July 23, 1957 C. T. WALTER ET AL 2,800,224

CAN PACKAGING WRAPPER AND CAN PACKAGE FORMED THEREFROM

Filed May 18, 1953 2 Sheets-Sheet 1

FIG. 1

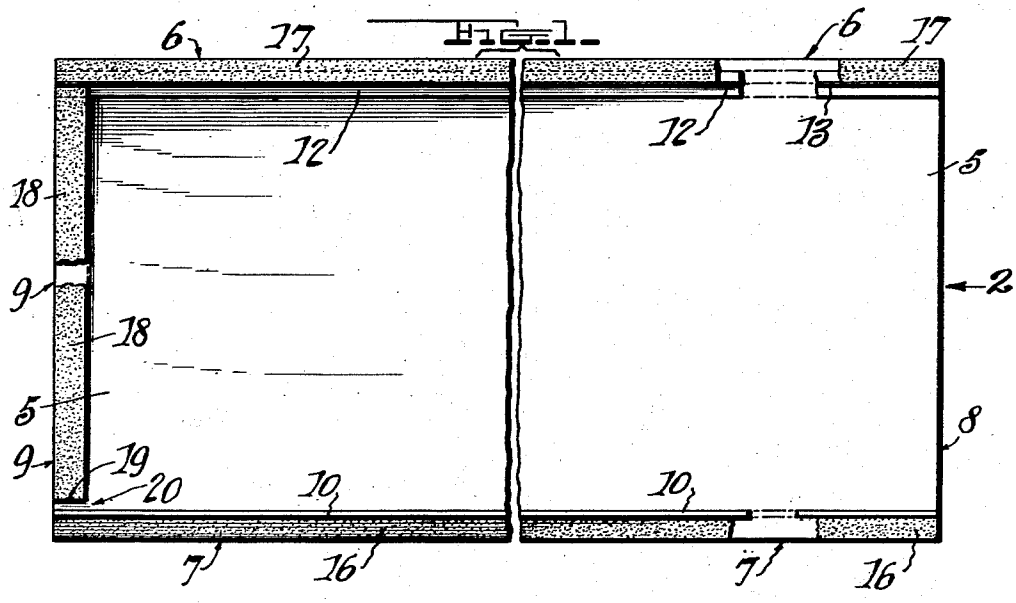


FIG. 2

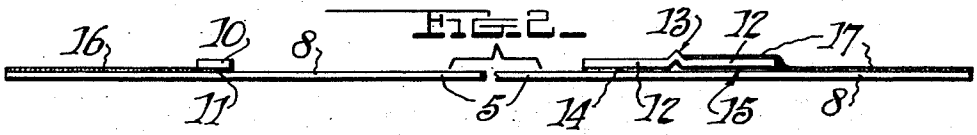


FIG. 4

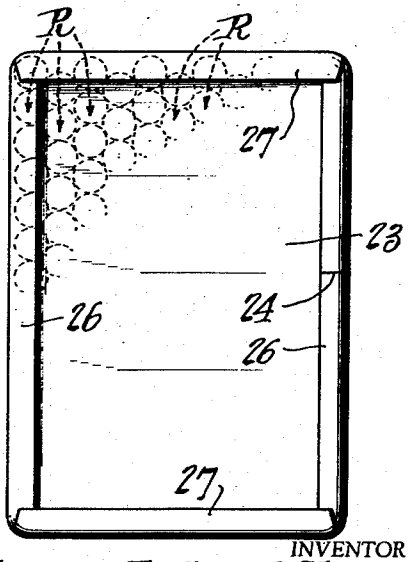
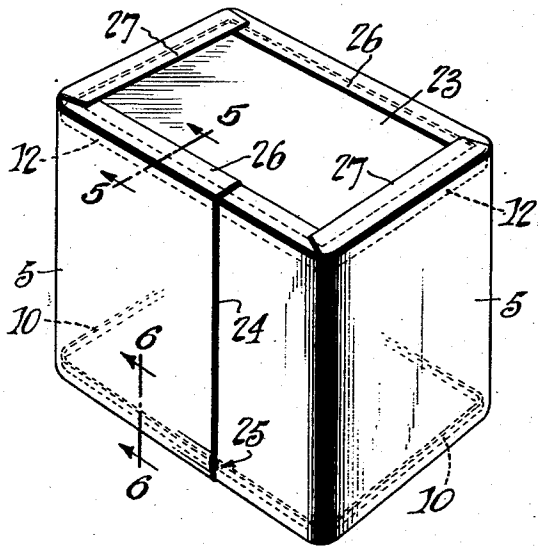


