Feb. 3, 1959 H. W. FORRER 2,872,036

PAPERBOARD WRAPPER HAVING STRENGTHENED EDGES

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Fig. 1

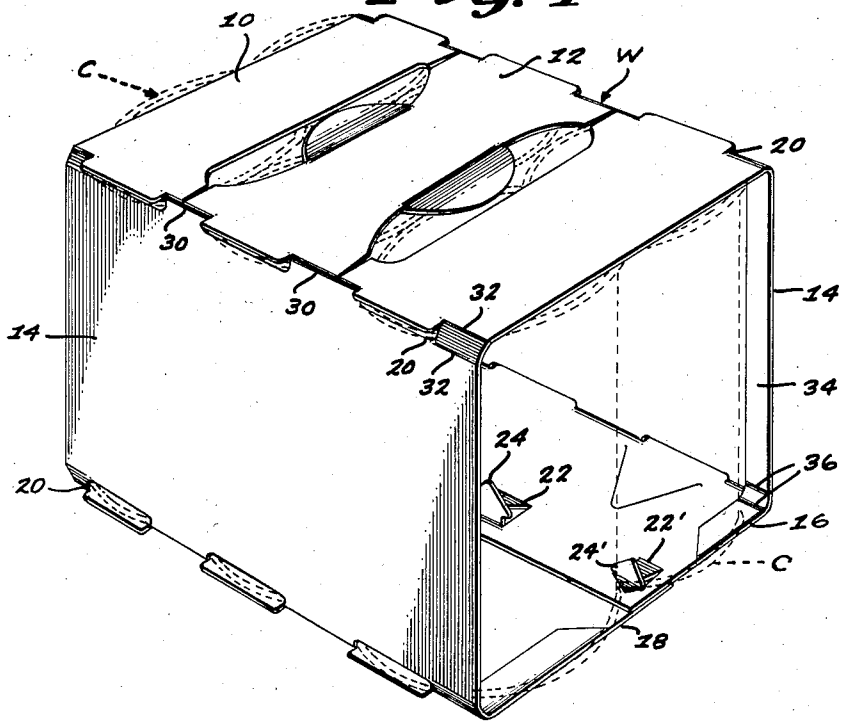

Fig. 2

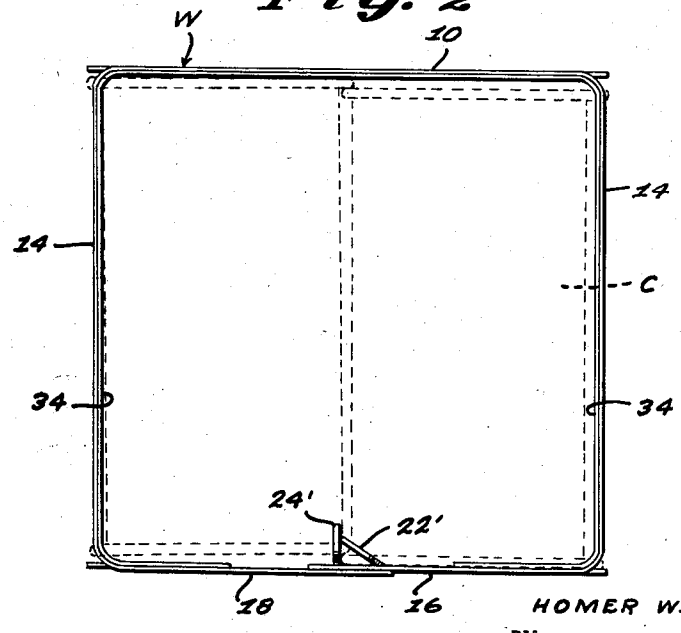

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Fig. 3

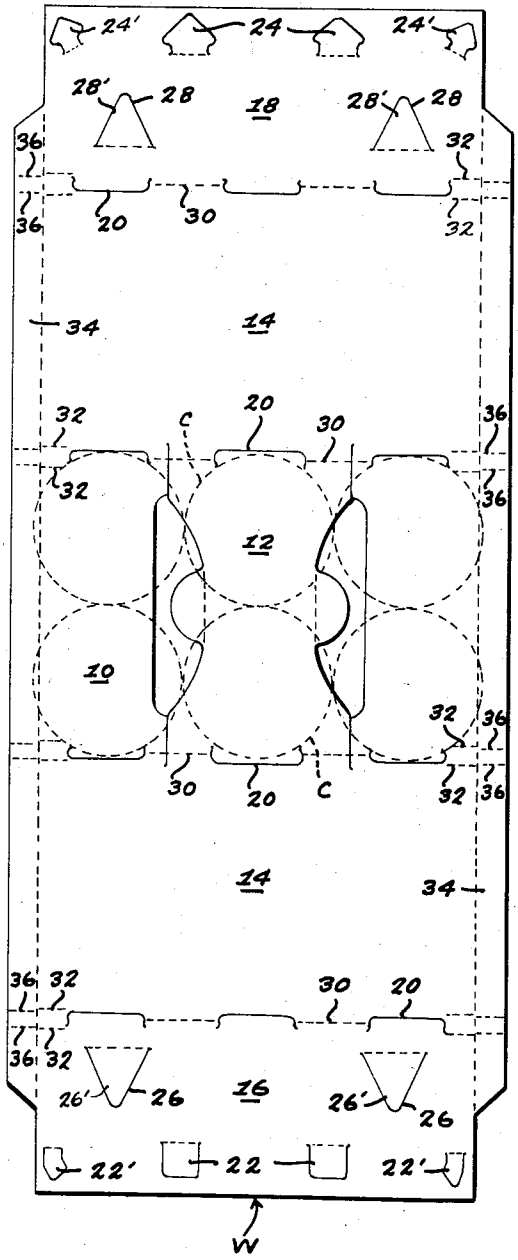
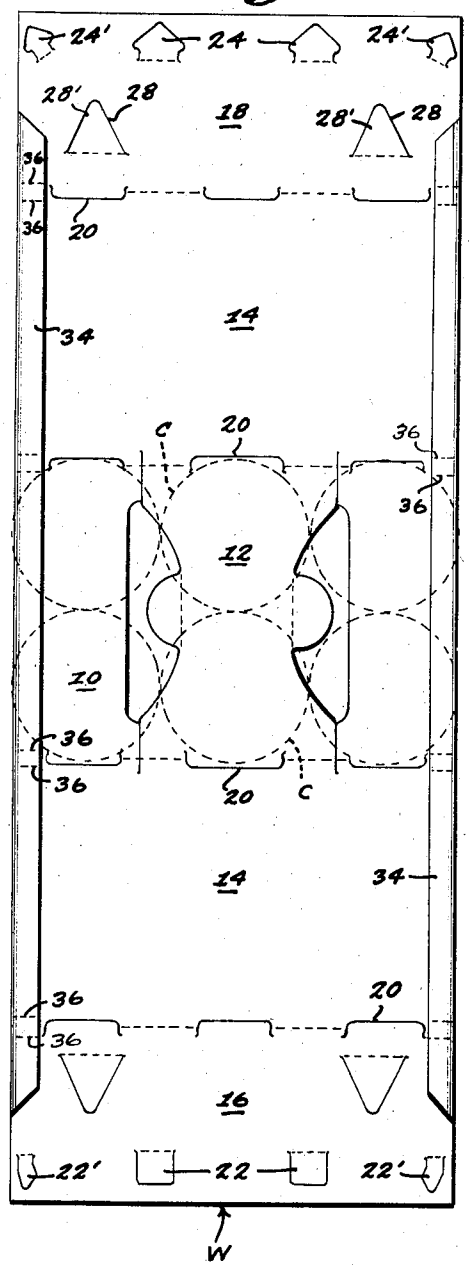


Fig. 4



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PAPERBOARD WRAPPER HAVING STRENGTHENED EDGES

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Application August 6, 1956, Serial No. 602,114

3 Claims. (Cl. 206—65)

This invention relates to paperboard wrappers of the type adapted for packaging cylindrical objects, such as cans, by folding about a group of cans or the like to form an open-ended package, and more particularly to an improved wrapper of this sort having strengthened edges by which the paperboard forming the wrapper is arranged to withstand substantially increased package loads.

The paperboard wrapper of the present invention constitutes an improvement in the form of wrapper disclosed and claimed in copending application Serial No. 459,918, filed October 4, 1954, now Patent No. 2,786,572. In this copending application the wrapper disclosed is arranged to be transversely folded and secured about a package group of cans or the like to form a four-sided package with open ends and with positioning slots located adjacent the transverse folds therein for sidewise engagement with end edge portions (e. g., the chines) of the cans in the package group.

