Feb. 5, 1929. 1,701,059

J. M. ANDREWS

CUSHION CARTON

Filed Nov. 19, 1925 3 Sheets-Sheet 1

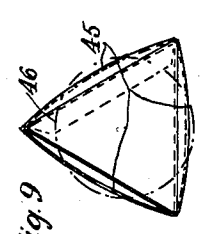


Fig. 9

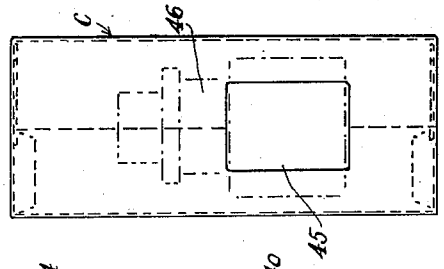


Fig. 10.

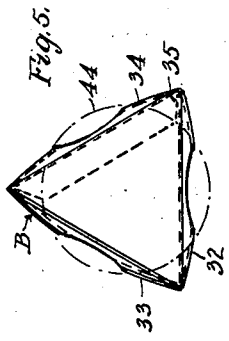


Fig. 5.

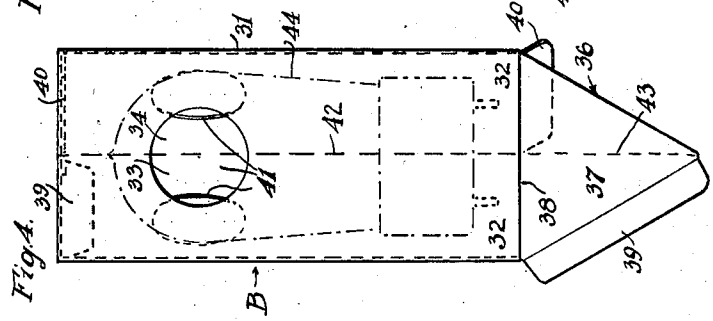


Fig. 4.

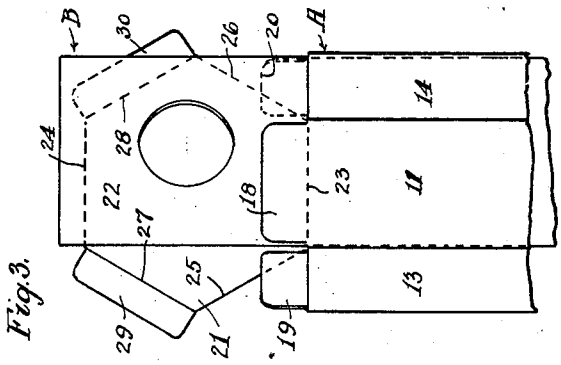


Fig. 3.

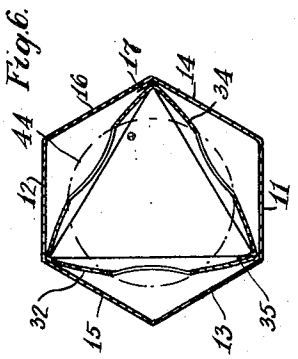


Fig. 6.

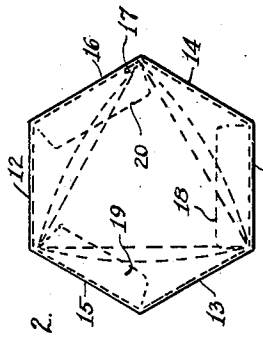


Fig. 2.

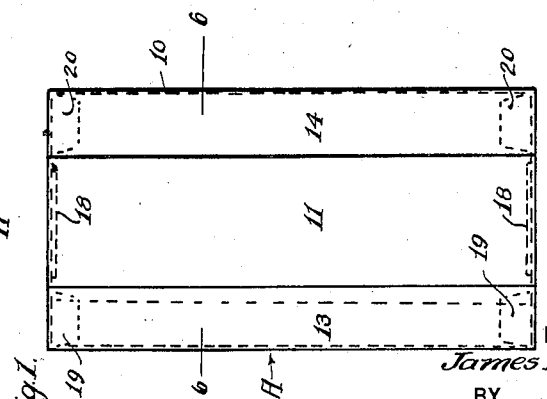


Fig. 1.

