Oct. 5, 1943. A. ROUS ET AL 2,330,927

CARTON AND CARTON BLANK

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FIG. 1

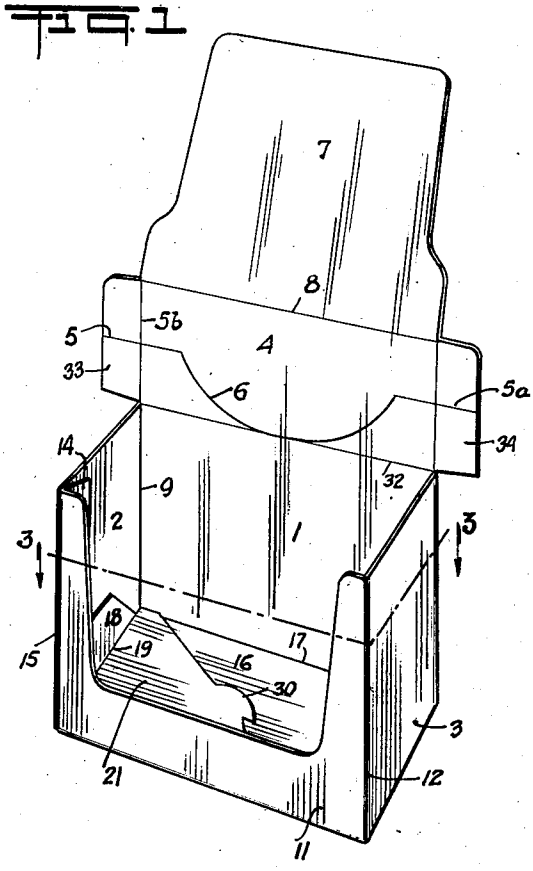


FIG. 2

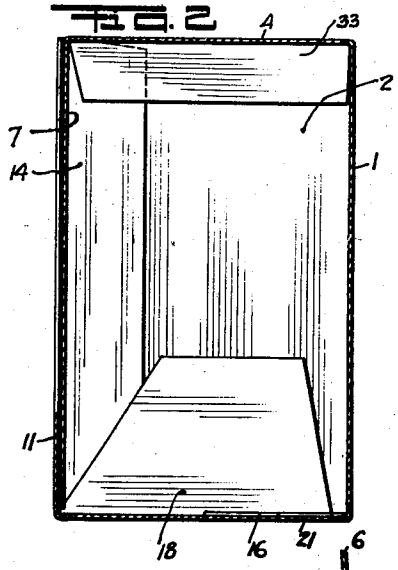


FIG. 3

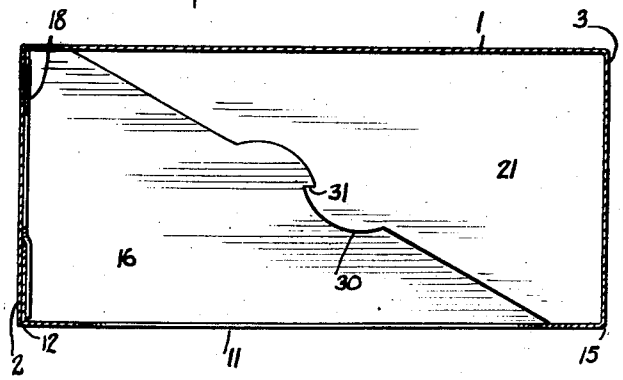
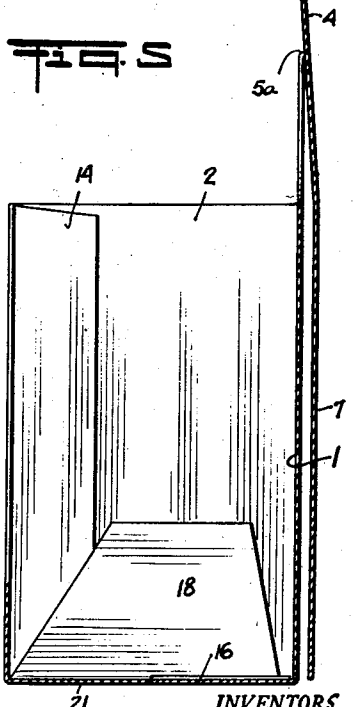


