Nov. 2, 1937. G. E. ANDERSEN 2,097,682

CONTAINER

Filed Sept. 7, 1935 2 Sheets-Sheet 1

FIG. 1.

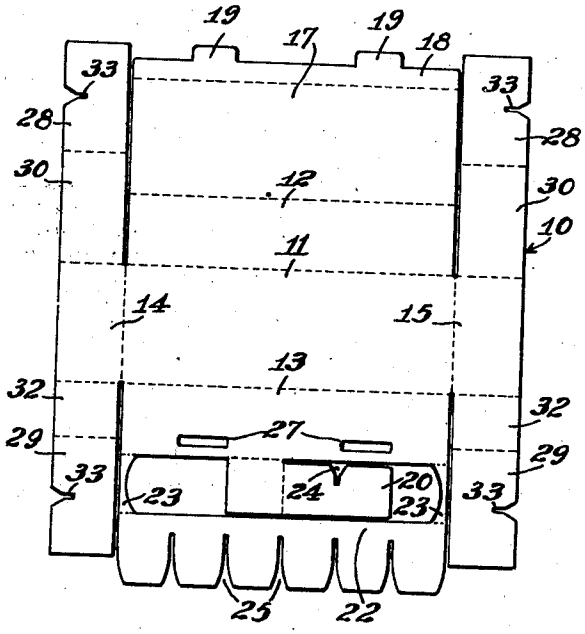


FIG. 2.

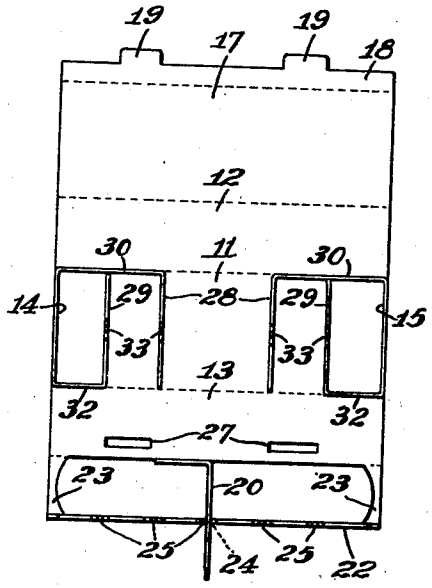


FIG. 3.

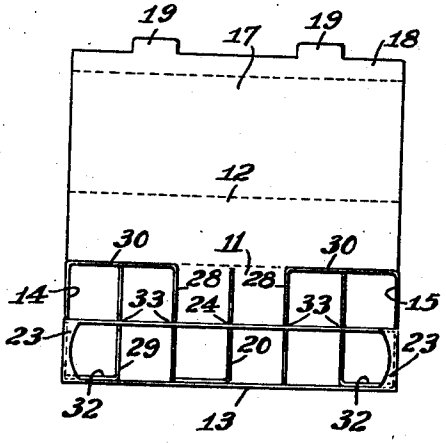
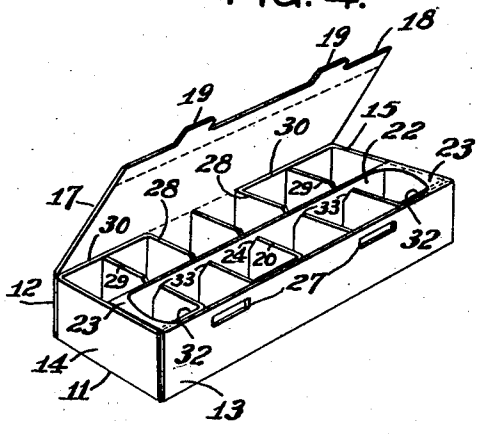


FIG. 4.



WITNESSES

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FIG. 5.

