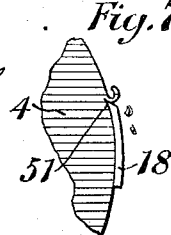
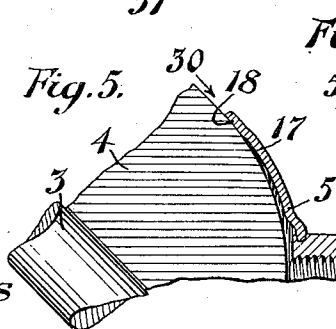
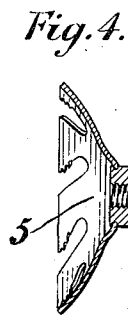
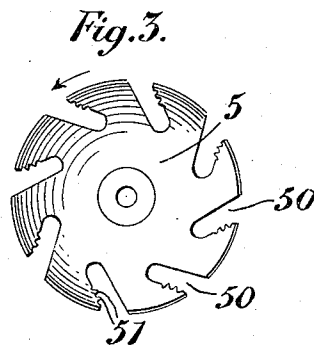
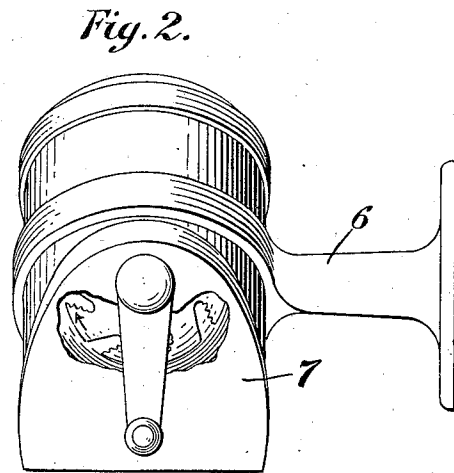
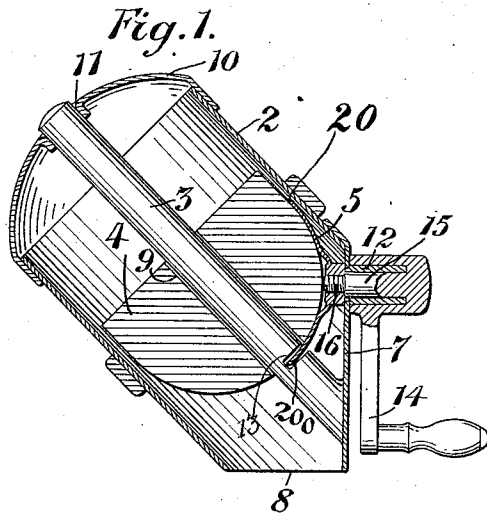


W. HADDOW.
 SOAP DISPENSING MACHINE.
 APPLICATION FILED JUNE 26, 1909.

1,015,678.

Patented Jan. 23, 1912.



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UNITED STATES PATENT OFFICE.

WILLIAM HADDOW, OF OSSINING, NEW YORK.

SOAP-DISPENSING MACHINE.

1,015,678.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed June 26, 1909. Serial No. 504,563.

To all whom it may concern:

Be it known that I, WILLIAM HADDOW, a citizen of the United States, and a resident of Ossining, in the county of Westchester 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 soap dispensing machines and particularly to that class thereof as include a rotary member which acts by cutting, scraping, abrading or the like, to granulate or shred material engaged thereby.

My improvements are particularly useful in devices for dispensing in a finely divided state such material as can be obtained in or conveniently molded into cakes, as chocolate, stove polish, soap and the like.

The present application is of similar subject matter to my copending application, Serial Number 422,826, filed March 23, 1908.

In the drawing accompanying this specification is illustrated one embodiment of my improvements and which may be the preferred embodiment thereof, together with several detail modifications all within the spirit and scope of my invention. Therein—

Figure 1 is a side elevation, largely in section, of my device with all the parts assembled therein. Fig. 2 is a front elevation of the same with a portion broken out to show the cutter. Fig. 3 is a front elevation on an enlarged scale of the cutter and Fig. 4 is a sectional side elevation thereof. Fig. 5 is a sectional side elevation of a part of the cutter, illustrating modifications. Fig. 6 is a front elevation corresponding with Fig. 5. Fig. 7 is a view looking in the direction of arrow 30 Fig. 5. Figs. 5, 6 and 7 are on a scale somewhat larger than that of Figs. 3 and 4, to more clearly set forth the details of my improvements.

As illustrated, my improvements are shown as embodied in an apparatus particularly designed for dispensing soap in a finely divided state from a cake thereof. Therein receptacle 2, preferably cylindrical in form, is arranged with its axis at an angle to the horizontal, I have found that about 45 degrees gives excellent results, so that the soap cake 4 will be fed downwardly toward cutter 5 by gravity. Said receptacle may be supported by any desired means such as bracket 6 which in turn may be attached to a side wall or other conven-

ient support not shown. Receptacle 2 is provided with a front wall 7, herein shown as flat and substantially vertical although it is not necessary that it be either flat or vertical. The intersecting walls of receptacle 2 and front 7 are cut off at the bottom to provide an opening 8 for the discharge of the cuttings from the soap cake.

