Nov. 29, 1938. A. FRIEDINGER 2,138,061

SHEET METAL CONTAINER

Filed Oct. 29, 1934

Fig. 1

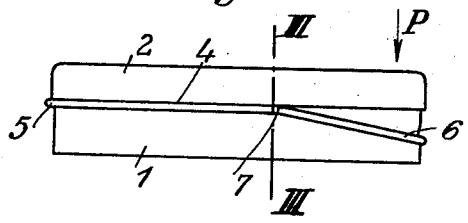


Fig. 2

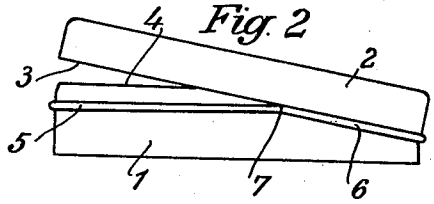


Fig. 3

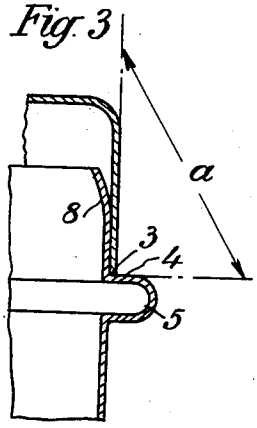


Fig. 4

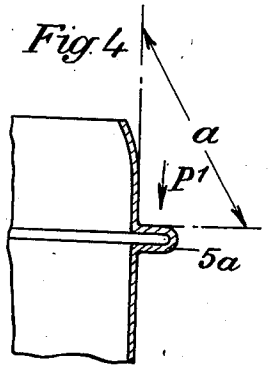


Fig. 5

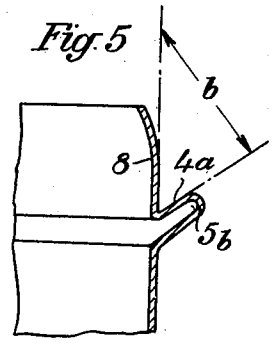


Fig. 6

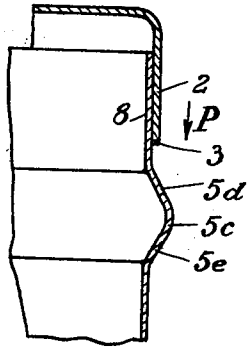
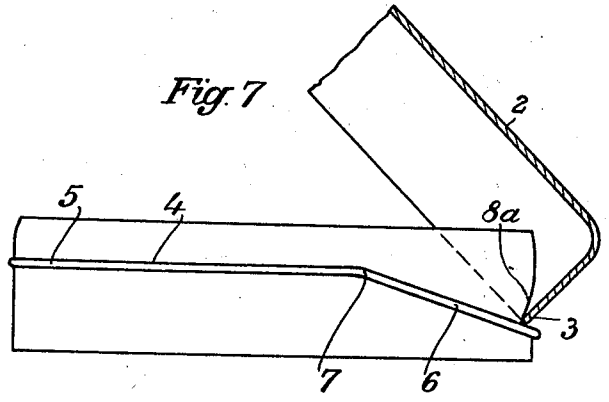


Fig. 7



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SHEET METAL CONTAINER

Albert Friedinger, Furstenfeldbruck, Germany

Application October 29, 1934, Serial No. 750,467
In Germany November 2, 1933

1 Claim. (Cl. 220—43)

This invention relates to a box or container composed of sheet metal and furnished with a tilting lid, and for the sake of brevity will be referred to in the following as a "tin", this being the usual designation applied to boxes or containers of this character.

At a certain distance from the upper edge the tin possesses a ridge or ledge, a portion of which is disposed angularly, that is to say—the ridge or ledge is not situated in a horizontal plane about the edge of the tin as usually applies in connection with tins in which the lid simply fits over the edge, but is disposed inclinedly downwards over a part of the periphery, so that in this manner an angle or bend is formed. The lid is of the usual kind, and rests with its lower edge against the horizontal portion of the ridge or ledge. If, however, pressure is exerted on the part of the lid which is not supported by the ridge, i. e., at the point where the ridge is disposed angularly downwards, the lid is caused to tilt at this point and the box is opened.

Now the known tins of this kind are accompanied by the disadvantage that the tilting of the lid in relation to the tin is in no way reliable, and large numbers of the tins of any particular consignment will not open at all, or only with extreme difficulty, in the manner intended.

In this connection it has been found that an important factor associated with a proper opening action resides in the particular form accorded to the ridge or ledge.

In the tins hitherto known the ridge or ledge has been formed in the usual fashion, passing over into the wall of the tin with a pronounced curve. In ordinary tins having a perfectly horizontal peripheral ledge or ridge the curvature of the latter is unimportant. As applied to tilting lids, however, this curvature represents a disadvantage insofar as the ledge or ridge does not offer a proper support to the edge of the lid at the fulcra. As a matter of fact the rounded section between the ledge proper and the wall of the lid results in the fact that upon the application of pressure for opening purposes the edge of the lid, which is composed of thin sheet metal, attempts to move over the ridge, the tilting action, and accordingly the opening of the tin, thus being prevented.

