Oct. 23, 1962 P. THOMPSON 3,059,829

LOCKED CORNER BOX AND BLANK

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Fig. 1

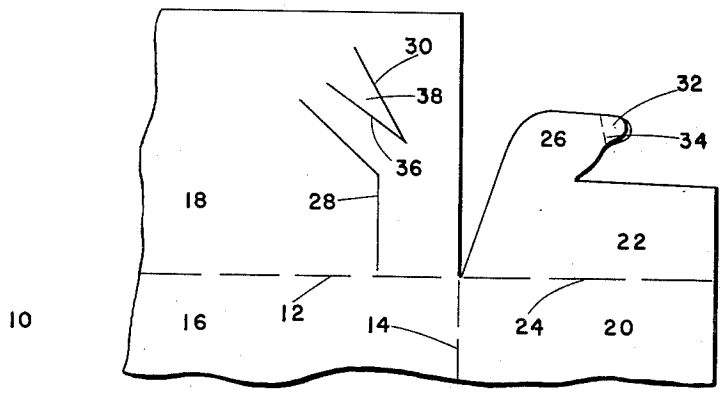


Fig. 2

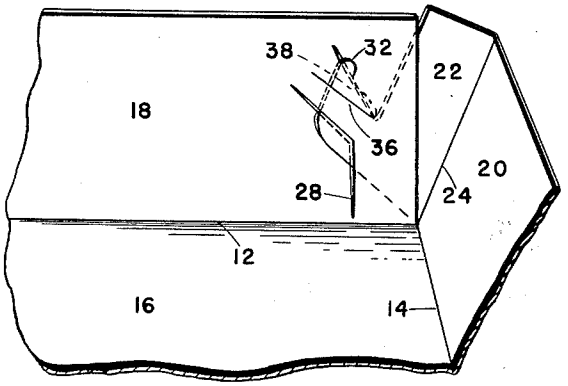
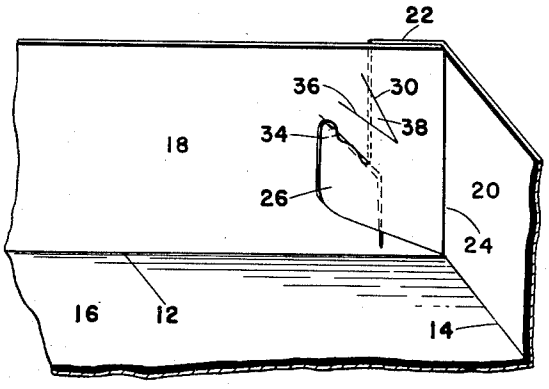


