Dec. 23, 1958 N. M. SIDER ET AL 2,865,552

SEPARABLE SHIPPING CONTAINER

Filed June 2, 1953

Fig. 1.

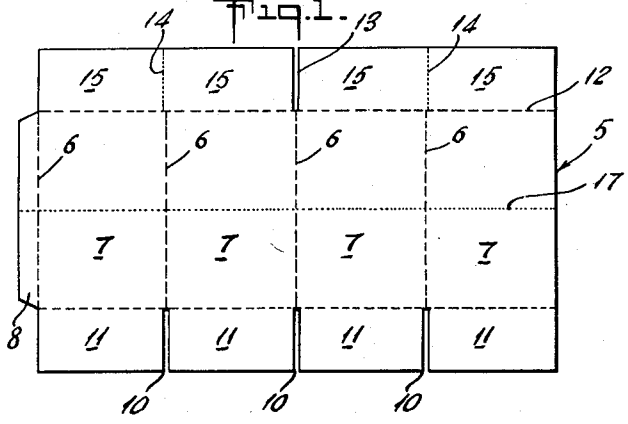


Fig. 7.

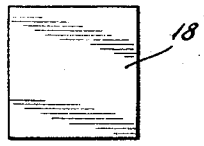


Fig. 2.

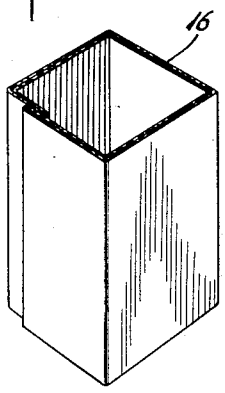


Fig. 3.

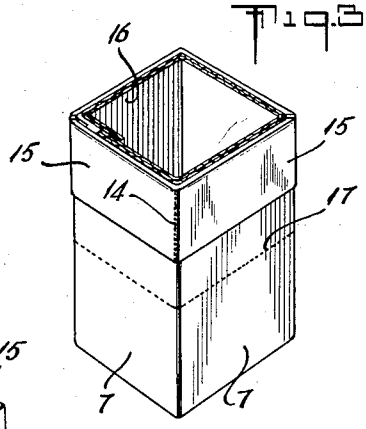


Fig. 6.

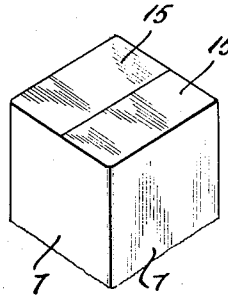


Fig. 4.

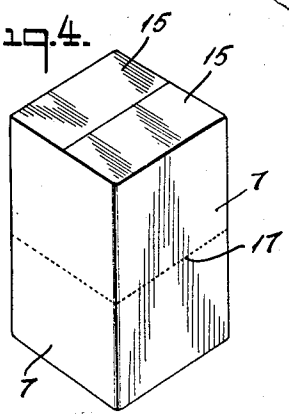
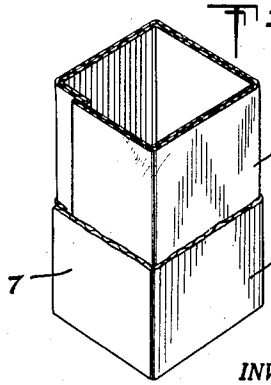


Fig. 5.



INVENTORS
NICHOLAS M. SIDER
BY OSCAR H. WILLIAMSON
Thomas E. Tate
AGENT

United States Patent Office 2,865,552 Patented Dec. 23, 1958

2,865,552

SEPARABLE SHIPPING CONTAINER

Nicholas M. Sider, Chicago, and Oscar H. Williamson, Riverside, Ill., assignors to International Paper Company, New York, N. Y., a corporation of New York

Application June 2, 1953, Serial No. 359,066

1 Claim. (Cl. 229—37)

This invention relates to new and useful improvements in shipping containers generally and particularly seeks to provide a novel shipping container fabricated from corrugated board for the packaging of high density loose articles such as nails or nuts and bolts.

