

Oct. 3, 1944.

E. M. BROGDEN

2,359,297

PACKAGE, PACKING CONTAINER AND BLANK THEREFOR

Filed Nov. 12, 1938

3 Sheets-Sheet 1

Fig. 1.

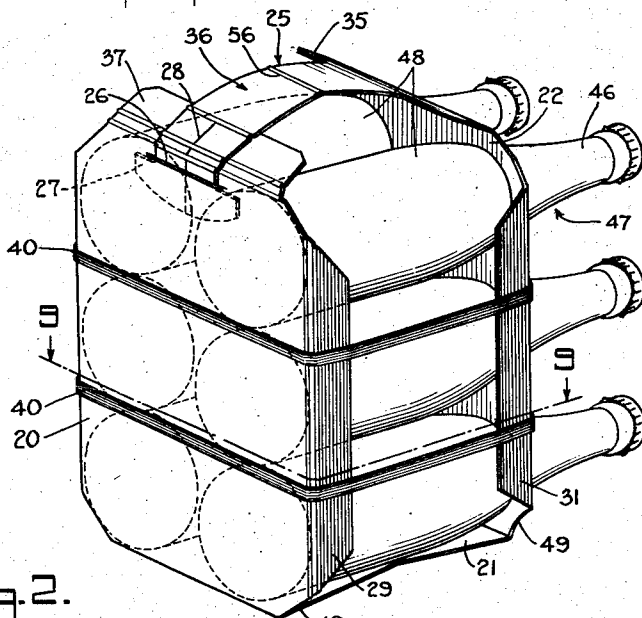


Fig. 2.

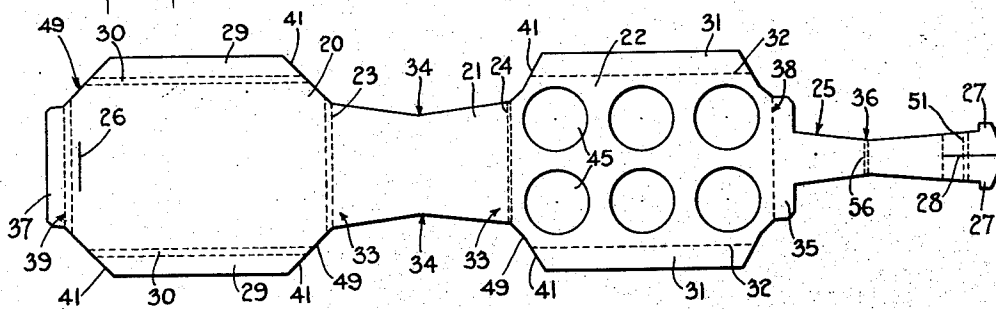
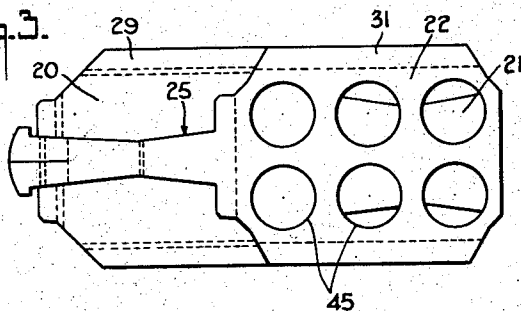


Fig. 3.



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3 Sheets-Sheet 2

Fig. 4.

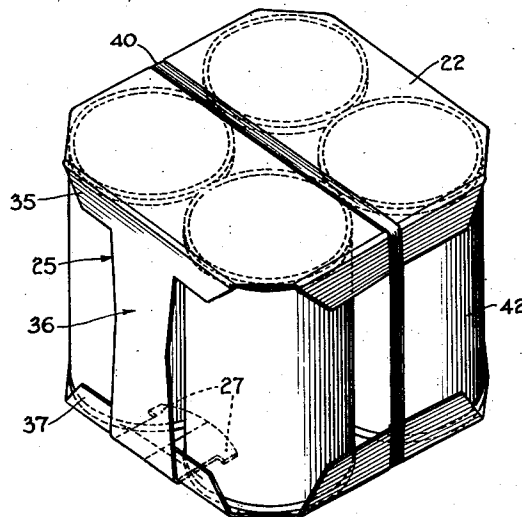


Fig. 5.

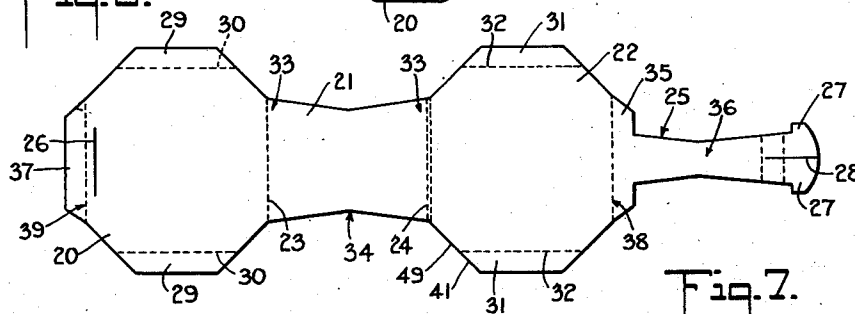


Fig. 6.

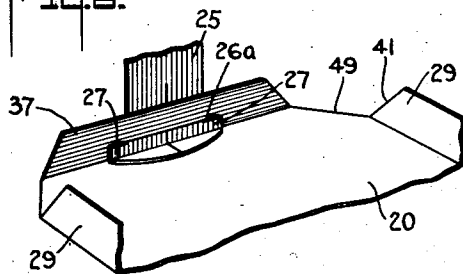


Fig. 7.

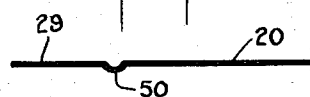
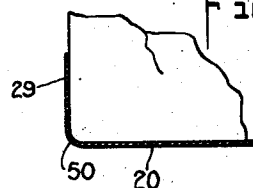


Fig. 8.