FIG. 3



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FIG. 5

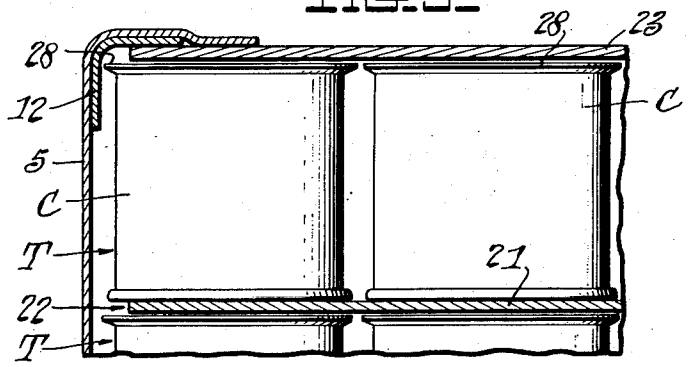


FIG. 6

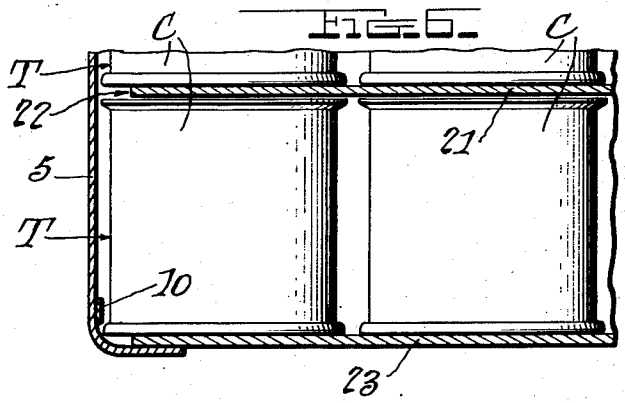


FIG. 7

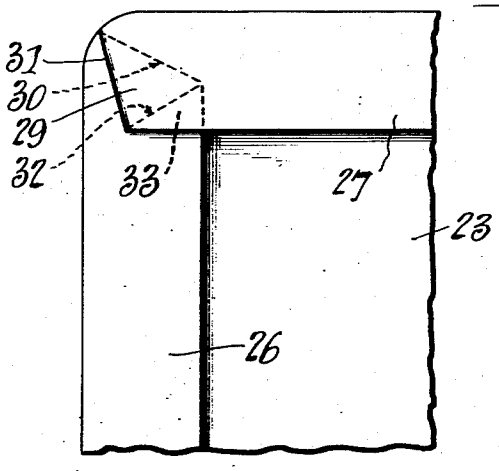
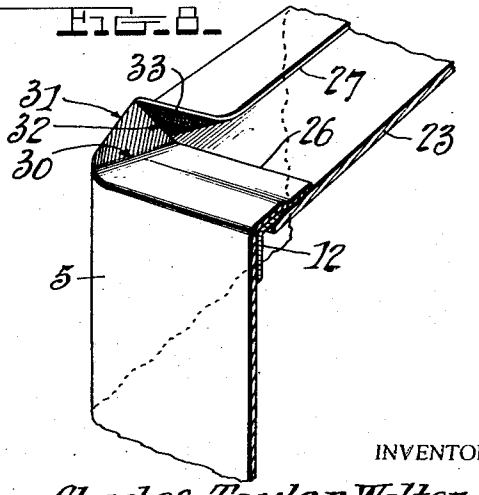


