May 20, 1930. R. C. GREEN 1,759,613

CARTON

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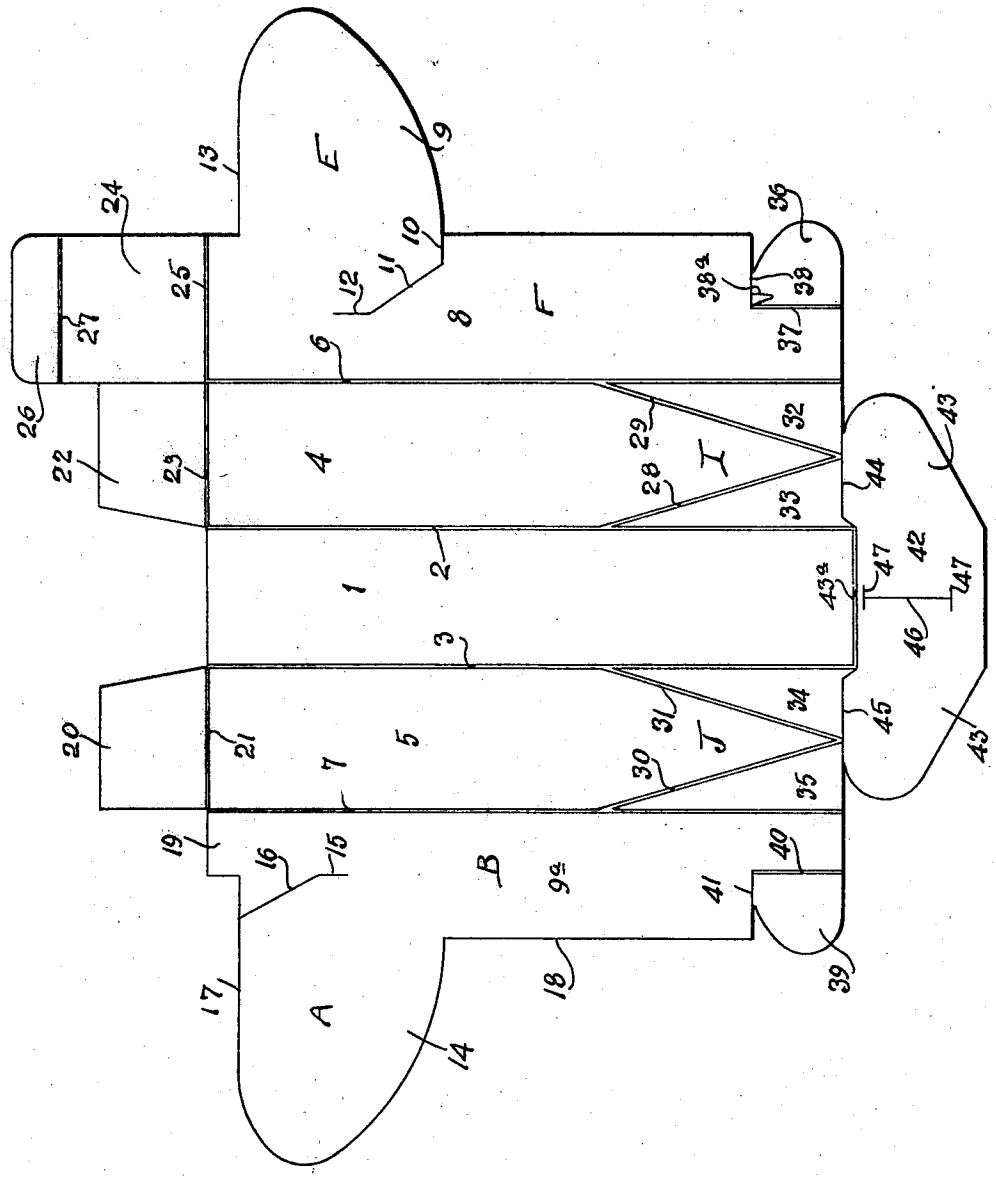



FIG. 1.

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Fig. 2.

