

Sept. 22, 1953

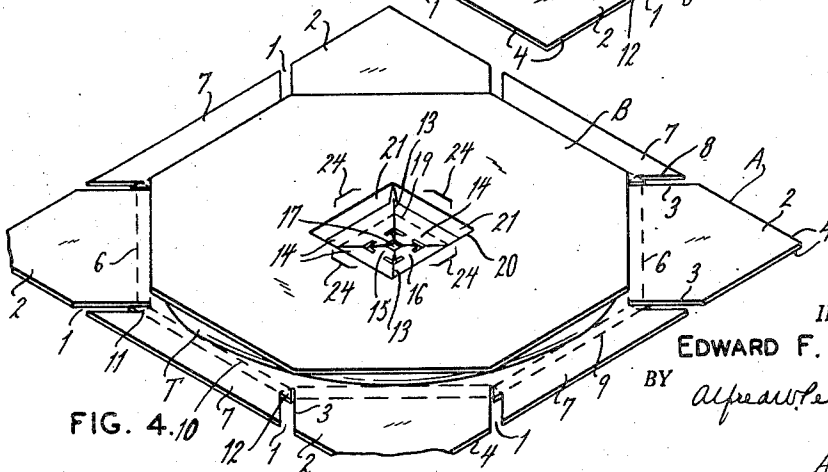
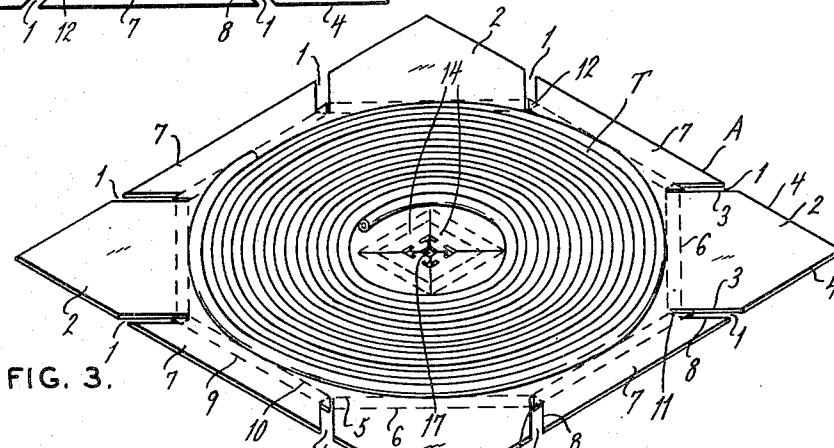
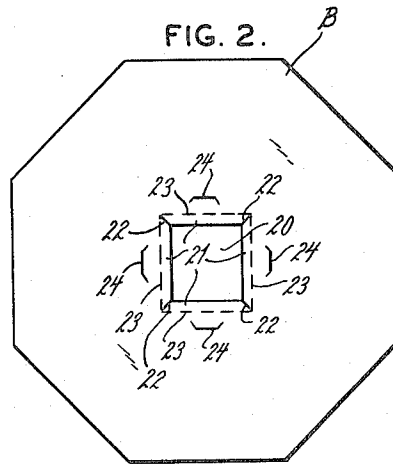
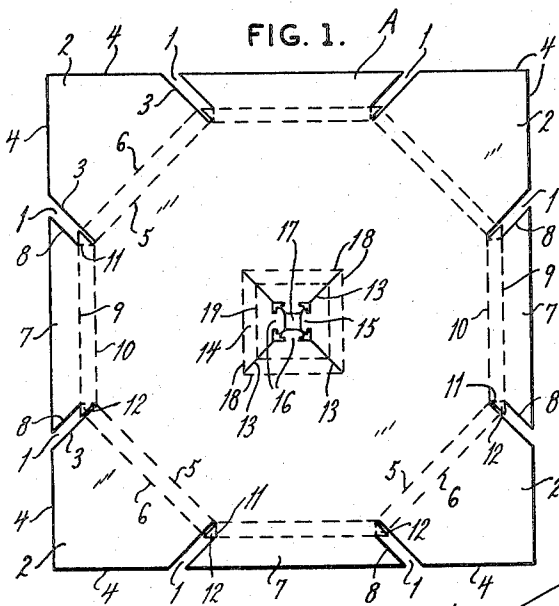
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2,652,922

