

May 21, 1935.

J. M. ABRAMS

2,002,072

CAN

Filed Oct. 22, 1932

2 Sheets-Sheet 1

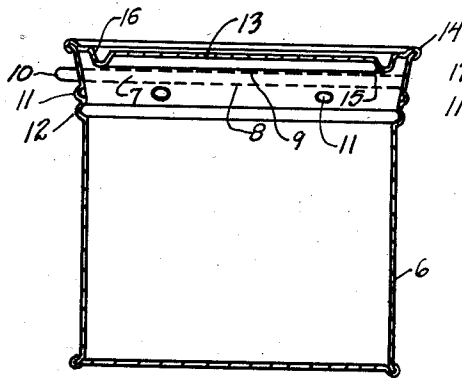


Fig. 1

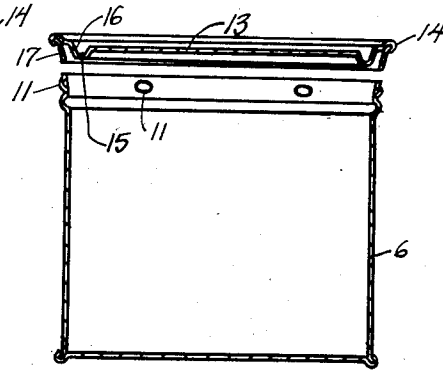


Fig. 2

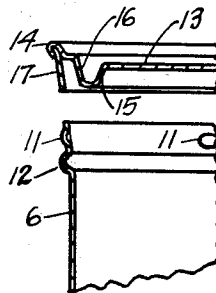


Fig. 3

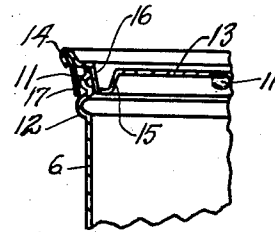


Fig. 4

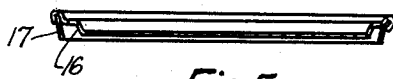


Fig. 5

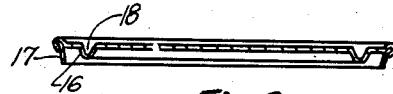


Fig. 6

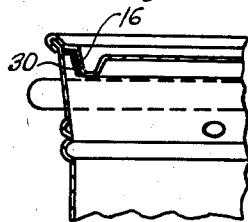


Fig. 1A

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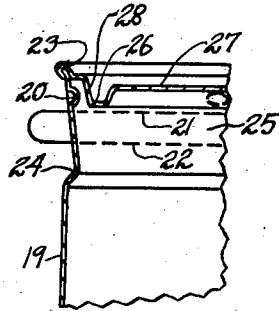


Fig. 7

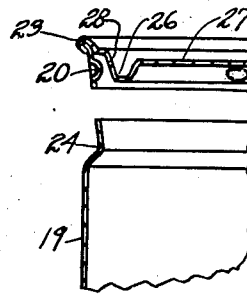


Fig. 8

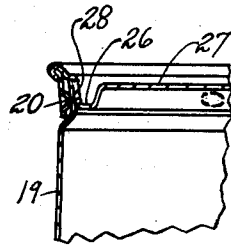


Fig. 9

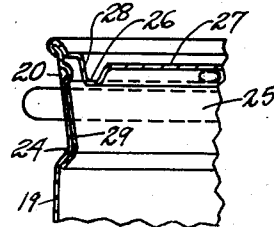


Fig. 10

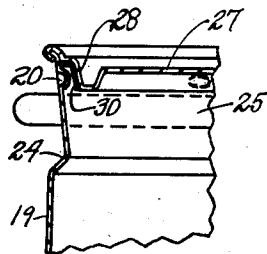


Fig. 11

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Application October 22, 1932, Serial No. 639,010

14 Claims. (Cl. 220—54)

This application is a continuation in part of my application Serial #614,310, filed May 31, 1932, for Cans, the subject matter thereof being embodied in this application.

This invention relates to new and useful improvements in containers or cans and more particularly to an hermetically closed can provided with a rip strip for easy opening.

An object of the invention is to provide a can having score lines formed in the body portion adjacent the top end, providing a rip strip whereby the top end may be severed from the body portion, said end then being adapted to serve as a reclosure cover for the can.