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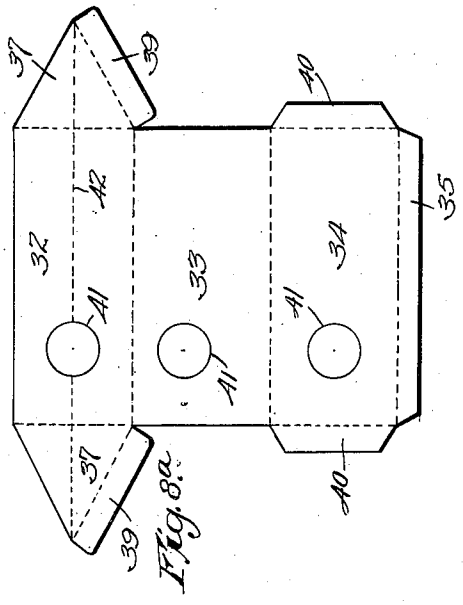


Fig. 8a.

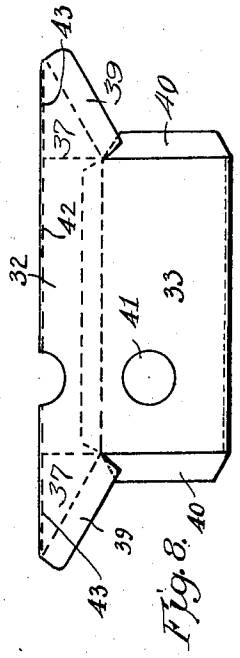


Fig. 8.

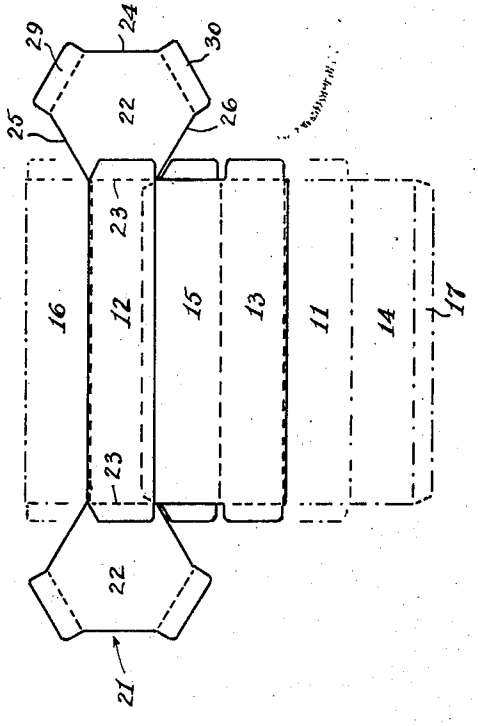


Fig. 7.

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CUSHION CARTON

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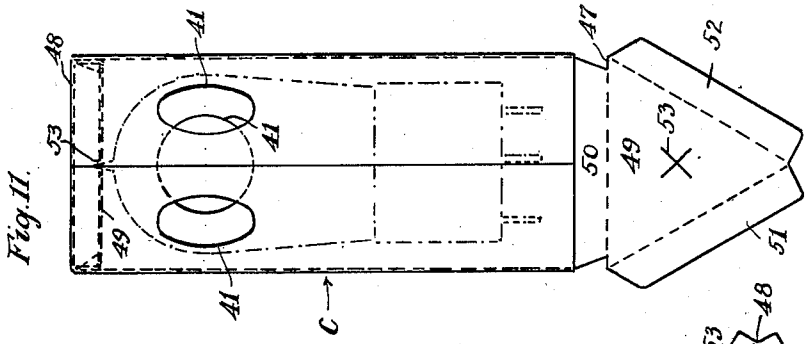


Fig. 11.

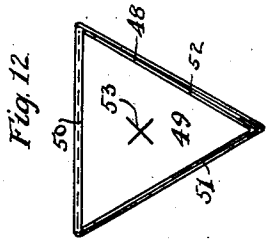


Fig. 12.