FIG. 8



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2,800,224

CAN PACKAGING WRAPPER AND CAN PACKAGE FORMED THEREFROM

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Application May 18, 1953, Serial No. 355,610

10 Claims. (Cl. 206—65)

The invention relates generally to the art of manufacturing and handling cans and primarily seeks to provide a novel form of wrapper which may be employed in providing a novel form of can package which is compact and sturdy and subject to being handled and stored with great facility and in a very sanitary manner.

It is known that cans can be handled and stored with great facility, and maintained in a sanitary condition, if they are enclosed in bags or wrappers which not only hold the cans in an easily handled unit, but also enclose them against ingress of dust and other foreign matter. A purpose of the present invention is to provide a novel form of wrapper which can be applied easily and rapidly about an arranged package complement of cans to seal them against ingress of foreign matter in a dustproof package, and a novel package thus formed which can be handled with great facility and which can be opened with great facility when it is desired to expose the cans for use.

An object of the invention is to provide a can package of the character stated wherein there is included a rip strip which can be torn out easily and rapidly to open the package and which is disposed approximately at one end of the package so that when it is torn out it will permit telescoping of the whole of the encasing envelope off the arranged cans in the direction of the axes of the cans, leaving only the end closure beneath the exposed cans.

Another object of the invention is to provide a can package of the character stated wherein the rip strip terminates at the side seam of the package and is free of adhesion to the underlying packaging stock so that a person seeking to open the package by ripping out the rip strip can easily insert a finger under the free terminus of the strip and grasp the same preparatory to said ripping out of the strip.

Another object of the invention is to provide a can package of the character stated wherein there is included a reinforcing strip disposed at an end of the package where it is folded over can flanges presented at said end in a manner for assuring against tearing of said can flanges through the wall of the package.

Another object of the invention is to provide a can package of the character stated wherein the reinforcing strip is adhered to the wall of the package throughout a portion only of the width of the strip, the non-adhered portion of the strip width being folded over the can flanges and free to move relative to the wrapper wall portions overlying the same at the end of the package.

Another object of the invention is to provide a package of the character stated wherein the rip strip is provided at one end extremity of the package and the reinforcing strip is provided at the other end extremity of the package.

Another object of the invention is to provide a can package of the character stated wherein there is included an end closure sheet at each end of the package, end margin portions at two opposed sides at one end of the package being folded over and adhered to the end closure sheet at the particular end, and the remaining opposed end margin portions at said end being folded over and adhered to

said end closure sheet and also to the first mentioned folded over end margin portions.

Another object of the invention is to provide a can package of the character stated wherein the overfolding of the end margin portions at each end thereof provides at each corner of a given end a triple thickness triangular corner overfold defined by two diverging fold lines and the edge extremity connecting said fold lines, and there being included inwardly of said triple thickness portion a triangular single thickness of the overfolded end margin portion adhered to the underlying end margin portion and forming a dust excluding seal over said connecting edge extremity.

Another object of the invention is to provide a can packaging wrapper comprising an elongated rectangle of paper having along each long side marginal edge a glue stripe, said stripes being traversed at one end by a glue stripe extending along the marginal edge at said one end.

Another object of the invention is to provide a wrapper of the character stated including a rip strip adhered thereto and extending full length of the wrapper adjacent to and paralleling one of the side stripes.

Another object of the invention is to provide a wrapper of the character stated wherein there is provided an unglued void in the traversing stripe through which the rip strip extends.

Another object of the invention is to provide a wrapper of the character stated including a reinforcing strip adhered to and extending full length of the wrapper parallel one of the side stripes in position for folding over and protecting can flanges in a finished package.

