

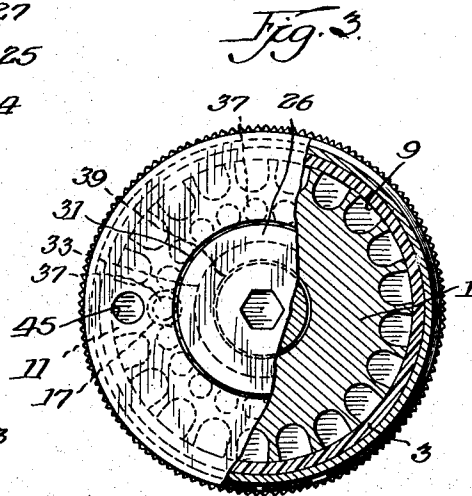
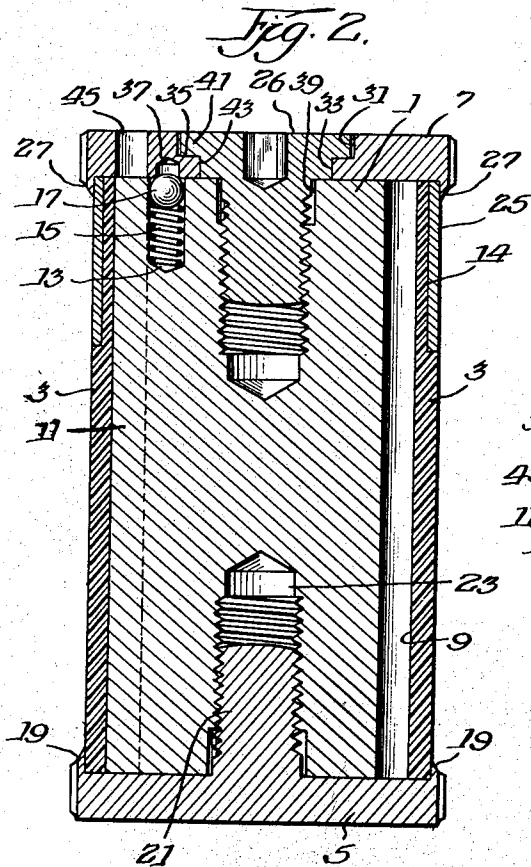
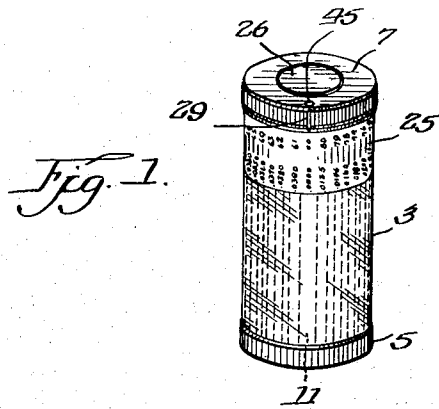
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DRILL DISPENSER

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DRILL DISPENSER

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7 Claims. (Cl. 206—17)

This invention relates to drill dispensers of the type adapted to accommodate a plurality of drills of different sizes and which provide for the selection of appropriate drills from the dispenser by means of an indexing device on the dispenser. More particularly, this invention relates to a drill dispenser of the aforesaid type having a transparent casing which allows radiant heat to aid in maintaining a moisture-free condition and which enables the user to ascertain the condition of the drills as well as to locate empty pockets in the dispenser.

Prior drill dispensers have utilized various cylindrically shaped devices provided with a plurality of bores arranged equidistant from the axis of the cylinder. The bores acted as pockets to store drills, needles, etc., until such time as they were to be used. These devices were oftentimes provided with an indexing means and a rotatable cap having an aperture adapted to progressively communicate with the respective bores or pockets.

However, these prior devices were often complex and difficult to manufacture commercially, necessitating numerous machined parts or requiring unduly complicated stamping operations.

Even considering the disadvantages of these devices, they further provide neither a moisture proof container nor the user with immediate knowledge concerning the condition of his drills. Indeed, if moisture were to get into the bores previously used, the surrounding metal prevented the activity of radiant energy from dehydrating the pocket and indeed facilitated condensation on the metallic surface.