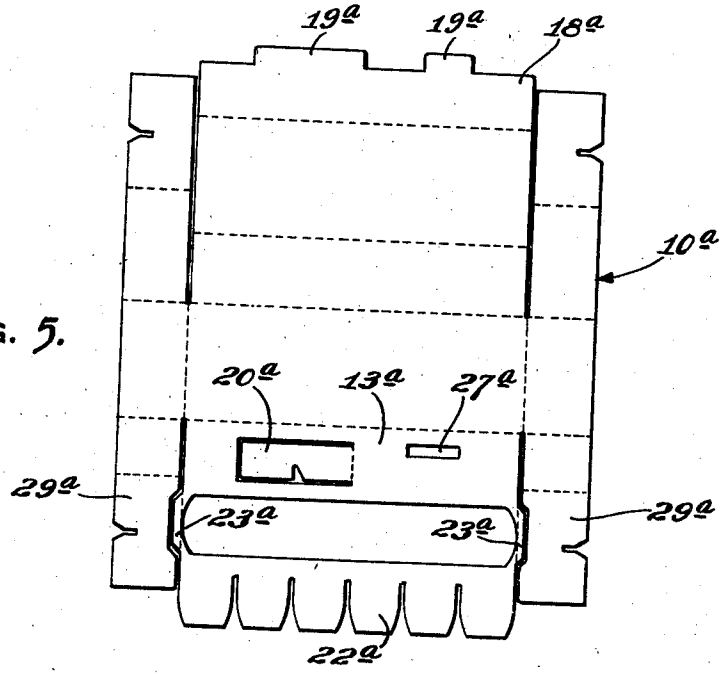
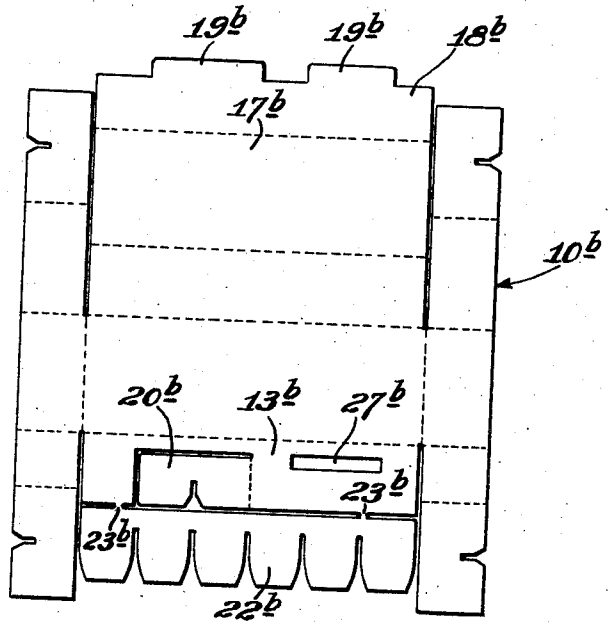


FIG. 6.



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UNITED STATES PATENT OFFICE

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CONTAINER

Gustav E. Andersen, Stavanger, Norway

Application September 7, 1935, Serial No. 39,649
In Norway April 18, 1931

12 Claims. (Cl. 229—29)

This invention relates to containers and is more particularly concerned with one-piece folded cardboard containers for eggs and the like.

Prior to my invention some attempts have been made to provide satisfactory containers for eggs and the like from cardboard stamped in a single piece. However, these structures have not proven entirely satisfactory in that they require intricate time-consuming folding and nesting operations for assembly of the container from the flat stamped stock. Moreover, it has usually been necessary heretofore to employ paste or glue to hold certain of the container parts together and this adds to the expense and labor involved in making the container. It has also been my experience that containers of known types were apt to be relatively weak and that they did not serve to properly and adequately support eggs or the like therein. Still another difficulty attending former practices has been that stamping the blank from a single piece has wasted more material than if the container were made from a number of pieces of material.

It is the object of the present invention to avoid and overcome the foregoing and other difficulties and undesirable features attending the use of, and common to, prior-known cardboard containers by the provision of an improved cardboard container adapted to be stamped from a single piece of cardboard substantially without waste and in such a shape that the container can be rapidly folded from the stamped cardboard to provide a strong relatively inexpensive container.

Another object of the invention is to provide an egg crate constructed from a single piece of cardboard, with the crate being adapted to be assembled from the flat cardboard shape by unskilled operators in a minimum of time and without the use of glue, fastening staples or the like.

The foregoing and other objects of my invention are obtained by stamping a flat sheet of cardboard to form a base having integral ends each carrying integral transverse partition members. The base likewise has front and back sides formed integral therewith with the front side carrying an integral transverse partition and likewise carrying an integral longtudinal partition. The back of the container is integral with the base and carries the lid of the container having a portion adapted to fold over in fastening relation with suitable slots cut in the front of the container. By stamping from a single piece of cardboard a blank of the character described, waste is reduced to a minimum and the blank provided is moveover adapted to be rapidly folded, as hereafter more fully described, into a rugged light-weight cardboard container without the use of adhesive or other fastening means.

