July 8, 1952 J. E. JONES ET AL 2,602,596

TABLET CRUSHER

Filed April 24, 1951

Fig. 1

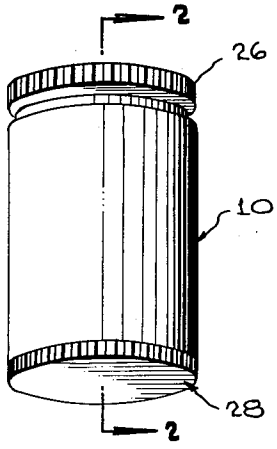


Fig. 2

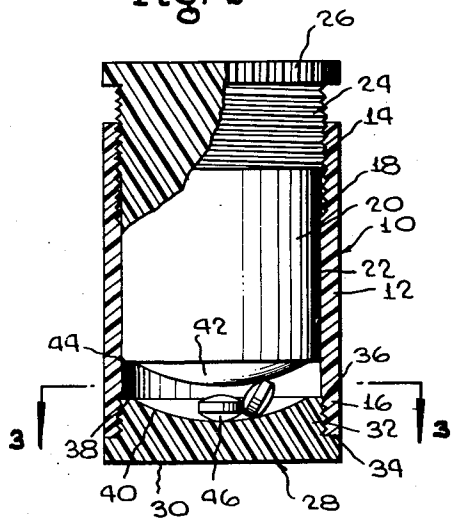


Fig. 4

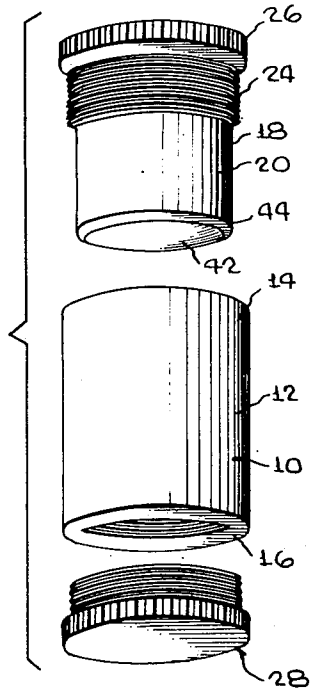
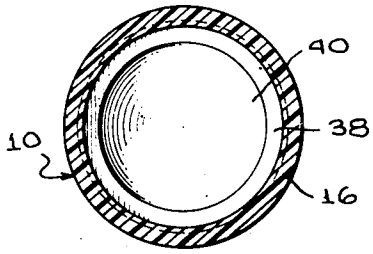


Fig. 3



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TABLET CRUSHER

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2 Claims. (Cl. 241—168)

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This invention appertains to improvements in tablet crushers, which are used to crush medicinal tablets so that they may be easily swallowed by being more completely and speedily dissolved in liquid.

A primary object of this invention is to provide a small and efficient crusher, which can be easily carried in a pocket and which can be used as a receptacle for pills and a drinking vessel for drinking pills, after the pills have been mixed with a fluid.

Another object of this invention is to provide a sanitary tablet crusher, whereby tablets may be completely crushed into an easily dissolvable powder without losing any of the tablets and without touching the tablets with the hands.

These and ancillary objects and structural features of merit are attained by this invention, the preferred embodiment of which is set forth in the following description and illustrated in the accompanying drawing, wherein:

Figure 1 is a perspective view of the tablet crusher, constructed in accordance with the principles of this invention;

Figure 2 is a longitudinal vertical sectional view, on an enlarged scale taken on line 2—2 of Figure 1;

Figure 3 is a transverse sectional view taken on line 3—3 of Figure 2; and,

Figure 4 is an exploded perspective view of the crusher.

Referring now more particularly to the accompanying drawing, the tablet crusher 10 includes a cylindrical body member 12, which is preferably formed from a thermo-setting plastic material or, of course, can be formed from any other material. The cylindrical body member includes a first internally threaded open end 14 and an opposing open internally threaded end 16.

A solid cylindrical pulverizing barrel or crusher member 18 is disposed through the end 14 of the body member and is formed with a smooth surface 20, engageable with the smooth inner wall 22 of the center portion of the body member. The end 24 of the crusher member is exteriorly threaded and the threads are threadingly engaged with the threads on the end 14 of the body member. A flat head 26 is formed on the threaded end of the crusher member and the underside thereof is engaged on the flat edge of the end of the body member.

A cap 28 forms the bottom wall of the cylindrical member and includes an outer portion 30 and an axially reduced inner portion 32, which is disposed within the end 16 of the body member.

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The end 30 is formed with a flat shoulder, which is engageable with the flat edge of the end 16 of the body member and which defines the reduced portion 32 of the cap. The reduced portion of the cap is formed with a threaded periphery 36, which is engageable with the threads on the end 16 of the body member.

The face of the portion 32 of the cap is formed with a flat periphery 38 and a concave center portion or well 40, which is complementary to a convex protuberance 42, formed on the end of the crusher member. The protuberance 42 is formed on the end of the crusher member, so that the outer edges thereof are spaced inwardly from the side wall of the crusher member to define a flat shoulder 44, which is adapted to seat on the flat periphery 38 of the cap member.