The problem of moisture accumulating and condensing in a drill dispenser is a very serious problem especially when it cannot be readily ascertained. Most drills are made from high quality metals which are especially susceptible to rust and corrosion. When dealing with drills having a size of .0135 of an inch and thereabouts, the problem is particularly critical since the rusting and corrosion of the drill will necessarily change its size and product inaccurate results. However, prior drill dispensers were designed as mere receptacles offering little or no protection against rust and corrosion.

Further, when the user wished to check his dispenser to replace missing drills, he had to inspect each and every bore by rotating the cap and inspecting the drill or drills.

Therefore, it is a primary object of the present invention to provide a drill dispenser having a transparent casing which provides the user with instantaneous knowledge of the condition of the drills, the number of drills within each pocket, which permits light to dehydrate the interior and which is simple in construction and allows economical manufacture.

It is a further object of this invention to provide a drill dispenser utilizing a rotatable cap in combination with detent means, which can be securely held in practically moisture proof contact with the pocketed cylinder by means of a shouldered securing device.

A further object of this invention is to provide a lon-

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gitudinally grooved cylindrical member which may be easily extruded or molded and which may be used with a transparent casing to form pockets for receiving a plurality of drills within each pocket.

5 It is a further object of this invention to provide a drill dispenser of the aforementioned type having cap portions extending into lips adapted to surround the end portions of the transparent casing in order to protect this casing from damage due to dropping.

10 Further objects and purposes of the invention will be evident from a consideration of the particular description and the drawings.

In the drawings:

Figure 1 is a perspective view of an embodiment of the subject invention.

Figure 2 is an elevational view in section of the embodiment shown in Figure 1.

Figure 3 is a fragmentary plan view of the embodiment shown in Figure 2 looking downwardly from the top.

15 In the drawings it is seen that the subject device is comprised generally of a cylindrical member 1 having a plurality of longitudinal grooves, a transparent casing 3 secured around said cylinder, a cap member 5 secured to said cylinder and a rotatable cap member 7 secured to said cylinder for rotation relative thereto.

20 The cylindrical member is formed with a plurality of longitudinal grooves 9, shown as being generally semi-circular in cross section. These grooves are spaced from each other approximately equal distances, except for one space 11, which forms a sealing surface between two adjacent grooves and which is considerably larger than the distance between the remainder of the grooves. The purpose of this latter surface will become evident as the description proceeds. Each groove is of adequate size to receive a plurality of equal sized drills.

25 The cylinder 1 is formed with a recess 13 which extends generally axially into the cylinder and which is formed to accommodate a spring 15 and a ball 17. The ball 17 is located in the upper portion of recess 13 and is urged upwardly as viewed in the drawings, by the spring 15 which is placed in the lower portion of recess 13.

30 Transparent casing member 3 may be made of any transparent material of either glass or plastic, although in the embodiment shown plastic is used to prevent breakage due to dropping and to aid in preventing condensation of moisture by allowing radiant energy to enter into the aforesaid groove and to warm both sides of the casing. Transparent casing 3 is generally cylindrical in shape, it being preferable that there be no longitudinal openings to be sealed, and has an inner diameter substantially the same throughout. Thus, the inner surface of the transparent casing is adapted to fit over and be secured to cylindrical member 3 by any conventional means to completely cover the outer surface of cylinder 1; the longitudinal grooves 9 and the transparent casing 3 cooperating to form individual pockets adapted to receive drills.

35 The outside diameter of the transparent casing is substantially the same throughout its length with the exception of a recessed portion 14 adjacent the upper end of the casing which is of a smaller diameter for a purpose to be described.

40 Lower cap member 5 is generally circular in cross section and is formed with a circumferential lip portion 19, adapted to extend over the end of the transparent casing when it is secured around the cylinder. This lip portion 19 thus protects the transparent casing from becoming loosened from the cylinder, should the drill dispenser be dropped, and further provides and insures a moisture and dust proof seal at the lower end of the pockets formed by transparent casing member 3 and longitudinal grooves 9.

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Cap member 5 may be secured to the cylinder in any conventional manner although in the embodiment shown it is formed with a stud portion 21 appropriately formed to be threadably received into the aperture 23 formed concentrically along the axis of cylinder 1.