Referring to the drawings, Fig. 1 illustrates a plan view of a flat stamped-out blank of cardboard from which the container is made in one form of the invention; Fig. 2 is a view similar to Fig. 1 but illustrates the first steps in folding the blank to container form; Fig. 3 is a view similar to Figs. 1 and 2 but illustrates the further folding of the blank to container form; Fig. 4 is a perspective view of the container with the lid open; Fig. 5 is a plan view similar to Fig. 1 of a modification of the invention; Fig. 6 is a plan view similar to Figs. 1 and 5 of a further modification of the invention.

While the principles of my invention are applicable to the manufacture of containers adapted to hold various articles, particularly fragile ones, the invention is particularly adapted for crating eggs and, accordingly, is so illustrated and described. Having reference to Fig. 1 of the drawings, the numeral 10 indicates generally a blank stamped from cardboard sheet, or the like, in accordance with the teachings of the invention. This blank-forming operation is preferably done by one or more stamps or cutters and it can be made continuous by the use of automatic machinery. Likewise, the invention contemplates forming the blank partly, or even entirely, by hand so long as the blank shape is as described.

More particularly the blank 10 includes a base portion 11 having formed integral therewith a back 12, a front 13 and ends 14 and 15. The back 12 carries an integral top 17 having an overhanging portion 18 formed with fastening tabs 19. The front 13 carries an integral transverse partition 20 and an integral longitudinal partition 22 secured to the front 13 by relative narrow strips 23. The partitions 20 and 22 are provided with slots 24 and 25 adapted to allow the partitions to be interlocked with each other as will be understood. The front 13 is likewise provided with slots 27 which are adapted to receive the tabs 19 formed on the overhang 18 of the lid 17 of the container.

The ends 14 and 15 of the container are each provided with transversely extending partitions 28 and 29 with the partitions 28 connected to the ends 14 and 15 by spacer portions 30 which are substantially twice the length of the cell between the transverse partitions while the partitions 29 are integrally connected to ends 14 and 15 by spacer portions 32 which are equal to the cell dis-

tance between the transverse partitions. The transverse partitions 28 and 29 are each formed with centrally positioned slots 33 adapted to engage with slots 25 provided in the longitudinal partition 22.

In the blank 10 all folds to be made in the blank have been indicated by dotted lines. In the actual stamping or forming of the blank the portions thereof to be bent are marked on the blank by any suitable means or in any known manner, as, for example, by heavily pressing these portions of the blank with a narrow rib in the die which aids in bending the cardboard to container form. Again if the blank is printed before or after stamping lines can be printed on the blank to show where it should be bent.

In the folding of the container from the flat blank the ends 14 and 15 are first bent up to the vertical position and the spacer portions 30 and 32 are bent at right angles to the ends 14 and 15 and the transverse partitions 28 and 29 are bent at right angles to the spacer portions 30 and 32. This brings the transverse partitions 28 and 29 to the positions illustrated in Fig. 2. Next the longitudinal partition 22 is bent upwardly to the vertical position, as shown in Fig. 2, and the transverse partition 20 is bent likewise to the vertical and is interlocked with the centrally positioned slot 25 in the longitudinal partition 22 in the position indicated in Fig. 2.

The front 13 of the container is now bent up to the vertical, and the longitudinal partition 22 and the central transverse partition 20 are bent down so that the slots 25 of the longitudinal partition interlock with the slots 33 of the transverse partitions 28 and 29 to form the container as shown in Fig. 3. To complete the folding of the container the back 12 is bent to the vertical position with the top 17 being folded down over the container and with the overhang 18 being bent on down to the vertical to bring the tabs 19 into alignment with the slots 27 on the front of the container. To close the container the tabs 19 are introduced into the slots 28 which thereby hold the lid 17 of the container in place.

From the foregoing it will be recognized that the container is made from a single piece of cardboard stamped or otherwise formed integrally as a single blank. The blank is adapted to be readily folded without special apparatus or tools, and by the unskilled operator, to form a rugged, yet light-weight, container adapted to package eggs or the like. No adhesive, staples, or the like, are needed for holding the container together.