Another object of the invention is to provide a wrapper including a reinforcing strip of the character stated which is adhered to the wrapper throughout a portion only of the width of the strip so that the remainder of the strip width will be free to move relative to the wrapper during the folding of the strip over can flanges in the making up of a package.

Another object of the invention is to provide a wrapper including a reinforcing strip of the character stated and wherein one of the side stripes of glue extends in part over the strip and in part over the wrapper beside the strip.

With the above and other objects in view that will appear hereinafter, the nature of the invention will be more fully understood by following the detailed description, the appended claims, and the several views illustrated in the accompanying drawings, in which:

Figure 1 is a plan view illustrating a wrapper embodying the invention, parts being broken away.

Figure 2 is an end edge view of the wrapper shown in Figure 1, looking in the direction of the arrow 2, and parts being broken away.

Figure 3 is a perspective view illustrating a can package embodying the invention and the wrapper of Figures 1 and 2.

Figure 4 is an end view of the package shown in Figure 3.

Figure 5 is an enlarged fragmentary corner section showing the relation of the reinforcing strip and the flanges of cans at the top of the package.

Figure 6 is an enlarged fragmentary corner section showing the placement of the rip strip at the bottom of the package.

Figure 7 is an enlarged fragmentary end view showing one corner seal at one end of the package.

Figure 8 is a fragmentary perspective view showing the corner seal of Figure 7 before it is finally sealed down.

In the example of embodiment of the invention herein disclosed the wrapper in which the cans are packaged is shown in detail in Figures 1 and 2, and the completed can package, and details thereof, are shown in Figures 3 through 8. It is to be understood that the wrapper

can be prepared hy hand, or in any suitable machine structure, and a disclosure of one form of machine in which such wrappers can be prepared is to be found in the copending application for United States Letters Patent Serial Number 355,705, filed by Heinrich Ernst Haase on May 18, 1953, and entitled Wrapper Cutting, Glueing and Feeding Apparatus.

The improved wrapper comprises an elongated rectangular body **5** of paper of suitable weight, such as kraft paper having two long side edges **6** and **7**, and two short end edges **8** and **9**. Spaced inwardly from and paralleling the side edge **7** is a narrow rip strip **10**, preferably formed of fiber in tape form. The rip strip extends the full length of the wrapper, as will be apparent by reference to Figure 1, and is adhesively attached to the wrapper throughout the full length thereof in the manner indicated at **11** in Figure 2.

Spaced inwardly from and paralleling the other side edge **6** of the wrapper is a relatively wide reinforcing strip **12** of suitable readily bendable or foldable material such as kraft paper. This reinforcing strip preferably, but not necessarily, is equipped with a fold facilitating score line **13** extending along its central portion throughout the full length thereof. The inner longitudinal half only of the strip **12** is adhesively attached to the wrapper throughout the full length thereof in the manner indicated at **14** in Figure 2. In this manner the other longitudinal half of the reinforcing strip **12** is left free as indicated at **15** in Figure 2 so that it can move freely relative to the portion of the main body of the wrapper which it opposes. The purpose of the reinforcing strip and the particular formation and manner of attaching the same to the wrapper body, and also the purpose of the rip strip **10** will become apparent as this description progresses.

A longitudinal glue stripe **16** is applied full length along the side margin between the rip strip **10** and the adjacent side edge **7**, as shown in Figures 1 and 2, and a longitudinal glue stripe **17** is applied full length along the other side margin over the space between the side edge **6** and the adjacent reinforcing strip **12** and also over that portion of the strip **12** lying outwardly of the score line **13**, or in other words that portion of the strip **12** which is not adhered to the underlying wrapper body, as shown in said Figures 1 and 2.