In such a wrapper the end edge or chine portions of the cans engaged at the positioning slots are normally disposed in substantial alignment with the transverse folds in the wrapper, which is the point of greatest weakness in the wrapper because of the weakening effect of the transverse folding. Also, as this type of wrapper must be drawn tightly about the package group in order to engage the positioning slots adequately at the end edge or chine portions of the cans, there is a normal tendency of the can edge portions to bite or cut into the wrapper at the transverse folds therein adjacent the positioning slots, particularly the end positioning slots where the cans engaged must be held by these positioning slots within the open ends of the package. When relatively heavy can loads are being dealt with, this problem often becomes extremely troublesome because of the tendency of the end cans in the package group to tear open the wrapper ends from the end positioning slots along the transverse folds thereat.

According to the present invention this difficulty is eliminated by forming the wrapper so that the transverse folds therein beyond each end positioning slot to the adjacent wrapper edge are defined by double score lines spaced to fall substantially out of alignment with the end edge or chine portions of the cans engaged by the end positioning slots, and thereby avoid the disposition of a weakened transverse fold at the engaged can edge portions so as to employ the full strength of the paperboard from which the wrapper is formed to withstand the can load.

This wrapper strengthening arrangement can also be employed effectively according to the present invention by doubling inwardly the wrapper edges adjacent the end positioning slots and forming the inwardly doubled ply at these edges with double score lines arranged at a sufficiently reduced spacing with respect to the double score lines provided adjacent the end positioning slots so that the inwardly doubled ply is rendered readily foldable at the transverse folds with the wrapper proper. A doubled wrapper edge of this sort may be employed to advantage either with particularly heavy can loads, or with lighter can loads that do not otherwise require a weight of paperboard heavy enough to render the double score arrangement of the present invention fully effective.

These and other features of the present invention are described in further detail below in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of a paperboard wrapper embodying the present invention as it appears secured about a package group of cans or the like;

Fig. 2 is an end view corresponding to Fig. 1;

Fig. 3 is a plan view of the blank for the wrapper shown in Figs. 1 and 2; and

Fig. 4 is a further plan view showing the blank of Fig. 3 with the edge flaps thereon doubled inwardly.

Referring now in detail to the drawings, the illustrated paperboard wrapper embodying the present invention, as indicated generally by the reference character W, comprises a top wall panel **10** arranged in any suitable manner to be gripped or held for carrying as at a strap handle portion **12**, a pair of side wall panels **14** foldably hinged at opposite edges of the top wall panel **10**, and a pair of bottom wall lap panels **16** and **18** foldably hinged at the respective bottom edges of the pair of side wall panels **14** and proportioned to overlap at their extending edge portions to form a rectangular four-sided wrapper W enclosing a group of cans C and having the ends thereof entirely open as seen in Figs. 1 and 2.

The top wall panel **10**, side wall panels **14**, and bottom lap panels **16** and **18** comprise portions of a unitary blank, as shown in Fig. 3 which is substantially rectangular in form and which is transversely scored to arrange these portions in a foldably hinged series, with all of the portions having an equal length (i. e., in the direction of the blank width) that is substantially equal to the multiple diameter of the cans C in the length of row or rows to be packaged, as illustrated in Figs. 3 and 4. The bottom wall lap panels **16** and **18** when overlapped form a bottom wall having a width equal to that of the top wall panel **10** and substantially equal to the diameter of the cans C multiplied by the number of rows in the can group to be packaged, and the side walls **14** are proportioned in correspondence with the height of the cans C, so as to arrange the wrapper W to enclose the can group to be packaged between the pair of side wall panels **14**; and each side wall panel **14** is suitably notched as indicated at **20** adjacent its foldably hinged edges to provide positioning slots for engaging end edge or chine portions of the cans C along each side wall **14**.

The wrapper W as arranged in the above noted manner is adapted to be folded and secured about a load or package group of cans C during a packaging operation, the lap panels **16** and **18** being formed with respectively aligned retaining and locking tabs **22** and **24** (and **22'** and **24'**) for interlocking engagement to secure the wrapper W in the manner disclosed and claimed in the above noted copending application Serial No. 459,918, now Patent No. 2,786,572. In this connection, reference should also be made to U. S. Patent No. 2,751,730, issued June 26, 1956, and to copending application Serial No. 593,604, filed June 25, 1956, now Patent No. 2,809,486, for further details of the packaging operation and of the manner in which the retaining and locking tabs **22** and **24** are interlocked to secure the wrapper W. The bottom half laps **16** and **18** are each further formed with apertures **26** and **28** at which they may be gripped to draw the wrapper W tightly about the cans C to be

