

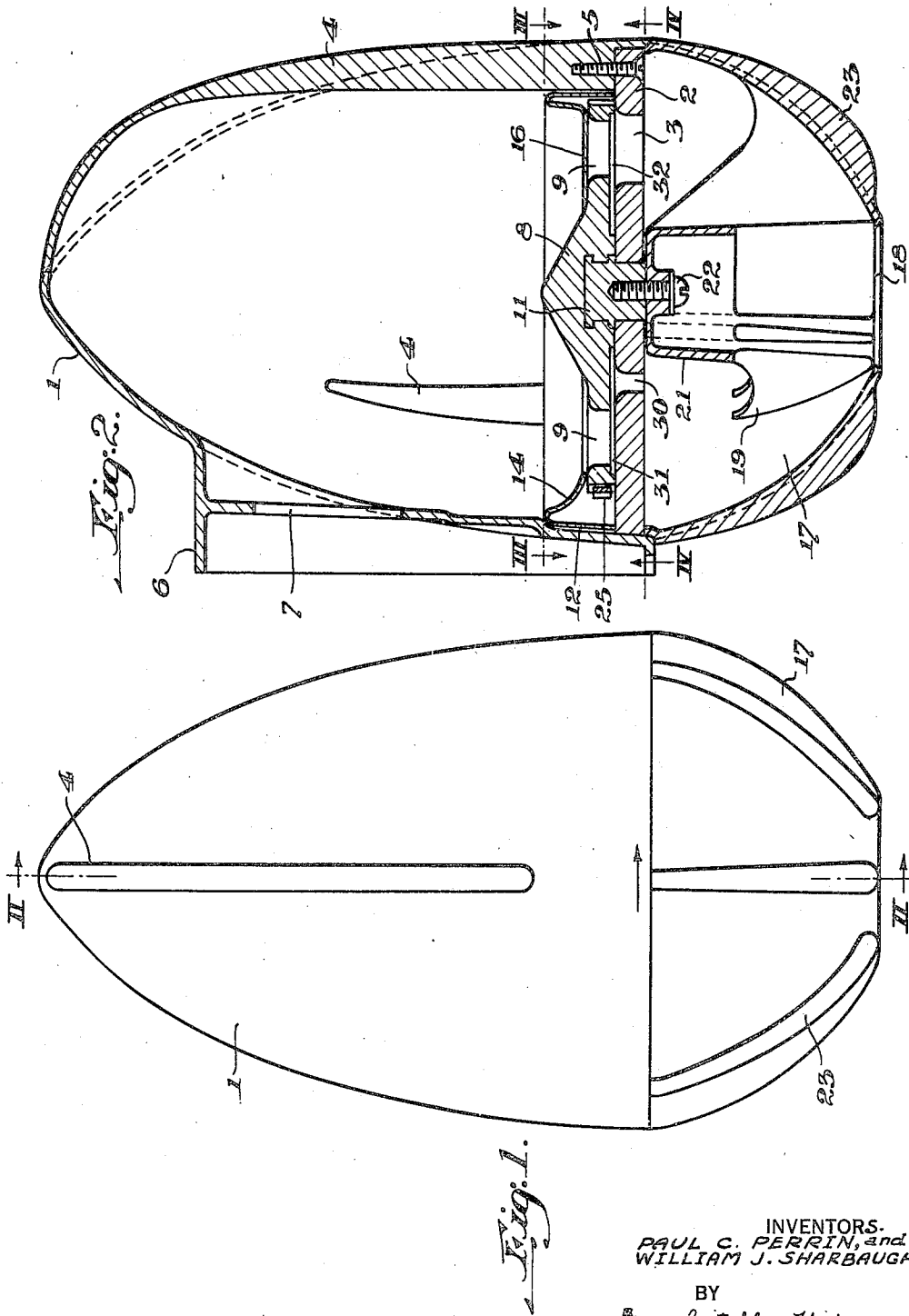
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SALT TABLET DISPENSER

