March 4, 1958 P. W. MIESSLER, SR 2,825,496

CONTAINER FOR LAMP BULBS OR THE LIKE

Filed Feb. 1, 1956 2 Sheets-Sheet 1

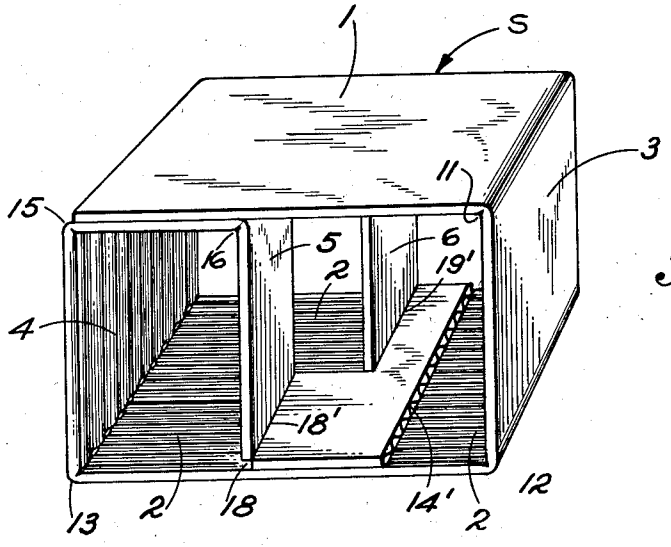


Fig. 1

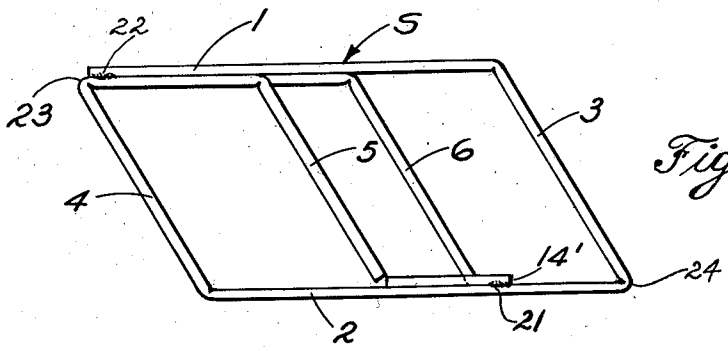


Fig. 6

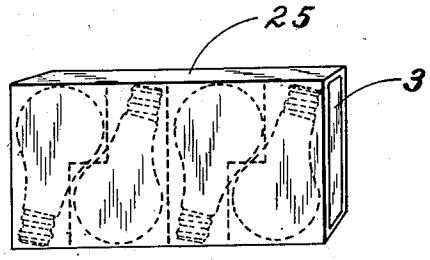


Fig. 7

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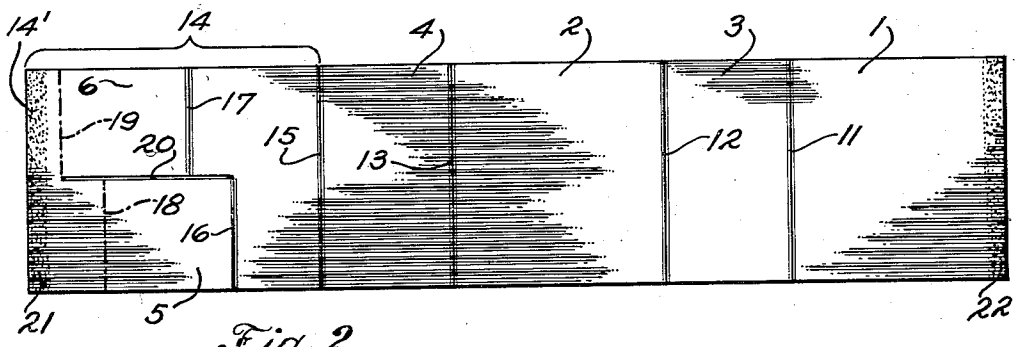