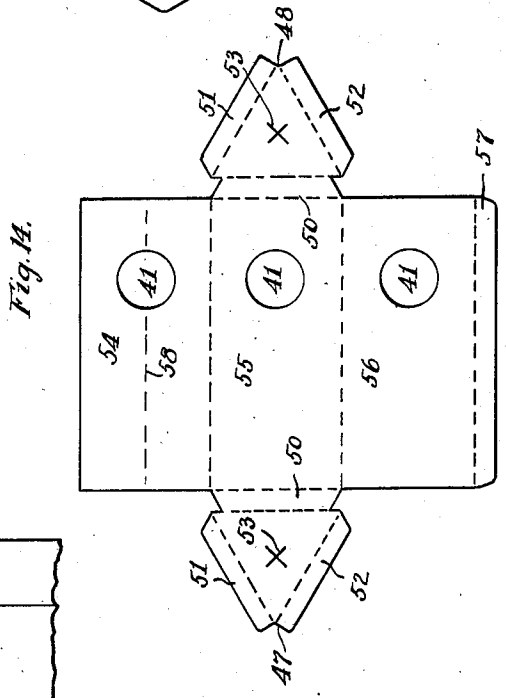


Fig. 14.

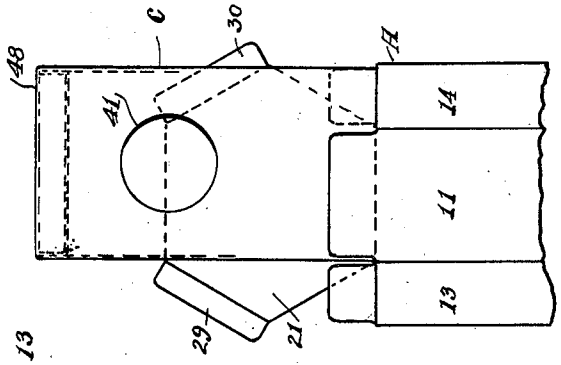


Fig. 13.

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UNITED STATES PATENT OFFICE.

JAMES M. ANDREWS, OF BROOKLYN, NEW YORK, ASSIGNOR TO ROBERT GAIR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CUSHION CARTON.

Application filed November 19, 1925. Serial No. 70,081.

My present invention relates to an improvement in cartons and a principal object of the invention is to provide a carton of the cushion type wherein any desired article, preferably those of a fragile nature, may be packaged against shocks by being resiliently held within the carton.

One of the main advantages of my invention, and as more specifically applied, relates to a carton for carrying incandescent bulbs or radio tubes and other like articles which are made of glass or of fragile nature, and in the present construction the main advantage relates to the manner in which the article is held within the container without packing the same by surrounding it with loose fluffy packing, but by surrounding the same with a cushion grip made preferably of thin flexible strawboard or the like.

Another advantage of my construction relates to the manner in which the article is held by the internal cushion member.

Another advantage relates to the manner in which the internal cushion member is resiliently held within the outer carton or packing box which is constructed in a novel manner to develop a characteristic package of rather unusual form.

Another advantage of my construction is that owing to the manner in which the component parts are manufactured on a large scale, they are each made of one piece, quickly assembled, are cheap and can be stored or shipped in flat packages, and are readily opened up into operative position by practically a single motion, and are then in condition to receptably cushion and protect the goods against breakage caused by dropping or careless handling.

One of the advantages in the holding of the tube or like article therein, is that the inner cushion member is provided with contour openings which are so cut and arranged as to hold the contained article, in the case of the tubes by the cheeks of the glass tube, such apertures firmly gripping the article; in the case of other articles the apertures in the cushion element may be so developed that their contours may be formed into intersections or developments of contact with the article whereby to firmly grip it and hold it in desired cushion position within the inner cushion member. Such a development is shown by Figs. 9 and 10.

One of the advantages as disclosed by the drawings herewith is that the cushion member is made somewhat smaller than the article to be held therein so as to enable the cushion member to be sprung over the article, and the outside container for the cushion suspended article is sufficiently larger in dimensions than the inner cushion container as to permit the inside cushion container in its turn to be sprung into the outer container and to be firmly held thereby in a cushioned manner.

A further advantage in the present construction is that due to the polygonal construction of both the inside cushion and outside container members, locking corners are provided between the two walls of the outside and inside containers under tension, thereby to provide a cellular-like construction between the outer shocks and the contained cushion held article.