FIG. 5



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Fig. 4

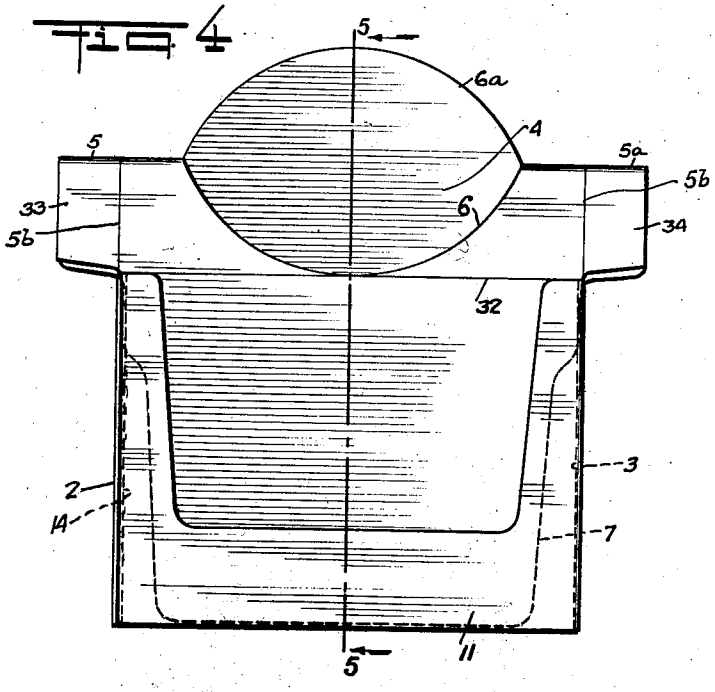
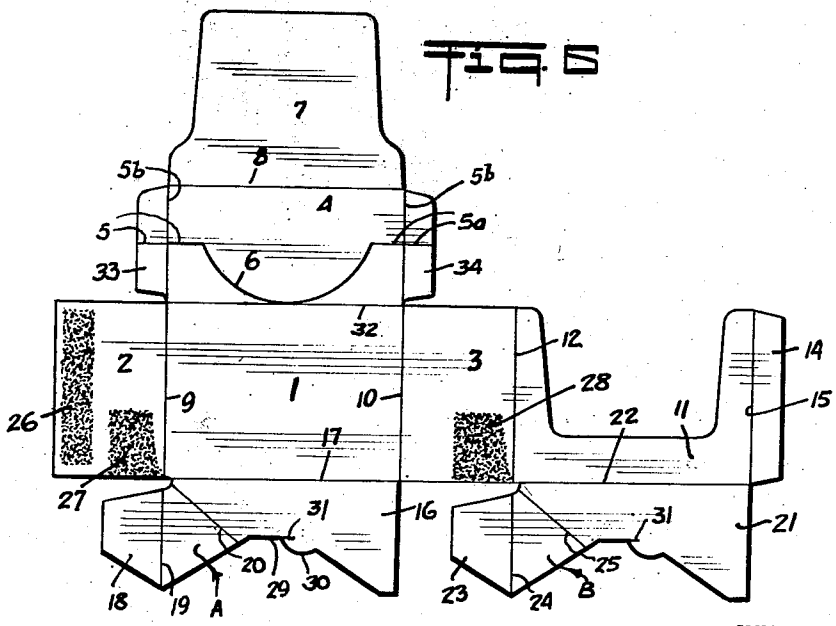


Fig. 5



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CARTON AND CARTON BLANK

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Application September 5, 1942, Serial No. 457,394

4 Claims. (Cl. 206—44)

Our invention relates to a new and improved carton and to a new and improved carton blank.

One of the objects is to provide a box or carton which can be assembled and shipped in extensible flat form and which can be readily set up into extended form.

Another object of our invention is to provide an improved construction for the bottom wall of said carton, whereby said bottom wall is made of a plurality of members which interlock automatically when the flat and assembled carton blank is set up.

Other objects of our invention will be stated in the annexed description and drawings which illustrate a preferred embodiment thereof.

Fig. 1 is a perspective view of the set-up box or carton, with the cover in the open position.

Fig. 2 is a sectional view of the set-up box in the closed position, taken along a plane which is perpendicular to the bottom wall of the box and which is located centrally between the end walls of the box.

Fig. 3 is a sectional view along the line 3—3 of Fig. 1.

Fig. 4 is a front elevation of the box in the display position, in which the cover has been bent rearwardly to vertical position.

Fig. 5 is a sectional view along the line 5—5 of Fig. 4.

Fig. 6 is a plan view of the blank which is used for making the box.

