May 30, 1961 M. A. WICHMAN 2,986,323

CARTON

Filed Dec. 30, 1959 2 Sheets-Sheet 1

Fig. 1

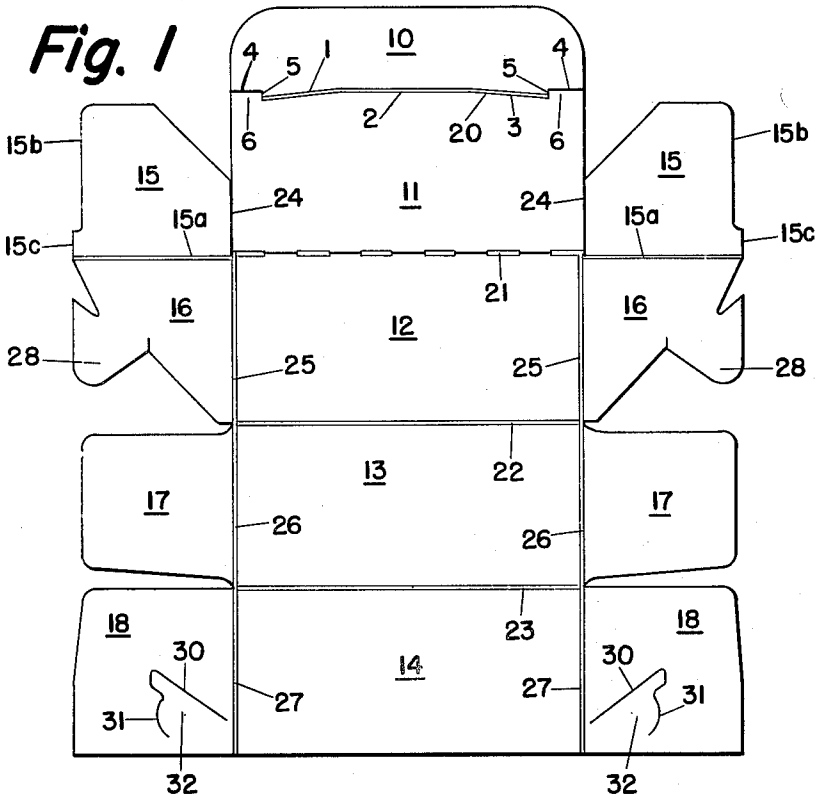
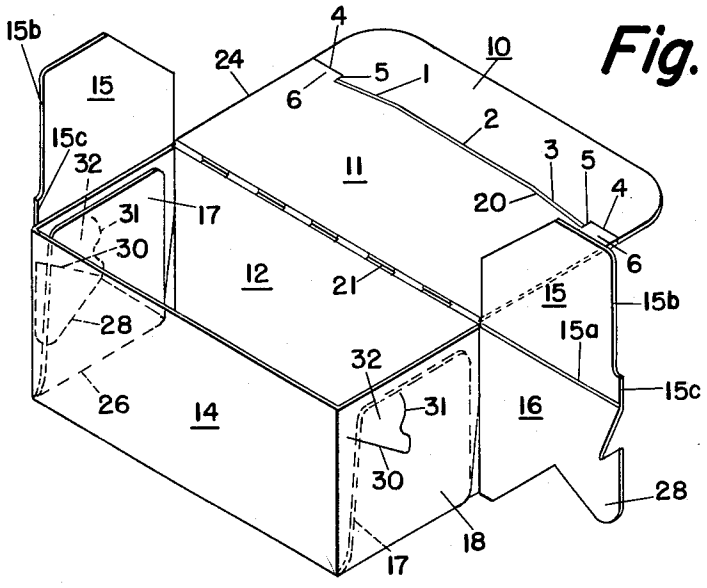


