May 30, 1961 E. A. KRUSE 2,986,272

PACKAGE FOR BOX-LIKE CONTAINERS

Filed July 2, 1958 2 Sheets-Sheet 1

FIG. 1

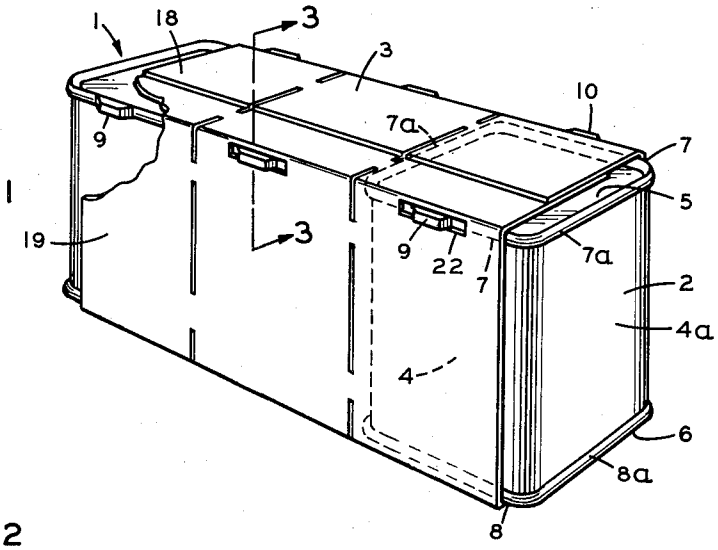
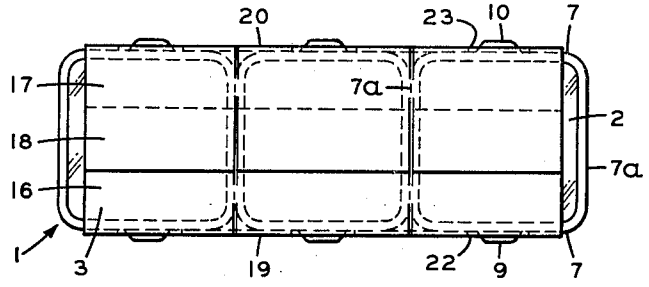