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3 Sheets-Sheet 3

Fig. 9.

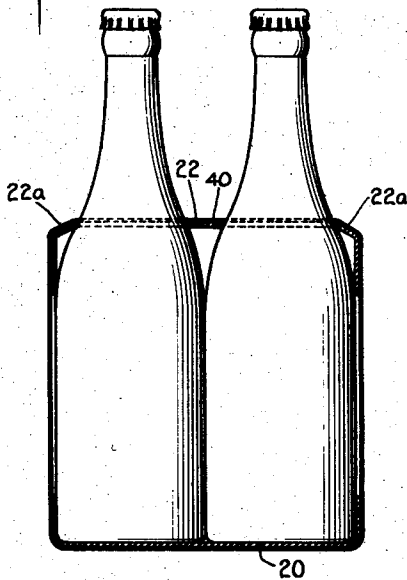


Fig. 10.

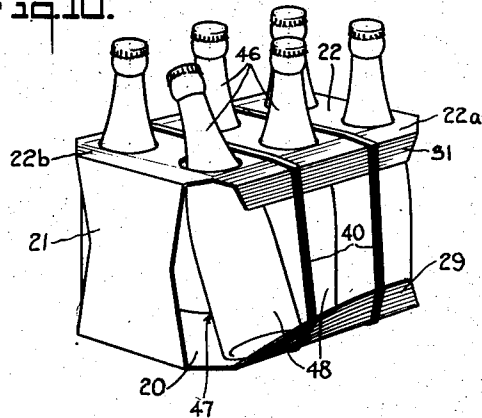


Fig. 11.

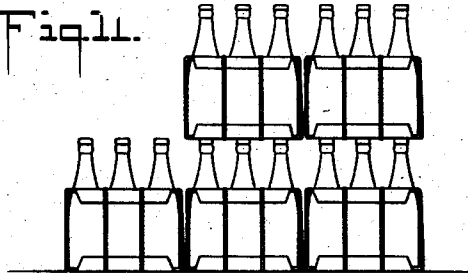


Fig. 12.

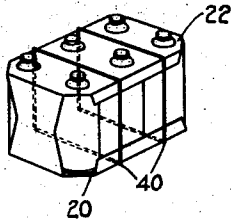


Fig. 13.

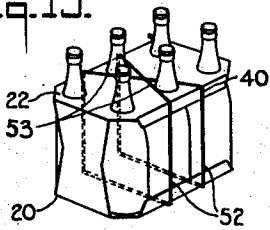


Fig. 14.

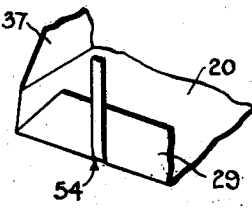


Fig. 15.

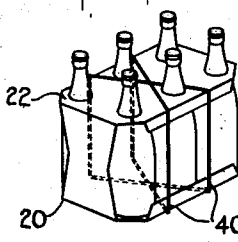


Fig. 16.

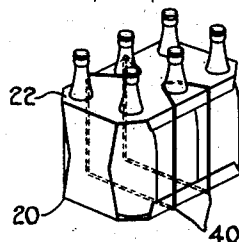
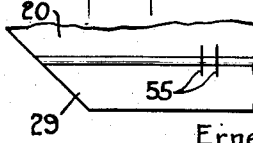


Fig. 17.



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UNITED STATES PATENT OFFICE

2,359,297

PACKAGE, PACKING CONTAINER, AND
BLANK THEREFOR

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Application November 12, 1938, Serial No. 240,165

17 Claims. (Cl. 229—16)

This invention relates to packages, packing containers and blanks therefor and is directed particularly to a consumer package and container of the display type.

The general purpose of this invention is to provide an improved packaging construction adapted to hold a plurality of articles of merchandise, preferably of uniform shape and size, such as bottles, cans, pieces of fruit and the like securely packed in a form convenient for handling and carrying especially by the consumer while exposing a substantial portion of such articles for display or other purposes.

This purpose may be accomplished by various constructions, and prior packages have included certain of the desired characteristics to some extent; but such packages have been deficient in one or more of the enumerated characteristics, thereby detracting to a substantial extent from any advantages that might accrue from other desirable features.

A primary requirement for such packages is low cost, since most of the merchandise to be packaged cannot be increased appreciably in price. This requirement necessitates the use of extremely cheap material, the employment of a minimum quantity thereof, and the avoidance of substantial expense in manufacturing, assembling, packing and handling the container and the package. On the other hand, the container must have sufficient strength to avoid rupture or distortion during packing, and the package must be strong enough to withstand the abuse to which it necessarily will be subjected, without material dislocation or damaging of the container or its contents.

Another requirement is the provision of a package that will be attractive in appearance both with respect to the container itself and the contents when packaged therein, since the success of such a package depends largely upon its appeal to the consumer. Moreover, the package must be provided with convenient handle means which will combine cheapness of construction and assembly with a substantial safety factor in strength and preferably freedom from interference with convenient and compact packing, storage and transportation of the packages in quantity. The container must likewise hold the merchandise securely and positively while exposing it for display or the like.

A purpose of this invention is to provide a package, a container and a blank therefor of the type indicated conforming to all of these requirements.

The invention is particularly applicable to generally rectangular packages adapted to contain substantially columnar articles of merchandise arranged in series; and a feature of the invention is the provision of a container for a group of such articles arranged to form a rectangular prismatic package provided with a handle and constructed to permit compact packing of a plurality of such packages in series and tiers without requiring substantially more space than that necessary for the articles themselves.

Another feature of the invention is the provision of a container and package having parallel opposite sides which are maintained in substantially open condition to expose the merchandise while holding the merchandise in snugly packed positively retained condition.

An object of the invention is to provide a display container and package in which the merchandise is firmly held, arranged for ready removal and preferably for ready replacement of merchandise units without injury to the container, by the employment of yieldable merchandise-retaining means.

