March 7, 1961 A. L. LANEVE ET AL 2,973,858

CONTAINER FOR WIRE, TUBING, CORDAGE AND THE LIKE

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FIG. 1

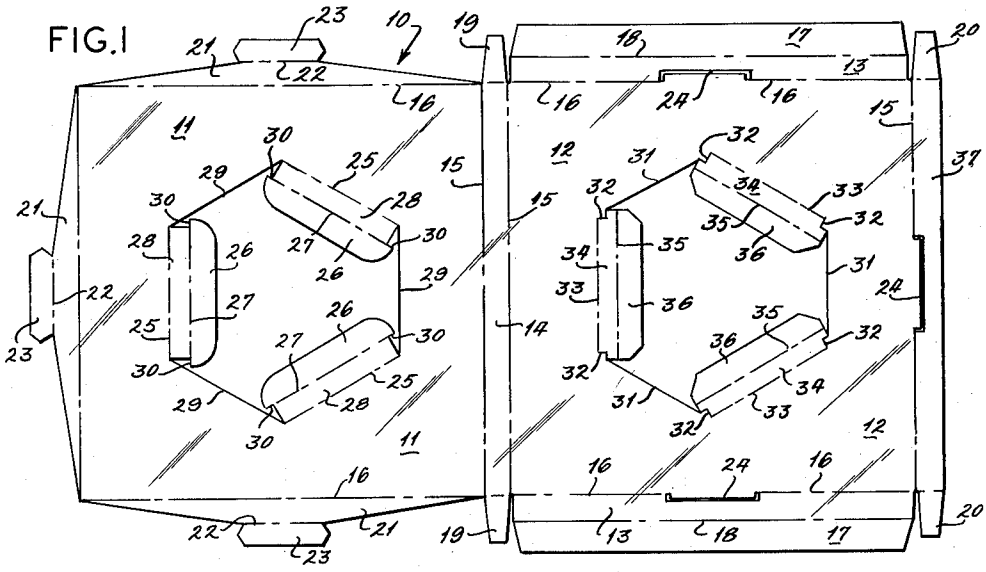


FIG. 2

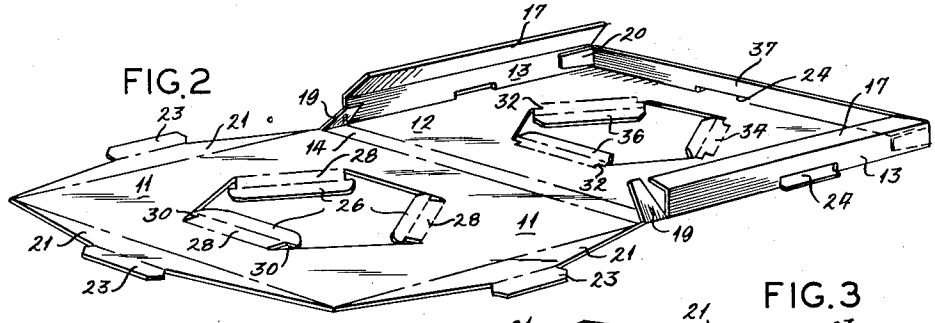


FIG. 3

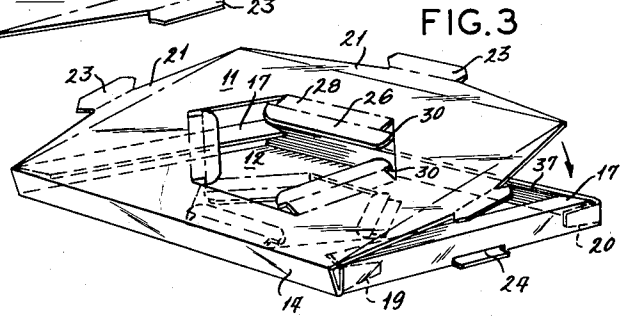
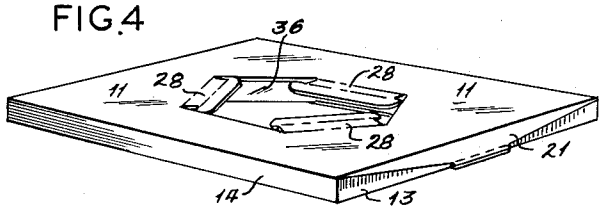