A further object of the invention is the provision of spaced protuberances on the upper part of the sidewall of the can, by means of which frictional engagement is effected between the part of the sidewall remaining attached to the top after the rip strip is removed and the upper portion of the can sidewall. In one form, the protuberances are provided on the upper portion of the sidewall of the can body below the score lines and the cover is adapted to be sprung over said protuberances upon reclosure of the can. In another form, the protuberances are provided above the score lines and form part of the cover when the rip strip is removed.

A still further object is to provide the reclosure cover with a substantially vertical annular wall, adapted to come in behind the upper portion of the can body when the rip strip is removed, said wall backing up said upper portion of the can body against inward pressure.

A feature of the can is the provision of a temporary paper collar or collar of other suitable material, said collar extending behind the score lines, so that when the rip strip is torn off, the contents of the can will be prevented from overflowing. A gasket is also provided outside the annular wall of the top to ensure a tight reclosure.

In my preferred form the diameter of the top of the can body equals that of the lower portion of said body.

Other objects and advantages will become apparent upon a further study of the description and drawings, in which:—

Fig. 1 is a cross section of one type of my can before being opened, said type being one in which the protuberances are below the score lines.

Fig. 1A is an enlarged section of an upper corner of the can, of the type of Fig. 1, but with the addition of a gasket outside the annular wall.

Fig. 2 is a cross section of my can of the type of Fig. 1, with the rip strip torn off.

Fig. 3 is an enlarged section of an upper corner of the can, of the type of Fig. 1, with the reclosure separated from the can by the depth of the rip strip.

Fig. 4 is an enlarged section of an upper corner of the can, of the type of Fig. 1, with the reclosure cover shown reclosing the can.

Fig. 5 is a modified form of the reclosure cover of the can, in which the depressed portion comprises substantially the entire top wall of the can.

Fig. 6 shows another modified form of reclosure cover.

Fig. 7 is an enlarged section of an upper corner of the can of the type in which the protuberances are above the score line, and the diameter of the upper portion of the can body is equal that of the lower portion.

Fig. 8 is an enlarged section of an upper corner of the can, of the type of Fig. 7, with the reclosure separated from the can by the depth of the rip strip.

Fig. 9 is an enlarged section of an upper corner of the can, of the type of Fig. 7, with the reclosure cover shown reclosing the can.

Fig. 10 is an enlarged section of an upper corner of the can, of the type of Fig. 7, but with the addition of a temporary inside collar, and

Fig. 11 is an enlarged section of an upper corner of the can, of the type of Fig. 7, but with the addition of a gasket outside the annular wall.

The can includes a body portion 6. An encircling rip strip 7 is formed in the body by means of parallel score lines 8 and 9. A tongue 10 is provided at one end of rip strip 7. Protuberances 11 are spaced in a row about the side of the can just below score line 8. A bead 12 is provided in body portion 6 just below the row of protuberances 11 for stiffening the upper part of the body portion. Top wall 13 is fastened to the sidewall of the can by a seam 14. From the top of bead 12 to seam 14, the sidewall of the can inclines outwardly so that when rip strip 7 is torn off, the lower edge of the top at what was score line 9 has a diameter sufficiently great to pass over the upper edge of the body portion at what was score line 8. The diameter of score line 9, however, is less than the diameter of a cylinder which would circumscribe the protuberances. The cover has a downwardly extending annular bead 15 formed in top wall 13. The outer and upwardly extending wall 16 of bead 15 is adapted to come inside the body portion 6 above bead 12 and just behind protuberances 11. Top wall 13 preferably comes below or is recessed below seam 14.

When the can is reclosed by the cover after severing rip strip 7, sidewall 17 of the cover is sprung over protuberances 11 and has a hooking action over them. At the same time substantially vertical annular wall 16 comes behind them and backs them up against being pushed inward by the pressure of wall 17 of the cover. Wall 17 is the portion of the side of the can remaining after the removal of rip strip 7.

In this way a double friction grip is obtained by the can on the body portion, one grip being between wall 17 and protuberances 11, and the other grip being between wall 16 and the metal around the back of and between said protuberances. The friction grip between wall 17 and protuberances 11 is reinforced by the hooking action of said latter wall over said protuberances. Where a gasket as at 30, Fig. 1A is used against wall 16, as will be explained later, the friction grip with wall 16 takes place through said gasket. Bead 12 stiffens the can just below the protuberances and at the same time protects the hand from the bottom edge of wall 17 when the can is reclosed.

The modified form of the cover shown in Fig. 5, has no bead 15, but instead substantially the entire top wall is depressed so as to give rise to an annular wall 16, extending in an up and down direction.