FIG. 2



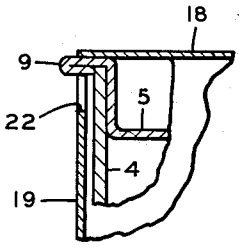


FIG. 3

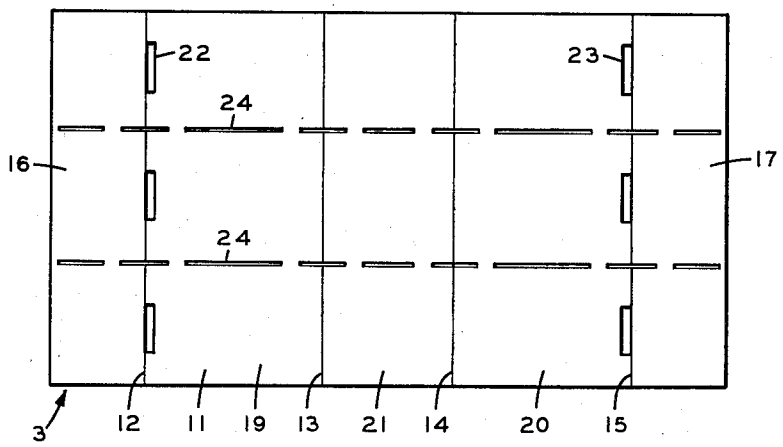


FIG. 4

INVENTOR.
ELMER A. KRUSE
BY
Gravely, Lieder & Woodruff
ATTORNEYS

May 30, 1961 E. A. KRUSE 2,986,272

PACKAGE FOR BOX-LIKE CONTAINERS

Filed July 2, 1958 2 Sheets-Sheet 2

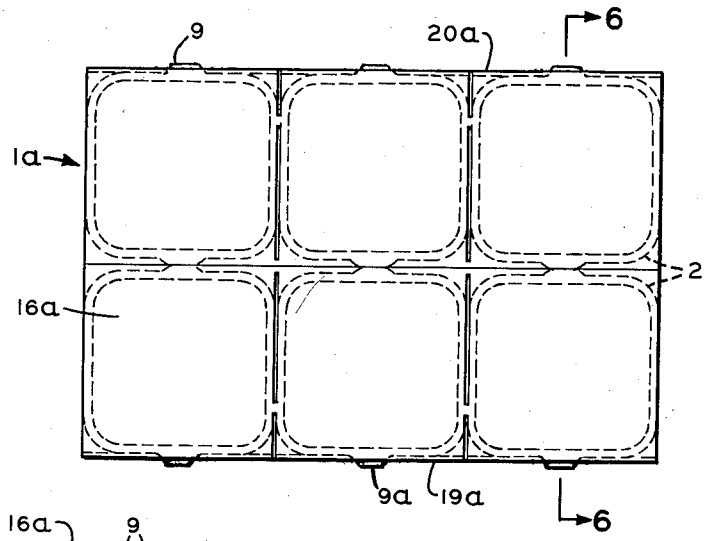


FIG. 5

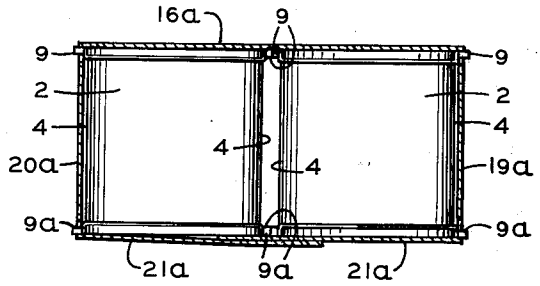


FIG. 6

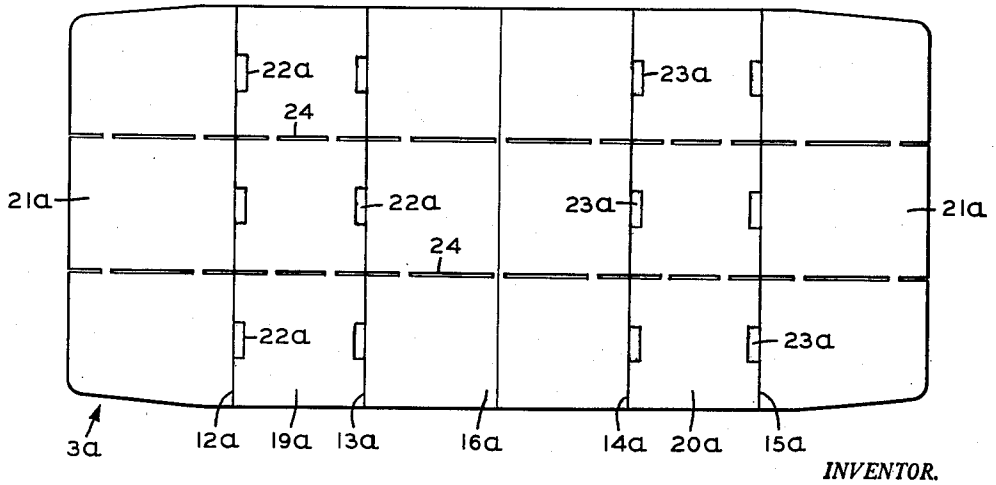


FIG. 7

INVENTOR.
ELMER A. KRUSE
BY
Gravely, Lieder & Woodruff
ATTORNEYS

United States Patent Office 2,986,272
Patented May 30, 1961

2,986,272

PACKAGE FOR BOX-LIKE CONTAINERS

Elmer A. Kruse, Berkeley, Mo., assignor to Wagner Electric Corporation, St. Louis, Mo., a corporation of Delaware

Filed July 2, 1958, Ser. No. 746,169

4 Claims. (Cl. 206—65)

This invention relates in general to packages and in particular to a package constructed of a foldable wrapper of sheet material positively embracing box-like containers.

In the past, only cylindrical containers were packaged in open ended foldable wrappers while box-like containers were necessarily encased in paperboard or cardboard packing boxes.