Indexing member 25 is annular in shape and is secured to the recessed portion 14 of transparent casing 3 by any conventional means. This indexing member may carry information pertaining to the size and appropriate number of each of the drills which are located in each of the pockets.

The upper rotatable cap member 7 is generally circular in cross section and is provided with a circumferential lip 27 which extends over and in close relation to the indexing member 25 in order to enable an indicator means such as a line 29 to cooperate with the indexing member, to prevent the entry of moisture and dust into the pockets containing the drills, and to protect the transparent casing 3, should the dispenser be dropped. The edges of the rotatable cap are preferably knurled to provide a better gripping surface.

The central portion of the rotatable cap member 7 is formed with two axially concentric cylindrical bores of different diameter extending through the cap, the larger diametered bore 31 being in the upper portion of the cap and the smaller diametered bore 33 being in the lower portion, the bores joining to form an annular shoulder 35.

A plurality of indentations 37 equidistant from the axis of said bores; i.e. the center of the cap, are formed on the inner side of said rotatable cap in such relationship to the aforementioned ball 17, that as the cap is rotated, ball 17 progressively contacts each indentation and retains the cap in that position. When the cap is rotated, the movement of the indentation overcomes the force of spring 15 and ball 17 is forced into successive indentations.

Rotatable cap 7 is secured to cylinder 1 by a securing means 26. Securing means 26 is shown as a bolt adapted to be threadably received into recess 39 formed in the upper portion of cylindrical member 1. The cap portion of the bolt is formed into an upper flange portion 41 and a lower aligning portion 43 of differing diameters, adapted to conform to the bores aforementioned in said rotatable cap. When the rotatable cap is secured within said cylinder by means of said securing bolt means, the flange portion 41 of said bolt forces the shoulder portion 35 of said cap downwardly into relatively moisture proof contact with the upper surface of the aforementioned cylinder 1, aligning portion 43 cooperating with the walls of bore 33 to provide radial alignment of the parts.

Rotatable cap 7 is provided with an aperture 45 which is located so that as the cap member is rotated this aperture may communicate with each of said pockets progressively and may be placed over sealing surface 11 to close the container and the pockets from exposure to moisture, dust and other atmospheric corrosives. The aperture is further related to the indicating member and to the indexing means so that the indexing means may provide immediate information as to the drill occupying the pocket which is in communication with the aperture.

In operation the rotatable cap member 7 is rotated from its closed position, that is, when the aperture 45 is placed over sealing surface 11, into communication with each of the pockets progressively. As the rotatable cap member 7 begins to move, the inner surface of the cap member moves toward ball 17 which is forced, by the walls of the indentation, downwardly against spring 15. The cap then continues to rotate until the ball is forced into the next indentation by spring 15. Rotatable cap 7 must then be urged onward with sufficient force to overcome the resistance provided by the cooperation of ball 17 and spring 15 and each of the indentations until the indicator 29 is in position with respect to the desired size or number on the indexing member 25.

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The ball, spring and indentation then align and retain the cap in the appropriate position with aperture 45 communicating with the appropriate pocket. A drill corresponding to the number and size shown on the indexing means is then inserted in each pocket progressively until the drill dispenser is appropriately filled.

The rotatable cap is then rotated to the closed position and the dispenser may be placed on the shelf until further use. When it is time to use the drill dispenser, the rotatable cap is rotated to align the indicating means 29 with the appropriate drill number and size indicated on the indexing means 25. Ball 17 then is urged by spring 15 into the appropriate indentation and the rotatable cap held securely in a manner aligning the aperture 45 to communicate with the pocket containing the desired drill. The drill dispenser is then turned over and a drill slides out through the aperture into the hand of the user.

When it is desired to replace broken or depleted drills in the dispenser, inspection may be made through the transparent casing into each pocket in turn to determine the condition, absence or broken nature of each drill.

Thus the subject invention, in providing a transparent casing and a unique bearing surface for the rotatable cap, achieves all the purposes which are desired in effective drill dispensers.