CONTAINER FOR PACKAGING TORUSLIKE OBJECTS AND ARTICLES

Filed March 8, 1950

2 Sheets-Sheet 1



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CONTAINER FOR PACKAGING TORUSLIKE OBJECTS AND ARTICLES

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2 Sheets-Sheet 2

FIG. 5.

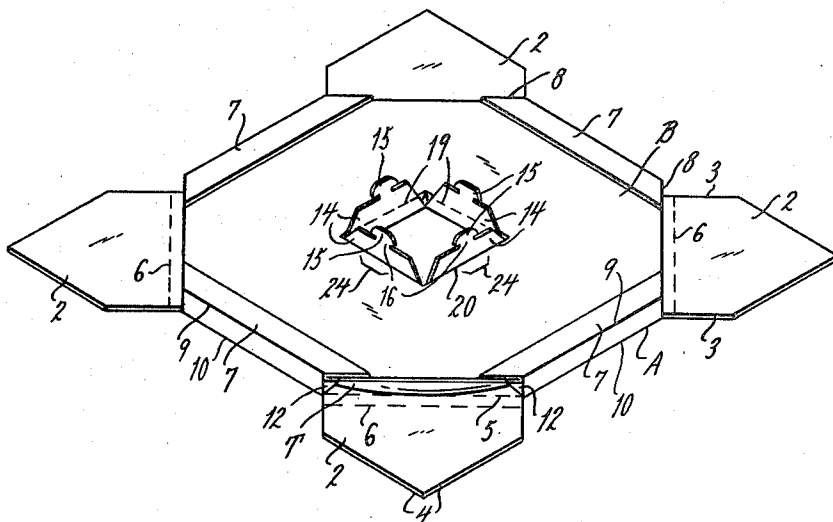


FIG. 6.

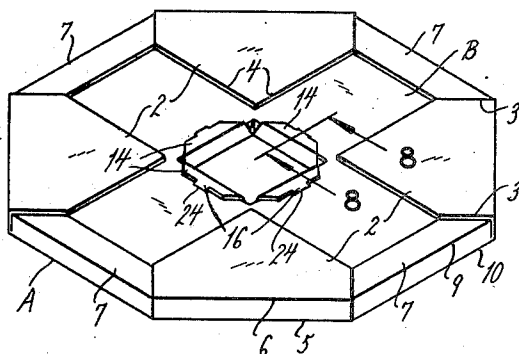


FIG. 7.

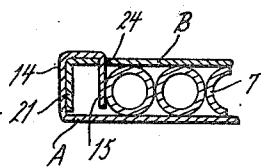
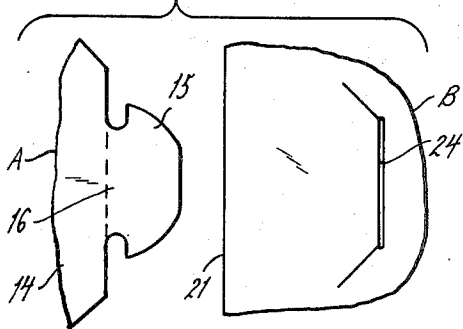


FIG. 8.

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6 Claims. (Cl. 206—59)

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This invention relates to certain new and useful improvements in containers for packaging torus-like objects and articles and, more particularly, to a box or carton for packaging, shipping, and storing of flat, circular articles, such as coils of tubing, hose, and the like.

It is one of the principal objects of the present invention to provide a box or container which is particularly well adapted for housing flat circular objects, such as coils of tubing, coils of hose, or any other similar article which in its overall or assembled shape is relatively flat and circular.