The invention is particularly suitable for packaging columnar articles of merchandise such as cans or bottles, or items of the same general contour piled one on another to form a composite columnar article, such as cakes of soap, fruit and the like. These articles, particularly bottles and cans, are generally provided with attractive and commercially important printed matter carried by labels extending across the sides of the articles. A purpose of the invention is to provide a container and package for a plurality of such articles arranged to expose extensive portions of such printed matter to view while retaining the articles in compact securely packed condition. A specific purpose is to provide an arrangement of this type which will likewise cover the base and relatively unsightly end portions, especially of cans.

Another object of the invention is to provide a container and package for a plurality of merchandise articles which are of a type that may be readily damaged by impact against each other or by movement relative to adjacent articles, such as bottles, tender fruit and the like. In the arrangement provided by this invention such articles are maintained in firm engagement with each other, and in the preferred arrangement they are yieldably pressed into such engagement by the use of resilient means, this construction likewise serving to maintain the desired engagement even though the units may vary in size or contour.

A specific purpose of the invention is to provide a container or package of the indicated type which is suitable for the packaging of bottles, cap-sealed cans or other merchandise having a generally columnar and usually cylindrical body with a tapered end. In the embodiment of the invention adapted for this purpose the tapered portions or necks of the articles are held firmly in place by engagement with the margins of suitable apertures located in a generally flat section of the container connected by opposite end sections to a bottom section snugly engaging the opposite ends or bottoms of the articles, leaving the articles substantially exposed at opposite parallel sides; and suitable yieldable retaining means extending across only a limited portion of such sides serves to retain the articles in position while permitting extensive exposure of the sides and the labels thereon. A handle extending lengthwise of the series of sections serves to maintain the snug retention of the articles of merchandise during carrying without interfering with the exposure of the articles or the stacking of the packages.

While the exposure of the merchandise will ordinarily be advantageous primarily for display purposes, it may have other material advantages, such as the circulation of air between the articles, or the facility with which such articles may be chilled in refrigerators. A purpose of the invention therefore is to provide a container and package in which a plurality of articles of merchandise are securely held while permitting free circulation of air, extensive access of light and the like to and around the articles and the package without altering or manipulating the package or container arrangement or structure.

In the preferred arrangement a feature of the invention is the utilization of resilient means and preferably of rubber bands or their equivalent as part of the container structure. By combining such bands with a cooperating flap construction or the like it is possible to form the container from an exceptionally small amount of material without sacrificing the effective retention of the merchandise. Moreover, this arrangement makes it possible to provide for the ready and rapid removal and replacement of an article such as a can or bottle without disturbing the package structure or sacrificing the positive and secure retention of the merchandise in the package.

A further object of the invention is the provision of a container construction of the indicated type which may be made conveniently and effectively from fibrous material of the cheaper grades such as paperboard, boxboard, fiber board, cardboard and other similar pulp products, constructed and arranged to provide the requisite strength in use with the minimum of such material. A further purpose is to provide a container construction which can be readily folded compactly for shipment in knockdown form and which is capable of rapid and convenient assembly, packing and closure under commercial conditions. An additional object is to provide a blank for such container which may be conveniently formed from cheap material and particularly material of the type indicated, by a single operation of a die or the like.

A valuable feature of the invention is the provision of a suitable handle construction which does not materially interfere with the manufacture, assembly or packing of the container or the handling of the package, which is available for convenient and immediate use, particularly by the

consumer, and which has the requisite strength. This feature includes a novel construction and arrangement for connecting the handle to the container body.

Other objects and desirable features of the invention will appear from the following description considered in connection with the accompanying drawings in which

Fig. 1 is a perspective view of a desirable practical form of package embodying the invention, comprising a container in carrying position packed with six bottles;

Fig. 2 is a plan view of a blank from which such container may be constructed;

Fig. 3 is a similar view of said blank folded for convenient transportation;

Fig. 4 is a perspective view of another form of package comprising a container packed with four cans;

Fig. 5 is a plan view of a blank from which the container shown in Fig. 4 may be formed;

Fig. 6 is a detailed perspective view of a modified form of handle end connection;

Fig. 7 is a fragmentary marginal view of a blank showing a broad corner crease;

Fig. 8 is a fragmentary view of the scored corner of the blank in folded position;

Fig. 9 is a transverse vertical view on line 9-9 of Fig. 1;

Fig. 10 is a perspective view of the package shown in Fig. 1 in stacking position illustrating the method of removal and insertion of merchandise units;

Fig. 11 is a side elevation showing a plurality of stacked packages;

Figs. 12, 13, 14 and 15 are diagrammatic perspective views of the package shown in Fig. 1 illustrating different methods of applying elastic bands thereto, Fig. 12 showing the packaging of cap-sealed cans;

Fig. 16 is a fragmentary perspective view illustrating a band-receiving depression in a corner of the container; and

Fig. 17 is a fragmentary plan view of a portion of a container blank showing slits for forming such depression.

The package in general consists of a container enveloping a plurality of articles of merchandise which preferably consist of a series of columnar articles arranged in one or more rectilinear series with the series and the articles therein in snug juxtaposition forming a compact rectangular prismatic merchandise group with the axes of the units parallel to each other and the ends of the articles in parallel planes at opposite faces of the group. In the preferred forms illustrated, these articles consist of bottles and cans, though the invention in its broader aspects is not restricted thereto.

The container comprises in general four sections in rectilinear series connected to form a continuous tubular body of flat sheet material adapted to engage four consecutive sides of a rectangular merchandise prism. For convenience of description these sides will be referred to as the top, bottom and ends of the prism or merchandise group. While these terms have definite significance in connection with certain applications of the invention, they are employed only for convenience of description in connection with the broader phases thereof. Said body is likewise provided with means extending from the body across restricted portions of the two remaining opposite sides of the group arranged to retain the mer-

chandise without substantially interfering with the exposure thereof at said sides.

