July 8, 1958 F. A. RYDER 2,842,302

POURING SPOUT CARTON

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Fig. 1.

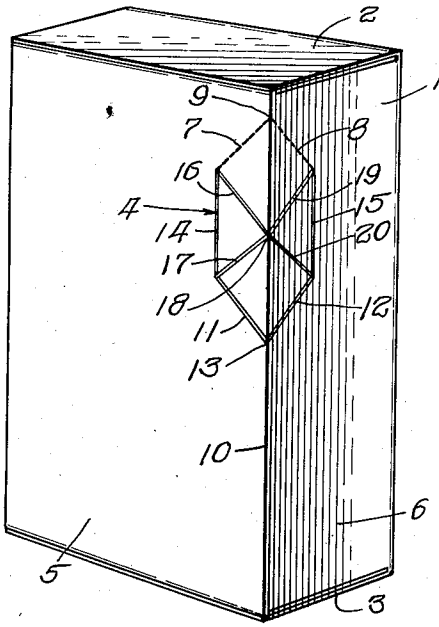


Fig. 2.

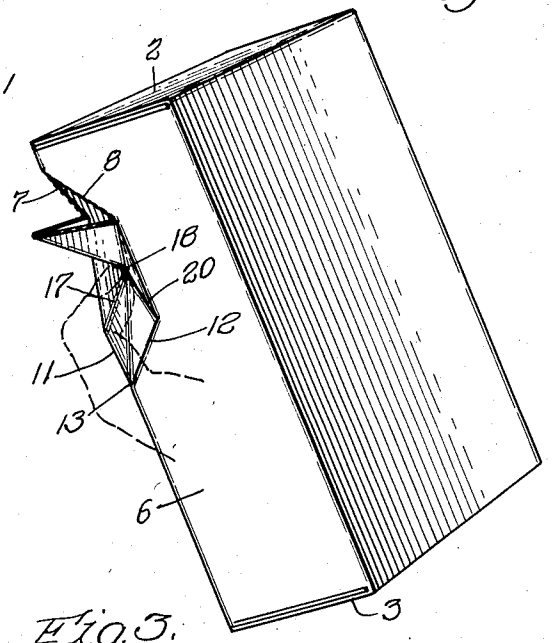
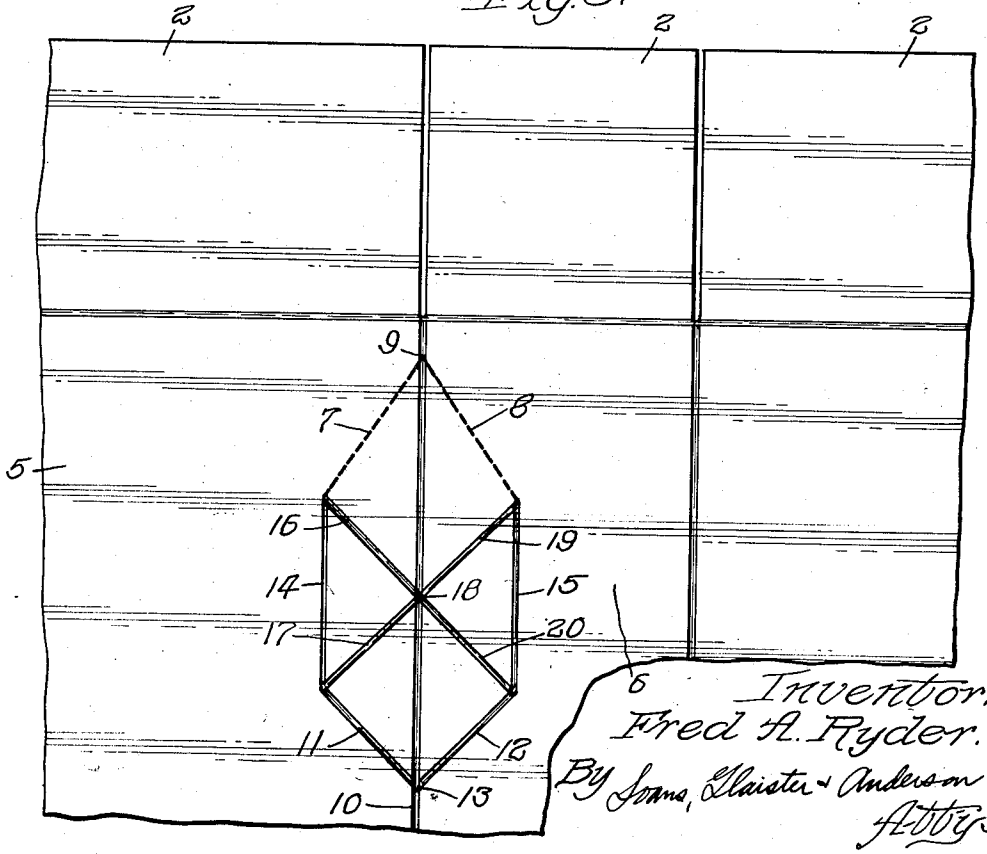


Fig. 3.