This blank is made of a single piece of cardboard or the like. It comprises a cover 7, a top wall 4 which has flaps 33 and 34, a rear wall 1, end walls 2 and 3, a front wall 11, a rear bottom section 16, and a front bottom section 21. The front wall 11 has a flap 14. The bottom sections 16 and 21 have respective flaps 18 and 23. The reference numerals 8, 5b, 5, 5a, 32, 9, 10, 12, 15, 17, 22, 19, 20, 24 and 25 designate respective fold lines, along which the blank can be indented or scored. The arcuate line 6, which connects the inner end of fold lines 5 and 5a, indicates a through-and-through cut or slit. The reference numerals 26, 27 and 28 indicate areas of adhesive which are applied to the blank, in order to assemble it in the flat condition, and to keep certain essential parts of the assembled blank connected to each other. Fig. 6 is to scale, and reference is made thereto for further details. The respective rear and front bottom sections 16 and 21 are identical. Their end-portions are of equal width, and each has a median portion of reduced width. Each said median portion has a straight edge 29, which is parallel to the respective fold line 17 or 22. Each said bottom section has a short slit or cut 31, which is parallel to and which is an extension of said edge 29. Each said bottom section also has a curved edge 30. In the flat blank, said bottom sections 16 and 21 are symmetrically disposed. The face of the blank which is visible in Fig. 6, is the inner face of the flat blank. The outer face of said blank is printed in any manner.

In order to assemble the blank in flat or collapsed condition, end wall 2 is bent along line 9, front wall 11 is bent along line 12, and the outer face of flap 14 is connected to the inner face of end wall 2 by adhesive at the area 26. Before or after this has been done, the rear bottom section 16 is bent along the fold lines 17, 20, and 19, so that area A is located between the body of section 16 and flap 18. Likewise, the front bottom section 21 is bent along the lines 22, 25 and 24, until area B is located between the body of section 19 and flap 23.

Flap 18 is connected to the inner face of end wall 2 by adhesive at area 27, so that said flap 18 overlies the bottom part of flap 14. Flap 23 is connected to end wall 3 by adhesive at area 28.

The main body of the rear bottom section 16 now abuts rear wall 1, and the main body of front bottom section 19 now abuts front wall 21. The rear wall 1 and the end wall 3 are now in the same plane, and the end wall 2 and the front wall 3 are in another respective plane. The rear bottom section 16 has three abutting layers of its material between rear wall 1 and end wall 2. The front bottom section 21 now has three abutting layers of its material between front wall 11 and end wall 3. One edge of front bottom section 16 is substantially coincident with fold line 10.

The flat and assembled carton can be extended or set up by turning the end walls 2 and 3 around the fold lines 9 and 10, until said end walls are parallel to each other. When this is done, the respective bottom sections are automatically bent down along the fold lines 17 and 22. When these bottom sections are pressed down until they are perpendicular to the parallel rear and front walls 1 and 11, said bottom sections interlock at their respective slits 31. The chords of the arcuate edges 30 are then aligned as shown in Fig. 3. These aligned chords are inclined to the respective diagonal of the bottom wall of the carton. The front bottom section 16 then overlaps the rear bottom section 21 adjacent the end wall 2 and rear wall 1, and the rear bottom section 21 then overlaps the front bottom section 16 adjacent end wall 3 and front wall 11.

The flaps 33 and 34 can now be bent inwardly along the fold lines 5b, and said flaps can be located inwardly of the end-walls 2 and 3 by bending top wall 4 downwardly on fold line 32. The cover 7 can be bent downwardly on fold line 8, so that said cover can be located behind front wall 11, thus closing the box.

In order to display and to advertise the contents of the carton, the flaps 33 and 34 and the

top wall 4 can be bent along the aligned median fold lines 5 and 5a, so that the cover 7 is located behind the rear wall 1. This exposes a part of the printed outer face of the top wall 4. The edge 6a of said top wall coincides with the slit 6 when the blank is in the flat condition of Fig. 6.

I have described a preferred embodiment of the invention, but numerous changes and omissions can be made without departing from its scope.

The end wall 3 may be designated as the intermediate end wall, because it is located intermediate rear wall 1 and front wall 11. The end wall 2 may be designated as the free end wall. If extended, the diagonal fold line 20 would intersect the adjacent corner of the free end wall 2 and the rear wall 1. If extended, the diagonal fold line 25 would intersect the adjacent corner of the intermediate end wall 3 and the front wall 1. Said diagonal fold lines 20 and 25 are parallel to each other, and they are inclined 45° to the aligned fold lines 17 and 22.