In use, tablets 46 are disposed in the well 40, by removing the cap 28 and placing the tablets in the well and, thereafter, securing the cap to the end 16 of the body member. The crusher member is then rotated within the body member, the threaded portion 24 engaging the threaded end 14 and the protuberance or knob 42 is cooperative with the wall of the well 40 to grind the tablets into a fine powder.

The cap 28 may then be unscrewed from the body member, with the powdered or crushed pills in the well and the cap member may then be used as a receptacle to transport the crushed tablets to the bedside of a patient or the like.

Also, the body member may be used as a drinking vessel, by entirely unscrewing the crusher member leaving the crushed pills in the well 40. A liquid is then poured into the body member onto the cap 28 to dissolve the powdered tablets.

Of course, the tablets 46 may be easily carried in the body member, with the crusher member disposed in a spaced relation with the cap member, as illustrated in Figure 2.

As will be noted from Figure 2, the device constituting the present invention is so designed as to constitute, in the assembled relation of its component parts, a compact, cylindrical assembly that will be sealed tightly at its opposite ends and will be capable of being carried in one's pocket. In this connection, the construction is one which is particularly adapted for use of the invention as a tablet container that can be used when one is, for example, away from home and is required, at periodic intervals during a day, to crush tablets and partake of the same, with the tablets being taken in a state in which they are either dissolved in water or washed down with water.

In this connection, the construction is one wherein the body member is of constant inner diameter from end to end thereof, and is formed open at its opposite ends, with internal threads being provided at said opposite ends. The cap member **28**, as will be noted, is of generally disc-like configuration, and is so connected to one end of the body member as to cooperate with the body member in defining a receptacle which can be filled with water after the tablets **46** are crushed. It may be noted, in this regard, that the cap member is provided with a circumferential shoulder that will engage the adjacent end edge of the body member, so as to limit movement of the cap member inwardly of the body member.

At the same time, the crusher member is proportioned to a length approximating that of the body member, the crusher member having a smooth-surfaced portion for a substantial part of its length, with said smooth-surfaced portion being disposed in wiping contact with the inner surface of the side wall of the body member. As a result, crushed tablets cannot enter the space between the crusher member side wall and the body member side wall. The crusher member, at one end, has a central protuberance complementing the concavity of the cap member, with the concavity extending through substantially the full diameter of the inner end wall of the cap member. This construction causes the tablets to be properly centered preliminary to the crushing operation, and prevents the tablets from escaping into recesses or the like. The crusher member, additionally, has at its other end a circumferential shoulder that engages the body member to limit movement of the crusher member inwardly of the body member, the complementary inner end surfaces of the crusher and cap members being substantially in engagement when the shoulders of said members are in engagement with the opposite ends of the body member.

This provides for a highly compact assembly, which can be operated by a user in a manner to hold the body member tightly closed, with a cavity being formed in the body member between the inner end surfaces of the crusher and cap members only at such time as tablets are to be actually crushed. Further, the crusher member, after the tablets have been crushed, can be removed entirely, and a cup-like receptacle results, into which water can be poured directly upon the previously crushed tablets.

Having thus described this invention, what is claimed is:

1. A tablet crusher comprising a cylindrical body member constant in its inner diameter from end to end thereof and having opposing, open, internally threaded ends; a cap member threadingly disposed in one of said ends and closing the body member at said one end to form the body member into a cup-like receptacle, said cap member defining a bottom for the receptacle and having a flat inner wall formed with a center concavity extending through substantially the full diameter of said inner wall; and a cylindrical crusher member having a smooth surfaced side wall for part of its length disposed in wiping contact with the side wall of the body member, the crusher member being threaded for the rest of its length and having its threaded portion engaged in the other end of the body member for movement of the crusher member axially of and within the body member, said crusher member having an inner end surface formed with a center protuberance complementing said concavity.

2. A tablet crusher comprising a cylindrical, tubular body member constant in respect to the inner diameter thereof, said body member being formed open at its opposite ends and having internal threads at each of said ends; a disc-like cap member formed with external threads engageable with the threads of one end of the body member and including a circumferential shoulder engageable with one end edge of the body member to limit movement of the cap member inwardly of the body member, said cap member having an inner end surface provided with a center concavity extending through substantially the full diameter of said inner end surface; and a cylindrical crusher member formed to a length approximating that of the body member and having a constant-diameter side wall smooth-surfaced for a substantial part of its length and threaded for the rest of its length, the smooth-surfaced portion of the crusher member side wall being disposed in wiping contact with the side wall of the body member and the threaded portion of the crusher member side wall being engaged with the threads of the other end of the body member, said crusher member having an inner end surface formed with a central convexity complementing said concavity and having, at its outer end, a circumferential shoulder engageable with the other end edge of the body member to limit movement of the crusher member inwardly of the body member, said crusher and cap members having said inner end surfaces thereof substantially in engagement with one another in the body-member-engaging positions of their respective shoulders.

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