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2 Sheets-Sheet 1



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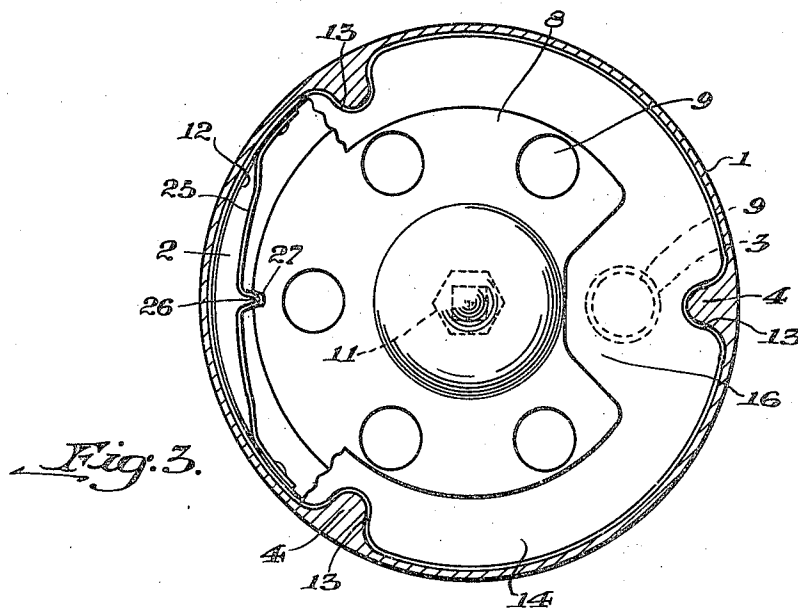
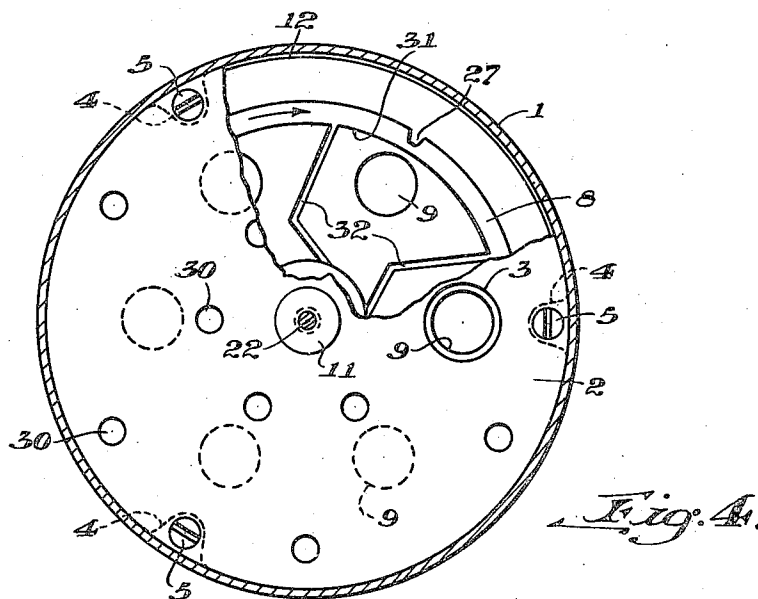
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SALT TABLET DISPENSER

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This invention relates to tablet dispensers, and in particular to salt tablet dispensers such as are used in mills and factories where the workers perspire profusely.

A common type of salt tablet dispenser is one that has a rotatable bottom which, when rotated, drops a tablet into the hand of the operator. However, grains of salt break away from the tablets and in time work in between the moving parts of the dispenser and interfere with its operation. This condition is aggravated when the humidity is high because the salt grains absorb moisture from the air and, in effect, glue the rotating parts to the stationary parts.

It is therefore an object of this invention to provide a tablet dispenser that keeps the loose tablet grains from interfering with operation of the dispenser.

Another object is to provide a simple and sturdy dispenser that is easily assembled or disassembled for cleaning or repair.

Another object is to provide a dispenser in which the tablet containing part can be changed for one of a different capacity without changing the other elements of the dispenser.

A further object is to provide a dispenser in which the spring that holds the rotatable mechanism in preselected positions is located where loose tablet grains will not affect its operation.