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POURING SPOUT CARTON

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5 Claims. (Cl. 229—17)

This invention relates to a pouring spout carton, that is, to a paper board carton which is equipped with a pouring spout. The main objects of the invention are to provide a carton in which a pouring spout is formed as an integral part of the carton; to provide a pouring spout structure which may be embodied in the carton as a part of the normal wall structure thereof and without the addition of special spout forming pieces of material; to provide a very simple, low cost pouring spout construction which is very easy to open and close and which is self-closing; and, in general, it is the object of the invention to provide an improved pouring spout carton.

Other objects and advantages of the invention will be understood by reference to the following specification and the accompanying drawing (1 Sheet) in which there is described and illustrated a pouring spout carton embodying a selected form of the invention.

In the drawing:

Figure 1 is a perspective illustration of a carton embodying a pouring spout according to the invention;

Figure 2 is a perspective illustration of the carton with the pouring spout opened; and,

Figure 3 is an elevational view of a portion of the blank from which the carton is formed and which contains the improved pouring spout structure.

The improved pouring spout according to the present invention is applicable to a corner portion of a paper board carton. In this instance it is illustrated as applied to a conventional carton **1** of rectangular form and having its top and bottom ends **2** and **3** closed by overlapped end flaps in the usual manner. A pouring spout structure **4** is provided in the corner area of the carton formed by the intersection of a pair of walls **5** and **6**.

Said pouring spout structure **4** is formed by a pair of weakened score lines **7** and **8** in the walls **5** and **6** respectively. Said weakened lines **7** and **8** may be ordinary perforated scores as shown, or they may be cut scores in which the cutting goes only part way through the thickness of the carton walls, or any other weakened lines which may easily be broken or cut to provide slits through the walls in registry with said lines **7** and **8**. These potential slits **7** and **8** intersect at **9** in the corner **10** of the carton and they extend downwardly and away from said corner at acute angles thereto. A pair of fold lines **11** and **12** in opposed relation to said potential slits, intersect at **13** in said corner **10** and said fold lines **11** and **12** extend into the respective walls **5** and **6** at acute angles relative to the corner **10** and toward the potential slits **7** and **8**.

A pair of fold lines **14** and **15** interconnect the free ends of the potential slits **7** and **8** respectively to the free ends of the fold lines **11** and **12** as shown, said fold lines **14** and **15** being disposed in spaced, substantially parallel relation to said corner **10**.

A pair of fold lines **16** and **17** is provided in the wall **5**, this pair of fold lines intersecting as indicated

at **18** in the corner **10** of the carton and extending therefrom at angles to each other to the junctures of the fold line **14** with the potential slit **7** and fold line **11** respectively. Similarly, the carton wall **6** is provided with a pair of fold lines **19** and **20** which intersect each other in the corner **10** at the point **18** where said fold lines **16** and **17** intersect. Said pair of fold lines **19** and **20** extend angularly from the intersection **18** to the junctures of the fold line **15** with the potential slit **8** and fold line **12**.

When the spout structure **4** is to be opened, the weakened lines **7** and **8** are cut through with a knife or broken open by the application of pressure to the pouring spout structure adjacent said lines **7** and **8**. The spout is then capable of being opened by the application of pressure to the corner of the box immediately below the fold line intersection point **18** as illustrated in Figure 2, such pressure being directed toward the inside of the box. Such inward offsetting of the box corner portion defined by the fold lines **11**, **12**, **14**, **15**, **16** and **19** causes outward offsetting to pouring spout position as shown in Fig. 2, of the box corner portion defined by the slit lines **7** and **8** and the fold lines **16** and **19**.

The opening action of the spout appears to depend upon hinging of the outwardly offset spout portion about the fold lines **16** and **19**, the upper end portions of which are substantially fixed in the planes of the walls **5** and **6** and the lower portions of which are moved inwardly when the lower portion of the spout structure is pressed inwardly. Flexibility of the box walls also enters into the opening action in that it permits the spout portions intermediate the lines **14** and **15** and below the fold lines **16** and **19** to be passed from their normal angular wall relationship as shown in Figure 1 through a coplanar position and to a carton entering angular relationship in which the spout is fully opened.