The carton made as herein shown may be sealed in any desired manner with tape or fanciful seal.

Another advantage of the construction herein described is that the cushion held article is held by its cheeks so that its top and bottom portions are maintained a predetermined distance away from both ends of both containers thus providing a springy resilient clearance between both ends of the contained article thereby to protect both ends of the article.

Referring to the accompanying drawing which shows two of the possible embodiments of the invention,

Fig. 1, is a side elevation of the outer cushioning container when closed.

Fig. 2, is an end elevation of the outer cushioning container when closed.

Fig. 3, is a fragmental side elevation of the outer cushioning container open at one end and having a portion of the closed inner container projecting from the open end of the outer container.

Fig. 4, is a side elevation of the inner cushioning container closed at one end and open at the other and having a tube supported therein.

Fig. 5, is an end elevation of the inner cushioning container when closed and having a tube therein.

Fig. 6, is a sectional view on the line 6—6 of Fig. 1.

Fig. 7, is a plan view of the blank for forming the outer cushioning container,

showing by full lines the outer container when it is in flat folded form as for shipment or storing, and showing by dash and dot lines the main portion of the blank and by full lines the wings constituting cover members on the main portion, the blank being extended for folding for forming the outer container.

Fig. 8, shows the inner container, when it is in assembled form, folded flat for shipment or storage.

Fig. 8ª is an extended view of the blank for forming the inner container.

Fig. 9, is an end elevation of a modified form of the inner cushioning container having therein an article other than a tube or incandescent lamp globe.

Fig. 10, is a side elevation of the form of inner cushioning container shown in Fig. 9.

Fig. 11, is a side elevation of a modified form of the inner cushioning container closed at one end and open at the other and having a tube supported therein.

Fig. 12, is a plan view of the cover member of the modified form of inner container shown in Fig. 11 and in closing position in the inner container.

Fig. 13, is a fragmental side elevation of an outer cushioning container similar to the outer container shown in Fig. 3 and having a portion of the closed inner container shown in Fig. 11 projecting from the open end of the outer container, and

Fig. 14, is a plan of the blank for forming the modified form of inner cushioning container.

Similar reference characters denote similar parts throughout the several views.

Referring to Figs. 1, 2 and 3, the outer cushioning container, generally denoted by A, is made of box-board, card-board or other suitable foldable material and has a casing 10, formed from an oblong strip of the material, shown in Fig. 7 by dash and dot lines as the main portion of the blank and which although not shown in Fig. 1 is readily understood by the showing in this figure, the oblong strip being divided transversely into a plurality of side forming sections of like dimensions and defined from each other by fold lines, the casing 10 in the present instance being hexagonal in cross-section and the sections being denoted by 11, 12, 13, 14, 15 and 16. The section 14 which is at one end of the oblong strip has thereon the attaching extension 17, and the section 16 which is at the opposite end of the oblong strip has a free side, and the casing 10 being formed or erected by securing adhesively or otherwise the extension 17 to the free side of the section 16, as shown in Figs. 2 and 6, the sections 11 to 16 inclusive thus extending longitudinally of the casing when the casing is in erect form Three of the sections, that is, 11, 15 and 16, have on both ends thereof closure flaps 18, 19 and 20, each end of the sections 12, 13 and 14 being straight edged. The casing 10 is provided at each end with a cover member 21 having a main or covering portion 22 which in the present instance is hexagonal. The covering portion 22 of each cover member 21 is connected on one of its sides by the fold line 23 to one of the ends of the section 12 and is straight edged on its opposite side 24, the sides 25 and 26 of the cover member adjacent to the fold line 23 being straight edged and the sides 27 and 28 adjacent to the side 24 having thereon the closure flaps 29 and 30.