Fig. 2

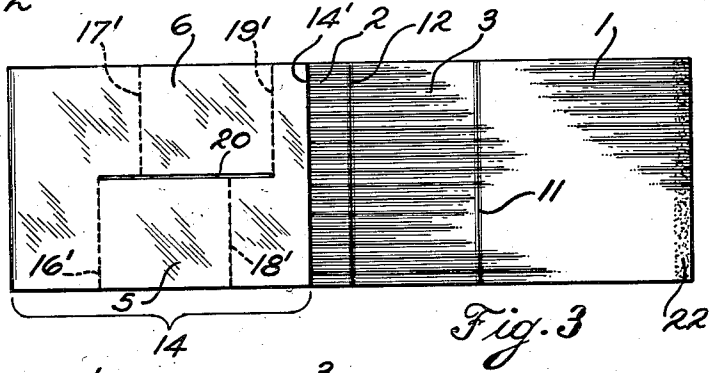


Fig. 3

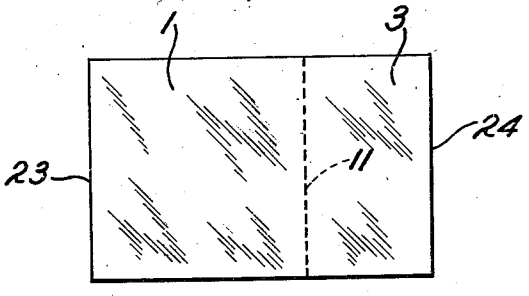


Fig. 4

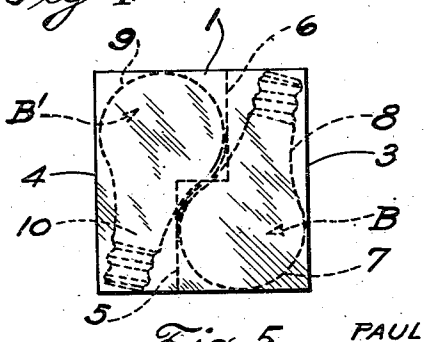


Fig. 5

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CONTAINER FOR LAMP BULBS OR THE LIKE

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Application February 1, 1956, Serial No. 562,772

9 Claims. (Cl. 229—37)

This invention relates to containers or packages for fragile articles and more particularly to an improved container or package for holding a plurality of electric lamp bulbs or the like in nested relation to each other.

Various types of packages have been proposed for the usual, generally pear shaped, electric light bulb. It has been found desirable from the standpoint of merchandising and economy of packaging to provide containers which will hold a pair of lamp bulbs. It is also desirable that the container be collapsible so that it may be shipped in flat condition and then set up at the time the bulbs are inserted therein.

It is therefore among the objects of my present invention to provide an improved collapsible container for lamp bulbs or the like which will securely hold the bulbs in fully nested or overlapped relation to each other while preventing harmful contact therebetween. Other objects of my invention include: the provision of a collapsible lamp bulb container which is adapted to be readily set up for loading either by hand or by machine operation; the provision of a lamp bulb container which requires a minimum of material, the blank being readily fabricated and folded into collapsed container form by machine operations; the provision of a lamp bulb container in which the bulbs are held with the bulb portion of each lamp adjacent the base portion of the next lamp and with the corrugated side of the single face corrugated paper in frictional contact with the bulb and base portions of each lamp; the provision of a two-bulb container for lamp bulbs which is particularly adapted for assembly into a four-bulb or larger package wherein all of the bulbs of the package are arranged in bulb to base relation, thus minimizing the possibility of breakage; and the provision of a container for lamp bulbs or the like which may be made from a one-piece blank of single face corrugated paper or board in rectangular form without cut-outs, separate pieces, etc., and thus may be most economically manufactured.