It is a further object of the present invention to provide a container of the type stated, which is unusually economical in structure and cost of manufacture, can be stored and shipped to its point of use prior to assembly in a relatively compact unit, and can be set up or assembled in container-form, at point of use, in a convenient manner without resort to complicated machinery or the excessive employment of hand-labor.

It is another object of the present invention to provide a container of the type stated, which is adapted to support the contained object on eight sides and thereby materially assist in retaining the circularity of the object against deformation under its own weight.

It is an additional object of the present invention to provide a container of the type stated, which will conform more closely to a circular coil or other similarly shaped object housed therein.

It is also an object of the present invention to provide a container of the type stated, which will withstand the ordinary stress and strains to which a container of this type is subjected during shipment and will not readily become dented or otherwise broken at its corners.

It is also an object of the present invention to provide a container of the type stated, which may be fabricated from rectangular board stock, or other suitable material of construction with a minimum of wastage thus achieving an unusual economy in manufacturing thus.

It is a further object of the present invention to provide a container of the type stated, which is uniquely provided with a central hub-forming construction adapted to support a coil of relatively heavy weight deformable material from a plurality of central support points, thereby materially assisting in supporting the weight of the material when the container is set up on end or dropped on one of its corners.

It is also an object of the present invention to provide a container of the type stated, which is

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uniquely suited to storage in a suspended manner from wall hooks and various similar projecting brackets, and which, when stored, will present a plurality of narrow edges to the view of the workman so that printed labels or other identifying legends placed thereon will be readily visible at all times particularly if printed in alternated up and down fashion, so that the legend may be legible irrespective of which side of the package may be presented to view.

It is likewise an object of the present invention to provide a container of the type stated, which will support a circular coil or similar packaged article at three or four points even when the package is dropped on its corners, due to accident or mishandling and will therefore materially offset the tendency of the packaged material to deform itself under impact by reason of its own weight.

With the above and other objects in view, my invention resides in the novel features of form, construction, arrangement and combination of parts presently described and pointed out in the claims.

In the accompanying drawings (two sheets)—
Figure 1 is a plan view of the bottom-forming element of a container constructed in accordance with, and embodying the present invention;

Figure 2 is a plan view of the top-forming element of a container constructed in accordance with, and embodying the present invention;

Figure 3 is a perspective view of the bottom-forming element with a coil of tubing placed thereon, illustrating the first step in the packaging of such objects;

Figure 4 is a perspective view of the bottom-forming element, coil, and the top-forming element illustrating the second step in the packaging of the coil;

Figure 5 is a perspective view of the container in partially completed or formed position around the coil;

Figure 6 is a perspective view of the container fully formed, and in coil-encasing position;

Figure 7 is a fragmentary detailed view of the center flat interlock forming a part of the present invention; and

Figure 8 is a fragmentary transverse sectional view taken along line 8—8 of Figure 6.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention, A designates a bottom-forming element or member which is die-cut or otherwise formed out of a square section of suitable container board stock, such as corrugated board, fiber-board, or

any other similar material. The member A is provided along each of its four edges with inwardly converging slots 1, which are disposed at angles of 45° to the longitudinal margins of the member A and sub-divide the member A into four corner flaps 2, each having diagonally extending straight edges 3 and right-angularly intersecting corner margins 4. The corner-flaps 2 are integrally connected to the main body of the member A across a score line 5 and are further provided with a second score line 6 disposed in outwardly parallel relation to the score line 5.

Between each pair of corner flaps 2, along each straight-edge of the member A, is an intermediate flap 7 having angular margins 8 disposed in parallel relation to the corner flap margins 3, being joined integrally to the body of the member A across a score line 9. The flap 8 is further provided with a second score line 10 disposed in inwardly spaced parallel relation to the score line 9 and joining at its ends with the score lines 5 of the adjacent corner flaps 2.

The score lines 9, 10, furthermore, are transversely connected at their outer ends by right-angularly disposed score lines 11 which served to define small, triangular, internal flaps 12, lying between the flaps 7 and the corner flaps 2 at the inner ends of the slots 1.