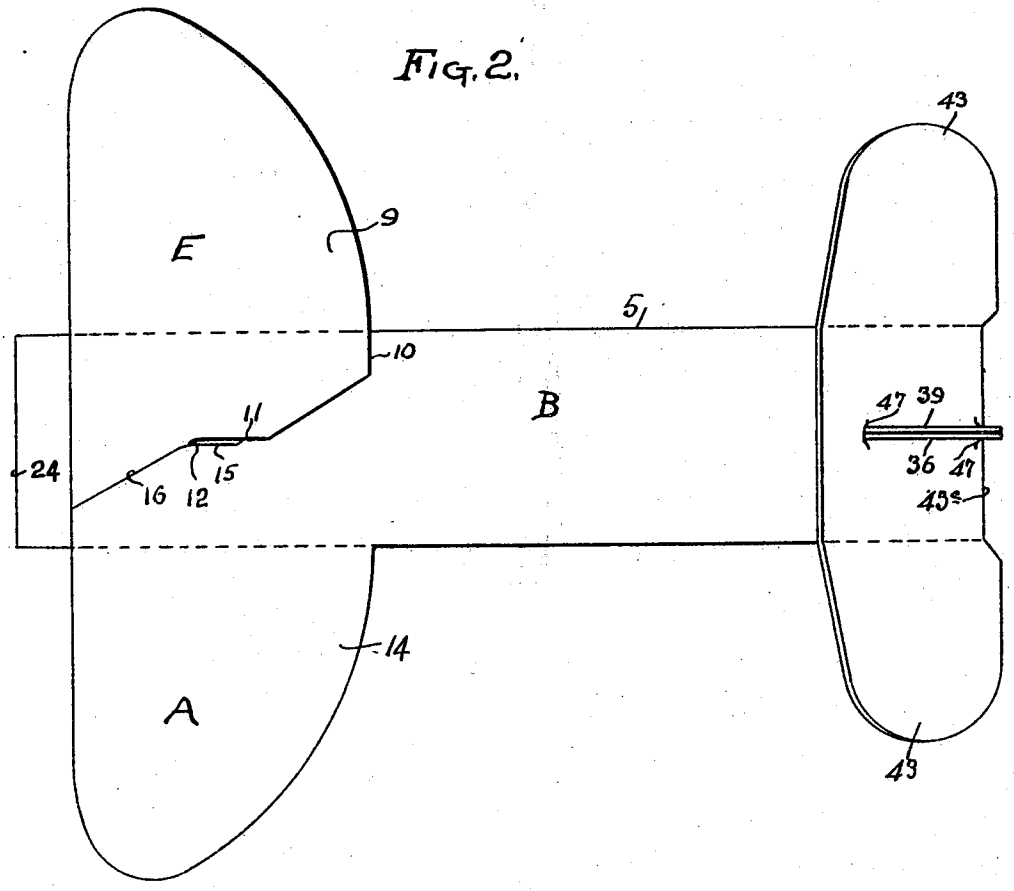
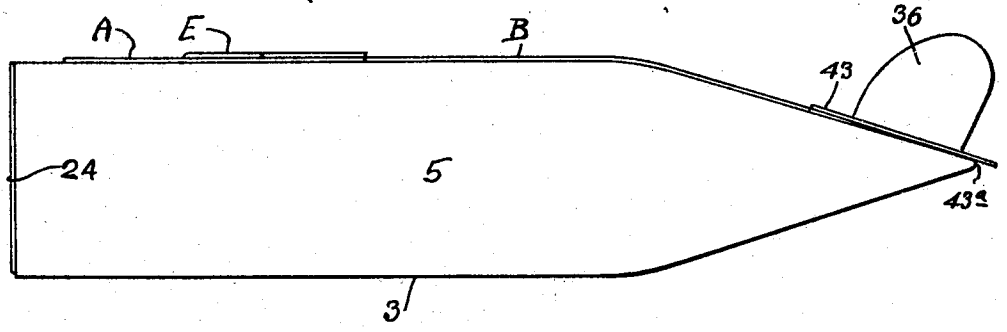



Fig. 3.




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FIG. 4.

