July 23, 1935. E. R. ROSSITER 2,008,798

MEANS FOR FACILITATING THE REMOVAL OF LIDS FROM THE BODIES OF TINS AND THE LIKE

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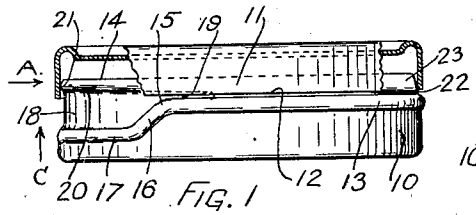


FIG. 1

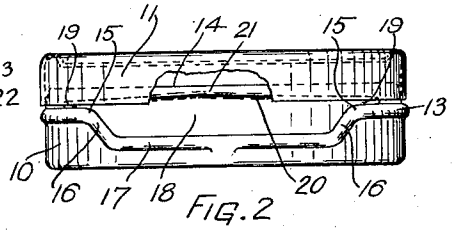


FIG. 2

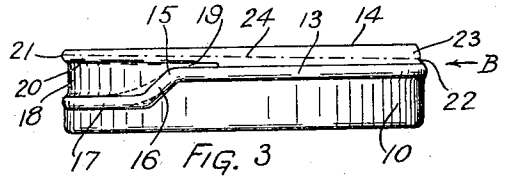


FIG. 3

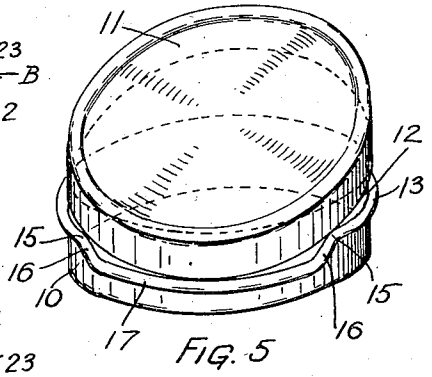


FIG. 5

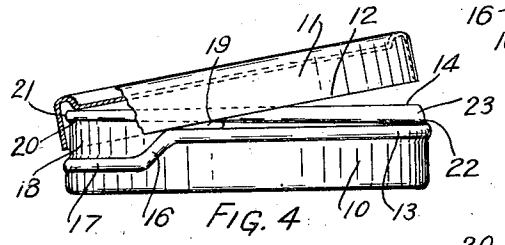


FIG. 4

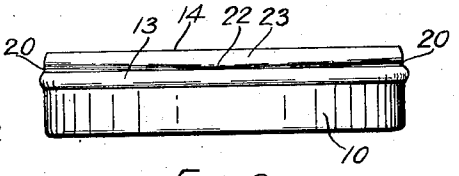


FIG. 6

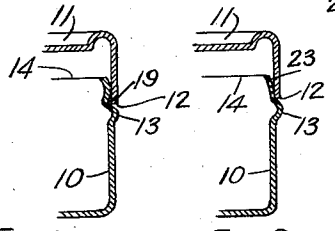


FIG. 8

FIG. 9

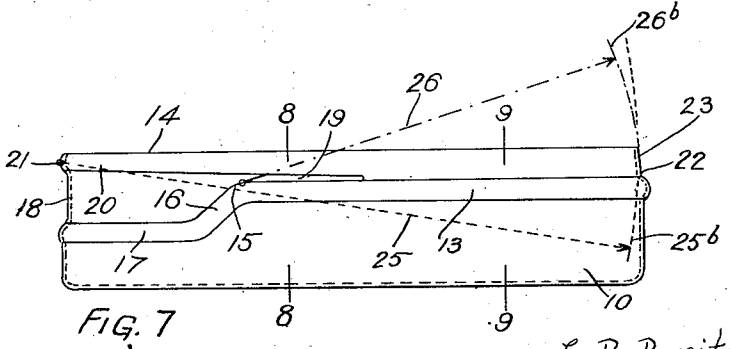


FIG. 7

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MEANS FOR FACILITATING THE REMOVAL OF LIDS FROM THE BODIES OF TINS AND THE LIKE

Edwin Ralph Rossiter, Sydney, New South Wales, Australia

Application May 19, 1934, Serial No. 726,593
In Australia May 19, 1933

1 Claim. (Cl. 220—43)

This invention relates to improved means for facilitating removal of lids from the bodies of tins and the like.

Many different means have been devised for achieving the before stated objective. Some such known means have necessitated the employment of a device additional to the body and lid of the tin or the like and/or intimately associated therewith.

The present invention does not necessitate the employment of any device additional to the body and lid of the tin or the like and its aim more particularly stated is to provide, in a receptacle which is of the known type having a removable lid or cover adapted upon pressure being applied to it to be released or opened by being tilted upon fulcra portions or rocker points, an improved arrangement of such fulcra portions or points which in association with a special inwardly curved or recessed formation of portion of the body of the receptacle brings about much improved results as compared with the before-mentioned known constructions.