In the illustrated embodiments the container body is constructed with a bottom section 20, an end section 21 and a top section 22 which may be formed integrally from foldable material, and may advantageously be cut from a single sheet. The end section 21 is connected at parallel bending lines, creases or score lines 23 and 24 to the bottom and top sections 20 and 22 respectively.

The margins of the top and bottom sections 22, 20, opposite to bending lines 23, 24, are connected by a suitable means or member adapted to hold said top and bottom sections in substantially parallel merchandise-engaging position. In the form illustrated, this member consists of a web or end section 25 of sheet material connected to contiguous ends of said top and bottom sections. End section 25 may be formed integrally with one of said latter sections, being here illustrated as integral with top section 22; and is connected to the other of said sections in suitable manner. A separable connection is illustrated, the outer end of end section 25 being adapted to enter slot 26 in the bottom section 20, and to engage the margins of said slot, as by suitable projections or barbs 27; and said outer end is longitudinally slitted at 28 to permit overlapping of the halves of the section for insertion in slot 26 in known manner. In the specific arrangement shown, end section 25 is suitably contoured and arranged to constitute a handle and may conveniently be used for carrying the package.

The remaining opposite sides of the container are maintained in generally open condition to expose the merchandise for display or other purposes; and end sections 21 and 25 may be suitably narrowed for similar purposes.

Means is provided at the margins of the top and bottom sections 22, 20, for retaining the merchandise against lateral displacement, said means engaging portions of the merchandise adjacent to said top and bottom sections, such as adjacent end portions of columnar articles of merchandise, and extending only partially across said container sides, leaving the main portion thereof open to provide the desired exposure of the contents. The retaining means may conveniently comprise integral flaps or extensions of said top and bottom sections 22, 20 which in the form illustrated include flaps 29 connected to opposite margins of the bottom section 20 at parallel bending lines 30, which may be of special form as hereafter described, and side flaps 31 similarly connected to opposite margins of the top section 22 at similar parallel lines 32. The depth of flaps 29 and 31 in a direction at right-angles to the respective lines 30, 32 preferably is substantially less than half the distance between bottom section 20 and top section 22 in assembled position. For the usual types of merchandise, and particularly columnar articles, said flap depth may advantageously be less than one-fourth of said distance between the top and bottom sections, and for ordinary articles may typically be between one-half inch and one inch.

The container body is also provided with retaining means engaging the merchandise at the ends of the packaged group of articles. This means may advantageously include marginal extensions of the ends of the top and bottom sections 22, 20, engaging end portions of the articles of merchandise in a manner similar to flaps 29, 31. Such extensions preferably are integral

parts of the end sections 21, 25, and consist, in the present instance, of end portions 33 of section 21, end portion or flap 35 of section 25, and flap 37 on the end of bottom section 20. Said end or flap members or portions 33, 35, 37, preferably have a depth, width and end contour similar to that set forth in connection with side flaps 29, 31.

The portions of end sections 21, 25, intermediate said flaps may be suitably contoured, normally being substantially narrower in a direction parallel to lines 23, 24, than the top and bottom sections 22, 20, to provide an attractive appearance and additional exposure of the merchandise. Their width and contour will depend somewhat upon the nature of the merchandise in the package. Where columnar articles of merchandise, and particularly cans or bottles, are packaged, the width of said intermediate portions of the end sections need be only sufficient to provide the necessary mechanical strength, permitting considerable leeway in designing such portions for the purposes indicated, or others, such as providing a handle construction. In the form illustrated the intermediate portion 34 of the end section 21 has margins forming extensions of the ends of the flap or retaining portions 33 of said end section and angled inwardly toward a point midway between lines 23 and 24. The width of end section 21 at such midway point may advantageously be approximately the distance between the axes of the columnar articles adjacent to said end section 21, so that with substantially cylindrical articles the edges of section 21 at the midway point are substantially on the lines of contact between said section and the adjacent faces of the articles, the flap portions 33 being consequently slightly longer than the distance between said axes.

The intermediate portion 36 of end section 25 may be suitably contoured to form a handle. In the form illustrated, the intermediate or handle portion 36 of section 25 is substantially narrower than the end or flap portion 35 in a direction parallel to bending line 38, which is parallel to bending lines 23, 24, and at which flap portion 35 is connected with the top 22. The handle portion 36 may be tapered inwardly from both ends toward its central portion, and preferably is located centrally in alinement with the center line between bending lines 32.

Flap 37 is connected to bottom section 20 at a score line 39 parallel to score line 23. The handle-receiving slot 26 is advantageously located below and preferably adjacent to bending line 39 in order to increase the strength of the handle connection.

Yieldable means is provided for maintaining the flaps 29 and 31, which are free from each other and individually movable, in merchandise-retaining position. The retaining means preferably is resilient and advantageously consists of one or more elastic bands 40, extending across the top and bottom sections 22, 20, in assembled position and across flaps 29, 31, arranged to press the flaps yieldably against the merchandise. Bands 40 preferably are relatively narrow rubber bands of suitable length and strength to hold flaps 29, 31, against the merchandise with sufficient force to prevent substantial lateral displacement under service conditions; and they also serve to press the top section 22 and bottom section 20 toward each other, thereby maintaining said sections in yieldable engagement

with the merchandise. At the same time the width of bands 40 is insufficient to interfere materially with the exposure of the merchandise at the sides of the package.

The container is particularly adapted to carry columnar articles of merchandise such as cans and bottles. When employed in this manner each of the side flaps 29, 31, should be long enough in a direction parallel to lines 30, 32, to engage the end articles of the row adjacent such flap. For this purpose each flap should be at least as long as the distance between the axes of said end articles. Preferably the flaps are slightly longer than this distance, to provide additional resistance to any angular thrust by the article adjacent the container corners exerted in a cornerwise direction during rough handling; but in the preferred form said flaps 29, 31, do not extend to the points of intersection of the lines defining the lateral margins of the top and bottom sections 22, 20, and may be cut away adjacent the corners of the sections, preferably along slanting lines 41, to expose further the side portions of the merchandise units. This arrangement also extends the stiffening effect of these flaps along a greater length of lines 30, 32, without correspondingly obscuring the sides of the merchandise. Flaps 29, 31 and 37 and flap portions 33 and 35 likewise serve to stiffen the top and bottom sections 22, 20, facilitating the use of lighter material.