The above and other objects of my invention will appear from the following description of one embodiment thereof; reference being had to the accompanying drawings in which:

Figure 1 is a perspective view of one of my lamp bulb containers in set up condition ready to receive a pair of lamp bulbs.

Figure 2 is a plan view of the blank from which my improved container is formed, looking at the inner or corrugated side thereof and showing the various score lines, etc., thereon.

Figure 3 is a plan view of the blank shown in Figure 2 after the divider panel portion of the blank has been folded over into superimposed relation with the body of the blank.

Figure 4 is a plan view of the container after the final fold of the blank has been made, the container being in collapsed or flat condition.

Figure 5 is a plan view of a container made as indicated in Figures 2–4 after it has been set up and with a pair of lamp bulbs inserted therein.

Figure 6 is an illustrative end elevation of one of my improved containers in partially set up position.

Figure 7 is an illustrative perspective view showing a four-bulb package comprising a tubular sleeve into which a pair of my improved two-bulb containers have been inserted, all of the bulbs being in nested, bulb to base relation.

Referring now particularly to Figure 1, the container is shown in set up position ready to receive a pair of lamp bulbs. It comprises essentially an open ended tubular sheath S of single face corrugated paper with the corrugations on the inside and having a top wall 1, a bottom wall 2 and side walls 3 and 4. Extending between the top and bottom walls 1 and 2 and parallel to the side wall 4 is a first divider wall 5. It will be noted that this divider wall 5 is closer to the side wall 4 than to the side wall 3 and extends from one open end of the sheath S inwardly substantially to the center of the sheath in a lengthwise direction. A second divider wall 6 is substantially parallel to the side wall 3 and extends vertically between the top and bottom walls 1 and 2 in the same manner as divider wall 5. This divider wall 6 however extends inwardly from the opposite open end of the sheath S for a distance substantially half the length of the sheath S and is closer to the side wall 3 than to the side wall 4.

From the above it will be seen that my improved container, when in erected or set up condition, provides a pair of diagonally arranged, substantially identical open ended bulb receiving sections or compartments which are square in transverse cross section, which are offset but overlapping relative to each other, and which extend inwardly from opposite open ends of the sheath S. In addition to these bulb receiving sections the container provides a pair of base receiving sections which are diagonally arranged in the opposite corners of the container from the bulb receiving sections and which are narrower than they are high, thus having a smaller transverse cross sectional area than do the bulb receiving sections or compartments.

As best seen in Figure 5, when a pair of lamp bulbs are inserted into the set up container of Figure 1 the bulb portion 7 of lamp bulb B lies in the bulb receiving section or compartment defined by the divider wall 5, side wall 3 and top and bottom walls 1 and 2. The reduced base portion 8 of lamp bulb B extends into the base receiving section which is longitudinally adjacent the above defined bulb receiving section and is defined by divider wall 6, side wall 3 and top and bottom walls 1 and 2. It will be noted that the overall length of the container is substantially the same as that of a single lamp bulb. In like manner the lamp bulb B′ is disposed with its bulb portion 9 in the bulb receiving section or chamber defined by divider wall 6, side wall 4 and top and bottom walls 1 and 2, while its base portion 10 lies in the longitudinally adjacent base receiving section defined by divider wall 5, side wall 4 and top and bottom walls 1 and 2. In the case of lamp bulb B′ all of its contacts with the inner surfaces of the container are with the corrugated wall thereof and it will be noted that the corrugations thereof all run transversely to the length of the container. The container is so dimensioned as to provide a snug engagement with the bulb portions of the lamps contained therein and the resilient frictional grip provided by the transverse corrugated surfaces assists in retaining the lamps in position in the container. Lamp bulb B also has substantial portions of its surface in contact with the corrugated surfaces of the container although some parts engage non-corrugated surfaces.