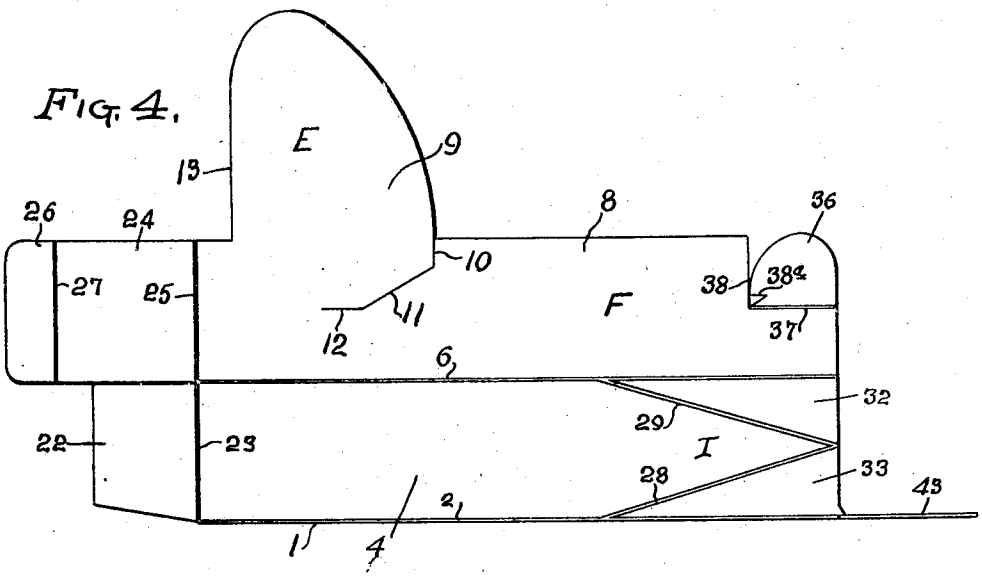



FIG. 5.

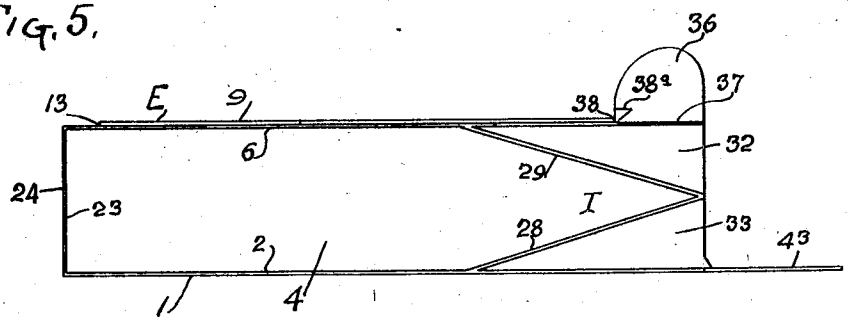
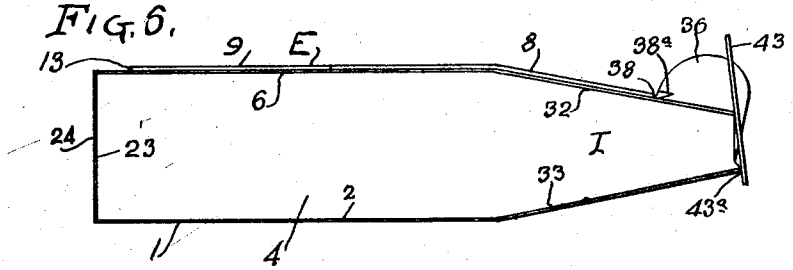



FIG. 6.




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Patented May 20, 1930 1,759,613

# UNITED STATES PATENT OFFICE

ROBERT C. GREEN, OF DAYTON, OHIO, ASSIGNOR TO THE GREEN & GREEN COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO

## CARTON

Application filed October 17, 1928. Serial No. 313,114.

My invention relates to cartons, and particularly to a carton which can be formed from a single piece of stock into the general design of an airplane.

It is the object of my invention to provide such a box or carton that may be filled, closed and opened at will, without disassembly after having once been assembled.

It is a further object to provide such a carton which will provide the maximum space for carrying crackers, candy and other edible products and the like, while at the same time maintaining its shape and form as an airplane.