Referring to Figs. 4, 5 and 6. the inner cushioning container, generally denoted by B, is made of box-board, card-board or other suitable foldable material and has a casing 31 formed by an oblong strip of the material shown by dash and dot lines in Fig. 8 as the main portion of the blank and which although not shown in Fig. 4 is readily understood by the showing in this figure, the oblong portion being divided transversely into a plurality of side forming sections of equal dimensions and defined from each other by fold lines, the casing in the present instance being triangular in cross-section and when in erect form and closed at its ends as later described being in length substantially the same as the side sections of the casing 10, the side sections of the casing 31 being denoted by 32, 33 and 34. The section 33 is located intermediately of the sections 32 and 34 and is free on each of its ends. The section 34 which is at one end of the oblong portion has thereon the attaching extension 35, and the section 32 which is at the opposite end of the oblong portion has a free side, and the casing 31 is formed or erected by securing adhesively or otherwise the extension 35 to the free side of the section 32, as shown in Figs. 5, 6 and 8, the sections 32, 33 and 34 thus extending longitudinally of the casing 31 when the casing is in erect form.

The casing 31 is provided at each end with a cover member 36 having a main or covering portion 37 which in the present instance is triangular. The covering portion 37 of each of the cover members 36 is connected at its base by the fold line 38 to an end of the section 32 and has on one of its sides the closure flap 39. The section 34 has foldably connected to each of its ends a closure flap 40. Each of the sections 32, 33 and 34 has therein an aperture 41, these apertures when the casing 31 is in erect form lying in the same transverse plane relative to the axis of the casing 31. The section 32 is provided with a fold line 42 extending from top to bottom of the section and dividing the section into two equal portions, this fold line being extended as by 43 from the mid point of the base to the apex of the triangular

covering portion 37 of the cover member 36.

To close the outer container A at its ends the closure flaps 18, 19 and 20 are folded over inwardly at right angles to the ends of the sections 11, 15 and 16; the cover member 21 is folded downwardly, or upwardly as the case may be, on the fold line 23 and rests on the inwardly bent closure flaps 18, 19 and 20, and the closure flaps 29 and 30 are tucked into the interior of the casing 10 adjacent to the straight edge ends of the sections 13 and 14 and are tensionally held therein.

To close the inner container B at its ends the closure flaps 40 (Fig. 4) at the ends of the section 34 are folded over inwardly at right angles to the ends of the section; the cover member 36 is folded downwardly, or upwardly as the case may be, on the fold lines 38 and rests on the flaps 40, and the closure flap 39 is tucked into the interior of the casing 31 adjacent to the straight edge ends of the section 33 and is tensionally held therein.

The casing 31 being open at one of its ends, preferably the lower end, the bulbous article, a radio tube 44 as shown, is inserted into the casing and pushed inwardly so that the bulb end or bulbous portion, at the sides of the bulb or bulbous portion, is received in the aperture 41 and partially extends or pushes through the apertures as shown in Figs. 5 and 6, and is thereby tensionally held in the casing 31, the article being spaced away at its ends from the closed ends of the casing and spaced away from the interior sides of the casing.

The inner container B is insertible in the outer container A, the corner angles of the inner container then engaging in the angles of the outer container as shown in Fig. 6 and exerting an outward pressure on the outer container, and it will be noted that at the points of engagement of the corner angles of the inner container in the angles of the outer container, the carton, consisting of the outer and inner containers, is provided with reinforced walls, thereby providing rigidity for the carton at these points for resisting impact or shock on the exterior of the outer container. The pressure of the article engaged in the apertures on the side sections of the inner container provides rigidity for the sections 32, 33 and 34 of the inner container and the pressure of these sections on the outer container at the points where the corner angles of the inner container engage in the angles of the outer container provides rigidity for the unreinforced angles formed by the sections 11 and 14, 12 and 16 and 13 and 15 of the outer container whereby the sections forming these unreinforced angles are held spaced away from the portions of the article extending through the apertures of the sections of the inner container and whereby impact or shock on the outer container at these unreinforced angles does not injuriously affect the articles. The article in the inner container when the inner container is inserted in the outer container is protected at each of its ends by the space between its ends and the closure tabs and cover members when the tabs and cover members are in closing position, these tabs and cover members when in their closing position providing cushioning means at the ends of the carton.

Figs. 9 and 10 show a form of inner cushioning container C substantially similar to the inner container B but having in the side sections thereof the apertures or openings 45 which are adapted to receive therein side portions of an article other than a radio tube or incandescent lamp bulb, such as the bottle 46, for supporting the article in the inner container spaced away at its ends and sides from the closed ends of the inner container and the inner sides of the outer container substantially in the manner described in relation to the radio tube or incandescent lamp bulb supported in the first mentioned form of inner container.