According to the invention this disadvantage is eliminated by the fact that the portion of the ridge branching off from the wall of the tin is disposed at the fulcra substantially at right angles to the wall. In this manner the edge of the lid is supported vertically to the ridge, and the tilting action when opening the tin proceeds without obstruction. The acute angle formed between the upper edge of the ridge and the tin possesses at the part of the tin where the ridge is disposed downwards, and more particularly at the lowest point, the additional advantage that the lid is unable to slip when opening the tin, as readily occurs in the known embodiments with consequent injury to the fingers. It is also of particular advantage to make the wall of the tin oblique or spherical in form immediately above the inclined portion of the ledge or ridge.

It is also desirable to draw in the extreme upper edge of the tin in inclined or spherical form to prevent the lid from jamming when the tin is opened.

Between this restricted edge portion and the restricted portion immediately above the downwardly disposed ridge the wall of the tin is cylindrical. In this manner the lid will fit on the tin more tightly, and a certain necessary resistance will also oppose the opening of the tin. The drawn-in portion immediately above the downwardly disposed section of the ridge moreover has the object of not only causing the lid to perform a snapping movement when the tin is opened, but also at the same time of lifting the lid to such extent away from the tin that the contents of the tin may be readily removed.

The invention is illustrated by way of example in the accompanying drawing, in which—

Fig. 1 shows a tin, with tilting lid, in the closed condition.

Fig. 2 shows the tin according to Fig. 1 when the same is open.

Fig. 3 is a section along the line III—III in Fig. 1 on enlarged scale.

Fig. 4 is a sectional view illustrating an additional form of embodiment of the ridge or ledge.

Fig. 5 is a sectional view showing a further embodiment of the ridge.

Fig. 6 is a section through a part of a known tin with ridge and fit-on lid.

Fig. 7 shows on enlarged scale a specific feature of the invention.

In the drawing, 1 is the tin furnished with the lid 2. When the tin is closed the edge 3 of the lid is supported by the upper portion of a ridge or ledge 5 on the tin 1.

This ridge over a part of the periphery of the tin is disposed inclinedly downwards as at 6, so that there is produced an angular bend 7. By the application of pressure to the lid in the direction of the arrow P at the point of location of the downwardly sloped ridge portion 6, the lid

is caused to tilt about the bend or fulcra 7 and assume the position shown in Fig. 2, the tin being opened.

According now to the invention, the upper edge 4 of the ridge 5, preferably at the point of the bend 7, is situated substantially at right angles to the wall 8 of the tin. In this manner there is formed the angle *a*, and the edge of the lid, as shown in Fig. 3, is supported vertically against the portion 4. When pressure is applied to the lid—with reference to Fig. 1—in the direction of the arrow P, the lid is tilted about the fulcra 7 and the tin opened.

The ridge or ledge may also be constructed in the manner illustrated in Fig. 4, in which the ridge 5*a* is compressed. The primary feature also in this form of embodiment consists in the fact that a pressure exerted on the upper edge of the ridge in the direction of the arrow P^1 acts substantially vertically to this edge.

An additional form of embodiment is illustrated in Fig. 5. In this case the upper edge 4*a* of the ridge 5*b* assumes an acute angle *b* to the wall 8 of the tin.

The essence of the invention will be particularly apparent from Fig. 6, which shows the known form of tin with ordinary ridge or ledge 5c. The parts 5*d* and 5*e* of the ridge pass over into the wall 8 of the tin in inclined or curved fashion.

When the lid 2 in Fig. 6 is pressed downwards in the direction of the arrow P as in Fig. 1, there is no tilting of the lid about the bend 7, and the lid will merely move downwards along the curved or inclined face 5*d* of the ridge 5c, i. e., the edge 3 of the lid will be expanded at this point, as the same is composed of thin sheet metal, and there will be no support for the tilting action of the lid as in the forms of embodiment described in the above, so that a proper tilting movement is impossible.

Fig. 7 shows that the upper edge of the wall of the tin is drawn in or restricted in oblique or spherical fashion above the downwardly disposed ridge portion 6 as at 8*a*. Between this portion and the extreme edge of the wall, which is also confined in inclined or spherical fashion, the wall has the normal cylindrical form, resulting in the advantage already described.

It is of course obvious that numerous modifications are quite possible within the meaning of the above description and the annexed claim without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent is:

In a sheet metal container of the character described, a cylindrical container body having a bottom and an upstanding peripheral wall, said wall having a bead extending outwardly therefrom and spaced below the top of the wall, said bead extending parallel to the top of the wall for a distance greater than one-half the circumference of the body and then extending downwardly for the remainder of the circumference of the body, the junctions of the parallel and downwardly extending portions of the beads forming fulcra, the wall above the downwardly extending portion of the bead being curved vertically substantially concentric to a line passing through said fulcra and the opposite portion of the wall being vertically curved inward from the bead upwardly, the bead at the fulcra having its upper surface disposed at right angles to the wall and forming a sharp angle therewith, and a lid having a depending wall portion fitted on the body to have a portion of its lower edge rest on the first mentioned portion of the bead, the wall portion of the cap being perpendicularly disposed with reference to the upper surface of the bead at the fulcra, whereby the lower edge of the lid is spaced normally from the downwardly inclined portion of the bead and whereby downward pressure on the lid at a point above the downwardly inclined portion will tilt the lid on said fulcra without spreading the portions of the wall resting on the fulcra laterally.

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