According to this invention, a receptacle for salt tablets and the like has a bottom portion provided with a tablet-discharge opening. A disc, having one or more tablet-receiving openings extending through it, is rotatably mounted in the receptacle and overlies the tablet-discharge opening in the bottom. Manually operable means outside of the receptacle is operatively connected with the disc to rotate it and thereby to effect a registry of a tablet-receiving opening therein with the tablet-discharge opening in the bottom of the receptacle so that a tablet in the disc opening will drop from the receptacle and into the hand of the operator. To prevent other tablets from falling through the two registering openings, a shield is mounted above the disc and is shaped and positioned so as to obstruct the entrance to the tablet-receiving opening while the latter registers with the tablet-discharge opening. One or more additional openings are provided in the receptacle bottom to permit the free escape of tablet grains which have found their way in between the bottom and the disc and which, if they could not escape, eventually would interfere with or prevent further rotation of the disc. A spring holding the

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disc in predetermined positions is located at the side of the disc where it will not become obstructed by salt grains. It is preferred to provide the receptacle with a removable bottom so that tops or shells of different capacities can be used.

The preferred embodiment of the invention is illustrated in the accompanying drawings in which Fig. 1 is a side view of our tablet dispenser; Fig. 2 is a vertical section along line II-II of Fig. 1; and Figs. 3 and 4 are horizontal sections along lines III-III and IV-IV respectively, of Fig. 2, with portions broken away to show underlying elements.

Referring to the drawings, a receptacle for salt tablets is formed from an upwardly tapered shell 1 having an open bottom for which there is a closure in the form of a plate 2 provided with a discharge opening 3 for the tablets (not shown) with which the receptacle may be filled. The shell may be molded from a plastic, and is provided with integral ribs 4 extending upwardly from its open bottom along its inner surface. The lower ends of these ribs are provided with vertical threaded openings in which are mounted screws 5 that extend up through plate 2 for removably fastening the plate to the shell. The dispenser is removably attached to a wall bracket by means of a bracket 6 from which there is an opening 7 into the shell to permit refilling with tablets.

Mounted in the receptacle on plate 2 is a circular disc 8 (Fig. 3) which is provided with a plurality of equally spaced tablet-receiving openings 9 extending therethrough. The central area of the disc is tapered upwardly as shown in Fig. 2, so that tablets above it will slide outwardly toward the openings. Molded into this central area is a bushing 11 that is rotatably mounted in an opening in the underlying plate. The disc is rotated in the receptacle, by means to be described later, so as to index the tablet-receiving openings 9 into registry with discharge opening 3 in the plate and thereby permit a tablet to fall through the plate and into the hand of an operator.

To prevent more than one tablet from falling through the registering openings, an annular shield is placed around and above the disc. This shield has a circular side wall 12 resting on plate 2 and provided with indentations or notches 13 (Fig. 3) that receive ribs 4 to prevent the shield from turning. The side wall extends some distance above the disc and then curves inwardly and downwardly to provide a top wall 14 that

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overlaps and engages the upper edge of the disc. The inner edge of this top wall is circular for most of its length and does not extend above openings 9 except in the area above discharge opening 3 where the shield is provided with an inwardly extending projection 16 that obstructs or covers the tablet-receiving opening which happens to be registering with discharge opening 3. The shield is prevented from moving upwardly in the receptacle by the upward taper of the shell's side wall which it engages. The shield serves the multiple purposes of guiding tablets to the openings in the disc, preventing more than one tablet from being discharged from the receptacle each time the disc is turned, and covering the space between the periphery of the disc and the wall of shell 1.

The manually operable means whereby the disc is rotated in the receptacle comprises, as shown in Fig. 2, a cup or hollow knob 17 having an outlet opening 18 in its bottom. Supported in the top central portion of this knob by means of radial ribs 19 is a hub 21 provided with a central vertical opening up through which a screw 22 extends. This screw is screwed into an axial opening in bushing 11 which projects a very short distance below plate 2. The screw is turned up tight so that the hub is rigidly secured to the bushing, whereby the disc will be turned whenever the knob is rotated. The outside of the knob may be provided with ribs 23 that strengthen it and help to provide a hand hold for turning the knob.