Fig. 3



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Fig. 4

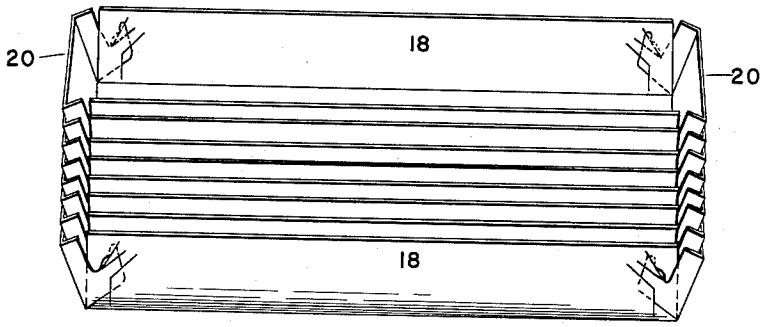


Fig. 7

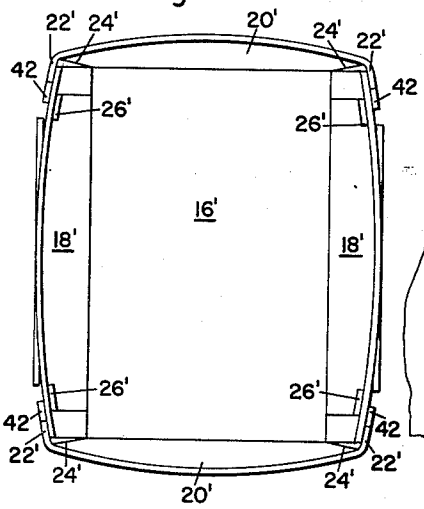


Fig. 5

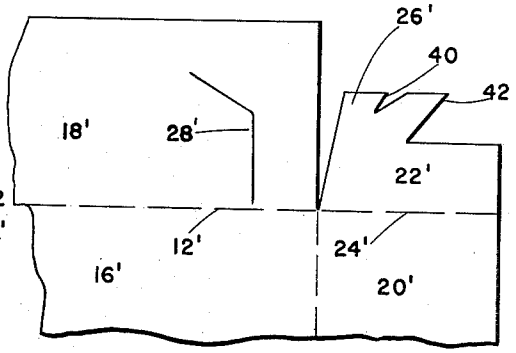
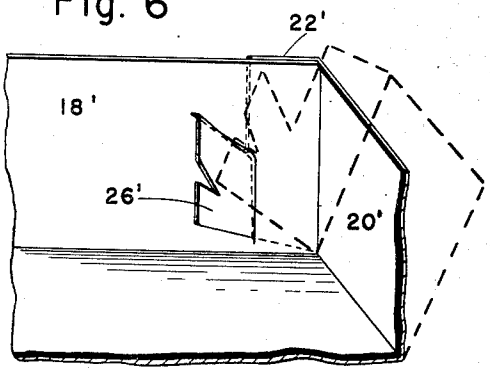


Fig. 6



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LOCKED CORNER BOX AND BLANK

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4 Claims. (Cl. 229—35)

This invention relates to folded paperboard boxes of the locked corner type wherein adjacent side walls of the box are interlocked through slits to support the walls in upright position. Each such box is formed from a scored blank which blanks are ordinarily shipped flat to the consumer and need to be set up as used, such operation requiring considerable time and/or setting up mechanism. My invention herein contemplates a blank and box of this nature which is partially set up at the manufacturing plant and shipped therefrom to the consumer in compact nested relation. The construction is such that the consumer needs only to press the ends of the nesting box together to complete the setting up operation, thus facilitating rapid use of the box without the aid of expensive setting up machinery.

The invention particularly concerns a novel corner lock wherein a flap integral with a side panel at each corner is adapted to fold to corner forming relation overlapping the adjacent panel and interlocking therewith through a slit herein. The relation at the slit is such that the flap carrying panels can be folded either to full and upright corner forming relation with the adjacent panels or to a partially folded position inclined outwardly therefrom. In the latter position the boxes are adapted to be nested in compact relation for easy and convenient shipping and each box can be brought to fully set up position mereby by pressing the flap carrying panels toward each other. The production of a box of this nature having corner locks as and for the purpose described comprises the primary object of the invention.

These and other features of the invention will be more readily understood and appreciated from the following detailed description of preferred embodiments thereof, selected for purposes of illustration and shown in the accompanying drawings, in which—

FIG. 1 is a fragmentary view of a box blank embodying the invention,

FIG. 2 is a fragmentary view of the blank folded to nesting and shipping position,

FIG. 3 illustrates the blank fully folded to box form,

FIG. 4 illustrates a stack of partially folded boxes in nested relation,

FIG. 5 is a fragmentary view of a modified form of blank,

FIG. 6 illustrates this blank folded to box form, and

FIG. 7 is a plan view of this blank partially folded for nesting.

The paperboard blank **10** illustrated in FIG. 1 is scored on lines **12** and **14** to provide a bottom panel **16** and side wall panels **18** and **20**. A corner forming flap **22** is integral with one end of the panel **20** along a score line **24** and is provided with a locking ear **26** at its outer margin.

