

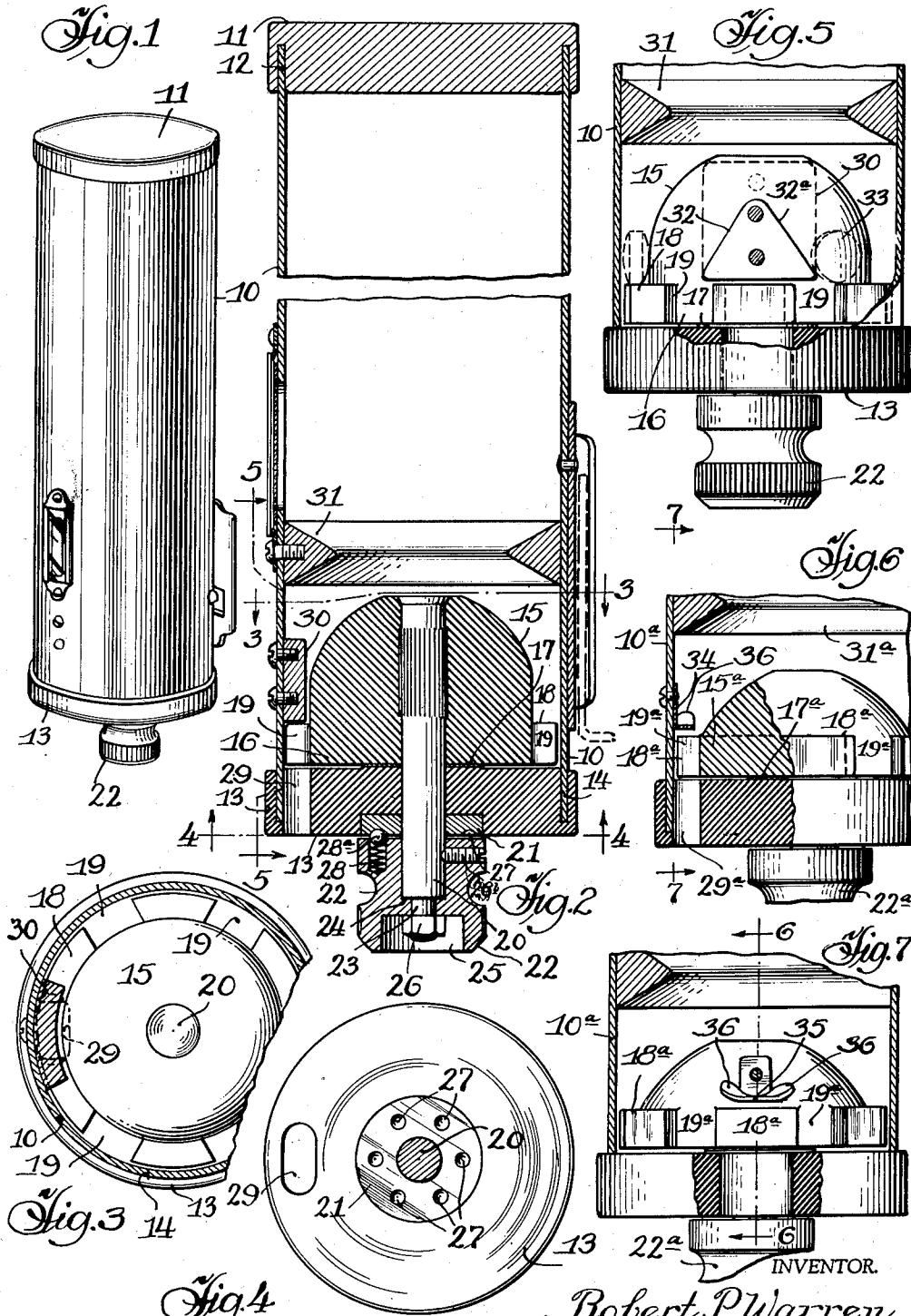
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DISPENSER FOR TABLETS

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DISPENSER FOR TABLETS

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This invention relates to a novel and improved hand dispensing device for tablets, lozenges, pellets and the like, and consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The object of the invention is to provide a hand dispensing device which is of simple and economical construction, which is capable of ready and easy operation and which will positively deliver a single tablet or pellet at each operation of the device.