packaged therein and to hold the lap panels **16** and **18** in proper overlapping relation for securing of the locking tabs **24** and **24'** in the manner disclosed at length in the above noted copending application Serial No. 593,604, now Patent No. 2,809,486. The gripping apertures **26** and **28** are shown with the entire area thereof occupied by hinged flaps **26'** and **28'** as disclosed in copending application Serial No. 602,968, filed August 9, 1956, now Patent No. 2,827,165. It should also be noted that the cans C are shown in Fig. 2 with the chines thereof nested so as to insure a resulting tightly wrapped package as disclosed in copending application Serial No. 593,627, filed June 25, 1956, now Patent No. 2,809,484.

The foldably hinged edges of the side wall panels **14**, at which the previously mentioned positioning slots **20** are located, are defined between the positioning slots **20** in the usual manner by score lines **30** serving to weaken the wrapper W for folding transversely thereat. Beyond each end positioning slot **20** toward the adjacent edge of the wrapper W, however, double score lines **32** are provided according to the present invention to form the wrapper W for transverse folding. These double score lines **32** are offset in straddling relation with respect to the score lines **30** at a spacing sufficient to displace them substantially out of alignment with the score lines **30**, so as to present an intervening unweakened portion of the wrapper W at each end positioning slot **20** to bear at the can edge portion engaged thereby and in this way substantially strengthen the paperboard wrapper structure.

The blank for the wrapper W may also be advantageously formed according to the present invention, as previously mentioned, with edge flaps **34** arranged for doubling at the wrapper blank edges adjacent the end positioning slots **20** as shown in Figs. 3 and 4. When provided, these edge flaps **34** are proportioned in a width less than the spacing of the end positioning slots **20** from the adjacent blank edges and have double score lines **36** extending across their width in general alignment with the double score lines **32** in the wrapper W proper, but at a sufficiently reduced spacing to render the edge flaps **34** readily foldable when disposed as a doubled inner ply at the blank edges.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise except as defined in the appended claims.

I claim:

1. A package of cylindrical objects, such as cans, said package comprising a four-sided wrapper with open ends and at least one row of said objects enclosed thereby, said wrapper comprising an elongated paperboard blank scored transversely and transversely folded and secured about said objects with positioning slots spaced along the transverse folds in said wrapper and disposed sidewise of said objects for engaging end edge portions thereof, the transverse folds in said wrapper being defined between said spaced positioning slots by single score lines at which the engaged end edge portions of said objects are aligned, while being defined beyond each end positioning slot at the spacing therefrom to the adjacent wrapper edges by substantially parallel double score lines spaced to fall substantially out of alignment with the object end edge portions engaged by said end positioning slots.

2. A paperboard blank adapted for forming a four-sided wrapper with open ends to package cylindrical objects, such as cans, arranged in at least one row, said blank having an elongated form and being scored for folding transversely to define a first panel arranged centrally with respect to the length of said blank, a pair of panels foldably hinged at opposite edges of said first panel, and a pair of lap panels foldably hinged respectively at the edges of said pair of panels opposite said first panel edges, said blank having a width corresponding to the multiple diameter of the objects in said row to be packaged, said first panel extending between said pair of panels in substantial correspondence with the diameter of said objects multiplied by the number of rows, said pair of panels extending to said pair of lap panels in correspondence with the height of said objects, and said pair of lap panels being proportioned for forming a composite panel corresponding in width to said first panel, each of said pair of panels having positioning slots spaced along the foldably hinged edges thereof for engaging end edge portions of objects to be packaged in said wrapper blank, the foldable hinging of said pairs of panels being defined between said spaced positioning slots by single score lines disposed for alignment at the object end edge portions to be engaged by said positioning slots, while being defined beyond each end positioning slot at the spacing therefrom to the adjacent wrapper blank edges by substantially parallel double score lines spaced to fall substantially out of alignment with the object end edge portions to be engaged thereat.

3. A paperboard blank as defined in claim 2 and further characterized in that said blank is formed with foldable edge flaps at the elongated edges thereof for doubling at said blank edges adjacent said end positioning slots, the width of said edge flaps being less than the extent of the spacing from said end positioning slots to the adjacent wrapper blank edges, and said edge flaps having substantially parallel double score lines extending across the width thereof in general alignment with said first mentioned double score lines but at a sufficiently reduced spacing with respect thereto for transverse folding of said edge flaps readily when doubled as an inner ply at said blank edges.

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