Fig. 2



May 30, 1961 M. A. WICHMAN 2,986,323

CARTON

Filed Dec. 30, 1959 2 Sheets-Sheet 2

Fig. 3

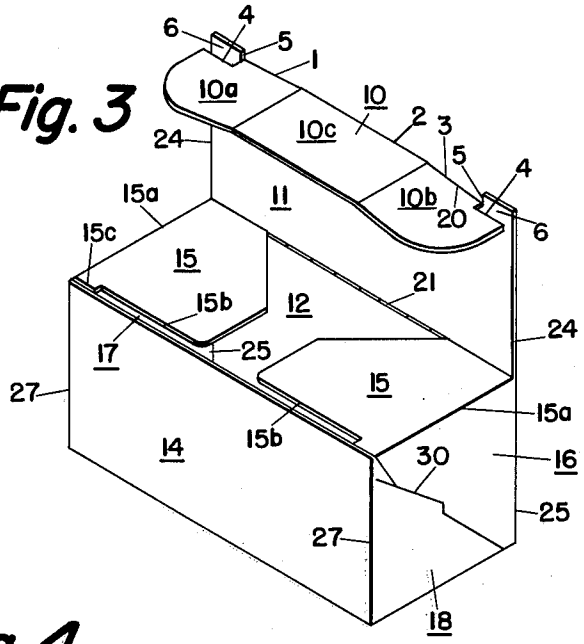


Fig. 4

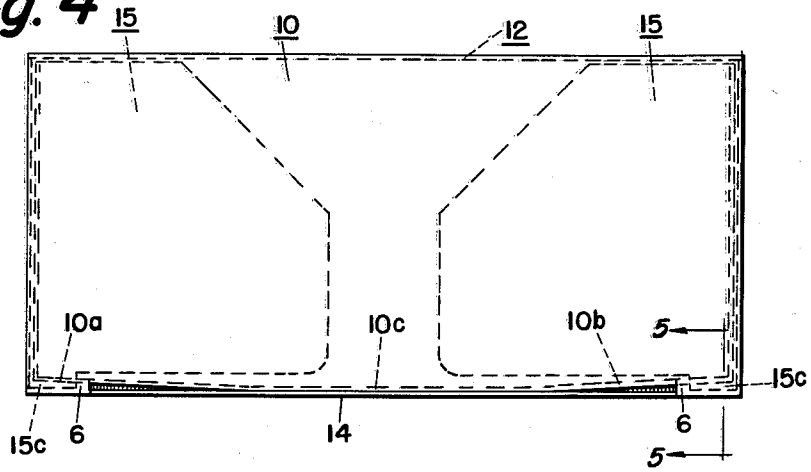


Fig. 5

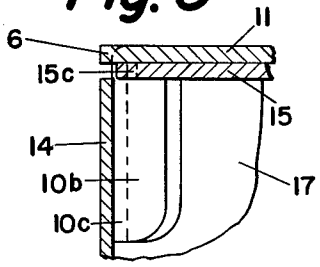
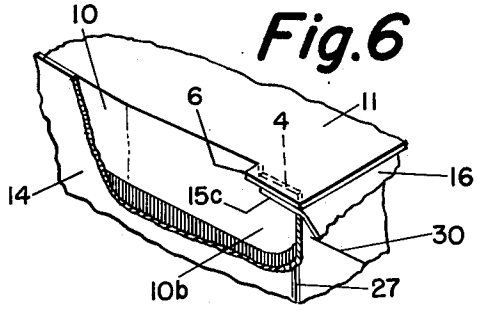


Fig. 6



United States Patent Office 2,986,323 Patented May 30, 1961

2,986,323

CARTON

Merle A. Wichman, Appleton, Wis., assignor to American Can Company, New York, N.Y., a corporation of New Jersey

Filed Dec. 30, 1959, Ser. No. 862,889

3 Claims. (Cl. 229—36)

This invention relates to a carton made of a single flexible sheet material. The carton is provided with a closure panel which is adapted to be retained in locked position upon tucking said closure panel within the carton.

Further details and advantages of the carton construction will be apparent from the following description and accompanying drawings, wherein

Figure 1 is a plan view of a paperboard blank cut and scored to provide a carton construction,

Figure 2 illustrates the blank in partially set-up condition,

Figure 3 is a later stage in setting up the carton,

Figure 4 is a plan top view of the closed carton,

Figure 5 is an enlarged sectional view taken on lines 5—5 of Figure 4, and

Figure 6 is a fragmental perspective view of the set-up carton showing the cover locking elements.

Referring to the drawings, the paperboard blank is suitably cut and scored along score lines **21** to **27** to form a front wall **14**, bottom wall **13** and rear wall **12** which form a receptacle portion. A closure panel **11** is hinged to rear wall along hinge line **21** which is preferably alternately cut and scored to facilitate folding of the closure panel. End flaps **16**, **17** and **18** are hingedly connected to walls **12**, **13** and **14**, respectively, along score lines **25**, **26** and **27**, respectively. Inner closure flaps **15** are hingedly connected to flaps **16** along score lines **15***a* and are separated from closure panel **11** along cut lines **24**. Flaps **16** are provided with locking tongues **28** adapted to be inserted though slits **30** and **31** provided in flaps **18**. The edge **15***b* of each flap **15** is offset to form a locking tab or edge **15***c*.