A transverse glue stripe also is provided on the wrapper at one end only, this stripe **18** being applied on the same face of the wrapper as are the stripes **16** and **17** and along the portion paralleling the end edge **9**. This stripe **18** is terminated short of the side stripe **16** so as to leave a bare space **20** through which the rip strip **10** extends. In this manner no glue striping is applied over the rip strip **10** where it extends to the edge **9** of the wrapper, and hence in the making up of the package the end extremity of the rip strip **10** will be free and not sealed down in the closure seam formed by sealing down of the transverse stripe **18** in the manner to be described hereinafter.

In arranging the cans C for packaging they preferably are made up in multiple tiers T separated by tier sheets **21** with each tier comprising multiple rows R of cans nested and staggered as shown in dotted lines in Figure 4 to form a compact package and with long rows placed at each of the extremities as viewed at the right and left in said figure so as to position cans directly in each corner. It will be apparent by reference to Figures 5 and 6 that the tier sheets **21** are centered with respect to the cross section of the package and are dimensioned so that their marginal edges will be spaced inwardly from the encasing wrapper, as indicated at **22**. In addition to the intermediate tier sheets **21** placed between the tiers of cans as shown in Figures 5 and 6, end closure sheets **23** are placed over the ends of the cans in each endmost tier. These end closure sheets may be, and preferably are, thicker than the ordinary or intermediate tier sheets **21**.

In forming the package the wrapper is shaped in the form of a tube about the arranged cans and tier sheets, the ends being brought into overlapping relation to form a seam **24** secured by the sealing of the transverse glue stripe **18** down against the underlapped outer face of the other end of the wrapper. It is to be understood that this seam may be arranged at one of the long sides of the package as shown in Figure 3, or it may be arranged at one of the short sides, according to the prevailing packaging practice. In either case the end extremity of the tear strip **10** will be left free at the point **25** indicated in Figure 3, that is, not adhered to the underlying wrapper stock, so that a person seeking to open the package can readily insert a finger under the end of the rip strip and grip the same preparatory to tearing the same out.

After the formation of the wrapper tube and the side seam **24** in the manner stated, the ends of the package will be sealed to complete the package. This may be accomplished at each end by first folding in the opposed long side marginal edges as indicated at **26** in Figures 3 and 4, and then the opposed short side marginal edges **27**, or this sequence may be reversed, if desired. In either case the side glue stripes **16** or **17** will be adhered to the underlying marginal portions of the end closure sheets **23**.

Upon sealing the end of the package at which the reinforcing strip **12** is located, this being the end at which the can flanges **28** are presented, the reinforcing strip will be folded over the relatively sharp edges of the can flanges in the manner illustrated in Figure 5 so as to assure that said flanges will not cut through the wrapper during any ordinary handling and storage of the can package. It is to be understood that the adhesive **14** by which the reinforcing strip **12** is attached to the wrapper body extends over only that portion of the strip which is arranged vertically in Figure 5, the remainder or folded over portion of the strip being free of the wrapper so that it can move relative to the wrapper margin as it is folded over and thus not only facilitate the folding but also assure against binding and wrinkling.

While it is preferred that the glue stripes be applied mechanically, as by machine parts such as are disclosed in the beforementioned copending application for patent, and that the wrapper be thereafter promptly utilized to package cans while the glue remains in a desirably tacky state, it is to be understood that the glue stripes may be applied and thereafter hardened so that a moistening step just prior to making up of a package must be practiced, if desired.

The overlap folding of the marginal edge extensions of the tube as shown at **26** and **27** in Figures 3, 4 and 6 results in the provision at each corner of the package of a triple thickness corner overfold **29** defined by the two diverging fold lines **30** and **31** and the joining edge **32**. At each corner the converging marginal folds **26** and **27** will, of course, be adhered to the underlying end closure sheet **23**, and inwardly of the triple thickness portion referred to, there will be a triangular portion **33** of the marginal fold **27** adhered to the underlying portion of the marginal fold **26**, the adhesion being provided by the inwardly presented exposed portion of the respective side stripe **16** or **17**. It will be noted that each triangular portion **33** is defined by the beforementioned joining edge **32**, the downwardly presented edge extremity of the marginal fold **27** and the edge extremity of the marginal fold **26** directed toward the right as viewed in Figure 7. See also Figure 8. This adhesion of the marginal folds **26** and **27** to the underlying end closure sheets **23**, and the adhesion of the folds **26** and **27** together over the last mentioned triangular area **33** assures the provision of dust proof end closures for the can package, including the corners thereof.