In the case of cylindrical containers, circular end closure members were provided having circumferential beads extending outwardly from the juncture of said closure members and the cylindrical sidewalls of said cylindrical containers. Inherently, these circumferential outwardly extending beads fitted into cooperating spaced slots in a foldable wrapper thereby providing a naturally formed displacement preventive means for the cylindrical containers in cooperation with said wrapper. In addition, the side panels of the foldable wrapper also embraced a portion of the sidewalls of said cylindrical containers to further enhance retention of said cylindrical containers in said wrapper.

One of the primary disadvantages encountered in packaging box-like containers was shipping less than a full packing box of the box-like containers. The removal of box-like containers from a packing box resulted in damaged merchandise due to shifting during shipment, and the shifting of the box-like containers often burst the packing box resulting in scattered loose box-like containers. Another disadvantage was that the removal of box-like containers also resulted in inaccurate accounting since it was impossible to inspect each packing box for missing containers.

In attempting to package box-like containers in an open ended, foldable, paperboard wrapper, it was found that substantially the same disadvantages existed as were present in packaging box-like containers in paperboard boxes. The box-like containers were provided with rectangular end closure members having opposed, parallel, circumferential side edges extending outwardly from the juncture of said closure members and the corresponding parallel sidewalls of said box-like containers. Contrary to the case of the cylindrical containers, the circumferentially outwardly extending side edges of the box-like containers did not form a natural displacement preventative means for said box-like containers in cooperation with the wrapper. Instead, the wrapper merely loosely embraced the opposed side edges of the rectangular closure members, and the side panels of said wrapper were spaced from the opposed sidewalls of the box-like containers which was also contrary to the case of the cylindrical containers. As a result, the box-like containers were slidable in said wrapper and could be displaced therefrom through the open end portions of said wrapper.

One of the principal objects of the present invention is to provide package means for box-like containers which overcomes the abovementioned disadvantages.

Another object of the present invention is to provide

a package having an open ended foldable wrapper embracing box-like containers.

Still another object of the present invention is to provide a package having an open ended wrapper and box-like containers wherein said box-like containers are positively retained therein against displacement.

Still another object of the present invention is to provide a package having an open ended wrapper, which can be subdivided, as desired, embracing box-like containers, and wherein each of said box-like containers are positively retained against displacement.

These and other objects and advantages will become apparent hereinafter.

Briefly, the invention is embodied in a package having an open ended, foldable wrapper embracing box-like containers, in which extension means on said box-like container are cooperatively received by aperture means in said wrapper to retain said box-like containers against displacement therefrom.

The invention also consists in the parts and in the arrangements and combination of parts hereinafter described and claimed. In the accompanying drawings which form a part of this specification and wherein like numerals refer to like parts wherever they occur:

Fig. 1 is a perspective view of a package embodying the present invention,

Fig. 2 is a top plan view of the package showing a plurality of box-like containers therein,

Fig. 3 is an enlarged, fragmentary, sectional view taken along line 3—3 of Fig. 1 showing the box-like container and a wrapper therefor in cross-section,

Fig. 4 is a plan view of the wrapper for the package,

Fig. 5 is a top plan view of a modified form of the present invention showing two rows of box-like containers therein,

Fig. 6 is a cross-sectional view taken along the line 6—6 of Fig. 5 but showing the containers in solid lines, and

Fig. 7 is a plan view of the wrapper for the two row package.

Referring now to Figs. 1, 2, and 3 in detail, a package 1 is provided with a plurality of box-like containers 2 in row formation which are embraced by an open ended, foldable wrapper 3. Of course, the wrapper 3 may be of any desired proportion not only to embrace a desired number of box-like containers 2 in row formation, but also to embrace a desired number of said box-like containers in row formation and in tranverse alignment. For purpose of disclosure, the box-like containers 2 are shown only in single and double row formation.

The box-like containers 2 are provided with opposed, substantially parallel sidewalls 4 and 4*a* of paperboard, or the like. The box-like containers 2 are also provided with metallic top and bottom closure members 5 and 6 having substantially the same configuration defined by the corresponding ends of the sidewalls 4 and 4*a*. The top and bottom closure members 5 and 6 are normally clinched into engagement with the corresponding ends of the sidewalls 4 and 4*a* which provide opposed, substantially parallel side edges 7 and 7*a* and 8 and 8*a* at the periphery of the closure members 5 and 6, respectively. The side edges 7, 7*a* and 8, 8*a* extend outwardly beyond the periphery of the sidewalls 4 and 4*a*. Extensions 9 and 10 are integrally provided on opposed side edges 7 and protrude substantially horizontally therefrom beyond the periphery of the closure member 5. For purposes of disclosure, only the extensions 9 and 10 are shown; however, it is apparent that any desired number of extensions could be provided on the top closure member 5 and/or the bottom closure member 6.