FIG. 4



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CONTAINER FOR WIRE, TUBING, CORDAGE AND THE LIKE

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FIG.5

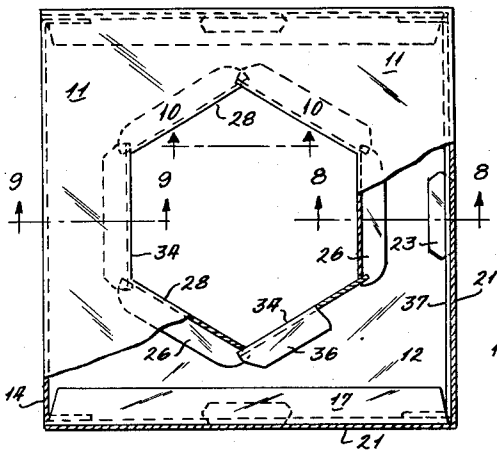


FIG.7

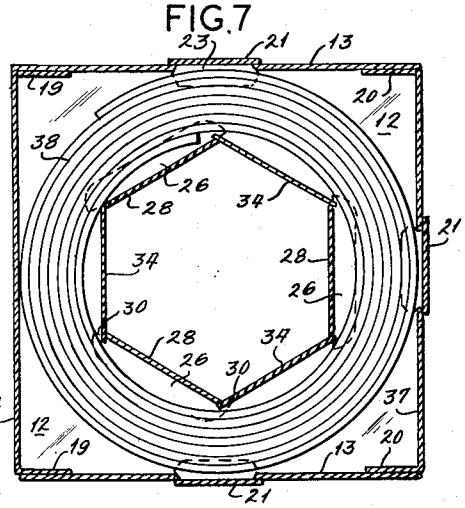


FIG 6

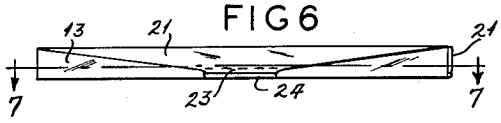


FIG.8

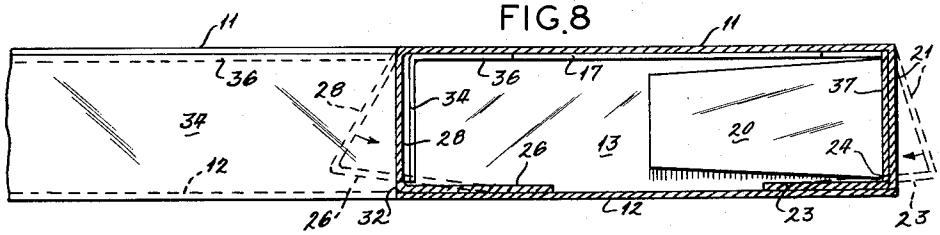


FIG.9

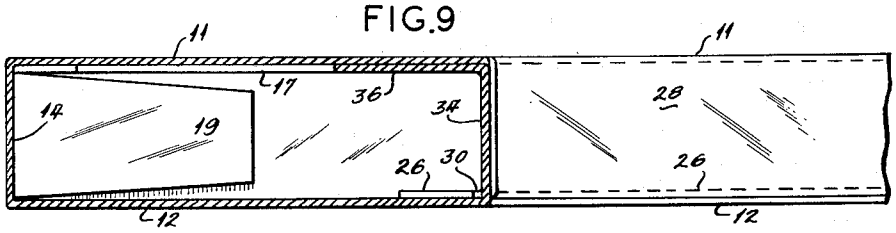
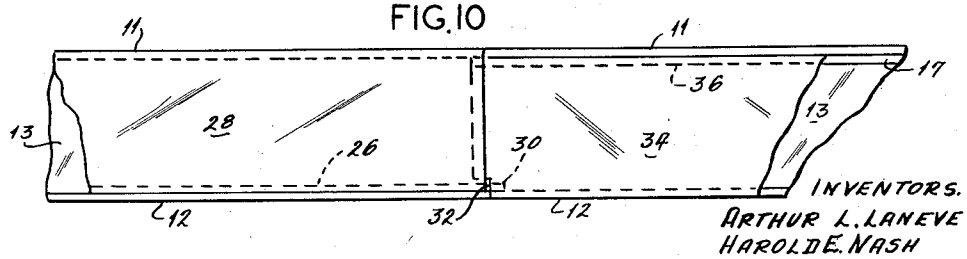


FIG.10



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United States Patent Office 2,973,858 Patented Mar. 7, 1961

2,973,858

CONTAINER FOR WIRE, TUBING, CORDAGE AND THE LIKE

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Filed Mar. 13, 1958, Ser. No. 721,222

5 Claims. (Cl. 206—52)

This invention relates to certain new and useful improvements in packaging and more particularly to a box or container for packaging, shipping and storing flat, circular articles, such as coils of wire, tubing, cordage and the like.

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

It is a further object of the invention to provide a container formed of a single blank of fibreboard or other suitable material, which is unusually economical in structure and cost to manufacture and can be stored and shipped to its point of use, prior to assembly, in knocked down flat form, and can be set up or assembled at the point of use, in a convenient manner without resort to machinery and with but a moderate employment of hand labor.

It is another 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 coils 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.