As it is desirable to indicate to the operator when a tablet-receiving opening 9 in the rotatable disc is directly above discharge opening 3, and also to stop the disc in such a position every time it is turned, an indexing spring is provided. Accordingly, as shown in Fig. 3, a leaf spring 25, having an inwardly projecting central portion or detent 26, is compressed between the side of the disc and side wall 12 of the shield to which the ends of the spring are riveted or otherwise secured. By locating the spring at the side of the disc, the shield keeps salt grains from packing around it and impairing its operation. Also, there is plenty of room for a relatively large spring which is more dependable than a small one in a restricted space. The periphery of the disc is provided with a plurality of equally spaced radial notches 27, one for each opening 9. When the disc is indexed, each notch in turn receives the spring detent and holds the disc with one of its openings registering with the discharge opening. When it is desired to index the disc again, a slight manual pressure on the part of the operator will cause the disc to force the spring detent out of the notch into which it projects, and allow the disc to be turned freely until the detent snaps into the next notch.

An important object of this invention is to prevent loose salt grains that sift down into the bottom of the receptacle from interfering with rotation of disc 8 by working underneath it. This object is achieved by providing plate 2 with a plurality of openings 30, as shown in Figs. 2 and 4 through which salt grains can escape from between the disc and the plate. It is preferred, as shown in Fig. 4, to provide two radially spaced circular series of these openings, the outer series projecting from under the edge of the disc into the surrounding space, and the inner series being about half way between the edge of the disc and its center. In order to help prevent the salt grains from packing between the disc and bot-

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tom plate before they reach the escape openings, the bottom of the disc is provided with a plurality of annular recesses 31 separated from each other by arms 32, the recesses allowing some accumulations of salt grains without packing and the arms preferably being shaped to sweep the grains inwardly toward the inner series of escape openings when the disc is turned.

To disassemble this tablet dispenser for cleaning or repair, screw 22 is removed which disconnects knob 17 from the receptacle. Screws 5 then are accessible and can be removed so that plate 5 can be separated from shell 1. Disc 8 and the shield then will slide out of the shell. In case it is desired to use a receptacle having a different capacity than the one shown, or if the original shell is broken, a new shell can be substituted without changing the other elements of the dispenser. The lower ends of all shells, regardless of capacity, are made the same so that the shells are interchangeable.

According to the provisions of the patent statutes, we have explained the principle and construction of our invention and have illustrated and described what we now consider to represent its best embodiment. However, we desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

We claim:

1. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, and manually operable means disposed below said bottom, said means being operatively connected to said disc for rotating it and being in the form of a cup having an outlet opening in its bottom through which said tablets discharge, and said receptacle bottom being provided with an opening beneath said disc for escape of tablet grains from between said bottom and disc and out through said discharge opening.

2. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said openings, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc obstructing the entrance to said receiving opening when it registers with the discharge opening, and manually operable means disposed below said bottom, said means being operatively connected to said disc for rotating it and being in the form of a cup through which said material is discharged, the lower surface of said disc being provided with a plurality of recesses arranged in a circle above said receptacle bottom, and said receptacle bottom being provided with an opening beneath said disc for escape of substantially all of the tablet grains from said recesses.

3. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-re-

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ceiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, and manually operable means outside said receptacle operatively connected to said disc for rotating it, the lower surface of the disc being provided with a plurality of recesses separated one from another by sweeping arms, and said receptacle bottom being provided with openings beneath said disc recess for escape of tablet grains trapped in said recess, said arms substantially engaging the receptacle bottom for sweeping said grains toward said escape openings when the disc is rotated.

4. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, manually operable means outside said receptacle operatively connected to said disc for rotating it, and a spring compressed between the receptacle and side of the disc, said disc being formed at circumferentially spaced intervals for locking engagement with the spring whereby to hold the disc in predetermined positions, and said receptacle bottom being provided with an opening beneath said disc for escape from said dispenser of tablet grains between said bottom and disc.

5. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, manually operable means outside said receptacle operatively connected to said disc for rotating it, and a leaf spring compressed between the side of the disc and the receptacle and having its central portion provided with a detent engaging the disc, said disc having a plurality of notches around its periphery for receiving said spring detent to hold the disc in predetermined positions, and said receptacle bottom being provided with a plurality of openings beneath said disc for escape from said dispenser of tablet grains between said bottom and disc.

6. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, manually operable means outside said receptacle operatively connected to said disc for rotating it, a spring compressed between the shield and the side of the disc, said disc being formed at circumferentially spaced intervals for locking engagement with the spring whereby to hold the disc in predetermined positions, the lower surface of the disc being provided with a plurality of recesses arranged in a circle above said receptacle bottom and separated

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one from another by sweeping arms, and said receptacle bottom being provided with an opening for escape of tablet grains trapped in the recesses, said arms substantially engaging the receptacle bottom for sweeping said grains toward said escape opening when the disc is rotated.

7. A tablet dispenser comprising a shell having an open bottom and ribs extending upwardly therefrom along its inner surface, said ribs having threaded openings in their bases, a removable bottom member provided with a tablet-discharge opening, screws in said threaded openings detachably connecting the bottom member to said shell to form a tablet receptacle, a disc in said shell rotatably mounted on said bottom member and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, and manually operable means outside said receptacle operatively connected to said disc for rotating it, said bottom member being provided with an opening beneath said disc for escape from said dispenser of tablet grains between said member of disc.

8. A tablet dispenser comprising a tablet receptacle having a bottom provided with a tablet-discharge opening, a disc in said receptacle rotatably mounted on said bottom and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, a bushing rotatably mounted in said bottom and rigidly connected to the disc, and manually operable means outside said receptacle rigidly connected to said bushing whereby the disc can be rotated in the receptacle, said receptacle bottom being provided with an opening beneath said disc for escape from said dispenser of tablet grains between said bottom and disc.

9. A tablet dispenser comprising a shell having an open bottom and ribs extending upwardly therefrom along its inner surface, a removable plate closing said open bottom to form a tablet receptacle, said plate being provided with a tablet-discharge opening, means for detachably connecting said plate to the lower ends of said ribs, a disc in said receptacle rotatably mounted on said plate and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, the periphery of the shield being provided with notches receiving said ribs to hold the shield in predetermined fixed position, and manually operable means outside said receptacle operatively connected to said disc for rotating it, said plate being provided with an opening beneath said disc for escape from the dispenser of tablet grains between said plate and disc.

10. A tablet dispenser comprising a shell having an open bottom and ribs extending upwardly therefrom along its inner surface, said ribs having threaded openings in their bases, a removable plate provided with a tablet discharge opening, screws in said threaded openings detachably connecting the plate to said shell to form a tablet receptacle, a disc in said receptacle rotatably mounted on said plate and overlying said opening, said disc being provided with a tablet-receiving

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opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, the periphery of the shield being provided with notches receiving said ribs to hold the shield in fixed position, manually operable means outside said receptacle operatively connected to said disc for rotating it, and a leaf spring compressed between the side of the disc and the shield and having its central portion provided with a detent engaging the disc, said disc having a plurality of notches around its periphery for receiving said spring detent to hold the disc in predetermined positions, and said plate being provided with a plurality of openings beneath said disc for escape from said dispenser of tablet grains between said plate and disc.

11. A tablet dispenser comprising a shell having an open bottom and ribs extending upwardly therefrom along its inner surface, said ribs having threaded openings in their bases, a removable plate provided with a tablet discharge opening, screws in said threaded openings detachably connecting the plate to said shell to form a tablet receptacle, a disc in said receptacle rotatably mounted on said plate and overlying said opening, said disc being provided with a tablet-receiving opening adapted to be moved into registry with said discharge opening, a shield above the disc for obstructing the entrance to said receiving opening when it registers with the discharge opening, the periphery of the shield being pro-

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vided with notches receiving said ribs to hold the shield in fixed position, manually operable means outside said receptacle operatively connected to said disc for rotating it, and a leaf spring compressed between the side of the disc and the shield and having its central portion provided with a detent engaging the disc, said disc having a plurality of notches around its periphery for receiving said spring detent to hold the disc in predetermined positions and being provided in its bottom with a plurality of recesses arranged around it and separated one from another by sweeping arms, and said plate being provided with an opening for escape of tablet grains in said recesses, said arms substantially engaging said plate for sweeping said tablet grains toward said grain escape opening when the disc is rotated.

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