In Fig. 4, the foldable wrapper 3 is shown as a generally rectangular, continuous strip of sheet material 11,

such as paperboard or the like, divided by transversely extending fold or score lines **12**, **13**, **14**,, and **15** normal to one edge thereof. The fold lines **12**, **13**, **14**, and **15** form a plurality of connected panels and sections which are adapted to be folded into wall forming relation in the completed package. The outermost fold lines **12** and **15** cooperate with the transversely extending end edges of the sheet material **11** to define a pair of rectangular top forming portions **16** and **17** which are adapted to be positioned with their free marginal edges in overlapping relation to form an upper section **18** of the wrapper **3**. One of the top forming portions **16** and **17** is preferably provided with an adhesive binder (not shown) adjacent the free marginal edge thereof for securing together the overlapped portions; although, other fastening means, such as staples or the like, may be used, if desired. The fold lines **12**, **13**, and **14**, **15** in the sheet material **11** define rectangular side panels **19** and **20**, and the fold lines **13**, **14** in said sheet material define a rectangular lower section **21** of the wrapper **3**.

In the set-up form of the wrapper **3**, the side panels **19** and **20** are in oppositely disposed relation and are interconnected by the upper and lower sections **18** and **21** which are in parallel planes at right angles to the side panels **19** and **20** to bridge the container space therebetween. The side panels **19** and **20** are spaced from each other a distance slightly greater than the overall width of the box-like container **2** or a distance which is at least equal to said overall width of said box-like container. The side panels **19** and **20** are each provided at the upper edge thereof adjacent the fold lines **12** and **15** with a plurality of spaced elongated apertures **22** and **23** for receiving the extensions **9** and **10**, respectively, of the box-like containers **2**, as will be discussed hereinafter. The wrapper **3** is also provided with a plurality of parallel, spaced, tear lines or serrations **24** extending across the upper and lower sections **18** and **21** and the side panels **19** and **20**. Of course, in the set-up form of the wrapper **3**, the tear lines **24** extend about the periphery of said wrapper. The tear lines or serrations **24** are provided to weaken the wrapper **3** in order to facilitate subdivision of the package **1**, and said tear lines are predeterminately positioned in the sheet material **11** to be between each adjacent box-like container **2** in the package **1**.

In assembling the package **1**, the box-like containers **2** are positioned in row formation on the lower section **21** of the wrapper **3**, so that the serrations **24** in said wrapper are between each adjacent box-like container. When the side panels **19** and **20** are folded inwardly, the opposed side edges **8** of the closure member **6** are positioned adjacent the fold lines **13** and **14** and are embraced by the side panels **19** and **20** and the lower section **21**; therefore, said side panels and lower section are juxtaposed and substantially parallel with the box-like container sidewalls **4** and the closure member **6**, respectively. With the side panels **19** and **20** in this position, the extensions **9** and **10** on the side edges **7** of the closure member **5** protrude through the plurality of apertures **22** and **23** in said side panels, thereby preventing endwise movement of the box-like containers **2** in the wrapper **3** and/or displacement therefrom. The top forming portions **16** and **17** of the wrapper **3** are then folded inwardly so that the opposed side edges **7** of the closure member **5** are positioned adjacent the fold lines **12** and **15** and are embraced by the side panels **19** and **20**. The end margins of the top forming portions **16** and **17** are then brought into overlapping relationship where they are secured by an adhesive binder, or other securing means, (not shown) to form the top section **18**; therefore, said side panels and top section are juxtaposed and substantially parallel with the box-like container sidewalls **4** and the closure member **5**, respectively. With the package **1** thus assembled, the opposed side edges **7** and **8** of the closure members **5** and **6** are positioned adjacent the fold lines **12**, **15** and **13**, **14**, respectively, and are rather loosely embraced by the side panels **19** and **20** and the top and bottom sections **18** and **21** of the wrapper **3**. Only the cooperative engagement between the extensions **9** and **10** and the apertures **22** and **23** in said side panels positively retains each of the box-like containers **2** against displacement through the open end portions of the wrapper **3**.