The container is suitable for packaging a plurality of columnar articles of merchandise having tapered end or neck portions, such as bottles or cap-sealed cans, a bottle package being illustrated in Figs. 1 and 10, and a cap-sealed can package in Fig. 12. In such packages, for example that shown in Fig. 1, the top section 22 of the container is provided with a plurality of apertures 45 each adapted to fit snugly around the neck 46 of a bottle 47, preferably at a point adjacent the generally cylindrical body 48 of the bottle, so that flaps 31 when extending downwardly at right-angles to the general plane of the top section 22 will engage said body portion 48. Apertures 45 register with the bottle necks 46 when the body portions 48 of the bottles are snugly packed, preferably in contact with each other and in rectilinear series, resting on the bottom section 20, the engagement of the bottles with the margins of said apertures 45 therefore serving to maintain the upper ends of the bottles securely in packed aligned position.

When the container is employed for the packaging of columnar articles of generally cylindrical shape such as cans or bottles, the corners of the top and bottom sections 22, 20, may be cut away, as at 49, to avoid excessive projection beyond the adjacent margins of the merchandise. The corner margins 49 may be relatively straight, may be at an angle of the order of 45° to the side and end margins, and each may be substantially in register with the adjacent vertical face of the columnar article located at the contiguous corner of the merchandise group. The adjacent flap ends 41 may likewise be approximately rectilinear continuations of the corner margins 49 of top and bottom sections 22, 20, providing a neat and effective retaining structure for the corners of the package, serving to restrain cornerwise escape of the contents while exposing the articles of merchandise throughout the entire distance between the top and bottom sections 22, 20, across a substantial portion of the circumference of the unit.

As will be more apparent from Fig. 9, the excised corners 49 (Figs. 1 and 2) of top section 22 may likewise be utilized to provide a firmer engagement of said section with the shoulders of bottles or similar tapered articles of merchandise, as well as a more attractive package, without complicating the construction or assembly of the container. In this arrangement side margins of the top section 22 are pulled downwardly by the bands 40, as shown in Fig. 9, the top section bending adjacent the margins of apertures 45 and across the central portions of the corner margins 49, providing a sloping marginal zone 22^a which merges with the adjacent flap 31. By properly proportioning the apertures 45 and the width of the top section 22 between said apertures and lines 32, this arrangement may be designed so as to provide a snug and effective fit over the sloping shoulders of bottles, or over the shoulders of cap-sealed cans or similar articles, with the top section margins preferably bearing on the can rims.

The end marginal portions of top section 22 may likewise be deflected downwardly by suitably proportioning end sections 21 and 25 to exert a downward pull on said top section margins after the container has been packed with bottles or the like. In this arrangement said end marginal zones 22^b (Fig. 10) of the top section are bent downwardly along the margins of the end apertures 45 adjacent the ends of top section 22, said lines of bending intersecting the similar bending lines of the side marginal zones at the central portions of the corner margins 49 of top section 22. By providing a relatively narrow area at said central points between the margins 49 and the adjacent corner apertures 45, it is possible to deflect downwardly both the end margins 22^b and the side margins 22^a of the top section 22 without creating an unsightly or weakening distortion of the material at the intersections of said bending lines.

When a slotted barbed handle of the type indicated is employed, and in general whenever the handle is held in place by integral barbs, it is important that the handle end and the barbs be held flatwise against the container body adjacent the slot 26. In the illustrated construction, the slot 26, the handle width and the spread of barbs 27 are proportioned to bring a substantial part of the handle end and particularly of the barbs underneath the adjacent portion of the merchandise; for instance, underneath the ends of the adjacent bottles 47 or cans 42. The pressure of such merchandise against the end of the handle including the barbs is increased when the package is lifted by the handle, thereby maintaining the barbs 27 in flatwise engagement with the bottom section 20.

As will appear from Figs. 2 and 5, the container may be constructed from a single blank of suitable sheet material by a single stamping operation, in which the lines at which the container is folded may be provided with suitable bending, crease or score lines in the locations already indicated. Where the margins of the top and bottom sections 22, 20, are intended to fit around rounded corner portions of articles, such as the bottoms of bottles, the appropriate bending lines such as 23, 30 and 39 may each consist of a relatively wide depression or crease 50 as indicated in Fig. 7 which will fit snugly around the bottom edge of bottle 47, for instance, as indicated in Fig. 8.

The free end of the end section 25 may likewise be provided with a transverse bending line

51 to facilitate bending across the line 39 of the bottom section 20 when the container is assembled. The end portion of section 25 below line 51 may be sufficiently elongated so that said section may be collapsed by sliding such end portion inwardly through slot 26 until the handle lies flat at right-angles to the top and bottom sections 22, 20, when the package is stacked or stored, but may be withdrawn slightly to provide hand room when carrying the package. The handle portion 36 likewise is conveniently located above the space between adjacent columnar articles such as the body portions 48 of bottles or the sides of cans 42, this arrangement providing a depression beneath the handle into which the knuckles may project when the package is carried by the handle.

It will be noted that the handle is arranged in line with the series of sections forming the container body and constituting what may be termed a tube consisting of the top, bottom and end sections. With this arrangement the lifting of the package by the handle tends to constrict the tube and press the merchandise units firmly together in the line of engagement thereof by the tube. This arrangement assures the maintenance of a snug compact package especially when carried by the handle, and cooperates with the rubber bands or the like which constrict the package in a direction transverse to said tube.

The blank shown in Fig. 2 is designed and arranged for convenient packing and shipping, particularly when completely folded along bending line 24 in the manner indicated in Fig. 3. This arrangement locates the projecting end handle section 25 between the bottom sections of superposed blanks and protects this portion of the blank against injury, in addition to providing a stack of blanks that is substantially rectangular and which facilitates compact packing of such stacks.