In its central portion the bottom-forming member A is die-cut with four diagonal slits 13, each such slit 13, being coincident with a line running from the geometrical center of the member A, radially outwardly through the geometrical point or corner of a corner flap 2. In other words each slit 13 lies along one of the diagonals of the member A. At its inner end each slit 13 is enlarged to form a cut-out area 14 and is turned around to meet the next adjacent slit 13 on either side. Thus, the four slits 13 define four trapezoidally shaped flaps 14 integrally provided on their free margins with locking ears 15 having reduced necks 16 and being separated from each other by a somewhat rectangular cut-out or aperture 17.

The slits 13, at their inner ends, are connected by score lines 18, forming in effect a rectangular pattern and the flaps 14 are sub-divided midway of their width by a score line 19 in parallel relation to the score line 18.

It should be noted in this connection that the distance between the score lines 18, 19, is substantially equal to the distance between the score lines 5, 6, for purposes presently more fully appearing.

Provided for co-operation with the bottom-forming member A is a top-forming member B, which consists of an octagonal sheet of container-forming material preferably the same type of stock as that used in bottom-forming member A.

The peripheral shape and size of the member B is substantially identical with the shape of the octagonal area defined in the member A by the several score lines 5 and 10. The member B is die-cut in its central area to provide a rectangular central aperture 20 having four marginal flaps 21, separated at their corners by angular slits 22, arranged so as to overlie, and be substantially coincident with the slits 13. At their inner ends, the slits 22 are connected by score lines 23, which define a rectangular pattern substantially similar to, and adapted to be coincident with, the rectangular pattern defined by the member A and the score lines 18.

The member B is further provided with four

locking slits 24, each of which is disposed in outwardly spaced parallel relation to one of the score lines 23, and is more or less centered with respect to the ends thereof.

It should be noted in this connection that the distance between the geometrical center point of the rectangular opening and each slit 24 is substantially less distance from such geometrical center to the outer end of each slit 22, so that if a circle were to be circumscribed about the rectangle defined by the score lines 23, it would completely enclose the slits 24 and would not be intersected by them.

In use, the bottom-forming member A is laid down flatwise upon a suitable table, floor, or other flat surface, which may be conveniently available, and a coil of tubing T is laid down flatwise and concentrically upon the bottom-forming A. It should be noted that the bottom-forming member A is laid out and designed for the type of coil T, which is to be packaged therein, so that the coil T, when properly centered on the bottom-forming member A, will be substantially tangent to the center points of the score lines 5 and 10.

Furthermore, the distance between the score lines 5, 6, and the score lines 9, 10, is substantially equal to the diameter of the tubing, or in other words the thickness of the coil T. Similarly, the dimensions of the inside rectangle formed by the score line 18 is such that the corners of this rectangular pattern will approximately be tangent to the interior circle of the coil. In the case of small diameters, it may be desirable to cut-off or foreshorten the corner flaps 2.

The top-forming member B is thereupon placed on top of the coil T with its marginal edges in substantial registration with the octagonal pattern formed by the score lines 5, 10, substantially in the manner shown in Figure 4. Thereupon, the flaps 7 are folded up, so that the area lying between the score lines 9, 10, will, in effect, become a short vertical wall and the remainder of the flap 7 folded over likewise on top of the forwardly presented face of the top-forming member B. The small triangular tabs 12 are thereupon folded inwardly to lie in the plane of the next adjacent side of the octagon, substantially as shown in Figure 5. Thereupon, the flaps 21 are folded down and the flaps 14 are folded upwardly about the score lines 18 to form double-thickness, interior vertical walls, also as substantially shown in Figure 5.

Suitable adhesive, such as silicate of soda, is applied beneath the folded over portions flaps 7 and preferably, though not necessarily, along the inside rectangular opening in the region of the flaps 14.

Thereupon the corner flaps 2 are folded up around the score lines 5 and then bent over around the score line 6, and pasted down with suitable adhesive so as to lie flatwise upon the upwardly presented face of the top-forming member B.