It is not necessary that the slit lines **7** and **8** be angularly disposed in the manner illustrated, the important thing being that they connect the ends of the fold lines **14** and **15**.

Other changes in the described structure may also be made while retaining the principles of the invention.

I claim:

1. A paper board carton having a pouring spout formed in two walls of the carton which meet to form a corner of the carton, said two walls having potential slits therein which are joined at said corner and which potential slits respectively extend from said corner into said walls at substantially like acute angles to said corner, a pair of fold lines which are joined at said corner and respectively extend therefrom into said walls at substantially like acute angles to said corner and towards said potential slits, a pair of fold lines respectively in said walls in spaced parallel relation to said corner and interconnecting said potential slits and said angularly extending fold lines in the respective walls, and, in each of said walls, a pair of fold lines which intersect each other at said corner and extend therefrom to the junctures of said parallel fold lines with said potential slits and said angularly extending fold lines, the intersections of said last-mentioned pairs of fold lines joining each other in said corner intermediate said potential slits and said first mentioned pair of fold lines.

2. A paper board carton having a pouring spout formed in two walls of the carton which meet to form a corner of the carton, said two walls having potential slits therein which are joined at said corner and which potential slits respectively extend from said corner into said walls, a pair of fold lines which are joined at said corner and respectively extend angularly therefrom into said walls,

a pair of fold lines respectively in said walls in spaced relation of said corner and interconnecting said potential slits and said angularly extending fold lines in the respective walls, and, in each of said walls, a pair of fold lines which intersect each other at said corner and extend therefrom to the junctures of said interconnecting fold lines with said potential slits and said first mentioned pair of fold lines, the intersections of said last-mentioned pairs of fold lines joining each other in said corner intermediate said potential slits and said first mentioned pair of fold lines.

3. A paper board carton having a pouring spout formed in two walls of the carton which meet to form a corner of the carton, said two walls having potential slits therein which are joined at said corner and which potential slits respectively extend from said corner into said walls, a pair of fold lines which are joined at said corner and respectively extend angularly therefrom into said walls, a pair of fold lines respectively in said walls in spaced parallel relation to said corner and interconnecting said potential slits and said angularly extending fold lines in the respective walls, and, in each of said walls, a pair of fold lines which intersect each other at said corner and extend therefrom to the junctures of said parallel fold lines with said potential slits and said first mentioned pair of fold lines, the intersections of said last-mentioned pairs of fold lines joining each other in said corner intermediate said potential slits and said first mentioned pair of fold lines.

4. A paper board carton having a pouring spout formed in two walls of the carton which meet to form a corner of the carton, a potential slit in each of said walls, said slits being joined at said corner and respectively extending from said corner downwardly in said walls at substantially like acute angles with respect to said corner, a pair of fold lines joined at the corner at a point spaced downwardly from the juncture of said potential slits, said pair of fold lines respectively extending from said corner upwardly in said walls at substantially like acute angles with respect to said corner, said fold lines extending to said slits, and a second pair of fold lines joined at the

corner at the point of juncture of said first pair of fold lines, said second pair of fold lines respectively extending from said corner downwardly in said walls at substantially like acute angles with respect to said corner which are approximately equal to the acute angles formed between said first pair of fold lines and said corner, said potential slits and said first pair of fold lines defining wall portions which are automatically offset outwardly to form a spout when pressure is applied to the corner immediately below the point of juncture of said fold lines.

5. A paper board carton having a pouring spout formed in two walls of the carton which meet to form a corner of the carton, a potential slit in each of said walls, said slits being joined at said corner and respectively extending from said corner downwardly in said walls at substantially like acute angles with respect to said corner, a pair of fold lines joined at the corner at a point spaced downwardly from the juncture of said potential slits, said pair of fold lines respectively extending from said corner upwardly in said walls at substantially like acute angles with respect to said corner, said fold lines extending to said slits, a second pair of fold lines joined at the corner at the point of juncture of said first pair of fold lines, said second first pair of fold lines respectively extending from said corner downwardly in said walls at substantially like acute angles with respect to said corner which are approximately equal to the acute angles formed between said first pair of fold lines and said corner, and a third pair of fold lines respectively in said walls in spaced relation to said corner and extending from the junctures between said potential slits and said first fold lines to said second fold lines, said potential slits and said first pair of fold lines defining wall portions which are automatically offset outwardly to form a spout when pressure is applied to the corner immediately below the point of juncture of said fold lines.

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