The invention contemplates a novel and peculiar formation of the upper portion of the receptacle body and particularly of its shouldered or beaded portion and of its rim portion.

The said shouldered or beaded portion of the body of a tin of the ordinary common variety such as would be used in the marketing for example of boot polishes is formed during stamping operations in substantially the same plane and all around the said tin body and against and/or upon such shouldered or beaded portion the edge of the lid when in closed position is adapted to abut or rest.

According to the present invention, the said shouldered or beaded portion extends circumferentially of and in the same plane only some distance more than half around (as for example approximately two-thirds around) the tin body to form what will be herein termed a main beaded body portion, the extremities of which latter are preferably of rounded and/or inclined form and design and function as the fulcra or rocker points upon and about which the lid may be moved or tilted by manual pressure applied to that portion of it whose edge is not resting upon or in contiguity with the said main beaded body portion.

To facilitate the movement of the lid as last described that portion of the said body which lies between and adjacent to the said extremities or rocker points of the said main beaded portion is inwardly curved recessed or depressed in special manner, thus freely permitting the requisite slight movement inwardly of the relative portion of the lid flange and edge as when manual pressure is applied to the lid to depress one side or edge portion of it so that that lid portion diametrically opposite to the point of application of such manual pressure is raised completely away from the rim and rim edge of the body from which the whole lid construction may then be readily completely removed.

The rim portion of the body of the receptacle is of peculiar construction so formed as to on the one hand ensure a snug sealing or fitting therewith of the lid when in closed position upon it so that the said lid may not be accidentally raised or raised in any other manner than by initial tilting movement about the said fulcra or rocker points and so that materials contained may thus be adequately protected against deterioration either by evaporation of their volatile content or by ingress of air or atmospheric moisture, and on the other hand to permit the said lid when so required and by being first moved or tilted about the said fulcra or rocker points to be with a maximum of ease removed from the body.

To this last-mentioned end the said rim portion of the said body progressively varies slightly in depth and in form at different parts of it, being narrower at its part which is midway of the said rocker or fulcra points of the said main beaded body portion and being deeper at its part which is diametrically opposite to its last-mentioned part; and having an inclined circumferential lid-sealing protuberance which forms a very effective sealing line as will be seen and which to such end has a slight progressive downward inclination extending from its said first-mentioned part to its said last-mentioned diametrically opposite part, such inclined circumferential lid-sealing protuberance forming an important feature of the invention.

That part of the said rim portion adjacent the lowest part of its said inclined circumferential lid-sealing protuberance furthermore has its lip incurved in inwardly sloping fashion and this feature also is deemed to be of some importance.

Thin packing as of oil impregnated paper or of metal foil commonly known as "silver paper" may be used, in association with a construction according to the invention, in known manner for its known purposes.

In order that the invention may be clearly understood reference will now be made to the accompanying drawing wherein like reference nu-

merals refer to like parts throughout the several views which are as follows:—

Figure 1 is a side view of a construction according to the invention showing portions of the lid broken away to show the peculiar formation of the rim portion of the container body and the close fitting of the lid therewith.

Figure 2 is a view of Figure 1 taken in the direction of the arrow A showing the beaded formation of the container body which permits ready removal of the lid, portion of the latter broken away to show the lid-sealing protuberance of the rim portion of the said container body.

Figure 3 is a side view of the container body with the lid removed therefrom showing in chain dotted lines at once the inclined direction of the said circumferential lid-sealing protuberance of the rim portion of the container body and the effective sealing line for the lid when in its closed position. Curved dotted lines indicate an alternative beaded formation of the container body designed to more nearly conform with the shape and disposition of the lid edge when the latter is depressed.

Figure 4 is a similar view to Figure 1 showing the lid partly removed.

Figure 5 is a perspective view of Figure 4.

Figure 6 is a rear elevational view B of Figure 3.

Figure 7 is an enlarged view (in proportion) of Figure 3 and serves with the description which follows to illustrate more clearly constructional features which permit opening and closing operations of the lid in most effective manner.

Figure 8 is a sectional view of one side of the container taken on the line 8—8 of Figure 7.

Figure 9 is a sectional view of one side of the container taken on line 9—9 of Figure 7.

A construction according to the invention is comprised by a circular container body 10 which is formed with a main beaded body portion 13. The said main beaded body portion 13 is disposed parallelly with the edge of the body rim 14 and extends some distance more than half around as approximately two thirds of the distance around the circumference of the container body 10 its extremities forming fulcra or rocker points 15.