Each end of the panels **18** is slitted at **28** to receive the adjacent locking ear **26** therethrough when the panels are folded upwardly as illustrated in FIG. 2. The panels **18** are also provided with slits **30** spaced from the slits **28**. Each locking ear **26** includes a tip end portion **32** disposed to overlap the panel **18** when the shoulder **34** of the ear is in contact with a marginal edge of either slits **28** or **30**. When the shoulder is engaged with the marginal edge of slit **30** the panel **20** is inclined outwardly as illustrated in FIG. 2 and when the panel **20** is moved inwardly to the position of FIG. 3 the shoulders **34** engage the marginal edges of the slits **28** and

support the panels **20** in the fully upright and full corner forming relation illustrated. The tip end **32** of the locking ear is slightly bent forward (FIG. 1) to facilitate its passage through the slit and the engagement of the shoulder **34** with the slit margins. The panel **18** is also preferably provided with a slit **36** converging into the slit **30** and forming a wing **38** adapted to aid in supporting and facilitating the operation of the locking ear.

In FIGS. 5, 6 and 7 I have illustrated a modified construction in which parts corresponding to those of FIGS. 1–3 are indicated by like reference characters primed. In this construction the locking ear **26'** of the flap **22'** is provided with two shoulders **40** and **42** for engaging a marginal edge of the slit **28'** as illustrated in FIG. 6. When the shoulders **40** are thus engaged the panels **20'** are supported in the outwardly inclined position illustrated in FIG. 7 and in broken lines in FIG. 6 and when the shoulders **42** are thus engaged the panels are folded in the fully upright and full corner forming relation illustrated in full lines in FIG. 6.

The flat blanks are folded at the manufacturing plant to the nesting relation shown in FIGS. 2, 4 and 7 and are shipped to the consumer in the compact nested relation illustrated in FIG. 4. The consumer has merely to push the end panels **20** inwardly to the fully upright position and the box is ready for use. Thus no setting up machinery is required and the operation is quick and economical. Particular attention is called to FIG. 7 wherein is illustrated not only the outwardly inclined position of the panels **20'** but also the outwardly inclined bowing of the panels **18'** whereby each partially folded blank quite naturally nests completely with the adjacent blanks. Attention is also called to the slight bend on the tip **32** of each locking ear which facilitates the automatic locking engagement. My improved box has no weakening diagonal folds at the corners, uses a minimum of paper stock, is conveniently and economically shipped in nested relation and can be set up quickly and economically without the employment of expensive mechanism.

Having thus disclosed by invention, what I claim as new and desire to secure by Letters Patent is:

1. In a paperboard box embodying a rectangular bottom panel and four side wall panels folded upwardly therefrom to provide side walls forming a box corner at the junction of each two adjacent side panels, a corner lock at each corner of the box comprising a flap integral with one end of a side panel and folded right angularly thereto to provide a corner wall overlapping the adjacent side panel, said adjacent side panel being slitted therethrough adjacent to said corner wall, and interlocking means including a locking ear integral with the flap and extending through said slitted panel and including coabutting stop shoulders on the locking ear and said slitted panel for optionally and positively supporting said side panel folded either in upright and full corner forming relation with said adjacent panel or inclined outwardly therefrom, the box being adapted to nest compactly with other like boxes when its corners are supported in the outwardly inclined position.

2. The corner lock defined in claim 1 in which said interlocking means includes two spaced shoulders on said ear disposed to engage a marginal edge of said adjacent panel at the slit therethrough for supporting said side panel in said upright and outwardly inclined positions respectively.

3. The corner lock defined in claim 1 in which said interlocking means includes a stop shoulder on said ear disposed to engage a marginal edge of said adjacent panel at one slit therethrough for supporting said side panel in upright position and to engage another marginal edge of said adjacent panel at another and relatively

spaced slit for supporting said side panel in the outwardly inclined position.

4. The corner lock defined in claim 3 in which said ear includes a tip end portion integral therewith beyond said shoulder for overlapping said side panel at said slits when the shoulder is engaged with said marginal edges at the slits, said tip end portion of the ear being bent laterally out of the plane of the ear to facilitate engagement of said shoulder with the marginal edges.

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