For convenience, the direction which is parallel to the lines 17 and 22 in Fig. 6 is designated as the horizontal direction.

The preferred embodiment discloses a complete carton which has a top wall and a cover, but the invention is not limited to the complete carton and it includes sub-combinations of the complete combination or device disclosed herein.

The connecting flap 18 of the rear bottom section 16 is directly adjacent the free end wall 2 and the diagonal line 20 is also adjacent said free end wall 2. The connecting flap 23 of the bottom section 21 is directly adjacent the intermediate end wall 3 and the diagonal line 25 is also adjacent said intermediate end wall 3. The rear bottom section 16 is bendable and foldable until its connecting flap 18 abuts the free end wall 2, and a pleat is formed in said bottom section 16 along the diagonal line 20. The front bottom section 21 is also bendable and foldable until its flap 23 abuts the intermediate end wall 3, and a pleat is formed in said front bottom section 21 along the diagonal line 25. The free edges of said bottom sections are shaped to overlap and to interlock when the bottom sections are prependicular to the rear wall, in the extended form of the carton. This interlocking is not limited to the slits 31, because the arcuate sections 30 of said free edges will produce some interlocking when the bottom sections are held perpendicular to the rear wall.

We claim:

1. A carton blank which comprises a rear wall and a front wall, said blank also having an intermediate end wall which is located between one of the vertical edges of the rear wall and the adjacent vertical edge of the front wall, said blank having a free end wall which is joined to said rear wall at the other vertical edge of said rear wall, a rear bottom section which is joined to the rear wall at its bottom edge, a front bottom section which is joined to the front wall at its bottom edge, said rear bottom section having a connecting flap directly adjacent the free end wall, said front bottom section having a connecting flap which is directly adjacent said intermediate end wall, the rear bottom section also having a diagonal fold line which is adjacent the flap of said rear bottom section and which is adjacent said free end wall, the front bottom section also having a diagonal fold line which is adjacent the respective flap and which is adjacent the intermediate end wall, said bottom section being bendable and foldable until its flap abuts the inner face of the free end wall and a pleat is formed in the body of said rear bottom section along the diagonal line thereof, the front bottom section being bendable and foldable until its flap abuts the inner surface of the intermediate end wall and a pleat is formed in said front bottom section along its diagonal line, said bottom sections having their free edges shaped to overlie and to interlock when the bottom sections are perpendicular to said rear wall.

2. An integral carton blank which comprises a rear wall and an intermediate end wall and a free end wall and a front wall and a rear bottom section and a front bottom section, the intermediate end wall being located intermediate the rear wall and the front wall, the rear wall being located intermediate the free end wall and the intermediate end wall, the rear bottom section being integral with the rear wall at the bottom edge of said rear wall, the front bottom section being integral with the front wall at the bottom edge of said front wall, said rear bottom section and said front bottom section being substantially identical in shape and in dimensions, each said bottom section being substantially of equal width at the respective ends thereof and being of reduced width intermediate the respective ends thereof, the rear bottom section having a lateral flap which is vertically aligned with the free end wall, the front bottom section having a lateral flap which is vertically aligned with the intermediate end wall, each said bottom section having a diagonal fold line, the diagonal fold line of the rear bottom section being substantially directed to the corner between the bottom edge of the free end wall and the respective vertical edge of the rear wall, the diagonal fold line of the front bottom section being substantially directed to the corner between the bottom edge of the intermediate end wall and the respective vertical edge of the front wall, said bottom sections being shaped to overlap each other in the assembled carton when said bottom sections are perpendicular to said rear wall, said carton being foldable along the respective lines of junction between the aforesaid walls and bottom sections.

3. A carton blank according to claim 2, in which the free edge of each said bottom section has a straight edge portion which is parallel to the aligned bottom edges of the rear wall and of the front wall, each said free edge also having a curved edge portion which directly succeeds said straight edge portion.

4. A carton blank according to claim 2, in which the free edge of each said bottom section has a straight edge portion which is parallel to the aligned bottom edges of the rear wall and of the front wall, each said free edge also having a curved edge portion which directly succeeds said straight edge portion, each said bottom section also having a slit which is continuous with said straight edge portion and which is located between the respective curved edge portion and the bottom edge of the respective carton element to which the respective bottom section is joined.

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