The embodiment illustrated in Figs. 4 and 5, arranged for the packaging of cans and similar articles, is substantially the same in construction and arrangement as the form shown in Figs. 1-3, and no special description is necessary. The form shown in Fig. 1 comprises a package of six bottles, whereas the form of Fig. 4 contains four cans; and it will be readily understood that other numbers of similar articles may be packaged in similar manner simply by changing the relative proportions of the container body. In the form shown in Fig. 4, only one rubber band 40 is required.

The rubber bands 40 or their equivalents may be applied to the package in various manners; but it is primarily important that whatever the mode of application the band or bands should extend across the top and bottom sections 22, 20, and the flaps 29, 31, to hold the vertically aligned portions of the container in compact but yieldable merchandise-engaging position. A convenient arrangement, illustrated in Figs. 1, 4 and 12 utilizes a single band passing directly around the package and substantially at right-angles to the edges engaged by the band. It is desirable to employ one such band in alinement with the junction between each pair of columnar articles of merchandise at the sides of the container, it having been determined by experience that this arrangement provides sufficient package strength, while it likewise permits maximum exposure and visibility of the outer sides of said articles. However, a single band may be passed twice around the package as indicated in Fig. 13, arranged with loop portions 52 extending across

the bottom section 20 and upwardly along the opposite sides of the package substantially at right-angles to lines 30, and crossed portions 53 connecting loops 52 and crossing substantially at the center of the top section 22. Where the container carries bottles, cap-sealed cans or other articles projecting through the top section, the portions 53 may cross between adjacent necks or other projections and be held in place thereby.

Another arrangement is illustrated in Fig. 14 in which two bands 40 are used but are arranged diagonally, crossing at approximately the centers of the top and bottom sections 22, 20. The portions crossing on the top section 22 may likewise be held in position by the necks of the bottles or other projections. Another arrangement, illustrated in Fig. 15, is specifically adapted for use with packages of bottles or the like having portions such as bottle or can necks projecting above its top section 22. In this arrangement looped ends of the band are passed around opposite container necks or projections and extend downwardly across the package sides and under the bottom section 20 in obvious manner. In each of these arrangements the bands have been located so that the portions passing over the sides of the package may readily be positioned in alinement with the junctions of the adjacent columnar articles for purposes already indicated.

If desired, the body may be provided with suitable depressions or other means arranged to receive the bands and to hold them in position. A convenient arrangement for this purpose is illustrated in Fig. 16 and consists of a depression 54 formed in one of the bending lines 30, 32, as by providing short parallel slits 55 (Fig. 17) extending across said line, formed when the blank is stamped out and spaced by a distance slightly greater than the width of the band 40. With this arrangement it has been found that the pressure of the band against the portion of the blank between said slits will depress said portion and provide a suitable retaining means for the band.

While the general nature of the invention has been set forth and the preferred form has been described with certain modifications, it will be apparent that many changes may be made in the construction thereof within the scope of the invention as set forth in the claims. For instance, the end section 25 may detachably engage a slot 26^a (Fig. 6) located in the flap 37, which may be suitably proportioned and contoured to provide appropriate strength to the detachable connection with the end section. In the modification of this type illustrated in said figure, the end portion of said section 25 is transversely folded below the engaging margins of barbs 27 and fits in the fold angle at line 39, this arrangement tending to clamp the handle end in fixed position.

Packages embodying the invention as described are notable for their extreme simplicity and economy of material used for the container. The container blanks may be cut out readily in a single operation and can be assembled, packed and closed with great rapidity, so that the package will add only an extremely small amount to the cost of the merchandise. In fact, it will add so little that in many instances its cost may be completely balanced by economy in handling, packing, shipping and storing.

The package has proven to be very strong, due partly to its integral construction and partly to the arrangement of the handle with relation to the body members. While various types of handle construction and arrangement may be employed,

it is noted that in a construction of the type shown in Fig. 1, in which the section 22 is apertured to receive the necks of bottles and the like, the area available for handle attachment to that section is correspondingly restricted, and it therefore is advantageous to form the handle member integral with said section to provide maximum strength at this point of handle attachment. With an arrangement of the type shown in Fig. 4 this requirement does not apply and the handle may be integral with or permanently connected to either section 22 or section 20.

As already indicated, the container may be formed from a single blank cut from cheap sheet material in a single operation, and may conveniently be collapsed or folded for transportation to the packer. The container is likewise arranged for convenient and rapid packing under commercial conditions, as the articles of merchandise may be inserted with the sides and ends of the container partly folded, the construction being suitable for packing by the use of a simple jig. The packaging is then completed simply by inserting the end of handle 36 in slot 26 and placing the rubber band or bands 40 in position, both of which are simple operations which may be performed with great rapidity. The assembly and packaging of the package is therefore convenient and rapid, and involves only a very low expenditure for labor per package.

The completed package may be handled with utmost convenience and is readily packed in a minimum of space. Its rectangular shape permits packing in cartons of standard size since the total thickness of the container beyond the outer surface of the merchandise is extremely slight. Handling is greatly expedited particularly in the case of cans and bottles.

There are also special advantages in the invention as applied to bottles. The packages eliminate under proper conditions the necessity for the use of cases or holders having special partitions between bottles; and the bottle packages can be rapidly handled, since the construction permits them to be lifted by grasping one or more of the bottle tops. The use of rubber bands or other resilient retaining means provides a shock-absorbing structure when the package is lifted in this manner, and the engagement of the top section 22 and connected portions of the container with the bottles is such that the strain of such lifting is sufficiently distributed to prevent rupture of the container. This construction makes it easy to pack and unpack cases and to place the bottle packages in storage.