The modification of the invention illustrated in Fig. 5 is quite similar to that shown in Figs. 1 to 4, and described above, with the exception that the central transverse partition 20 of the blank 10 shown in Fig. 1 is replaced in the blank 10*a* shown in Fig. 5 with a transverse partition 20*a* being cut directly from the front 13*a* of the container. Moreover, the strips 23*a* connecting the longitudinal partition 22*a* to the front 13*a* are offset somewhat into the transverse partitions 29*a*. Thus more space is provided for insertion and removal of articles into the container, as it will be evident, from Figs. 3 and 4, that the strips 23 of the blank 10 shown in Figs. 1 to 4 somewhat cut off the opening to the front end cells of the container.

Another difference in the blank 10*a* over the blank 10 is that one of the tabs 19*a* of the blank 10*a* is formed relatively wide to engage in the opening left by the transverse partition 20*a* when it is moved to position in the container. It is, moreover, necessary to make the overhang portion 18*a* of this blank somewhat greater and to place the slot 27*a* somewhat lower on the front 13*a* so that the tabs 19*a* engage properly in the slot 27*a* and in the opening left by the transverse partition 20*a*. The blank 10*a* is folded up to form a container substantially in the same manner as described above in conjunction with the folding of blank 10.

The modification of the invention illustrated in Fig. 6 is quite similar to that shown in Figs. 1 and 5 with the exception that the transverse partition 20*b* is formed to extend clear to the upper edge of the front 13*b* of the container. The tabs 19*b* are provided on the overhanging portion 18*b* of the lid 17*b* so as to engage in the slot left by the transverse partition 20*b* and also in the slot 27*b*. One other difference in the modification of the invention shown in Fig. 6 is that the longitudinal partition 22*b* is not connected to the front 13*b* by strips of the type shown at 23 and 23*a* in the blanks 10 and 10*a*. The longitudinal partition 22*b* is cut with the blank 10*b* and if desired can be connected to the blank 10*b* by relatively small breakable necks 23*b*, or the longitudinal partition can be cut so as not to be joined to the blank 10*b* at all. Employing the necks 23*b*, however prevents the longitudinal partition 22*b* from being lost from the main portion of the blank and more readily adapts the blank for handling and shipment prior to folding to container form. The blank 10*b* is adapted to be folded to form the container in a manner similar to that above described in conjunction with the blank 10.

It will be evident that the objects of the invention have been obtained by the provision of an improved container formed from a single integral blank of cardboard without the use of adhesive or staples. The formation of the container from the stamped blank is facile and requires no expensive or complicated machinery, nor the use of skilled operators. The resulting container is light, strong and readily adapted to package various articles, such as lamp bulbs, Christmas tree decorations, etc., but is particularly designed for crating eggs. Likewise the containers can be made up to form any desired number of cells without departing from the principle of the invention. For example, containers having compartments or cells to receive 6, 8, 10, 12, 14, or any like number, of articles may readily be provided. It will further be appreciated that while cardboard has been specifically mentioned as the material from which the container is usually made, the invention contemplates making the containers from other materials such as sheet metal, fiberboard and the like.

While, in accordance with the patent statutes, several embodiments of the invention have been illustrated and described it should be understood that the invention is not limited thereto or thereby but is defined in the appended claims.

I claim:

1. A container formed with a plurality of cells therein and comprising a base, integral front, back and ends on the base, a transverse partition connected integrally at one side of each end of the container by a spacer substantially two cells long, a transverse partition connected integrally with the other side of each end of the container by a spacer substantially one cell long, a centrally positioned transverse partition formed integrally with the front of the container, a longitudinally extending partition formed integrally with the front of the container, and a lid formed integrally

with the back of the container and having a front flap folding over the front of the container and formed with tabs adapted when the container is closed to be received in slots cut in the container front.

2. A container formed with a plurality of cells therein and comprising a base, integral front, back and ends on the base, a transverse partition connected integrally at one side of each end of the container by a spacer substantially two cells long, a transverse partition connected integrally with the other side of each end of the container by a spacer substantially one cell long, a centrally positioned transverse partition formed integrally with the front of the container, a longitudinally extending partition formed integrally with the front of the container, and a lid formed integrally with the back of the container.