Another object of the invention is to provide a hand dispensing device which includes operative mechanism by means of which the tablets or pellets will be dispensed without breaking the tablets or pellets as they are fed towards the discharge opening.

Another object of the invention is to provide a dispensing device of the kind in which the hand member by which the dispensing member is operated may be manipulated in either direction to discharge a tablet or pellet.

These and other advantages of the invention will appear more fully as I proceed with my specification.

In the drawing:

Figure 1 is a perspective view of the improved dispensing device.

Figure 2 is a vertical central section through the dispensing device shown on an enlarged scale.

Figure 3 is a view representing a cross-section through Figure 2 in a plane indicated by the line 3—3 of Figure 2.

Figure 4 is a view representing a cross-section through Figure 2 in a plane indicated by the line 4—4 of Figure 2.

Figure 5 is a partial vertical central section through the dispensing device.

Figure 6 is a partial section similar to that shown in Figure 5, showing a modified form of the dispensing device.

Figure 7 is a view representing a vertical section through Figure 6 in a plane indicated by the line 7—7 of Figure 6.

Referring now to that embodiment of the invention illustrated in Figures 1 to 5, inclusive, of the drawing: 10 indicates a vertically elongated tube which is the body of the dispensing device. Said tube is closed by a top cap 11, which is removably secured thereto in any convenient manner, as by a close slip fit of the tube 10 in an annular groove 12 in the cap. 13 indicates the bottom wall of the device. It consists of a thick disc provided with a deep annular groove 14 in which is engaged the bottom

end of the tube 10 (as shown in Figure 2), and is removably secured to said tube 10 in any convenient manner as by screws or the like.

On top of said bottom wall 13 within the tube 10 is mounted a rotative dispensing member 15. This is preferably made of a rustproof material or composition. It is dome-shaped, with a flat circular base 16 which rests upon the bottom wall 13, with an interposed anti-friction washer 17 between the two. Said dispensing member 15 has a bottom, radially extending flange 18, provided with equally, annularly spaced openings 19 between. The flange 18 is of substantially a depth equal to the diameter of the tablets to be dispensed; and the openings 19, closed at the bottom by the bottom wall 13, provide pockets to receive the tablets which slide down from the dome of the dispenser into the space about the same. The sides of the dome, as illustrated in Figure 2, are vertical for a distance above the flange 18 somewhat greater than the diameter of the tablets.

20 indicates a vertical stud extending through the dispensing member 15 and fixed thereto in any convenient manner. Said stud extends downwardly through an aperture in the bottom wall 13 and, as illustrated, through a plate 21 fixed concentrically in a recess in said bottom wall 13. 22 indicates a knurled thumb nut provided with a central bore through which the stud 20 depends. The stud 20 is reduced in diameter at its bottom end as indicated at 23 to correspond with a like reduction in the bore of the thumb nut 22 to provide a shoulder 24. An annular recess 25 is formed in the bottom of the thumb nut 22, and the reduced bottom end 23 of the stud 20 depends into said recess and is secured to the thumb nut by a nut 26 threaded upon said bottom reduced end 23 of the stud.

An indexing device is interposed between the operating member, namely, the knurled thumb nut 22, by means of which the openings 19 in the flange 18 of the dispensing member may be positively brought into and arrested in succession in vertical position above a discharge opening in the bottom wall. As illustrated in the drawing, said indexing device comprises the following parts:

The bottom wall 13 of the tubular body 10, or in this case the plate 21 fixed therein, is provided on its bottom face with annularly spaced recesses 27 at angular intervals equal to the angular spacing of the openings 19 in the flange 18 of the dispensing member 15. And the discharge opening in the bottom wall 13, indicated at 29, is

is in radial alignment (see Figure 2) with one of said recesses 27.