Fig. 6 shows a substantially flush top wall having an annular depression 18 formed therein, giving rise to the substantially vertical wall 16.

In Figs. 7, 8 and 9 is shown a modified form of can. Here the can body 19 has a row of spaced protuberances 20 in its sidewall, located above score lines 21 and 22 of rip strip 25. Protuberances 20 extend in the opposite direction from protuberances 11 of Fig. 1. The outside diameter of the can body, at the top edge 23, does not exceed that of the lower portion of the can body, that is the portion of the can body below neck 24. The upper portion of the can sidewall slopes outwardly between the smallest diameter at neck 24 to the top edge 23. The slope is such, that when rip strip 25 is torn off, the lower edge of the top at what was score line 21 has a diameter sufficiently great to pass over the upper edge of the body portion at what was score line 22. The diameter of score line 22, however, is greater than the diameter of a cylinder which would be inscribed within protuberances 20. The cover has a downwardly extending annular bead 26 formed in top wall 27. The outer and upwardly extending annular wall 28, of bead 26, is adapted to come inside the sidewall of can body 19 above neck 24. Wall 28 extends down far enough below edge 23 to come opposite protuberances 20. Similar variations can be made in the cover of Fig. 7 as those shown in Figs. 5 and 6.

When the can is reclosed by the cover after severing rip strip 25, protuberances 20 on the portion of the sidewall remaining attached to the cover are sprung over the portion of the sidewall of the can body remaining above neck 24, said latter portion of the sidewall also being sprung and having a hooking action over protuberances 20. At the same time, substantially vertical wall 28 comes behind the portion of the sidewall remaining above neck 24 and backs it up against the inward pressure of protuberances 20. A double friction grip is obtained by the cover on the body portion, one grip being between the protuberances and the sidewall of the body portion above neck 24, and the other grip being between said protuberances and wall 28. The latter fric-

tion grip is reinforced by the hooking action over protuberances 28 as noted above, especially when a gasket 30, Fig. 11, is used around the outside of wall 28. Where gasket 30 is used, the friction grip with wall 28 takes place through said gasket.

The portion of the sidewall, extending from neck 24 down to the full diameter of the can, acts to stiffen this portion, and to protect the hand from the lower edge of the sidewall of the cover.

In order to prevent the spilling of the contents of the can when the rip strip 25 is torn off, I prefer to provide (Fig. 10) behind the rip strip a temporary collar 29 of suitable material. The lower portion of the collar is turned outwardly and downwardly from neck 24 to the full diameter of the can below. A temporary collar, similar to the one just described, can be used for the type of can of Fig. 1, as well. When sufficient of the contents of the can have been used, collar 29 can be removed.

For additional tightness of reclosure, I prefer to use a gasket 30 (Fig. 11) located around the outside of annular wall 28. When rip strip 25 is removed and the can reclosed, gasket 30 comes inside of the portion of the can sidewall remaining above neck 24. In a similar manner, a gasket 30 can be used around the annular wall 16 of Figs. 1 to 6 inclusive.

I claim:—

1. A can comprising a body portion having score lines beneath the top in its sidewall defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the sidewall located below the score lines, the outer face of said annular wall being set back from the outer edge of the top end to be substantially on line with the back of said protuberances, said sidewall flaring outwardly from the lower to the upper score line so that the portion of the sidewall remaining on the top end after the rip strip is removed is of suitable diameter to engage frictionally for reclosure the outside of said protuberances, said annular wall being of sufficient depth to reach the protuberances when the can is reclosed.

2. A can comprising a body portion having score lines on its side located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the side of the can located below the score lines, the outer diameter of said annular wall being substantially equal to the inside diameter of the can at the back of the protuberances, the side of the can flaring outwardly from the lower to the upper score line so that the inside diameter of the can at the upper score line is great enough to pass over the outside of the protuberances, the portion of the can above said latter score line being of suitable inside diameter to grip the protuberances and of sufficient depth to extend down below same upon reclosure.

3. A can comprising a body portion having score lines on its side located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, a row of spaced protuberances upon the side of the can located below the score lines, the outside diameter of said wall being substantially equal to the inside of the can at the back of the protuberances, and an encircling bead upon the side of the can below said protuberances for stiffening the can, the side of the can flaring outwardly from the lower to the upper score line so that the

portion of the side of the can remaining attached to the top end after the rip strip is removed is of suitable diameter to engage frictionally the outside of said protuberances for reclosure of the can, said annular wall backing up the protuberances when the can is reclosed.