A tuck-in flap **10** is hinged to closure panel **11** along continuously connected score lines **1**, **2** and **3** which together form a bowed hinge line for the tuck-in flap. The score lines **1** and **3** terminate in L-shaped cut lines **5** and **6**. When the tuck-in flap **10** is folded at right angles to closure panel **11**, as shown in Figure 3, slots will be provided at the ends of tuck-in flap **10** while tabs **6** will project therebeyond. Referring to Figure 3, it will be seen that cut lines **4** also serve to provide the tuck-in flap **10** with free locking end portions designated by numerals **10***a* and **10***b* at each end thereof, the function of which will be described later.

In forming a carton from the described blank, the blank is folded along its score lines so as to set up the front, bottom and rear walls at right angles. At the same time flaps **17** are folded upwardly and tongues **28** are inserted through slits **30** and **31** into locked position, thereby forming a receptacle portion. Flaps **15** are then folded inwardly of the receptacle portion, as shown in

Figure 3. Closure panel **11** is then folded down along hinge line **21** and tuck-in flap **10** is then folded on the outwardly bowed hinge lines **1**, **2** and **3** and tucked into the receptacle portion so as to be positioned adjacent the inner face of front wall **14**, as shown in Figures 4, 5 and 6. At the sametime, locking tabs **15***c* will automatically pass through the slots formed by L-shaped cut lines **5** and **6**. The free edge portions formed by cut lines **4** of the tuck-in flap **10** will then automatically flex and snap rearwardly toward the rear wall **12** and assume a position underneath the locking tabs **15***c* and will thus be securely retained thereunder, as shown in Figures 5 and 6. The rearward flexing movement of the end portions **10***a* and **10***b* of the tuck-in flap **10** is caused by the stresses produced in the tuck-in flap as a result of folding it down on the outwardly bowed hinge lines **1**, **2** and **3**. The end portions **10***a* and **10***b* of the tuck-in flap **10** adjacent cut lines **4** tend to flex and continue to extend inwardly in an outwardly bowed contour relative to the receptacle portion adjacent the front wall **14** of the carton, as shown in Figure 4, so that the edge portions **4** will snap rearwardly underneath the tabs **6** and are thus retained thereby so as to resist opening of the closure panel. In actual practice, although the cut line **4** may be of a length of only ⅛ inch, a very secure locking action is obtained so that the closure panel has to have considerable force applied thereto producing more distortion before the closure panel can be opened. Furthermore, the closure panel can be reclosed and securely relocked numerous times without tearing same.

It is obvious that end flaps **16**, **17** and **18** together form the end walls for the carton, and that depending upon the sequence of folding these flaps, the closure flaps **15** might be hinged to the appropriate free edge of any of them.

Modifications and changes may be made in the specific embodiment of the invention herein described which are intended to be included within the scope of the appended claims.

I claim:

1. A carton formed from a single blank of flexible sheet material suitably cut and scored to provide hinged bottom, front, rear and end walls, end closure flaps hinged to the end walls, said closure flaps being provided with locking edges adjacent the front wall, a closure panel hinged to the rear wall, said closure panel being provided with a tuck-in flap hinged to said closure panel along an outwardly bowed score line terminating short of said end walls, the ends of said bowed score line terminating in slits extending to said end walls, said slits being adapted to receive said locking edges therethrough and retain same in locked condition.

2. A carton made from a single flexible blank comprising hinged bottom, front, rear and end walls, closure flaps hinged to said end walls, locking tabs extending from said closure flaps adjacent the said end walls, and a closure panel hinged to said rear wall, said closure panel having a tuck-in flap hinged thereto along an outwardly bowed score line, the ends of said bowed score line terminating in an L-shaped cut line, one leg of said L-shaped cut line intersecting the ends of said bowed core line at a short distance from the hinge lines of said closure flaps and extending substantially parallel to said hinge lines, the other leg of said L-shaped cut score line extending to the side edges of said closure panel to form a slit at

each end of said tuck-in flap, said locking tabs being adapted to pass through said slits upon folding said tuck-in flap and releasably locking said tuck-in flap adjacent the inner face of said front wall.

3. A carton formed from a single blank of flexible sheet material suitably cut and scored to provide hinged bottom, front, rear and end walls forming a receptacle portion, closure flaps hinged to the upper portion of said end walls and adapted to be folded inwardly of said receptacle portion, said closure flaps being provided with locking tabs adjacent said end walls, a closure panel hinged to said rear wall, said closure panel being provided

with a tuck-in flap hinged to said closure panel along an outwardly bowed score line terminating short of said end walls, the ends of said tuck-in flap having free locking portions, said locking portions being bowed inwardly of the carton and frictionally retained by said locking tabs.

References Cited in the file of this patent

UNITED STATES PATENTS

1,989,659	Adsit et al.	Feb. 5, 1935
2,767,901	Buttery	Oct. 23, 1956
2,804,258	Petter	Aug. 27, 1957