The thumb nut 22 is provided with a vertical recess 28 opening against the plate 21 at a point spaced radially from the stud 20 the same as the recesses 27 in the bottom of said plate 21 and in a radial vertical plane extending through the middle of one of the openings 19. A spring-operated ball 28^a in said recess yieldingly engages the bottom of the plate 21 so that when the thumb nut 21 is rotated, and with it the dispensing member 15, the thumb nut will be arrested by said ball each time it comes into position below one of said recesses 27, with the associated opening 19 above the discharge opening 29. This permits a tablet advanced by an opening 19 of the distributor to drop through the discharge opening 29.

By means of a set screw 28^b taking through the thumb nut 22 against the stud 20, the recess containing the spring-controlled ball 28^a may be adjusted to and held in the above described association with one of the openings 19 in the flange 18 of the distributing member.

30 indicates a guard member disposed above the discharge opening 29, with its bottom edge free of the flange 18 on the dispensing member 15 (see Figures 2, 3 and in dotted lines in Figure 5.) Said guard member consists of a plate fixed to the inner surface of the tubular body. Said plate is of a thickness substantially equal to the width of the flange 18 of the distributing member 15 and is of a horizontal width greater than the width of the discharge opening 29 in the bottom of the dispenser. It acts to block the space above the discharge opening 29 and to prevent the discharge of more than one tablet at each operation of the device.

The tube 10 above the dispensing member 15 has fixed to it a ring 31 providing a diaphragm between the chamber surrounding the dispensing member 15, namely, the dispensing chamber and the upper part of the tube 10 which provides a reservoir for storage of tablets. The diaphragm ring 31 is preferably triangular in cross-section, presenting a downwardly and centrally inclined annular surface at the bottom of the reservoir for directing the tablets from the reservoir to the dispensing chamber downwardly and centrally towards the top of the dome-shaped distributing member 15, whence they are delivered into the narrow annular space above the flange 18 defined by the said dome and the inner vertical wall of the tubular body 10.

The space in the dispensing chamber immediately above the flange 18 is substantially equal to the thickness of the tablets so that the tablets are distributed first in the several openings 19, and then in an annular row riding on the flange 18 and on the tops of the tablets that are in the openings 19. For this reason the tablets are more readily and easily delivered separately into the openings 19 in advance of their coming to a position in vertical alignment above the discharge opening 29.

In Figure 5 the guard 30 is shown in dotted lines with vertical straight edges. It may, and sometimes does, happen with a guard of this form, that a tablet, riding upon a tablet in an opening 19, may be caught between the advancing rear edge of said opening 19 and the proximate vertical edge of said guard, and be broken as the tablet in said opening is advanced to register with the discharge opening. To obviate and prevent this, it is preferred to make said edges inclined

in the direction in which the openings 19 are advancing, as indicated at 32. The other edge is also likewise inclined in the opposite direction, as indicated at 32^a,—this, because as will be obvious, the index mechanism described permits the knurled nut 22 to be rotated in either direction to operate the distributing member 15. By this construction, if a tablet be caught between the following edge of an advancing opening 19 and the guard member, it will ride up on the inclined surface 32^a or 32, as the case may be, depending on which direction the operating member is being rotated, as indicated by dotted lines at 33 in Figure 5. As a result, breaking of tablets will be absolutely prevented.

In Figures 6 and 7 a somewhat modified form of the distributing member of the device is illustrated. In this case 15^a indicates the distributing member. Said distributing member is otherwise formed and connected as before, (like numerals with the superscript *a* indicating like parts) with the exception that the dome is flatter and its vertical sides merely extend the depth of the flange 18^a. In this case the tablets will merely slide down the dome and drop into the openings 19^a without the aid of the narrow deep channel above the flange 18^a as in the first case.

34 indicates the guard disposed above the discharge opening as before. In this case said guard consists of a plate secured to the side wall of the tube 10^a having a flange 35 disposed above the discharge opening 29^a and inclined upwardly at each end as indicated at 36, 36. In this case a tablet riding upon a tablet in an opening 19^a of the flange 18^a will strike one of the inclined wings 36, 36 of the guard and be guided towards and moved upwardly on the more gently inclined slope of the dome of the distributing member 15^a.