As previously noted, my improved container is preferably made of single faced corrugated paper and the

blank for the container shown in Figure 1 is illustrated in Figure 2 which is a plan view looking at the inner or corrugated face of the blank. At the right hand end (Figure 1) of the blank is the top wall 1 which is separated from the side wall 3 by a crease score line 11. Crease score lines, as the term is employed herein, consist of a creasing or crushing of the corrugations in the direction transversely of their extent but without substantial severing or cutting thereof. Immediately adjacent the side wall 3, and separated therefrom by crease score line 12, is the bottom wall 2 while adjacent the bottom wall 2 is the opposite side wall 4, a crease score line 13 separating walls 2 and 4. A divider wall panel, generally indicated at 14, extends from the left hand end of the side wall 4 and a crease score line 15 separates the panel 14 from side wall 4. The divider wall panel 14 includes the divider wall 5 and the divider wall 6 and also includes other portions which serve to support the divider walls 5 and 6 and to assist in properly positioning them when the container is set up as will more fully appear later.

On the inner corrugated face of the divider wall panel 14 of the blank are crease score lines 16 and 17 which define the top edges of the divider walls 5 and 6 respectively when the container is set up as seen in Figure 1. The lower ends of the divider walls 5 and 6 are defined on the corrugated face of the blank by cut score lines 18 and 19 respectively. These cut score lines are formed by slitting through the humps of the corrugations on the inner surface of the blank without cutting through the outer facing paper of the blank.

It will be observed that the pair of spaced parallel score lines 16 and 18 which define the top and bottom edges of divider wall 5 extend inwardly from one edge of the blank a distance equal substantially to half the vertical dimension of the blank as seen in Figure 2 (which dimension corresponds to the length of the tubular sheath portion S of the set up container). In like manner the pair of spaced parallel score lines 17 and 19, which define the top and bottom edges of divider wall 6, extend inwardly from the opposite edge of the blank for half the length of the container. In order to separate the divider walls 5 and 6 and permit them to be properly positioned when the container is set up, the blank is cut or slit completely through as indicated at 20. This slit 20 extends transversely of the length of the container and forms the inner vertical edges of both divider walls 5 and 6 when the container is erected. As seen in Figure 2, the divider wall panel 14 projects somewhat beyond the cut score line 19 which defines the lower end of divider wall 6 and a glue line 21 is shown applied across the end of the panel 14. A similar glue line 22 is applied at the opposite end of the blank across the end of the top wall portion 1 for purposes to be later described.

In addition to the crease score lines 16 and 17 and the cut score lines 18 and 19 which are formed on the inner or corrugated surface of the panel 14, the opposite side of this panel is provided with perforated score lines directly opposite each of said score lines 16, 17, 18 and 19. These perforated score lines are indicated on Figure 3 at 16', 17', 18', and 19' and consist of spaced slits through the outer face of the corrugated material from which the blank is constructed. All of these score lines which are disposed at the ends of the divider walls 5 and 6 provide what may be termed hinged connections between the ends of the divider walls and the adjacent portions of the panel 14.

Although I have described a blank for my improved lamp bulb container having certain types of score lines at certain specified locations it will be understood that the function of the score lines is merely to facilitate and assist in the assembly and erection of the container and that various other types and arrangements of scoring may be employed to permit and facilitate the proper bending of the blank.

The blanks of Figure 2 are preferably formed continuously from an elongated strip or roll of corrugated paper, having a width equal to the length of the blank between the right hand end of portion 1 and the left hand end of portion 14, by passing the strip through suitable scoring and slitting rolls. As the strip emerges from these rolls glue lines are applied at 21 and 22 and, while still moving, it is folded on score line 15 so that the divider wall panel portion 14 overlies the side wall 4 and a portion of the bottom wall 2 as indicated in Figure 3. During this folding operation the glue 21 adheres to the inner corrugated face of the bottom wall portion 2. Immediately following this folding operation the moving strip is folded on score line 12 so that the side wall portion 3 and top wall portion 1 overlie the divider wall panel 14 and the glue 22 is caused to adhere to the outer facing of the panel portion 14. The collapsed containers are now completed in tubular form and the moving tube is severed at proper intervals by suitable cutoff knives to produce the individual units seen in Figure 4. These flat or collapsed containers occupy a minimum of space and are particularly adapted for economical handling and shipment to the point of first use, i. e., loading with lamp bulbs.