From each of the points 15 is a straight downward extension 16 approximately at an angle of forty-five degrees and a horizontal continuation to form the comparatively short beaded body portion 17 located near the lower portion of the container and below the said main beaded portion 13.

Alternatively in lieu of the straight angular extension 16 of the main beaded portion 13 may be a curved extension (see dotted lines in Figure 3).

To give greater prominence or definiteness to and to prevent cracking or fracturing during manufacture of, the fulcra or rocker points 15, inward depressions 19 of the body 10 extend above and some distance along from the said points.

That portion of the container body 10 located above its short horizontal beaded portion 17 is inwardly curved or recessed as at 18 so forming above the said horizontal beaded portion 17 a projecting portion of the body rim 14.

That part of the said projecting portion of the body rim 14 which part is midway between the fulcra or rocker points 15 constitutes the highest part 21 of an inclined circumferential lid-sealing protuberance 20.

The said circumferential lid-sealing protuberance 20 inclined slightly from its said highest part 21 downwardly towards the diametrically opposite part 22 of the body rim 14 where it reaches its lowest part.

In Figure 6 the said circumferential lid-sealing protuberance 20 is represented by shading lines which clearly indicate its inclination and/or varying depth.

From adjacent the said part 22 the said body rim 14 extends upwardly and inwardly slightly as indicated by the incurved sloping body rim portion 23 which functions as will be seen (coincidentally with the said inclined circumferential lid-sealing protuberance 20) to facilitate reception over the body rim 14 or removal therefrom of the lid 11 portion of whose edge 12 is adapted to abut or rest against the main beaded body portion 13 in known manner for such closures.

To fit the lid 11 closely and securely over the body rim 14 it is first applied over the highest part 21 of the inclined circumferential lid-sealing protuberance 20, its diametrically opposite part being then firmly pressed down over the part 22 of the incurved sloping body rim portion 23 to be levered or gently forced over the adjacent lowest part of the said inclined circumferential lid-sealing protuberance 20.

The position of the sealing line or close fit of the lid 11 around the body rim 14 is clearly shown by the chain dotted line 24 in Figure 3 wherein is also indicated the greater prominence of the highest part 21 of the inclined circumferential lid-sealing protuberance 20 relatively to and with its lowest part at 22 and relatively to and with the associated incurved sloping body portion 23.

It will be at once clear from a reference to the drawing herein and to the manner of fitting or applying the lid closure 11 over the body rim 14 and over its inclined circumferential lid-sealing protuberance 20, that any ordinary attempt made to remove the said lid 11 by any pull in the direction indicated by the arrow C (see Figure 1) must necessarily result in failure, since the lid 11 is (as against any normal force so applied) firmly bound around and about the said inclined circumferential lid-sealing protuberance 20 whose diameter is slightly greater than is the interior diameter of the said lid.

The said lid 11 may however be readily removed only by firmly depressing manually (or otherwise applying thereto equivalent pressure), that portion of the lid which is disposed immediately adjacent the said inward curve or recess 18 of the container body 10.

Such firm manual depression (or its equivalent) of the lid 11 causes the latter to at once tilt by its edge 12 upon the prominences which form the fulcra or rocker points 15, (see radius line 26 and arc 26b of Figure 7) the lid edge receding slightly into the inward curve or recess 18 and into the inward depressions 19 and the movement imparting to the lid a slight sliding action upon the said fulcra or rocker points 15 as that portion of the said lid which is diametrically opposite to its said portion upon which the said firm manual pressure is being applied is caused to rise away from engagement with the lowest part of the said inclined circumferential lid-sealing protuberance 20 and clear of the incurved sloping body rim portion 23.

Thus although a very close fit of the lid over the body is maintained at all material times, the said lid may be instantly and readily removed in very convenient and simple manner as de-

scribed but only in such manner and yet without necessitating the employment of any device additional to the body and lid which latter together form the complete container.

Within the scope of the invention as described and claimed herein, there may be employed modifications as in regards to shape and design of articles manufactured in accordance with the invention.

What I do claim is:—

A circular metal box comprising a container member and a lid member, said container member including a beaded portion extending partially and circumferentially about the container member, the ends of the circumferential portion of said beaded portion forming rocker points, said container member being provided with an indentation between said rocker points, an inclined sealing protuberance extending circumferentially about said container member and above said beaded portion, the highest point of said sealing protuberance being adjacent said indentation and the lowest point thereof being diametrically opposite said highest point and adjacent the midpoint of said beaded portion, the rim portion of said container member above said sealing protuberance being bent inwardly, the outer diameter of said sealing protuberance being greater than the inner diameter of said lid member whereby said container member may be effectively sealed by said lid member, said lid member being easily removable by slight pressure on the lid adjacent said indentation.

EDWIN RALPH ROSSITER.