The operation of the improved dispenser and its advantages will be obvious from the foregoing description. One tablet only will be discharged at each operation of the dispensing member. The knurled thumb nut may be turned in either direction to operate the dispensing member to discharge a tablet. This is a great advantage, because one desiring to dispense a tablet from the device is just as apt to turn it one way as the other.

The freedom from breakage of the tablets, due to the guard with the oppositely inclined edges, is another feature of importance, since by reason of it the tablets when caught between the advancing edge of an opening 19 and the proximate edge of the guard will simply ride up on said guard without breaking.

While in describing the invention I have referred to many details of construction and arrangement of parts, it is to be understood that the invention is not limited thereto except as may be pointed out in the appended claims.

I claim as my invention:

1. A tablet dispensing device comprising an upright tubular body having a bottom wall provided with a discharge opening adapted to discharge a tablet edgewise, a dispensing member consisting of a dome-topped body provided with a bottom flange having a plurality of radial teeth spaced to receive a tablet edgewise between them, said dispensing member being rotatable on said bottom wall to bring the spaces between said teeth successively into register with said discharge opening, the dome-topped body of the dispensing member above said flange being formed to guide the tablets edgewise toward said flange,

and means for operating said dispensing member to arrest the same when one of the spaces between the teeth in said flange is in register with said discharge opening.

5 2. A tablet dispensing device comprising an upright tubular body having a bottom wall provided with a discharge opening adapted to discharge a tablet edgewise, a dispensing member consisting of a dome-topped body provided with a bottom flange approximating in depth the width of said tablet when disposed edgewise and having a plurality of radial teeth spaced to receive a tablet edgewise between them, said dispensing member being rotatable on said bottom wall to bring the spaces between said teeth successively into register with said discharge opening, the dome-topped body of the dispensing member above said flange being formed to guide the tablets edgewise toward said flange, and means for operating said dispensing member to arrest the same when one of the spaces between the teeth in said flange is in register with said discharge opening.

25 3. A tablet dispensing device comprising an upright tubular body having a bottom wall provided with a discharge opening adapted to discharge a tablet edgewise, a dispensing member consisting of a dome-topped body provided with a bottom flange having a plurality of radial teeth spaced to receive a tablet edgewise between them, said dispensing member being rotatable on said bottom wall to bring the spaces between said teeth successively into register with said discharge opening, the dome-topped body of the dispensing member above said flange being formed to guide the tablets edgewise toward said flange, means for operating said dispensing member to arrest the same when one of the spaces between the teeth in said flange is in register with said discharge opening, and a guard member fixed to said tubular body above said flange and in vertical alignment with said discharge opening.

40 4. A tablet dispensing device comprising an up-

right tubular body having a bottom wall provided with a discharge opening adapted to discharge a tablet edgewise, a dispensing member consisting of a dome-topped body provided with a bottom flange having a plurality of radial teeth spaced 5 to receive a tablet edgewise between them, said dispensing member being rotatable on said bottom wall to bring the spaces between said teeth successively into register with said discharge opening, the dome-topped body of the dispensing member above said flange being formed to guide the tablets edgewise toward said flange, means for operating said dispensing member to arrest the same when one of the spaces between the teeth in said flange is in register with said discharge opening, and a guard member fixed to said tubular body above said flange and in vertical alignment with said discharge opening, said guard member having a side inclined upwardly and in the direction of movement of said dispensing member. 10 15 20

5. A tablet dispensing device comprising an upright tubular body having a bottom wall provided with a discharge opening adapted to discharge a tablet edgewise, a dispensing member 25 consisting of a dome-topped body provided with a bottom flange having a plurality of radial teeth spaced to receive a tablet edgewise between them, said dispensing member being rotatable on said bottom wall to bring the spaces between said teeth successively into register with said discharge opening, the dome-topped body of the dispensing member above said flange being formed to guide the tablets edgewise toward said flange, means for operating said dispensing member to 30 arrest the same when one of the spaces between the teeth in said flange is in register with said discharge opening, and a guard member fixed to said tubular body above said flange and in vertical alignment with said discharge opening, said guard member having opposite sides inclined upwardly and towards each other. 35 40

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