It is a still further object to provide a box that can be simply and rigidly assembled by ordinary labor that requires no strings or tapes, that is self-locking and has sufficient strength by reason of its self-locking features to constitute a vehicle for carrying crackers and the like without crushing or injuring them, so that they can be shipped in such cartons.

Referring to the drawings,

Figure 1 is a plan view of the blank, looking at the outside of the blank.

Figure 2 is a top plan view of the assembled carton.

Figure 3 is a side elevation thereof.

Figure 4 is a right hand side elevation of the carton during the first folding operation, by which the sides are being folded up along the score lines 2 and 3.

Figure 5 is a similar side elevation showing the second step in folding by which the top of the carton has been closed, the open front end has been closed, and the wings interlocked for holding the box in assembled position

Figure 6 is a similar view showing the rear end of the box being locked by having the stabilizer flap brought up in position to lock on the front hook of the rudder flaps

Referring to the drawings in detail, the blank consists of a bottom 1 which forms the bottom of the fuselage and the resulting box or carton which is to contain the crackers and the like. This bottom 1 is connected integrally along the score lines 2 and 3 with the side walls 4 and 5 of the fuselage. These side walls 4 and 5 are in turn connected along the score lines 6 and 7 with the top members 8 and 9 that form the overlapping top portions of the carton. The top portion 8 has integrally formed with it a laterally extending wing 9. This wing has an inner margin extending into the top portion 8, but is severed therefrom along the lines 10, 11 and 12. This line of severance is to the rear of the front edge 13 of the wing.

The other top section $9^a$ is provided with a corresponding wing 14. This wing is partially severed from the top section $9^a$ by the cut along the lines 15 and 16 which communicate with the front edge 17 of the wing. The top section $9^a$ is cut away about one-half the distance from its outer edge 18 at the front end along the front line of the wing 14, so that a projecting shoulder portion 19 is formed.

The open forward end of the fuselage of the plane is used for inserting the contents of the box. This open forward end is closed by the overlapping flaps 20 hinged to the forward end of the side wall 3 along the score line 21; by the flap 22 hinged to the forward end of the side wall section 4 along the score line 23, and by the end wall flap 24 hinged along the score line 25 of the top section 8. This end wall which overlaps the two flaps 20 and 22 when in folded position, is locked into position by the inwardly extending locking flap 26 which is hinged along the score line 27 to the end wall flap 24. Thus the contents are securely locked within the fuselage of the plane and it may be readily opened for the extraction of the contents.

Turning to the rear closure of the carton and the formation of it into the tail, rudder and stabilizer of an airplane, it will be noted that the side wall sections 4 and 5 are so arranged that V-shaped score lines 28 and 29; and 30 and 31 permit of the folding of the rear end of the side walls so that they will taper. This forms V-shaped sections 32 and 33 between the score lines 6 and 29 and 2 and 29 respectively. Similar V-shaped sections 34 and 35 are formed between the score lines 3 and 31; and 30 and 7 respectively.

The top section 8 is provided with a rudder flap 36 hinged thereto along the line 37 which is a score line and severed therefrom along the slit 38. A locking notch 38[a] may be provided on one of the rudder flaps, or both, for cooperating and locking with the stabilizer hereinafter described. This arrangement provides for the placing of the rudder flap 36 in a vertical position with respect to the horizontal position of the top section 8. Such a flap is arranged parallel to its adjacent abutting rudder flap 39 which is hinged along the score line 40 of the overlapping top section 9[a]. It is severed from the top section 9[a] along the slit 41. As these score lines are located 50% of the width of the sections 8 and 9[a] approximately, the two flaps will be brought into abutting engagement with a vertical position when the box or carton is folded. The stabilizer designated 42 is hinged along the score line 43[a] to the rear end of the bottom panel 1 of the fuselage.