Soap cake 4 is illustrated as cylindrical in form but other shapes may be used. Said cake is provided with a longitudinal hole 9 therethrough, by which it is supported for revolution on stem 3 of receptacle 2. Said stem is illustrated as fixed to and upstanding from front 7 and concentric with receptacle 2. Cap 10 may engage said stem at its upper end as at 11 if desired. Said stem 3 is provided with a slot 13 therein within which the periphery of cutter 5 revolves, so as to permit said cutter to engage the soap cake throughout a full quadrant of its cross section (Fig. 1). Said cutter 5 is dish shaped and is of such size relative to the soap cake as will enable it to reach from a point of tangency to the cylindrical cake of soap on the one edge of said cutter to or slightly beyond the axis of said soap cake on the other edge thereof. Also said cutter is located so that its axis of revolution is at an angle of approximately 45 degrees to the axis of said soap cake and in approximately the same vertical plane as the axis of the soap cake. Said cutter 5 is supported for rotation on tubular shaft 12 fixed in front wall 7 and may be driven by crank 14 whose stem 15 is fixed to said cutter by threaded portion 16.

The coaction of my peculiarly shaped cutter 5 with the soap cake is such as to draw said soap cake constantly into engagement with the cutter and my improved device is therefore successfully operable with stem 3 in a horizontal position. Under some circumstances I may therefore, if desired, dispense with the use of gravity for feeding.

Referring now more particularly to cutter 5, its sectional profile may conform substantially to a portion of a circle approximately coincident with the circle which bounds the spherical lower end of soap cake 4 (Fig. 1) and which spherical end is generated by the action of cutter 5 on said soap cake as that cake is remodeled in use from its original cylindrical form. The soap cake is then supported against downward movement by the hollow spherical surface

of said cutter and the teeth of the cutter are prevented from digging into said cake or taking a chip greater in amount than that predetermined by the set of said teeth.

5 Cutter 5 is provided with one or more slots 50, extending inwardly from its periphery and having in one edge thereof one or more teeth or blades 51 for engagement with the soap. Said teeth have an inward set (Fig. 7) equal to the depth of chip it is desired to cut. I have found that the mere act of filing these teeth to a cutting edge is usually sufficient to provide a suitable set thereto, as the bur thrown up by the file supplies an inseting cutting lip of efficient relief.

In a device of this character, for dispensing soap it is highly desirable to have the chips that are removed, very thin so that they will instantly dissolve when water is applied thereto. To this end I have found that a simple chisel shaped tooth of low relief (Fig. 6) is particularly efficient. Also to obtain maximum rotating efficiency of the soap cake by the cutter, I preferably cut back or relieve the cutter as at 17 Figs. 5 and 6 leaving a relatively narrow land 18 at the periphery of the cutter for engagement with the soap cake. This relief at 17 also provides free exit for the soap chips and relieves any tendency for said chips to clog between soap cake and cutter.

In operation cutter 5 upon being rotated in the direction of its arrow first engages the periphery of the soap cake and having the greatest leverage at that point causes said cake to revolve in the same direction on stem 3. Teeth 51 of cutter 5 describe spiral paths on the spherical end of the soap cake as that cake is revolved in engagement therewith, said spiral paths extending from the periphery of the soap cake at 20 to near or beyond its axis at 200. This method of cutting gives a maximum of driving ability thus insuring uniformity of sphericity of the cake end while permitting a minimum of chip thickness.

I claim:

1. The combination of a cylindrical receptacle, an axial stem therein, a dish shaped rotatable cutter having radial teeth mounted for rotation therein, said cutter having its axis in the plane of the axis of the stem

of the receptacle but at an angle to said stem axis said cutter adapted for supporting a cake of soap on its inner curved face. 55

2. The combination of a receptacle having a stem mounted lengthwise therein adapted to support a cake of soap for rotary and longitudinal movements thereon, a dish shaped rotatable cutter having inwardly reaching teeth for feeding, rotating and cutting a soap cake on said stem and means for rotating the cutter. 60

3. The combination of a rotatable dish shaped cutter having teeth on its inner face and a stem for revolubly supporting a cake of material, said stem being mounted in the plane of the axis of said cutter but oblique to said axis. 65

4. The combination of a rotatable dish shaped cutter having radial teeth and means for supporting a cake of material for feeding said cake tangent to the working face of said cutter at one point and normal to said working face at another point thereof. 70

5. The combination of a receptacle for a cake of material, a dish shaped rotatable cutter mounted therein, means for supporting the cake of material for free rotation while allowing said cake to be fed by gravity against the inner curved cutting portion of said cutter and on both sides of the axis of said cutter, and means for rotating the cutter. 80

6. The combination of a receptacle having a stem mounted at an acute angle to the vertical therein, a dish shaped cutter mounted on a horizontal axis therein and means for rotating the cutter. 85

7. The combination of a cylindrical receptacle, an axial stem therein, a dish shaped rotatable cutter mounted for rotation therein on an axis oblique to said axial stem and operative to cut and rotate material mounted upon said stem, said cutter extending across the axis of said cylinder and the material mounted upon said stem. 90 95

Signed this 25th day of June, 1909, at Ossining, New York, in the presence of two subscribing witnesses.

WILLIAM HADDOW.

Witnesses:

ROBERT M. AKIN,
GEO. H. HADDOW.