When it is desired to open a can package completed as shown in Figure 3, it is a simple matter to insert a finger under the free or non-glued end extremity of the rip strip, grip the same firmly, and tear it out. This will separate the bottom end closure from the remainder of the packaging envelope close to the respective end closure sheet **23** so that said envelope remainder can be very easily telescoped upwardly off the can tiers, exposing all of the can tiers and the separating tier sheets **21** for handling.

While example illustrations of the packaging wrapper and the package formed therefrom are provided herein it is to be understood that the disclosed features may be variously modified without departing from the spirit and scope of the invention as defined in the appended claims.

We claim:

1. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a reinforcing strip extending about one end of the package interiorly of the tube and adjacent an end thereof in position for angling over flanges of cans at said end and assuring against tearing of said can flanges through the wall of the paper envelope, said strip being adhered to the wall of the paper tube throughout a portion only of the width of the strip, the non-adhered portion of the strip being disposed toward said adjacent end of the tube and free to move relative to the opposing portions of the tube at the particular end of the package.

2. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a reinforcing strip extending about one end of the package interiorly of the tube and adjacent an end thereof in position for angling over flanges of cans at said end and assuring against tearing of said can flanges through the wall of the paper envelope, said strip having a longitudinally extending fold facilitating score line intermediately of the width thereof and being adhered to the wall of the paper tube throughout the portion of the strip to that side of the score line extending away from said adjacent end of the tube and being free to move relative to the overfolded marginal edges of the tube and the cans at the portion outwardly of the score line and angled over the can flanges.

3. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, end margin portions at two opposed sides at each of said top and bottom being folded over and adhered to the particular closure sheet, and the remaining opposed end margin portions being folded over and adhered to the particular closure sheet and folded over and adhered also to the first mentioned folded over end margin portions to provide at each corner a triple thickness triangular corner overfold defined by two diverging fold lines and the edge extremity connecting said fold lines, and there being included inwardly of each said triple thickness portion a triangular single thickness of the overfolded end margin portion adhered to the underlying end margin portion and forming a dust excluding seal over said connecting edge extremity.

4. A can packaging wrapper comprising an elongated rectangle of paper having along each long side marginal edge a glue stripe, said stripes being traversed at one end by a glue stripe extending along the marginal edge at said one end, and a reinforcing stripe adhered to the wrapper and extending full length of one of the side stripes in position for folding over and protecting can flanges in a finished package, said reinforcing strip being adhered to the wrapper throughout a portion only of the width of the strip so that the remainder of the strip width will be free to move relative to the wrapper during the folding of the strip over can flanges in the making up of a package, one of the side stripes of glue extending in part over the reinforcing strip width and in part over the wrapper beside the reinforcing strip.

5. A can packaging wrapper comprising an elongated rectangle of paper having along each long side marginal edge a glue stripe, said stripes being traversed at one end by glue stripe extending along the marginal edge at said one end, and a reinforcing strip adhered to the wrapper and extending full length of one of the side stripes in position for folding over and protecting can flanges in a finished package, said reinforcing strip being adhered to the wrapper throughout a portion only of the width of the strip so that the remainder of the strip width will be free to move relative to the wrapper during the folding of the strip over can flanges in the making up of a package, one of the side stripes of glue extending in part over the non-adhered width of reinforcing strip and in part over the wrapper beside the reinforcing strip.

6. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a flat paper rig strip extending about the package interiorly of the tube with the lower edge of said strip disposed as a tearing edge closely adjacent the bottom sheet and adapted to be ripped out to free the remainder of the envelope from said bottom sheet and the marginal edges folded over and sealed thereagainst so that said envelope remainder can be telescoped off the superposed can tiers and leave them wholly exposed and supported on the bottom closure sheet.

7. A can package as defined in claim 6 in which the envelope includes an upright side seam into which the rip strip extends, the end of the strip extending into the seam being free of the underlying paper surface throughout the full width of the seam to permit insertion of a finger under said strip end and ready grasping thereof preparatory to the tearing out of the strip.

8. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a reinforcing strip extending about one end of the package interiorly of the tube and adjacent an end thereof in position for angling over flanges of cans at said end and assuring against tearing of said can flanges through the wall of the paper envelope, said strip having a longitudinally extending fold facilitating score line intermediately of the width thereof and being adhered to the wall of the paper tube throughout the portion of the strip to that side of the score line extending away from said adjacent end of the tube and being free to move relative to the overfolded marginal edges of the tube and the cans at the portion outwardly of the score line and angled over the can flanges, said package

also including a side seam and a flat paper rip strip extending about the package interiorly of the tube and into said seam with the lower edge of said strip as a tearing edge adjacent the bottom sheet, said rip strip being adapted to be ripped out to free the remainder of the envelope from said bottom sheet and the marginal edges folded over and sealed thereagainst and being spaced with relation to the reinforcing strip so as to assure placement of the reinforcing strip for angling over can flanges at the top of the package when the rip strip is placed opposite can bottom end portions at the bottom of the package.

9. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cams, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a reinforcing strip extending about one end of the package interiorly of the tube and adjacent an end thereof in position for angling over flanges of cans at said end and assuring against tearing of said can flanges through the wall of the paper envelope, said strip having a longitudinally extending fold facilitating score line intermediately of the width thereof and being adhered to the wall of the paper tube throughout the portion of the strip to that side of the score line extending away from said adjacent end of the tube and being free to move relative to the overfolded marginal edges of the tube and the cans at the portion outwardly of the score line and angled over the can flanges, said package also including a side seam and a flat paper rip strip extending about the package interiorly of the tube and into said seam with the lower edge of said strip as a tearing edge adjacent the bottom sheet, said rip strip being adapted to be ripped out to free the remainder of the envelope from said bottom sheet and the marginal edges folded over and sealed thereagainst and being spaced with relation to the reinforcing strip so as to assure placement of the reinforcing strip for angling over can flanges at the top of the package when the rip strip is placed opposite can bottom end portions at the bottom of the package, the end of the rip strip extending into the seam being free of the underlying paper surface

throughout the full width of the seam to permit insertion of a finger under said strip end and ready grasping thereof preparatory to the tearing out of the rip strip.

10. A can package comprising multiple superposed tiers of cans with each tier composed of multiple rows of cans, a tier sheet between each pair of superposed can tiers, a bottom closure sheet, a top closure sheet, said sheets traversing the axes of the cans and being engaged by top and bottom ends of cans, and an encasing paper envelope comprising an upstanding tube having marginal edges folded over and sealed against each of said bottom and top sheets, and a flat paper rip strip extending about the package interiorly of the tube with the lower edge of said strip disposed as a tearing edge closely adjacent the bottom sheet and adapted to be ripped out to free the remainder of the envelope from said bottom sheet and the marginal edges folded over and sealed thereagainst so that said envelope remainder can be telescoped off the superposed can tiers and leave them wholly exposed and supported on the bottom closure sheet, and a reinforcing strip extending about the upper end of the package interiorly of the tube in position for angling over flanges of cans at the upper end of the package and assuring against tearing of the can flanges through the wall of the paper envelope and also serving as a reinforced grasping portion during the telescoping of the envelope upwardly off the cans after ripping out of the rip strip.

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