Still another object of the invention is to provide a container of the type stated which may be fabricated from a single rectangular blank of fibreboard or other suitable material with a minimum of wastage, thus achieving an unusually economical manufacture.

It is likewise an object of the present invention to provide a container of the type stated having a centrally located hub member formed of an even number of inner flaps alternating from the top and bottom walls to form a strong shock resistant structure which will support coils of wire, tubing, cordage and the like even when the package is dropped 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.

Other objects and advantages will be apparent from the following detailed specification.

For a complete understanding of this invention reference may now be had to the drawings which form a part of this specification and in which:

Fig. 1 is a plan view of a one piece blank embodying the present invention;

Fig. 2 is a perspective view of the blank shown in Fig. 1 illustrating a first step of erection;

Fig. 3 is a perspective view of the blank illustrated in Fig. 1 illustrating a second step of erection;

Fig. 4 is a perspective view of the blank of Fig. 1 in erected condition preparatory to forming the central hub forming member;

Fig. 5 is a top plan view, partially cut away of the completely erected container;

Fig. 6 is a side elevation view of Fig. 5;

Fig. 7 is a sectional view taken in the direction of the arrows 7—7 of Fig. 6;

Fig. 8 is an enlarged sectional view taken in the direction of the arrows 8—8 of Fig. 5;

Fig. 9 is an enlarged sectional view taken in the direction of the arrows 9—9 in Fig. 5; and,

Fig. 10 is an enlarged view taken in the direction of the arrows 10—10 of Fig. 5.

Referring now in more detail and by reference characters to the drawings, which illustrate a preferred embodiment of the present invention and wherein like numerals refer to like parts wherever they occur:

The reference number **10** designates the one piece blank which is die cut or otherwise formed out of a rectangular section of fibreboard or other suitable material. The blank **10** is provided with a top wall **11** and a bottom wall **12**, generally defined by two horizontal scores **16** and four vertical scores **15** and are separated by a connecting side wall **14**. The score lines **16** and **15** also define three flaps **21** integral with the top wall **11** and side wall forming flaps **13** integral with the bottom wall **12** and side wall forming flaps **37** also integral with the bottom wall **12**. The score lines **16** also define the hinge connection of one pair of connecting flaps **19** integral with the connecting side wall **14**, and one pair of connecting flaps **20** integral with the side wall forming flap **37**. Score lines **18** define the outer flaps **17** which are integral with side wall forming flaps **13**. Openings **24** are provided in the pair of side wall flaps **13** and the side wall flap **37** adjacent the score lines **16** and **15** respectively. Score lines **22** define locking tabs **23** which are integral with the top wall flaps **21**.

The central portions of the top wall **11** and bottom wall **12** are die cut to define generally hexagonal apertures with three flaps on alternating margins of each of the top and bottom walls. More specifically the aperture in the top wall is defined by three margins **29** alternately separated by three flaps **28** defined by score lines **25**. The score lines **27** define locking tabs **26** integral with the flaps **28**. The locking tabs **26** have a pair of locking ears **30** which are extensions of flaps **26** adjacent score lines **27**.

The aperture in the bottom wall is defined by three margins **31** alternately separated by three flaps **34** defined by score lines **33**. Score lines **35** define tabs **36** which are integral with the flaps **34**. The side marginal edges of the flaps **34** are provided with cut outs **32** adjacent the ends of the score lines **33**.

The container is erected by placing a relatively flat circular article (not shown) on the bottom wall **12** and folding the side wall forming flap **37** right angularly upward and the integral tabs **20** right angularly inwardly. The side wall flaps **13** are then folded right angularly upwardly and the flaps **17** integral therewith folded right angularly inward as shown in Fig. 2. The tabs **19** are folded inwardly and the connecting wall **14** is folded right angularly upwardly with the pair of tabs **19** positioned adjacent the inner face of side walls **13**. The top wall **11** is then folded right angularly downwardly into registering relationship with the bottom wall **12** as shown in Fig. 3. The three flaps **21** with integral locking tabs **23** are then folded downwardly and the tabs **23** inserted into the openings **24** to close the container preparatory to forming the central hub member.

The central hub member is formed by first folding flaps **34** upwardly from the bottom wall about score line **33** and positioning the flaps **36** integral therewith into contacting relation with the under face of the top wall **11**. Then the three flaps **28** which are integral with the

top wall 11 are folded downwardly about the score line 25 and the locking tabs 26 are positioned in contacting relation with the inner face of the bottom wall 12. The tabs 26 lock in place by the co-action of the locking ears 30 with the cut outs 32 in flaps 34 thus completing the assembly of the container.

It will be apparent that while the aperture in the drawing is hexagonal in shape, any even number of sides could describe the aperture with the same new and novel result. That is, the aperture could be formed in a square or rectangular shape, an octagonal shape, a decagonal shape, etc. Generally speaking, a square or rectangular shape may be undesirable where an aperture of a more nearly circular shape is desired while an octagonal or decagonal shape will require more set up time.