From the foregoing, it is apparent that the package **1** is provided with an open ended, foldable wrapper **3** embracing box-like containers **2**. In the assembled package **1**, the opposed side edges **7** and **8** of closure members **5** and **6** are rather loosely embraced by the wrapper **3** at the fold lines **12**, **13**, **14**, and **15**. The side panels **19** and **20** are juxtaposed with the opposed sidewalls **4** of the box-like containers **2**, and the upper and lower sections **18** and **21** are juxtaposed with the closure members **5** and **6** of said box-like containers.

It is apparent that the box-like containers **2** are positively retained against displacement from the open ended wrapper **3**. In the assembled package **1**, the wrapper **3** rather loosely embraces the opposed side edges **7** and **8** of the box-like container closure members **5** and **6**; however, the extensions **9** and **10** protrude from said opposed side edges through the cooperating plurality of apertures **22** and **23** in the wrapper side panels **19** and **20**. In this manner, the cooperative engagement between the extensions **9** and **10** and the apertures **22** and **23** prevents endwise movement of the box-like containers **2** in the wrapper **3** and positively retains said box-like containers against displacement through the open end portion of said wrapper.

It is also apparent that the package **1** can be subdivided, as desired, and that each box-like container **2** in the subdivided packages is positively retained therein against displacement. In the assembled package **1**, the tear lines or serrations **24** extend about the periphery of the wrapper **3** and are positioned between each of the box-like containers **2** in row formation in said wrapper; therefore, any desired number of said box-like containers can be separated from the package **1** by merely breaking said package at said tear lines. Upon subdividing the package **1** in this manner, the box-like containers **2** in each of the subdivided packages are positively retained therein against displacement by the aforementioned cooperative engagement of the box-like container extensions **9** and **10** and the apertures **22** and **23** in the wrapper sidewalls **19** and **20**.

A double row package **1***a* is shown in Figs. 5–7. In this form, two rows of box-like containers **2** are shown, each container **2** having an upper extension **9**, and a lower extension **9***a* if desired, the remainder of each container being the same as the containers **2** shown in Figs. 1–3. The extensions **9** and **9***a* which contact each other in the center of the package may be in edgewise abutting relation.

The modified wrapper **3***a* is shown with a one-piece top forming portion **16***a* defined by scored lines **13***a* and **14***a* which define the upper edges of the rectangular side panels **19***a* and **20***a*, whose lower edges are defined by the scored lines **12***a* and **15***a* which also define the outer edges of the bottom forming panels **21***a*. The scored lines **12***a*, **13***a*, **14***a* and **15***a* are provided with spaced elongated apertures **22***a* and **23***a*, and the wrapper is further provided with tear lines **24** to subdivide the package **1***a* as desired. In this modified form, the overlapped portions of the wrapper **3***a* are shown at the bottom of the package but could be at the top if desired.

The two row package is wrapped similarly to the single row package except that two rows are provided in place of one. The package is compact and tight, and the box-like containers **2** can be pivoted out of the package only when intended and with some effort since the parallel oppositely facing side walls along the central longitudinal axis of the package are closely positioned and resist any relative twisting motion when disengaging any container from the wrapper. The wrapper can be of any suitable

length and may contain as many containers in each row as desired. Even when the wrapper is divided along a line 25 so as to contain only two containers, the containers will remain in fixed position within the wrapper segment.

It is now apparent that there has been provided a package having a foldable wrapper positively embracing a plurality of box-like containers and which fulfills all of the objects and advantages sought therefor.

The foregoing description and accompanying drawings have been presented only by way of illustration and example, and changes and alterations in the instant disclosure, which will be apparent to one skilled in the art, are contemplated as within the scope of the present invention which is limited only by the claims which follow.