4. A can comprising a body portion having score lines in its sidewall near the top, defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the upper portion of the sidewall, the outer face of said annular wall, being set back from the outer edge of the top end, to come behind and back up the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said sidewall flaring outwardly from the lower to the upper score line so that the part of the sidewall remaining attached to the top end, after the rip strip is removed, is of suitable diameter to come outside of the upper portion of the can sidewall and to effect frictional engagement by means of said protuberances between the part of the sidewall remaining attached to the top and said upper portion of the can sidewall.

5. A can comprising a body portion having score lines on its sidewall located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the upper portion of the sidewall, said annular wall being set back from the outer edge of the top end, to back up the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said sidewall flaring outwardly from the lower to the upper score line to enable reclosure, said protuberances being opposite, and causing pressure on the annular wall when the can is reclosed.

6. A can as claimed in claim 5, having the portion of the sidewall remaining attached to the top end, after the rip strip is removed, coming outside of the top portion of the can sidewall remaining immediately below the lower score line, the can body being suitably shaped for stiffness below said latter portion.

7. A can comprising a body portion having score lines on its sidewall located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the upper portion of the sidewall, said annular wall being set back from the outer edge of the top end to back up the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said protuberances being opposite and causing pressure on the annular wall when the can is reclosed, said sidewall having a necked in portion below the score lines and sloping upwardly and outwardly from the necked in portion to the top of the sidewall, said sidewall at the top being of an outside diameter not greater than the outside diameter of the sidewall below the necked in portion.

8. A can comprising a body portion having score lines beneath the top in its sidewall defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the sidewall located above the score lines, the outer face of said annular wall being set back from the outer edge of the top end to be on line with the back of the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said sidewall flaring outwardly from the

lower to the upper score line so that the outer face of said upper portion of the can sidewall remaining, is of suitable diameter to come within and frictionally engage the protuberances upon reclosure.

9. A can comprising a body portion having score lines on its side located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the side of the can located above the score lines, the outer diameter of said annular wall being suitable for said annular wall to be on line with the back of the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said annular wall extending down a sufficient distance from the top to be on line with the protuberances, the side of the can flaring outwardly from the lower to the upper score line so that the outer face of said upper portion of the can sidewall is of suitable diameter to come within and frictionally engage the protuberances, the inner face of said upper portion, at the same time engaging the outer face of said annular wall when the can is reclosed.

10. A can comprising a body portion having score lines on its side located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, and a row of spaced protuberances upon the side of the can located above the score lines, the side of the can flaring outwardly from the lower to the upper score line so that the outside diameter of the can at the lower score line is greater than that of a cylinder inscribing the protuberances but less than the inside diameter of the can at the upper score line, said annular wall coming inside and backing up the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed.

11. A can comprising a body portion having score lines on its sidewall located near the top defining a rip strip, a top end having an annular wall extending in an up and down direction, a gasket encircling said annular wall, and a row of spaced protuberances upon the upper portion of the sidewall, said annular wall with said gasket being set back from the outer edge of the top end to back up the upper portion of the can sidewall remaining when the rip strip is removed and the can is reclosed, said sidewall flaring outwardly from the lower to the upper score line to permit reclosure, said protuberances being opposite and causing pressure on the annular wall and gasket when the can is reclosed.

12. A can comprising a body portion having an upper and a lower score line on its sidewall defining a rip strip, said score lines being located a sufficient distance below the top to leave a depth of wall attached to the top end when the rip strip is removed to provide a reclosure cap for the can, and a collar inside the can extending opposite the rip strip and below, said collar, when the rip strip is removed being readily separable from the reclosure cap and readily removable from the can body below the lower score line, said cap fitting on the can body below the lower score line when the can is reclosed and the collar is removed.

13. A can as claimed in claim 12, in which the upper portion of the sidewall of the can for a distance above and below the rip strip is tapered with the smallest diameter of the taper at the bottom of said portion, the collar being tapered in con-

formity, whereby it is held in position in the can before it is removed.

14. A can as claimed in claim 12, in which the upper portion of the sidewall of the can for a distance above and below the rip strip is tapered with the smallest diameter of the taper at the

bottom of said portion, said can sidewall expanding in diameter below the portion of smallest diameter, said collar being formed in conformity with the tapered portion of the can sidewall and the expanding portion below.

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