To set up or erect the collapsed container shown in Figure 4 it is only necessary to apply inward pressure in opposite directions at the opposite ends 23 and 24. When this is done the container starts to open up as seen in Figure 6 and continued pressure will cause the container to reach its fully set up position as shown in Figure 1. Due to the fact that the end 14' of the divider wall panel 14 is secured against movement relative to the bottom wall 2, the vertical wall portions 3, 4, 5 and 6 of the container automatically and necessarily move up from their flat condition in parallel relation to each other until the unit is fully opened. As previously noted the score lines at the ends of divider walls 5 and 6 provide hinged connections to the adjacent portions of the panel 14 and, as the panel 14 is secured at its opposite ends to the top and bottom walls 1 and 2 of the tubular sheath, the divider walls 5 and 6 may properly be described as being hingedly connected at their opposite ends to the top and bottom walls of the tubular sheath of the assembled container. Although I have described the end 14' of panel 14 as being glued to the bottom wall 2 it will be understood that other means may be provided for preventing relative movement between these parts and thus insuring proper erection of the container when pressure is applied to the opposite ends or corners thereof 23 and 24 as described above. It has previously been noted that the corrugated surfaces of the lower ends of the divider walls 5 and 6 are defined by cut score lines 16 and 17. These cut score lines facilitate setting up the container as they permit the corrugated paper to bend or hinge more readily on these lines with the corrugations on the outside of the bend than would otherwise be the case.

After the unit is set up the lamp bulbs B and B' are inserted therein, lamp B being inserted from the near end of the container (as seen in Figure 1) so that its reduced base portion 8 enters into the narrow base receiving section between side wall 3 and divider wall 6 and its enlarged bulb portion 7 enters into and frictionally engages the walls of the longitudinally adjacent bulb receiving section between the side wall 3 and the divider wall 5. In like manner the lamp B' is inserted from the far end of the container (as seen in Figure 1), its base portion entering the base receiving section between side wall 4 and divider wall 5 and its bulb portion being housed in the longitudinally adjacent bulb receiving section between side wall 4 and divider wall 6. The divider walls 5 and 6 effectively prevent any contact between the two bulbs B and B'. Although, as illustrated, these divider walls are shown as each extending inwardly from the open ends of the sheath 1 substantially half the length of the sheath, it will be understood that for lamp bulbs of different configurations

they may be made to extend inwardly from the open ends different distances. Thus in some cases the slit 20 might be replaced by a cut out section thus making the divider walls somewhat narrower in a fore and aft direction than those illustrated. Furthermore, the inner vertical edges of divider walls 5 and 6 (formed by slit 20) are flexible to a degree and permit distortion thereof by the adjacent portions of the lamp bulbs, thus effectively preventing contact between adjacent portions of the lamp bulbs.

In shipping and handling lamp bulbs or the like the best results are obtained, so far as elimination of breakage is concerned, when all of the bulbs are arranged relative to each other in bulb to base relation. If the lamp bulbs are packed with the bulb portion side by side (in bulb to bulb relation), there is considerably greater danger of breakage as any impact or force exerted against one bulb will be transmitted directly to the adjacent bulb portion, whereas in the bulb to base arrangement this direct transmission of force is not possible. It is one of the advantages of my improved lamp bulb container that the two-bulb units illustrated and described herein may be combined, as seen in Figure 7, to make a convenient and compact four-bulb package by inserting them into an elongated tube or sleeve 25 of corrugated paper or the like with all of the lamps in bulb to base relation as indicated. Of course, if desired, longer packages could be assembled.