To erect the casing 10, the extension 17 of the section 14 being secured to the free side of the section 16 as before stated, squeezing or compressing pressure is exerted on the sides of the blank on its exterior to force the blank into the form of a cylinder like casing, hexagonal in cross-section, by bending of the side forming sections on the fold lines defining the sections from each other.

To fold the blank flat for shipment, the extension 17 being secured to the section 16 as before stated, the section is folded over flat on the section 12 and the sections 14 and 11 are folded over flat on the sections 15 and 13, the wing cover sections 21 being extended from the ends of the section 12 and the closure flaps extended from the ends of the sections to which they are connected.

To erect the casing 31, the extension 35 of the section 34 being secured to the free side of the section 32 as before stated, squeezing or compressing pressure is exerted on the sides of the blank on its exterior to force the blank into a cylinder-like casing, triangular in cross-section, by bending the side forming sections on the fold lines defining the sections from each other.

To fold the assembled inner container flat for shipment, the extension 35 being secured to the section 32 as before stated, the section 32 and its wing cover sections 35 are folded on the line 42 so that one-half of the section 32 and one-half of the wing cover sections 36 lie flat on their other halves, and the section 34 is folded on the fold line defining it from the section 33 so that the section 34 lies flat on the section 33, the closure flaps 40 of the section 34 being extended from the ends thereof.

Referring to Fig. 11, the modified form of inner cushioning container C is similar to the inner container B in that the casing is triangular in cross-section and has similar openings near one end thereof, the difference being in the cover members 47 and 48. Each of the cover members 47 and 48 has a triangular covering portion 49 foldably connected along its base to an end of one of the sides of the casing by the fold extension 50 and has foldably connected to its sides the closure flaps 51 and 52. The cover members 47 and 48 are foldable to closing position by bending downwardly or upwardly as the case may be, the extension folds 50 and bending upwardly, or downwardly as the case may be, the closure flaps 51 and 52 and pressing the cover members inwardly into the ends of the container, the covering portion 49 thus lying in a horizontal plane in the casing parallel to the plane of the end edge of the casing and spaced away from said end edge by the widths of the fold extensions and the closure flaps, it being noted that the ends of the walls of the casing are thus reinforced by the fold extensions and the closure flaps and greater rigidity of the casing is thus provided at its ends. Each of the covering members may be provided with a suitable slit such as 53 for receiving the teat of a tube or incandescent lamp for positioning the tube or lamp in the casing.

The blank, Fig. 14, for forming the inner container C consists of an oblong main portion composed of the side forming sections 54, 55 and 56 of equal dimensions and defined from each other by score lines extending transversely of the blank, the sections 54 and 56 being outer sections and the section 55 being an intermediate section. The section 54 is free on one side and its ends, and the section 56 is free on its ends and has on one side foldably connected thereto and defined therefrom by the score line extending transversely of the blank the attaching extension 57. The intermediate section 55 has foldably connected to its ends and defined therefrom by fold lines extending longitudinally of the blank the fold extensions 50. The cover sections 47 and 48 are of triangular shape and are connected along their bases to the fold extension 50 and are defined therefrom by score lines extending longitudinally of the blank, and have on their sides the closure flaps 51 and 52, and have in their triangular portions the slits 53. Each of the sections 54, 55 and 56 has therein an opening 41, these openings being in alinement on the blank. The section 54 is provided with the fold line 58 extending transversely of the blank and which divides the section into two equal parts and passes through the opening 41.

To erect the container C from the blank, the attaching extension 57 is secured to the free side of the section 54 and squeezing or compressing pressure is exerted upon the exterior of the blank whereby the blank is forced into triangular shape in cross-section by bending upon the section defining score lines. The fold extensions 50 and closure flaps 51 and 52 are then bent as above described and tucked into the ends of the casing of the container.

To fold the blank flat for storage or shipment squeezing or compressing pressure is exerted upon the exterior of the erected blank so that it is bent on the fold line 58 whereby the half portions of the section 54 are brought into flat overlying relation and the sections 55 and 56 are brought into flat overlying relation, the cover sections 47 and 48 being extended from the ends of the section 55 and lying flat, as may readily be understood from Fig. 14.