The arrangement is likewise particularly serviceable for stacking bottles in refrigerators. The open construction permits free circulation of the cold air, while the packages may be stacked as high as may be desirable in successive tiers. Heretofore it has been necessary to stack individual bottles in the refrigerators, which introduced obvious difficulties in packing the bottles in tiers, and generally required the use of shelves. The packages may likewise be placed in refrigerated showcases, with similar advantages as to convenience, the quantity that may be packed in a given showcase, the efficiency of refrigeration, and the ready transfer of the packages from the showcase to the consumer. The package moreover presents an attractive and effective display when thus placed in a refrigerated showcase.

It will be noted that the handle construction is such that it does not interfere with the compact stacking of the packages and yet provides a con-

venient method of transportation. This is especially valuable with bottles and cans, the handling of which is a substantial problem to the consumer, since the weight of such units makes it somewhat difficult to carry a paper bag filled therewith by grasping the mouth end of the bag in the usual manner. If it is desired to enclose the packages, they may be readily inserted in the bag, and the mouth end thereof may be tucked beneath the handle which is then available for carrying purposes.

The employment of rubber bands or similar resilient or yieldable members likewise facilitates the ready removal and replacement of merchandise units where desired. This feature is of particular value in connection with the packaging of bottles or other articles which are sold on a deposit basis and which are returned by the consumer after they are emptied, a common practice for instance in the retailing of beer. The disclosed arrangement permits the removal of a bottle by pressing down the adjacent lower side flap and withdrawing the lower end of the bottle which then can readily be slipped downwardly out of the aperture 45 surrounding its neck, as illustrated in Fig. 10. Upon removal thereof the flap will be snapped back by the rubber band 40 into position to retain the remaining bottles. Moreover, it has been found that most of the bottles may be removed from a package in this manner without collapse of the container. The empty bottle may be readily and rapidly replaced by reversing the indicated operation. This feature makes it possible to retain a part of the contents of the package in the container in an ice box, for instance, and greatly facilitates the return of the bottles to the store in the same container.

The materials employed for construction of the container will obviously depend upon the nature of the merchandise. In general, it has been found that fibrous sheet material made principally from wood pulp and having substantial stiffness is suitable for ordinary applications of the invention. The material should likewise be readily foldable without serious weakening at the folding points. For the packaging of bottles, cans and larger fruit, sheet material of the type generally referred to as paperboard or boxboard has been found to be suitable.

For instance, board of this type having a thickness of not substantially less than .035 inch is suitable for fruit and similar merchandise; and it has been found in general that a thickness of between .035 and .045 inch is sufficient for bottles and cans, although under unusual conditions the thickness may run as high as .050 inch. A suitable board has been found to have a Mullen strength of between 150 and 200. It will be understood that these figures are primarily illustrative and are not intended as limitations of the invention in its broader aspects. The material may be waterproof or semi-waterproof, which may be obtained by known waterproofing treatment of sheet material of fibrous character of the type already indicated, or by the application of a waterproofing surface layer to such material. The material such as paperboard may likewise be provided with a kraft or other special facing on one or both sides to improve the strength, appearance, printing qualities or other characteristics that are desirable for particular uses.

Where the material consists of paperboard or similar fibrous material, the fibres will generally extend principally in one direction, ordinarily re-

ferred to as the direction of the grain. It has been found that the junction of the free handle end with the container will be somewhat strengthened if the blank is cut with the grain extending lengthwise, that is, parallel to lines 30, 32, in the forms of blank indicated in Figs. 2 and 5. With this construction the handle 36 may be provided with one or more transverse bending lines 56, so that the longitudinal curvature of the handle during use will not produce unsightly and irregular transverse cracks or creases in the handle. Where, however, the added strength at the handle junction produced by this method of cutting the blank is not considered necessary, the blank may be cut with the grain running crosswise of the handle, that is, in a direction parallel to the fold lines 38, 39, since with this construction the longitudinal curving of the handle during use will produce relatively regular and slightly seams or creases in the handle surface and the scoring will not be equally necessary, although it may be employed.

It will be apparent that the rubber band or bands 40 constitute an important part of the package itself and are not simply a means for keeping a cover or wrapper in position. The various parts of the container body are particularly designed and arranged to cooperate with the compressive effect of the bands to retain the merchandise units in compact prearranged relationship, with the various merchandise-retaining elements of the containers held in proper article-engaging relationship. Such elements are likewise planned to cooperate with the yieldable character of said bands to permit ready insertion and removal of the articles of merchandise without materially changing the character or effectiveness of the container or package, and to facilitate snug packing of articles varying in size or shape.

While the container is suitable for the packaging of various types of merchandise, it is especially advantageous for use with merchandise articles of columnar form, which may be engaged at substantially spaced points by retaining flaps, providing secure retention of the merchandise combined with extensive exposure thereof. Such columnar articles may each be made up of a plurality of individual pieces arranged in superimposed relationship to form a unit article for packaging purposes; and such composite articles may obviously be arranged with the individual pieces either connected to each other in suitable manner or simply superimposed, depending upon the nature of such pieces and the type of package desired.

What is claimed is:

1. A merchandise display and carrying package comprising merchandise compactly arranged in the form of a generally rectangular prism, and a container confining the merchandise including a tubular body of relatively stiff sheet material extending continuously across the top, bottom and opposite ends of the prism and having open opposite sides; individually movable flaps carried by the body and extending in retaining engagement with the merchandise along the sides of the prism, said flaps being free from each other and also from the body except at lines of junction therewith, each flap having a width, transverse to said lines of junction, less than half the width of said open sides; and means for retaining the flaps in yieldable engagement with the merchandise, said means permitting movement of said flaps to enable removal of the merchandise without injury to the container.

2. A package as set forth in claim 1 in which the flap-retaining means comprises a resilient band extending across opposite faces of the body and across said flaps.

3. A merchandise display and carrying package comprising a plurality of columnar articles of merchandise arranged in rectilinear series, a container including a body portion having top, bottom and end sections connected in series and arranged in retaining engagement with the top, bottom and ends respectively of the series of articles, relatively narrow merchandise-retaining marginal flaps carried by said top and bottom sections engaging said columnar articles but leaving them laterally exposed, and resilient bands having portions engaging said flaps and extending across said sides between the top and bottom of the body in substantial alignment with junctions between the sides of adjacent articles; said flaps being individually movable against the restraining action of said bands to enable removal of said articles without injury to the container.