It will be apparent that the central hub member will snugly engage flat circular articles such as wire, tubing, cordage and the like at at least three, or possibly four points around its interior diameter, so that when the container is placed upright on one of its sides, as would usually be the case for handling and shipping, a substantial portion of the weight will be supported by this locked hub-like internal structure, thereby preventing all of the packaged article from bearing down upon one of the side walls of the container. Furthermore, containers of the present invention can be stored in a suspended manner by inserting a hook or supporting member through the centrally located aperture. Also, the container is 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 centrally located aperture and grasping the inner edges or faces, thus being enabled to carry the package of a fairly large size, weight, and bulk, under his arm in a highly convenient manner.

Although, in the preferred embodiment herein described reference has been made to the use of fibreboard, (which encompasses both corrugated and solid fibreboard) as a material of construction, it is, of course, obvious that other similar types of materials can be used with facility.

It should be noted that changes and modifications in the form, construction, arrangement and combination of the several parts of the container may be made and substituted for those herein shown and described without departing from the nature and principle of my invention.

We claim:

1. A container for coiled wire, tubing, cordage and the like comprising rectangular top and bottom wall panels disposed in superposed relation, spaced by relatively narrow vertically disposed side walls integral and coextensive with the side edges of the bottom wall, the top wall being hinged to one of the side walls, the top and bottom wall panels having marginally registering central, polygonal apertures, the bottom wall having integral flaps on alternate margins of its polygonal aperture folded right angularly upward, tabs integral with said flap positioned outwardly into contacting relation with the inner face of the top wall, the inner portions of the flaps having cutouts on their sides adjacent their hinge line the top wall having integral flaps on alternate margins of its polygonal aperture folded right angularly downwardly, locking tabs integral with said top wall flaps positioned outwardly flatwise against the inner face of the bottom wall with locking projections on the side edges and in mutual edgewise locking engagement with the cutouts in the bottom wall flaps, forming a rigid central hub adapted to support coiled articles with a central transverse opening therein.

2. A one piece container for packaging a cylindrical article having a substantially greater diameter than height and a central void therein comprising rectangular, substantially counterpart top and bottom wall panels spaced in parallel relation by relatively shallow opposed pairs of vertical side walls integral with the sides of the bottom wall panels, the top wall being hinged to the top edge of one side wall with flaps on its free edges disposed flatwise against the outer face of the side walls with locking tabs on said flaps locked in aligned slots in the side walls, in the top and bottom walls, centrally positioned and aligned marginal edges defining openings, flaps integral with alternate margins with tabs on their outer ends, folded into mutual edgewise interlocking engagement, the top wall flanges right angularly downward, the bottom wall flaps positioned right angularly upward with their tab extensions folded outwardly flatwise against the inner face of the opposite wall, the tabs on the flanges integral with the interior margins of the top and bottom wall panels having locking ears in engagement with aligned cutouts in the side edges of the bottom wall flanges, firmly locking the hub structure together.

3. The container set forth and claimed in claim 2 wherein the opposed pair of side walls, including the side wall integrally attached to the top and bottom wall panels, have attached connecting flaps at each end folded inwardly in flatwise relation against the inner surface of the adjacent side walls, the pair of adjacent side walls having foldably connected outer flaps on their outer edge, said outer flaps folded inwardly and downwardly over the connecting flaps and in parallel relation to the connected side walls, thereby securing the side walls in upstanding relation to the bottom wall panel and with the intersections of the side walls in engaged relation.

4. In a container for an article disposed about a central hub structure, the container having a first and a second panel in spaced parallel relation, said panels connected by outer marginal side walls, a hub structure disposed between the spaced parallel panels and defined by opposed pairs of interior marginal edges in each said panel and comprised of flaps attached to only one marginal edge of each such pair and in alternating relation between the first and second panel, the flaps having opposed side edges and an inner edge with tabs hingedly connected to the inner edge, with protruding locking ears on their side margins, the flaps disposed between the first and second panel in mutual substantially edgewise abutting relation and having the tabs disposed in flatwise relation against the inner surface of the respective parallel panel, the tab protruding locking ears in edgewise engagement with the adjacent flap side edges.

5. The container hub structure set forth and claimed in claim 4 wherein the flaps attached to the first panel have cutouts in the opposed side edges adjacent said attachment and in alignment with the adjacent tab locking ears.

References Cited in the file of this patent

UNITED STATES PATENTS

2,652,922	Schweich	Sept. 22, 1953
2,706,592	Schaller	Apr. 19, 1955
2,724,538	Schweich	Nov. 22, 1955
2,832,466	Sheard	Apr. 29, 1958