This invention provides a novel shipping container which includes an outer body portion having top and bottom closure flaps and an inner open-ended liner which fits snugly within the main body portion. The outer body portion is provided with a continuous line of perforations extending completely therearound to provide a separation, permitting removal and replacement of the top section. Through the use of a container of this nature it is possible to quickly erect the same, close the bottom by folding and glueing or otherwise securing the closure flaps, fill and then close the top by folding and glueing the top closure flaps. This forms a complete unitary package which does not require any external securing devices such as steel straps, yet it is possible to open the package easily by breaking the outer body portion thereof along the middle line of perforations and lifting the top section from its engagement over the upper portion of the open-ended liner.

A container constructed in accordance with this invention may be used with particular advantage in the packaging of nails. Heretofore the nail industry has required pre-assembled open-top wooden kegs or pre-assembled open-top (i. e., without integral closures) fibreboard containers since the filling and shaking machinery cannot be used with containers having closure devices that hang loose during filling. Containers constructed in accordance with this invention can be used with existing filling and shaking equipment because the top closure flaps are firmly held against the container walls, purely as the result of erecting the container, and can be readily freed for folding into closure-forming positions. Furthermore, these new containers can easily be assembled at the filling station with a consequent saving in labor costs to the user due to the elimination of pre-assembly of closed bottom containers, their storage and delivery to the filling machines. Further savings are effected due to the elimination of heading kegs or strapping earlier types of fibreboard containers.

Therefore, an object of this invention is to provide a shipping container fabricated from corrugated board which comprises essentially only two pieces to form a complete container.

Another object of this invention is to provide a container of the character stated in which the outer portion thereof is divided by a line of perforations extending horizontally completely therearound whereby to permit the upper portion to be removed after parting it from the lower portion as a result of tearing along the line of perforations.

Another object of this invention is to provide a container of the character stated in which adjacent pairs of top closure flaps are temporarily joined together

along lines of perforations whereby to hold the top closure flaps down against the container side walls during filling operations.

Another object of this invention is to provide a container of the character stated in which the thickness of the top and bottom closures can be increased simply by the insertion of pads of corrugated board, one of which would underlie the bottom of the open-ended liner and another of which would overlie the upper end thereof after filling has been completed.

With these and other objects in view, the nature of which will be more apparent, the invention will be more fully understood by reference to the drawings, the accompanying detailed description and the appended claims.

In the drawings,

Fig. 1 is a plan view of a blank from which the outer body portion of a container constructed in accordance with this invention is formed;

Fig. 2 is a perspective view of the erected open-ended liner therefor;

Fig. 3 is a perspective view of the erected container preparatory to filling;

Fig. 4 is a perspective view of the erected, filled and closed container;

Fig. 5 is a perspective view of the container after the upper portion of the outer body thereof has been removed;

Fig. 6 is a perspective view of the removed portion of the outer body; and

Fig. 7 is a plan view of the supplementary end pads which may be employed.

Referring to the drawings in detail, the invention as illustrated is embodied in a shipping container fabricated from corrugated board and includes an outer or body section formed from a rectangular blank generally indicated at **5**. The blank is provided with a plurality of vertical score lines **6** which define side wall panels **7** and a stitch or glue flap **8**. The blank **5** is provided with a lower horizontal score line **9** and a plurality of slots **10** to define four bottom closure flaps **11**. The blank is also horizontally scored as at **12** near its upper edge to define the lower limit of top closure flaps. The center of the upper edge of the blank **5** is slotted as at **13** and is provided with lines **14** of perforations slightly offset from the projection of the adjacent scores **6** to thereby define four top closure flaps **15**. By having the perforations **14** offset from the scores **6** in this manner the possibility of premature tearing along the perforations during filling operations is minimized since the perforations are not located right at the sharp bend of the corner. The blank **5** is preferably formed from a single sheet of double-faced corrugated board and when erected the panel **7** and the glue tab **8** are folded along the respective score lines **6** to set up the outer portion of the container after which opposed pairs of the bottom closure flaps **11** are folded towards each other and surface glued or otherwise secured to form the bottom closure. An open-ended liner **16** which is preferably fabricated from double-walled corrugated board is then inserted within the outer container to prepare the container for the reception of the nails or other articles to be packaged.