Having thus described my invention, I claim:

1. A drill dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a transparent casing around said cylinder, a cap member secured to one end of said cylinder, an annular indexing member secured around one end of said transparent casing, a rotatable cap member secured for rotation relative to said cylinder and having an aperture adapted to progressively communicate with each of said grooves when said cap is turned, said rotatable cap member having an indicator thereon adapted to cooperate with said indexing member and having an inner surface formed with a plurality of indentations equidistant from the center of said cap, a recess formed in the upper portion of said cylindrical member beneath one of said indentations and extending generally axially into said cylinder, a ball member in said recess and a spring member in said recess urging said ball progressively into each indentation as the cap is rotated.

2. A dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a transparent casing around said cylinder, a cap member secured to one end of said cylinder, an annular indexing member secured around one end of said transparent casing, a rotatable cap member secured for rotation relative to said cylinder and having an aperture adapted to progressively communicate with each of said grooves when said cap is turned, said rotatable cap having an indicator thereon adapted to cooperate with said indexing member, and means associated with said rotatable cap member and said cylinder for progressively aligning said aperture with each of said grooves as said cap is rotated.

3. A dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a cap member secured to one end of said cylinder, a transparent casing around said cylinder, an indexing means on said transparent casing, a rotatable cap member secured for rotation relative to said cylinder and having an aperture adapted to progressively communicate with each of said grooves when said cap is turned, said rotatable cap having an indicator thereon adapted to cooperate with said indexing member, and means associated with said rotatable cap member and said cylinder for progressively aligning said aperture with each of said grooves as said cap is rotated.

4. A dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a transparent casing around said cylinder, said grooves and said casing forming a plurality of pockets for receiving drills, an annular indexing member secured around

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one end of said transparent casing, a rotatable cap secured for rotation relative to said cylinder and having an aperture adapted to progressively communicate with each of said pockets when said cap is turned, an indicator on said rotatable cap member adapted to cooperate with said indexing member to indicate the size of the drill occupying the pocket in communication with which the aperture has been aligned, and means associated with said rotatable cap member and said cylinder for progressively aligning said aperture with each of said pockets as said cap is rotated.

5. A drill dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a transparent casing secured around said cylinder, said grooves and said casing forming a plurality of pockets for receiving drills, a cap member fixed to one end of said cylinder, an annular indexing member secured around one end of said transparent casing, a rotatable cap having a central aperture therethrough forming an annular recessed shoulder, a bolt adapted to be threadably received into said cylinder and having a head portion adapted to cooperate with said shoulder to hold said rotatable cap in rotatable relationship with said cylinder, an aperture in said cap adapted to progressively communicate with each of said pockets as said cap is rotated, an indicator on said rotatable cap member adapted to cooperate with said indexing member to indicate the size of the drill occupying the pocket in communication with the aperture, and means associated with said rotatable cap member and cylinder for progressively aligning said aperture with each of said pockets as said cap is rotated.

6. A drill dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, a cap member secured to said cylinder, a transparent casing around said cylinder, indexing means around said cylinder, a rotatable cap member secured for rotation relative to said cylinder and having an aperture adapted to progressively communicate with each of said grooves when said cap is rotated, said rotatable cap member having an indicator thereon adapted to cooperate with said indexing member to indicate the contents of the grooves communicating with said aperture, and means between said rotatable cap member and said

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cylinder for progressively aligning said aperture with each of said grooves as said cap is rotated.

7. A drill dispenser comprising a cylinder having a plurality of longitudinal grooves spaced around the circumference, at least two of said grooves being sufficiently spaced from each other to form a sealing surface, a transparent casing secured around said cylinder, said grooves and said casing forming a plurality of pockets for receiving drills, a cap member fixed to one end of said cylinder and having a circumferential lip portion adapted to extend over the end of said transparent casing, an annular indexing member secured around one end of said transparent casing, a rotatable cap having a central aperture therethrough forming an annular recessed shoulder between the upper and lower surface thereof, a bolt adapted to be threadably received by said cylinder and having a head portion adapted to cooperate with said shoulder to hold said rotatable cap in rotatable relationship with said cylinder, said cap having an aperture adapted to progressively communicate with each of said pockets as said cap is rotated, said cap having circumferential lip portions adapted to extend over the end portion of said indexing member and including an indicator adapted to cooperate with said indexing member to indicate the size of the drills occupying the pocket in communication with the aperture, and means associated with said rotatable cap member and cylinder for progressively aligning said aperture with each of said pockets and with said sealing surface as said cap is rotated.

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