Finally, the flaps 14 are folded about the score lines 19 and the locking ears 15 are inserted through the slits 24 to complete the container and enclose the coil T, substantially as shown in Figure 6.

It should be noted that when the container is completely pasted together the triangular tabs 12 will close the outer corner and the corner flaps 2 will overlie and be pasted down upon the triangular projecting portions of flaps 7 in the regions of the angular margins 8 thereof, forming a complete interlock at each corner and

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imparting unusual rigidity and strength in the corners of the finished container.

It will also be apparent that the inside tabs 18, being adhesively secured to the downwardly folded tabs 21 will thus form a securely interlocked central hub, so to speak, which will snugly engage the tubing coil T at least three or possibly four points around its interior diameter so that when the container is placed upright on one of its eight sides, as would usually be the case for handling and shipping, a substantial portion of the weight will be suspended by this hub-like internal structure, thereby preventing all of the weight of the coil T from bearing down upon one of the side walls of the container, or otherwise imposing rupturing stress upon the container, as would be the case with conventional types of containers heretofore in existence. The container of the present invention, furthermore, embraces the coil T at eight points around its outer periphery, snugly housing it against all normal tendencies, to bend or otherwise deform itself in the course of careless handling.

Actually, the eight corners of the container are extremely strong and will resist damage if the container is accidentally dropped on one of such corners. In addition to this, there is much less empty space in such corners than there is in the conventional rectangular type of package. Therefore, there is materially less likelihood of the corners breaking or being otherwise damaged. Containers of the present invention can be stored in a suspended fashion by inserting a horizontal or substantially horizontal hook or supporting bar (not shown) through the rectangular aperture. It has been found in actual practice that a number of packages can be very easily stored for ready access in this manner.

The container of the present invention is, furthermore, exceptionally easy to handle in storage and in shipment and is less likely to be handled carelessly or damaged. For example, the package handler can very readily lift a package formed with one of the containers of the present invention by inserting his hand through the central aperture and grasping the inner edges or faces, thus being enabled to carry a package of fairly large size, weight, and bulk, under his arm in a highly convenient manner. Finally containers of the present invention can be very easily handled by being rolled about on their octagonal edges very much in the manner of a disc or wheel. It has been found that even in the case of very heavy packages this rolling action will not, in any way, damage or seriously harm either the container or its contents.

Although in the preferred embodiment herein described reference has been made to the use of corrugated cardboard as the material of construction, it is, of course, obvious that other similar types of material can be used with facility. In fact, containers of the present invention can be fabricated of fiber-board, sheet metal, and a wide variety of other materials depending upon the particular type of object, which is to be packaged therein. It should also be apparent that the containers of the present invention can be varied in size and shape to accommodate various different sizes and types of circular disc-like or coiled objects.

It should be understood that changes and modifications in the form, construction, arrangement, and combination of the several parts of the packaging material may be made and sub-

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stituted for those herein shown and described without departing from the nature and principle of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A package for pancake-shaped articles comprising a pair of octagonal members, one of said members being provided with marginal flaps folded up and over the other member and secured facewise thereupon, each of said members being further provided in its central area with a plurality of interior flaps arranged in an end-to-end annular series, the interior flaps of one octagonal member being folded up into overlying abutment with the interior flaps of the other member, and means for severing said overlying interior flaps together in the formation of a plural-sided hub for supporting the article housed within the container.

2. A container for pancake-shaped articles comprising a pair of members each having more than four equal sides, one of said members being provided with marginal flaps folded up and over the other member and secured facewise thereupon, each of said members being further provided in its central area with a plurality of interior flaps arranged in an end-to-end annular series, the interior flaps of one octagonal member being folded up into overlying abutment with the interior flaps of the other member, and means for securing and overlying interior flaps together in the formation of a plural-sided hub for supporting the article housed within the container.