If the packaging system employed by the user of this container includes automatic filling equipment of such a nature that the top closure flaps **15** must be kept out of the way during the filling operations the flaps **15** are first folded downwardly and outwardly into juxtaposition with the side wall panels **7** of the blank **5** before the blank is folded into container-forming position. When this is done the perforations **14** will be positioned in close proximity to associated corners of the outer container,

and since the top closure flaps **15** lying on either side of each line of perforations **14** have not been separated by tearing along the line of perforations they will be held against the side walls **6** as shown in Fig. 3 of the drawings.

After the container has been filled the top closure flaps **15** are freed by tearing along the lines of perforations **14** and are folded into closure-forming position and glued in place.

In order that the filled package thus formed will withstand the rough handling during shipment and yet be readily openable without causing spillage of its contents the blank **5** from which the outer container portion is formed is provided with a horizontal line of perforations **17** extending entirely thereacross. Obviously, in the erected and closed container the perforations **17** form a continuous line around the entire package located any desired distance below the top thereof. In order to open the package it is only necessary for an individual to employ a claw hammer or similar tool to sever the side panels **7** by sharply hitting the panels along the line **17** of perforations and then lift off the entire upper portion of the outer container. The resultant open package appears as illustrated in Fig. 5 of the drawings and the removed top portion is shown in Fig. 6 of the drawings.

Whenever a container constructed in accordance with this invention is to be employed in connection with the packaging of relatively lightweight or bulky materials it probably will not be necessary to employ reinforcing pads at the top and bottoms thereof. However, when the container is to be used in connection with the packaging of dense materials such as nails or nuts and bolts greater strength may be desirable at the top and bottom closures. In this connection after blank **5** has been folded into its erected condition and the bottom closure flaps **11** thereof have been secured in closure-forming position a pad **18** formed from corrugated board or other suitable material and dimensioned to closely correspond to the internal dimensions of the container may be inserted therein at the bottom. Thereafter the open-ended liner **16** is inserted, the container may then be filled, and another pad **18** may be placed over the upper end of the liner **16**. Thereafter the top closure flaps **15** are folded over and secured as hereinbefore described. It is, of course, obvious that when the supplemental end pads are employed the height of the open-ended liner **16** will be less than the internal height of the container body by an amount equal to the combined thicknesses of the supplemental pads which are employed in order that a properly proportioned package may result.

It is, of course, apparent that when the packaging system employed by the user of these containers does not require the holding down of the top closure flaps **15** during filling operations the upper edge of the blank **5** can be provided with three slots **13** instead of the single slot **13** and two lines of perforations indicated. In such instances, of course, the top and bottom closure flaps will all be the same.

While this container has been illustrated with foldable top and bottom closure flaps it is believed apparent that any other type of suitable end closure may be provided without affecting the function of the horizontal line **17** of perforations to permit the upper portion of the outer container body to be readily removed.

It is, of course, to be understood that various details of arrangements and proportions of parts may be modified within the scope of the appended claim.

We claim:

A container fabricated from corrugated board comprising an initially one-piece outer body having side and end walls separable along a line of perforations formed completely therearound, bottom-forming closure flaps formed integrally with said side and end walls, an open-ended liner snugly fitted within said body for the full depth thereof, a plurality of downturned flaps formed integrally with and depending from the upper edges of said side and end walls in juxtaposition with the outer faces thereof, opposed adjacent pairs of said downturned flaps being formed integrally and adapted to be separated along a line of perforations extending therebetween and positioned in parallel alignment with but slightly offset from the adjacent container corner whereby to maintain said upper flaps in juxtaposition with said side and end walls until said container has been filled and to thereafter permit said upper flaps to be folded and secured into top closure-forming relation to form a unitary package in which no relative movement can take place between said body and said liner.

References Cited in the file of this patent

UNITED STATES PATENTS

1,140,288	Robinson	May 18, 1915
1,809,953	Witte	June 16, 1931
2,019,254	Dossena	Oct. 29, 1935
2,382,891	McCormick	Aug. 14, 1945
2,523,488	Williamson	Sept. 26, 1950
2,582,502	Nagler	Jan. 15, 1952
2,718,348	Montfort	Sept. 20, 1955