What I claim is:

1. A package comprising a plurality of containers disposed in row formation, each of said containers including sidewalls and having top and bottom closure members clinched into engagement with said sidewalls at opposite ends of the containers, said sidewalls including substantially flat portions, the flat portions of adjacent containers being disposed closely adjacent to one another so as to engage one another upon turning movement of the containers to thereby resist such turning movement, one of the closure members of each of said containers including a laterally projecting extension which protrudes beyond the periphery of the closure member, a wrapper loosely embracing said containers and consisting essentially of a continuous strip of foldable sheet material defining upper and lower sections with interconnecting substantially normal side panels and open end portions, the side walls of each of said containers including a substantially flat portion disposed adjacent one of said side panels for engaging the adjacent side panel upon turning movement to thereby resist turning movement, and a plurality of apertures formed in the side panels of said wrapper, said laterally extending projections extending through said apertures, whereby the projections limit sliding movement of the containers with respect to the wrapper, and the flat portions of the sidewalls of the containers limit turning movement of the containers such that the containers are positively prevented from being displaced through the open end portions of the wrapper.

2. A package comprising a first row of containers and a second row of containers, the containers in said second row being substantially transversely aligned with the containers in said first row, each of said containers including sidewalls and having top and bottom closure members clinched into engagement with said sidewalls and opposite ends of the containers, said sidewalls including substantially flat portions, each of the containers in each of the rows of containers including a plurality of flat portions, one of the flat portions of each container being disposed adjacent one of the flat portions of the next container in the row, another of the flat portions of each of the containers in said first row being disposed adjacent another of the flat portions of an adjacent container in said second row of containers, the adjacent flat portions of adjacent containers being adapted to engage one another upon turning movement of the containers to thereby resist turning thereof, the closure members of each of said containers including laterally projecting extensions which protrude beyond the peripheries of the closure members, a wrapper loosely embracing said containers and consisting essentially of a continuous strip of foldable sheet material defining upper and lower sections with interconnecting substantially normal side panels and open end portions, the sidewalls of each of said containers including another flat portion disposed adjacent one of the side panels for engaging the adjacent side panel upon turning movement of the containers to thereby resist turning movement thereof, each of said side panels having a plurality of apertures formed therethrough, the laterally extending projections of the containers extending through said apertures, whereby the projections limit sliding movement of the containers with respect to the wrapper, and the flat portions of the sidewalls of the containers limit turning movement of the containers such that the containers are positively prevented from being displaced through the open end portions of the wrapper.

3. A container package comprising at least two containers of similar flat polygonal side wall configuration and having top and bottom closure members extending outwardly around the top and bottom ends of said side walls, said containers being grouped in side by side relationship with adjacent closure members in contact and closely adjacent side walls, one of the closure members of each container on a remote side facing away from an adjacent container of said container group including a projecting portion extending outwardly beyond the side wall a distance greater than the remaining portion of said one closure member, and an open-ended wrapper member circumscribing said container group extending across the top and bottom closures and around the remote sides thereof, said wrapper member having means cooperable with each container for retaining it therein consisting of an aperture receiving said projecting portion of said closure member on the remote side of said container group, and the remaining portion of said closure member on the remote side being in surface contact with said wrapper member.

4. A container package comprising a plurality of containers of similar polygonal side wall configuration and having top and bottom closure members extending outwardly around the top and bottom ends of said side walls, said containers being grouped in side by side relationship and each container having a side wall in opposed substantially parallel relation with a side wall of an adjacent container, and each container having a remote side wall facing away from the other containers in said group, the closure member of each container on said remote side thereof including a projecting portion extending outwardly beyond the remote side wall a distance greater than the remaining portion of said one closure member, and an open-ended wrapper member circumscribing said container group extending across the top and bottom closures and around the remote sides thereof, said wrapper member having apertures receiving said projecting portions of said closure members, and the remaining portions of said closure members on the remote sides of said containers being in contact with said wrapper member.

References Cited in the file of this patent

UNITED STATES PATENTS

1,698,072	Russell	Jan. 8, 1929
2,128,258	Monnet	Aug. 30, 1938
2,299,277	Neuschaefer	Oct. 20, 1942
2,658,663	Reese	Nov. 10, 1953
2,765,073	Murray	Oct. 2, 1956

FOREIGN PATENTS

666,050	Great Britain	Feb. 6, 1952