It is provided with overlapping laterally extending, wing-like structures 43 which are severed from the rear ends of the side panels 4 and 5 along the slits 44 and 45 respectively. It is also provided with a longitudinal slit 46 and transverse end slits 47 for receiving the vertical rudder members 36 and 39 when this stabilizer surface is belt along the line 43[a] upwardly and forwardly into a position where the rear slit 47 locks in front of the shoulder 38[b] of the flap 36 so as to lock the rear end of the box in its folded condition, thus providing the laterally extending stabilizer surface and a vertically extending rudder surface.

*Method of folding*

The blank is placed upon a supporting surface. It is first bent along the lines 2 and 3. It is then bent along the lines 6 and 7. The wing slits are then brought opposite to one another by pushing one wing forward and drawing the other backward, so that the other side from A of wing 14 and the other side from B of the top strip 9[a] will be down. The side E of wing 9 adjacent the side F of the top section 8 will be covered while the face B of the wing 14 will be up. The upper surface of the top section 8 will be covered by the overlapping section 9.

The second step in the folding is to press the triangular areas I and J inwardly and bring the rear ends of the bottom section 1 and the top sections 8 and 9[a] together. In the meanwhile the flaps 36 and 38 have been bent along the lines 37 and 40 into a vertical position. The stabilizer is bent along the line 43[a] and moved upwardly and forwardly until the upper edges of the rudder flaps 36 and 39 project through the slit 46 and the forward transverse slit 37 engages the forward edges of the rudder flaps 36 and 39 and the notch 38.

Then the carbon can be filled and the forward end closure flaps 20 and 22 are folded over one another; the end wall flap 27 is folded over these flaps; the locking flap 26 is inserted into the interior of the carbon, and the operation is complete. Thus the lateral folding of the carbon will be locked by the wings. The rear end will be locked by the rudder and stabilizer surfaces and the open front end will be locked by the end wall and locking flaps to form the complete enclosure.

It will be understood that I desire to comprehend within my invention all the modifications and changes necessary to adapt it to varying conditions and uses.

Having thus fully described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A new article of manufacture for use as a carton, comprising a blank arranged to be formed in the shape of an airplane, having a box-like fuselage to serve as a container, and wings thereon adapted to lock the sides, top and bottom of the box together.

2. A new article of manufacture for use as a carton, comprising a blank arranged to be formed in the shape of an airplane, having a box-like fuselage to serve as a container, wings thereon adapted to lock the sides, top and bottom of the box together, and a rudder and stabilizer portions adapted to lock the rear ends of the box together.

3. A new article of manufacture for use as a carton, comprising a blank arranged to be formed in the shape of an airplane, having a box-like fuselage to serve as a container, wings thereon adapted to lock the sides, top and bottom of the box together, and a rudder and stabilizer portions adapted to lock the rear ends of the box together, and closure members carried by the fuselage portions for closing the forward end of the carton.

4. In combination in a box blank for forming an airplane, fuselage sections hinged to one another for forming both sides and top, and interlocking wing sections for locking the fuselage together.

5. In combination in a box blank for forming an airplane, fuselage sections hinged to one another for forming both sides and top, interlocking wing sections for locking the fuselage together, and a tail section adapted to interlock to form a closure for the rear end of the fuselage.

6. In combination in a box blank for forming an airplane, fuselage sections hinged to one another for forming both sides and top, interlocking wing sections for locking the fuselage together, a tail section adapted to interlock to form a closure for the rear end of the fuselage, and collapsible, rear, fuselage portions to permit of the rear end of the fuselage to be closed and locked by the locking portions.

7. In combination in a carton, a fuselage portion formed of a bottom, side and top section integral with one another, said top sections overlapping one another, wings carried thereby having oppositely disposed locking slits, collapsible rear portions, rudder sections carried by the overlapping top sections of the fuselage, and a stabilizer section carried by the bottom of the fuselage adapted to interlock in closed and collapsed position the rear end of the fuselage.

8. In a carton formed in the shape of an airplane, the combination in a blank of a bottom fuselage section, side wall fuselage sections, overlapping top wall sections, laterally projecting wings thereon having interlocking slits, hinged rudder sections attached to the top sections, forward closure members on the side wall and one of the top sections, and a stabilizer section hinged to the rear end of the bottom section of the fuselage.