3. A container formed with a plurality of cells therein and comprising a base, integral front, back and ends on the base, a transverse partition connected integrally at one side of each end of the container by a spacer, a transverse partition connected integrally with the other side of each end of the container by a spacer, a centrally positioned transverse partition formed integrally with the front of the container, a longitudinally extending partition formed integrally with the front of the container, and a lid formed integrally with the back of the container and having a front flap folding over the front of the container and formed with tabs adapted when the container is closed to be received in slots cut in the container front.

4. A container formed with a plurality of cells therein and comprising a base, integral front, back and ends on the base, transverse partions connected integrally with the ends of the container, a longitudinal partition connected integrally with the front of the container, and a lid formed integrally with the back of the container and extending over the entire top of the container.

5. A blank adapted to form a container with a plurality of cells therein, said blank comprising a base, integral front, back and ends on the base, a transverse partition connected integrally at one side of each end of the container blank by a spacer substantially two cells long, a transverse partition connected integrally with the other side of each end of the container blank by a spacer substantially one cell long, a centrally positioned transverse partition formed integrally with the front of the container blank, a longitudinally extending partition formed integrally with the front of the container blank, and a lid formed integrally with the back of the container blank and having a front flap adapted to fold over the front of the container blank and formed with tabs adapted when the blank is folded to container form to be received in slots cut in the container blank front.

6. A blank adapted to form a container having a plurality of cells therein, said blank comprising a base, integral front, back and ends on the base, a partition connected integrally at one side of each end of the container blank by a spacer substantially two cells long and adapted to form a transverse partition in the container when folded, a partition connected integrally with the other side of each end of the container blank by a spacer substantially one cell long and adapted to form a transverse partition in the container when folded, a partition formed integrally with the front of the container blank and adapted to form a transverse partition in the container when folded, a partition formed integrally with the front of the container blank and adapted to form a longitudinal partition in the container when folded, and a lid formed integrally with the back of the container blank.

7. A container provided with a plurality of cells and comprising a base, integral front, back and ends on the base, a transverse partition connected integrally at one side of each end of the container by a spacer substantially two cells long, a transverse partition connected integrally with the other side of each end of the container by a spacer substantially one cell long, a centrally positioned transverse partition formed integrally with the front of the container, a longitudinally extending partition, and a lid formed integrally with the back of the container and having a front flap folding over the front of the container and formed with tabs adapted when the container is closed to be received in slots cut in the container front.

8. A cut blank of cardboard or the like for making containers comprising a base, portions adapted to form the front, back and ends of the container integral with the base, a portion adapted to form the lid of the container formed integral with the back portion, a plurality of portions adapted to form transverse partitions in the container and integral with the end portions, a portion adapted to form a transverse partition and formed integral with the front portion, a portion adapted to form a longitudinal partition and formed integral with the front portion, and means integral with the lid portion and adapted to be received in the front portion upon assembly of the container to fasten the lid shut.

9. A cut blank of cardboard or the like for making containers comprising a base, portions adapted to form the front, back and ends of the container integral with the base, a portion adapted to form the lid of the container formed integral with the back portion, a plurality of portions adapted to form transverse partitions in the container formed integral with the end portions, a portion adapted to form a transverse partition and formed integral with the front portion, and a portion adapted to form a longitudinal partition and formed integral with the front portion.

10. A cut blank of cardboard or the like for making containers comprising a base, portions adapted to form the front, back and ends of the container integral with the base, a portion adapted to form the lid of the container formed integral with the back portion, a portion adapted to form a transverse partition and formed integral with the front portion, and a portion adapted to form a longitudinal partition and formed integral with the front portion but connected thereto by relatively narrow strips.

11. A cut blank of cardboard or the like for making containers comprising a base, portions adapted to form the front, back and ends of the container integral with the base, a portion adapted to form the lid of the container formed integral with the back portion, a plurality of portions adapted to form transverse partitions in the container and integral with the end portions, a portion adapted to form a transverse partition and formed integral with the front portion, and a portion adapted to form a longitudinal partition and formed integral with the front portion, certain of said partition portions being connected

integrally with their respective portions of the blank solely by breakable necks.

12. A container formed with a plurality of cells therein and comprising a rectangular base, integral front, back and ends on the base, a longitudinally extending partition integrally connected with the front of the container by relatively narrow strips positioned vertically above the cells but at the ends thereof so as to permit direct access to the cells without removal of the partition, and a lid for the container extending over the entire top of the container.

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