It will be apparent that with my improved container an extremely compact package is obtained the length of which is approximately the same as that of the bulbs being packaged and the width of which, for a two-bulb unit, is substantially less than the width of two bulbs. Thus my container provides maximum nesting of the packaged units which is particularly desirable from the standpoint of shipping and storage. Furthermore, my containers afford extremely effective protection against breakage and against accidental slipping of the bulbs from the containers.

Although I have described and illustrated certain embodiments of my invention in considerable detail it will be understood that variations and modifications may be made in the specific proportions, form, and arrangement of the elements which make up my improved container. Accordingly, I do not wish to be limited to the exact device herein shown and described but claim as my invention all embodiments thereof coming within the scope of the appended claims.

I claim:

1. A collapsible container for lamp bulbs or the like comprising a tubular open ended sheath having unbroken, flat top, bottom and side walls, a first divider wall disposed closer to one than the other of said side walls between said top and bottom walls and extending from one open end of said sheath inwardly for a distance less than the length of said sheath, and a second divider wall disposed closer to said other than to said one of said side walls between said top and bottom walls and extending from the other open end of said sheath inwardly for a distance less than the length of said sheath, said second divider wall being spaced from said other side wall the same distance said first divider wall is spaced from said one side wall, said first and second divider walls dividing said sheath into a pair of diagonally arranged offset but overlapping substantially identical open ended bulb receiving sections and a pair of oppositely diagonally arranged substantially identical base receiving sections of smaller transverse cross-sectional area than said bulb receiving sections, and said divider walls being hingedly connected at their opposite ends to the adjacent top and bottom walls.

2. A collapsible container for lamp bulbs or the like comprising a tubular open ended sheath having unbroken, flat top, bottom and side walls, a first divider wall disposed closer to one than the other of said side walls between said top and bottom walls and extending from one open end of said sheath inwardly for a distance less than the length of said sheath, and a second divider wall disposed closer to said other than to said one of said side walls between said top and bottom walls and extending from the other open end of said sheath inwardly for a distance less than the length of said sheath, said second divider wall being spaced from said other side wall the same distance said first divider wall is spaced from said one side wall, said first and second divider walls being substantially parallel and dividing said sheath into a pair of diagonally arranged offset but overlapping substantially identical open ended bulb receiving sections and a pair of oppositely diagonally arranged base receiving sections of smaller transverse cross-sectional area than said bulb receiving sections, and said divider walls being hingedly connected at their opposite ends to the adjacent top and bottom walls.

3. A collapsible container for lamp bulbs or the like comprising a tubular open ended rectangular sheath having unbroken, flat top, bottom and side walls, a first divider wall disposed substantially parallel to and closer to one than the other of said side walls between said top and bottom walls and extending from one open end of said sheath inwardly for a distance less than the length of said sheath, and a second divider wall disposed substantially parallel to and closer to said other than to said one of said side walls between said top and bottom walls and extending from the other open end of said sheath inwardly for a distance less than the length of said sheath, said second divider wall being spaced from said other side wall the same distance said first divider wall is spaced from said one side wall, said first and second divider walls dividing said sheath into a pair of diagonally arranged offset but overlapping substantially identical open ended bulb receiving sections and a pair of oppositely diagonally arranged base receiving sections of smaller transverse cross-sectional area than said bulb receiving sections, and said divider walls being hingedly connected at their opposite ends to the adjacent top and bottom walls.

4. A collapsible container for lamp bulbs or the like comprising a tubular open ended rectangular sheath having unbroken, flat top, bottom and side walls, a first divider wall disposed substantially parallel to and closer to one than the other of said side walls between said top and bottom walls and extending from one open end of said sheath inwardly for substantially one half the length of said sheath, and a second divider wall disposed substantially parallel to and closer to said other than to said one of said side walls between said top and bottom walls and extending from the other open end of said sheath inwardly for substantially one half the length of said sheath, said second divider wall being spaced from said other side wall the same distance said first divider wall is spaced from said one side wall, said first and second divider walls dividing said sheath into a pair of diagonally arranged offset but overlapping substantially identical open ended bulb receiving sections and a pair of oppositely diagonally arranged base receiving sections of smaller transverse cross-sectional area than said bulb receiving sections, and said divider walls being hingedly connected at their opposite ends to the adjacent top and bottom walls.