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

1. In a carton, in combination, a casing triangular in cross-section and having longitudinally extending foldably connected side sections, one of said sections having a closure flap at each of its ends, another of said sections being free on each of its ends, and cover members for each end of the casing, each cover member having a triangular covering portion connected on one of its sides to the end of the third section and free on one of its sides and having on its remaining side a flap insertible in the casing at the end of the free-ended section for retaining the cover member in closing position, said sections having in their sides apertures for receiving therein side portions of an article for supporting the article in the casing.

2. In a carton, in combination, an outer container hexagonal in cross-section and having longitudinally extending side walls, and an inner container triangular in cross-section and having longitudinally extending side walls and insertible in the outer container and held therein by engagement of the angular side wall portions of the inner container in three angular side wall portions of the outer container, said angular side wall portions of the containers providing at the points of their engagement double side wall portions for the carton, the inner container exerting pressure on the outer container at said points of engagement and thereby providing rigidity for the adjacent side walls of the outer container.

3. A blank for forming by folding the blank a container triangular in cross-section, said blank consisting of an oblong main portion composed of three side forming sections, one of said side sections having on each end thereof a flap section defined from the side section by a scoring and one of said side sections being free on each of its ends,

the third side section having on each end thereof and defined therefrom by a scoring a cover member having a triangular covering portion free on one of its sides and having a flap section on another of its sides defined from the covering portion by a scoring, each of the side sections having an aperture therein and said apertures being in alinement in the main portion of the blank, the side section at one end of said main portion being free on one of its sides and the side section at the opposite end of said main portion having on one of its sides an attaching extension section defined from the side section by a scoring and attachable to said free sided side section.

4. In a carton, in combination, an outer container polygonal in cross section having angular edge portions, and an inner container adapted to hold an article, said inner container being polygonal in cross section and having angular edge portions, the angular edge portions of the outer container being in number a multiple of the number of the angular edge portions of the inner container, the inner container being received in the outer container and retained therein by engagement of the angular edge portions of the inner container in angular spaces of the outer container formed by a like number of angular edge portions of the outer container thereby causing a convex distortion of the inner container side walls whereby said walls can be sprung over said article.

5. In a carton, in combination, an outer container hexagonal in cross-section having angular edge portions and plane side surfaces between said edge portions, an inner container triangular in cross-section having angular edge portions and plane side surfaces between said edge portions of the inner container, the inner container being received in the outer container and retained therein by engagement of the angular edge portions of the inner container in angular spaces of the outer container formed by three of the angular edge portions of the outer container, the angular edge portions of the outer container which are free from engagement with the angular edge portions of the inner container and the plane edge surfaces of the outer container adjoining said disengaged side portions providing cushioning space between the sides of the inner and outer containers, the inner container being provided with apertures in its plane side surfaces for supporting in the inner container an article having rounding sides by engagement of portions of said rounding sides in said apertures, said article so supported being protected at its sides by said cushioning space.

6. In a carton of the character described, a container adapted to hold an article polygonal in cross-section having angular edge portions and plane edge surfaces between said side portions, said side surfaces being provided with means for supporting said article in the container by engagement of said article at its sides with said means.

7. In a carton of the character described, a container adapted to hold an article, said container being triangular in cross section and having angular edge portions and plane side surfaces between said edge portions, said side surfaces being provided with apertures for supporting said article in said container by engagement of portions of the sides of said article in said apertures.

8. A blank for a container hexagonal in cross section, consisting of an oblong main portion composed of six side-forming sections defined from each other by scoring extending transversely of the main portion, three of said side sections having on each end thereof a flap section defined from the side section by scoring, and two of said side sections being free on each of their ends, the remaining side section having on each end thereof and defined therefrom by scoring a cover member having a hexagonal covering portion free on three of its sides and having on two of its sides flap sections defined by scoring from the covering portion and separated from each other by one of the free sides of the covering portion, the side section at one end of said main portion having said flap sections and positioned immediately adjacent to the side section carrying said covering portions, and the side section at the opposite end of said main portion free of flap sections but having an attaching edge extension flap defined from the side section by scoring and attachable to the aforesaid side section at the opposite end.

Signed at Brooklyn, New York city, in the county of Kings and State of New York, this 20th day of October, A. D. 1925.

JAMES M. ANDREWS.