3. A container for packaging torus-like articles comprising a top-wall member and a bottom-wall member, said bottom-wall member being provided in its central area with four diagonal slits which define four substantially triangular flaps adapted to be folded upwardly into a position perpendicular to the bottom-wall member to form a rectangular aperture in the center thereof, said top-wall member being provided in its central area with a rectangular aperture having short slits extending diagonally outwardly from its four corners to form narrow tabs which are bendable downwardly into a position perpendicular to the top-wall member to form a rectangular aperture of substantially the same size as the rectangular aperture in the bottom-wall member in such a manner that the tabs bordering said apertures will nest within each other to form a rectangular hub, said top-wall member being substantially smaller in peripheral contour than the bottom-wall member, and the bottom-wall member being provided with a plurality of slots extending angularly inwardly from its outer margin along lines parallel to the diagonals of the central apertures to form marginal tabs which are bendable upwardly around and over the margins of the top-wall member to form walls around the outer periphery of the container and securement tabs by which the two wall-forming members are secured together.

4. A container for packaging torus-like articles comprising a top-wall member and a bottom-wall member, said bottom-wall member being provided in its central area with four diagonal slits which define four substantially triangular flaps adapted to be folded upwardly into a position perpendicular to the bottom-wall member to form a rectangular aperture in the center thereof, said top-wall member being provided in its central area with a rectangular

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aperture having short slits extending diagonally outwardly from its four corners to form narrow tabs which are bendable downwardly into a position perpendicular to the top-wall member to form a rectangular aperture of substantially the same size as the rectangular aperture in the bottom-wall member in such a manner that the tabs bordering said apertures will nest within each other to form a rectangular hub, said top-wall member being octagonal in outwardly peripheral shape, and the bottom-wall member being provided with eight slots extending angularly inwardly from its outer margin along lines parallel to the diagonals of the central apertures to form marginal tabs which are bendable upwardly around and over the margins of the top-wall member to form walls around the outer periphery of the containers and securement tabs by which the two wall-forming members are secured together.

5. A container for packaging torus-like articles comprising a top-wall member and a bottom wall member, said bottom-wall member being provided in its central area with four diagonal slits which define four substantially triangular flaps adapted to be folded upwardly into a position perpendicular to the bottom-wall member to form a rectangular aperture in the center thereof, said top-wall member being provided in its central area with a rectangular aperture having short slits extending diagonally outwardly from its four corners to form narrow tabs which are bendable downwardly into a position perpendicular to the top-wall member to form a rectangular aperture of substantially the same size as the rectangular aperture in the bottom-wall member in such a manner that the tabs bordering said apertures will nest within each other to form a rectangular hub, said top-wall member being of octagonal peripheral contour and of substantially smaller size than the bottom-wall member, and the bottom-wall member being provided with a plurality of slots extending angularly inwardly from its outer margin along lines parallel to the diagonals of the central apertures to form marginal tabs which are bendable upwardly around and over the margins of the top-wall member to form walls around the outer periphery of the container and securement tabs by which the two wall-forming members are secured together.

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6. A container for packaging torus-like articles comprising a top-wall member and a rectangular bottom-wall member, said bottom-wall member being provided in its central area with four diagonal slits which define four substantially triangular flaps adapted to be folded upwardly into a position perpendicular to the bottom-wall member to form a rectangular aperture in the center thereof, said top-wall member being provided in its central area with a rectangular aperture having short slits extending diagonally outwardly from its four corners to form narrow tabs which are bendable downwardly into a position perpendicular to the top-wall member to form a rectangular aperture of substantially the same size as the rectangular aperture in the bottom-wall member in such a manner that the tabs bordering said apertures will nest within each other to form a rectangular hub, said top-wall member being of octagonal peripheral contour and of substantially smaller size than the bottom-wall member, and the bottom-wall member being provided with a plurality of slots extending angularly inwardly from its outer margin along lines parallel to the diagonals of the central apertures to form marginal tabs which are bendable upwardly around and over the margins of the top-wall member to form walls around the outer periphery of the container and securement tabs by which the two wall-forming members are secured together.

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