4. A merchandise display and carrying package including a plurality of columnar articles of merchandise reduced in diameter toward one end and arranged in juxtaposition in rectilinear series and a container having a body including continuously connected bottom, end and top sections engaging the bottom, ends and top of said plurality, respectively, one of said sections being adapted and arranged to serve as handle means; the top section being provided with suitable apertures having margins engaging the reduced portions of the articles; a plurality of flaps each connected to one of the top and bottom sections and extending from said section partly across a side of the package in retaining engagement with said articles, each flap being free except along the line of connection to said top or bottom section; and resilient band means for holding the flaps in merchandise-retaining position, extending around the container and including runs extending across the sides of the container in alignment with junctions between the sides of adjacent articles and runs extending across the top of the container between the reduced portions of the articles extending through said apertures.

5. A merchandise display and carrying package including a plurality of columnar articles of merchandise arranged in rectilinear series to form a prismatic group, a container including top, bottom and end portions engaging the top, bottom and end portions of said group, said top and bottom sections having parallel side edges registering with sides of the group, the corners of the top and bottom sections being cut away in register with the corners of the group, and merchandise-retaining flap means carried by the side margins of the top and bottom sections and extending partially across the sides of the package.

6. A merchandise display and carrying package comprising a plurality of articles of merchandise tapering toward one end and arranged in series to form a compact group; a container confining the group and including a body having a top section provided with apertures having margins fitting the tapered portions of the articles, and end and bottom sections connected to the top section and engaging the ends and bottom of the group, the top section having marginal portions extending beyond said apertures and free at the ends to permit downward flexing of said marginal portions but being too narrow transversely to close the package laterally and means for pressing downwardly said marginal portions of the top section; said marginal portions being indi-

vidually movable against the restraining action of such pressing means to enable removal of said articles without injury to the container.

7. A merchandise display and carrying package comprising a plurality of articles of merchandise tapering toward one end and arranged in series to form a compact group; a container including a body having a top section provided with apertures having margins fitting snugly over the tapered portions of the articles, and end and bottom sections connected to the top section and engaging the ends and bottom of said group, the top section having marginal portions extending beyond said apertures and cut away at the ends to permit downward flexing of said marginal portions, the flexed portions extending less than half the distance to the bottom section; flaps extending upwardly from the side margins of the bottom section less than half the distance to the top section, leaving substantial portions of the package sides in exposed condition; and resilient band means extending around the package and across said flaps and marginal portions of the top section for pressing said portions downwardly and said flaps inwardly into merchandise-retaining position.

8. A merchandise display and carrying package comprising a plurality of columnar articles of merchandise arranged in rectilinear series to form a compact prismatic group, and a container confining the group comprising integral opposed top and bottom sections in endwise engagement with the articles and extending substantially to the side faces of the group, opposed end sections connecting opposite margins of the top and bottom sections and engaging side faces of the group, each of the end sections having a merchandise-engaging width adjacent said top and bottom sections not less than the distance between the axes of the outer articles engaged thereby, and at least one of said end sections having a narrowed central portion; and movable merchandise-retaining means extending partially across the sides of the group and having no portion overlying the inner surfaces of said top and bottom sections; said merchandise-retaining means being adapted and arranged to yield in order to permit removal of said articles without injuring or dismantling the container.

9. A merchandise display and carrying container including top and bottom sections and opposed end sections connecting opposite margins of the top and bottom sections to form a generally rectangular tubular prismatic body with substantially open sides, the top and bottom sections having substantially parallel margins at said sides, individually movable merchandise-retaining flaps extending from said margins over said sides for a distance less than one-fourth of the distance between the top and bottom sections, and spaced apart except at such margins from other portions of the container, and means for resiliently holding the flaps in merchandise-engaging position while maintaining said sides in open condition but permitting removal of the merchandise without injury to the container.

10. A container as set forth in claim 9 in which one of the end sections is constructed in the form of a handle.

11. A container as set forth in claim 9 in which at least the top, bottom and one end section are formed integrally from a single sheet of material.

12. A merchandise display and carrying container for carrying columnar articles having tapered end or neck portions, which includes top and bottom sections and opposed end sections connecting opposite margins of the top and bottom sections to form a generally rectangular tubular prismatic body with substantially open sides, the top and bottom sections having substantially parallel margins at said sides, movable merchandise-retaining flaps extending from said margins over said sides for a distance less than one-fourth of the distance between the top and bottom sections, and spaced apart except at such margins from other portions of the container; the top section being provided with a plurality of apertures through which such tapered end or neck portions may project, and one of the end sections being constructed to form a handle integral with the top section and separably engaging the bottom section; and means for resiliently holding the flaps in merchandise-engaging position while maintaining said sides in open condition.

13. A blank for a merchandise display and carrying container formed of relatively stiff foldable sheet material, comprising a bottom section, an end section and a top section formed in series from a sheet of said material and connected at parallel bending lines, said top and bottom sections being each provided with side flaps spaced at their ends from the ends of the section and having a depth parallel to said lines substantially less than the length of the end section, the flaps being connected to the top and bottom sections at parallel bending lines.

14. A blank as set forth in claim 13 in which the end section is substantially narrower than the top and bottom sections.

15. A blank as set forth in claim 13 in which one of the top and bottom sections is provided at its free end with a second end section connected at a bending line parallel to the first-mentioned lines and of effective length substantially equal to that of the first end section.

16. A blank as set forth in claim 13 in which one of the top and bottom sections is provided at its free end with an integral end section constructed to form a handle and the other of said top and bottom sections is provided adjacent its free end with slot means for receiving the handle section, said handle section being provided adjacent its end with locking means for engaging said slot means.

17. A blank as set forth in claim 13 in which the top section is provided with a plurality of apertures arranged in series and having margins arranged and located to fit portions of articles of merchandise projecting through said top section.

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