9. In a carton formed in the shape of an airplane, the combination in a blank of a bottom fuselage section, side wall fuselage sections, overlapping top wall sections, laterally projecting wings thereon having interlocking slits, hinged rudder sections attached to the top sections, forward closure members on the side wall and one of the top sections, and a stabilizer section hinged to the rear end of the bottom section of the fuselage, said side sections being scored to permit of inward folding, whereby the bottom and top sections may be brought together along their rear edges to close the rear end of the fuselage.

10. In a box blank for formation into an airplane, a plurality of parallel, integral, rectangular panels, said outer panels respectively carrying wing and hinged rudder sections, said wing sections having oppositely disposed interlocking slits.

11. In a box blank for formation into an airplane, a plurality of parallel, integral, rectangular panels, said outer panels respectively carrying wing and hinged rudder sections, said wing sections having oppositely disposed interlocking slits, and a stabilizer section projecting rearwardly from the central panel and laterally of the adjacent panels.

12. In a box blank for formation into an airplane, a plurality of parallel, integral, rectangular panels, said outer panels respectively carrying wing and hinged rudder sections, said wing sections having oppositely disposed interlocking slits, and a stabilizer section projecting rearwardly from the central panel and laterally of the adjacent panels, said panels on the outside of the central panel having their rear ends arranged in triangular folded sections.

13. In a box plank for formation into an airplane, a plurality of parallel, integral, rectangular panels, said outer panels respectively carrying wing and hinged rudder sections, said wing sections having oppositely disposed interlocking slits, a stabilizer section projecting rearwardly from the central panel and laterally of the adjacent panels, said panels on the outside of the central panel having their rear ends arranged in triangular folded sections, and forward closure flaps one on the forward end of each of the sections adjacent the central section, and an end wall and locking flap on the forward end of one of the outside sections.

14. In an integral box blank formed of one piece of stock, a central section, side sections hinged thereto on a score line, overlapping top wing sections hinged thereto on a score line, integral wings projecting therefrom, partially severed therefrom by oppositely disposed locking slits, end closure members hinged to the forward ends of the side sections and one of the wing sections, hinged rudder sections on the rear outer portions of the wing sections, a stabilizer section hinged on a score line to the bottom section, and rearwardly directed V-shaped scores to permit inward folding of the rear ends of the side sections whereby the interlocking wings lock the box laterally, and the folded side walls in combination with the rudder and stabilizer sections permit of the locking of the rear end of the fuselage with the rear edges of the bottom section and wing sections in engagement with one another.

15. In an integral box blank formed of one piece of stock, a central section, side sections hinged thereto on a score line, overlapping top wing sections hinged thereto on a score line, integral wings projecting therefrom, partially severed therefrom by oppositely disposed locking slits, end closure members hinged to the forward ends of the side sections and one of the wing sections, hinged rudder sections on the rear outer portions of the wing sections, a stabilizer section hinged on a score line to the bottom section, rearwardly directed V-shaped scores to permit inward folding of the rear ends of the side sections whereby the interlocking wings lock the box laterally and the folded side walls in combination with the rudder and stabilizer sections permit of the locking of the rear end of the fuselage with the rear edges of the bottom section and wing sections in engagement with one another, and a locking slit in the stabilizer section through which the rudder sections are adapted to project.

16. In an integral box blank formed of one piece of stock, a central section, side sections hinged thereto on a score line, overlapping top wing sections hinged thereto on a score line, integral wings projecting therefrom, partially severed therefrom by oppositely disposed locking slits, end closure members hinged to the forward ends of the side sections and one of the wing sections, hinged

rudder sections on the rear outer portions of the wing sections, a stabilizer section hinged on a score line to the bottom section, rearwardly directed V-shaped scores to permit inward folding of the rear ends of the side sections whereby the interlocking wings lock the box laterally and the folded side walls in combination with the rudder and stabilizer sections permit of the locking of the rear end of the fuselage with the rear edges of the bottom section and wing sections in engagement with one another, a locking slit in the stabilizer section through which the rudder sections are adapted to project, and a locking notch on a rudder section adapted to engage a transverse slit in the stabilizer section.

In testimony whereof, I affix my signature.

ROBERT C. GREEN.