5. A lamp bulb package comprising a tubular open ended sheath having unbroken, flat top, bottom and side walls, a first divider wall disposed closer to one than the other of said side walls between said top and bottom walls and extending from one open end of said sheath inwardly for a distance less than the length of said sheath, a second divider wall disposed closer to said other than to said one of said side walls between said top and bottom walls and extending from the other open end of said sheath inwardly for a distance less than the length of said sheath, said second divider wall being spaced from said other side wall the same distance said first divider wall is spaced from said one side wall, said first and second divider walls dividing said sheath into a pair of diagonally arranged offset but overlapping substantially identical open ended bulb receiving sections and a pair of oppositely diagonally arranged substantially identical base receiving base receiving sections of smaller transverse cross-sectional area than said bulb receiving sections, said divider walls being hingedly connected at their opposite ends

to the adjacent top and bottom walls, and a pair of lamp bulbs disposed in nested bulb to base relation in said sheath, one of said lamp bulbs having its bulb portion in one of said bulb receiving sections and its base portion in the longitudinally adjacent base receiving section and the other of said lamp bulbs having its bulb and base portions in the other of said bulb and base receiving sections.

6. A container of the type described comprising an open ended sheath having top, bottom and side walls formed from an elongated blank, and an integral divider wall panel connected to one end of one of said walls, said panel having a cut portion disposed between its ends and extending transversely of the length of the container and having offset score lines therein defining, with said cut portion, a pair of offset divider walls, said panel being disposed between said top and bottom walls of said sheath and being secured adjacent one end to said top wall and adjacent its other end to said bottom wall.

7. A blank for forming a collapsible container of the type described comprising an elongated strip of single face corrugated paper divided by parallel score lines into top, bottom, and side wall portions, and a divider wall panel integral with and extending from one end of one of said wall portions, said divider wall panel having offset score lines thereon and being slit between its ends transversely of the length of the container, said divider wall panel being divided by said slit and said offset score lines to form a pair of offset divider wall portions, said offset score lines being parallel to said first mentioned score lines and normal to said slit.

8. A collapsible container of the type described comprising an open ended sheath having top, bottom and side walls, and a divider wall panel integrally and hingedly connected to one edge of one of said side walls, said panel having attaching portions, secured to and engaging the inner faces of said top and bottom walls respectively,

and spaced divider wall portions extending between said top and bottom walls, one of said divider walls being closer to one of said side walls than to the other and the adjacent divider wall being closer to said other of said side walls than to said one of said side walls.

9. A collapsed container for lamp bulbs or the like comprising a first flat portion including the bottom and one side wall portion of the container, said bottom and side wall portions being separated by a score line, a divider wall panel overlying and secured at its opposite ends to said flat portion, said divider wall panel being slit between its ends in a direction substantially normal to said score line and having one pair of spaced parallel score lines extending from said slit to one edge of said panel in a direction parallel to said first mentioned score line and a second pair of spaced parallel score lines offset from said first mentioned pair and extending from said slit to the other edge of said panel in a direction parallel to said first mentioned score line, said slit and said pairs of score lines defining a pair of offset divider wall portions, the width of said divider wall portions being substantially the same as the width of said side wall portion, and a second flat portion secured to the opposite end of said first flat portion from said divider wall panel and overlying said divider wall panel, said second flat portion being divided by a score line into a top wall portion and a second side wall portion and being secured at its free end to the outer face of said divider wall panel adjacent the junction thereof with said first flat portion.

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