through the mouthpiece 4.

Rotatably mounted upon the short shaft 9, which forms a continuation of the shaft 6, is a supporting member 21 to which a ratchet wheel 22 is attached. This is kept in position upon the shaft 9 by means of the collar 23 which is secured to said shaft. The supporting member 21 carries three rods 24 which at their other ends are joined together by means of a ring 25, supported by rollers 26, adapted to travel upon the inner surface of the container 1, thus forming a holder for the cake of soap.

Attached to the shaft 9 is a member 27 carrying a pivoted pawl 28 engaging the ratchet wheel 22 and held against said wheel

by means of the flat spring 29. Another pawl 30, pivoted at 31 to the end of the container and held in engagement with the ratchet wheel 22 by means of the coil spring 32, serves to prevent the rotation of the ratchet wheel and soap-holder when the shaft 9 travels in the direction of the arrow in Fig. 3. Upon said shaft 9 is a coil spring 33 which is adapted to restore the shaft 9 and parts connected thereto, including the shaft 6 and the cutters, to their initial positions after said shaft has been turned through a part of a revolution and is released. When this takes place, that is when the shaft 9 travels in a direction opposite to that of the arrow in Fig. 3, the pawl 28 will turn the ratchet wheel and the soap holder so that no relative motion takes place between the soap and cutters. In order to prevent the rotation of the cutters during this backward movement the pinions are moved out of engagement with the geared racks 17 and 18 by means of a peculiar clutch arrangement at the end 7 of the shaft 6. A pin 34 upon the shaft 6 is engaged by the cam shaped end 35 and 36 of the shaft 9. When said shaft 9 travels in the direction of the arrow in Fig. 3 said pin rests against the projecting surface 35 and causes the shaft 6 to rotate, but when the motion is reversed the pin will ride over the inclined surface 36, causing the shaft 6 and all parts connected thereto to be moved longitudinally toward the right, as shown in Fig. 1, so that the pinions 16 will go clear of the racks 17 and 18. When this backward motion ceases the spring 19 will slide the shaft 6 and connected parts back to their original positions.

The shaft 6 is threaded the greater portion of its length and passes through a central opening in the cake of soap 37. The cake of soap is also provided with three grooves 38 on the outer surface thereof through which the rods 24 of the holder 21 pass. At the end of the cake of soap opposite the cutters is positioned a feeding disk 39, a detail view of which is given in Fig. 5. This disk has an opening 40 through which the screw shaft 6 passes and is also provided with two pivotally mounted members 41 having threaded portions 42 adapted to engage the threads of the shaft 6. Between the ends 43 of said members is a spring 44 adapted to hold the threaded portions 42 in engagement with the screw shaft 6. By pressing the ends 43 together the members can be disengaged from the screw shaft 6 so that the disk 39 can freely slide over the same. This arrangement facilitates the refilling of the device and has many advantages over an ordinary feeding screw threaded into the disk which has to be screwed up to its initial position when the device is to be refilled. With my arrangement when the

device is to be refilled, the removable end 3 of the container is removed, carrying with it the shaft 6, the cutters, the feeding disk 39 and any remaining portion of the cake of soap. The feeding disk 39 is now removed from the shaft 6 as described and a cake of soap placed in position on the shaft 6. The feeding disk 39 is replaced on the shaft 6 against the end of the cake and the whole replaced in the container.

To operate the device the lever 11 is pressed downward and the shaft 9 is caused to rotate in the direction of the arrow in Fig. 3, causing the shaft 6 to rotate and causing the pinions 16 to travel over the racks 17 and 18, rotating the cutters 14 and 15 which are at the same time advanced slowly over the surface of the cake of soap. The screw shaft 6 in the meantime operates the feeding disk 39 and feeds the soap constantly against the cutters, as the disk 39, the soap-holder 21 and the rods 24 are prevented from rotating in this direction by means of the pawl 30 which engages the ratchet wheel 22, as already described. When the movement of the lever 11, which is preferably limited to about 90 degrees, ceases, the spring 33 will return the cutters, the shaft 6, the shaft 9 and the lever 11 back to their original positions, the pawl 28 will at the same time engage the ratchet wheel 22, turning the soap-holder and the cake of soap so that no relative movement will take place between the soap and cutters. The cutters are prevented from rotating as described during this operation of restoring. Thus, although the cutter has an oscillating movement, the result will be that the cutting edges advance gradually over the entire surface of the cake of soap. As no relative movement takes place between the feeding screw and the feeding disk during the backward movement, the feeding will take place only during the forward movement when the cutters are operating.

What I claim is:—

1. In a device for dispensing soap, the combination of a cutter, means for advancing said cutter over the surface of the soap, means for limiting the advancing movement of the cutter, means for returning said cutter to its original position after it has been advanced, and means for rendering the cutter in-operative during its return movement.
2. In a soap dispensing device, the combination of a soap container, a detachable end therefor and into which the end portion of the body of the container projects, cutting mechanism mounted in the container and comprising a shaft, a plurality of cutters mounted on said shaft for bodily movement therewith, and means for rotating said cutters independently of their bodily movement including pinions connected with the

cutters, the adjacent projecting end of the container being formed with racks engaging the pinions for effecting the above independent rotation thereof.

5 3. In a device for dispensing soap, the combination of a rotatable cutter, a pinion operatively attached to said cutter, a rack upon which said pinion is adapted to travel, a threaded shaft, a support carried by said
10 shaft and projecting in a transverse direction therefrom carrying said cutter, means operated by said threaded shaft adapted to feed the soap against the cutter, and means for operating said threaded shaft to cause
15 the cutter to rotate and advance over the surface of the soap.

4. In a device for dispensing soap, the combination of a cutter adapted to be advanced over the surface of the soap, means
20 adapted to advance said cutter, means adapted to limit the movement of said first named means so that one operation causes the cutter to travel over a limited portion of the surface, means for restoring the cutter
25 to its original position, and means for rendering said cutter inoperative by bodily movement while the same is being restored to its original position.

5. In a device for dispensing soap, the

combination of a cutter adapted to be advanced over the surface of the soap, means
30 adapted to advance said cutter, means adapted to cause said cutter to rotate upon the surface of the cake of soap as the same is being advanced, means for limiting the advancing movement of said cutter, means for
35 returning said cutter after being so advanced to its original position, and means for rendering said cutter inoperative while the same is being returned.

6. In a device for dispensing soap, the combination of a rotatable cutter adapted to be advanced over the surface of a cake of soap, means for advancing said cutter, a
40 pinion operatively connected to said cutter, a rack adapted to be engaged by said pinion to rotate said cutter while the same is being advanced, and means for discontinuing the operative relation between said rack and
45 cutter at a predetermined point.

Signed at New York in the county of New York and State of New York this 8th day of June A. D. 1907.

FRANS GUNNAR AGRELL.

Witnesses:

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