

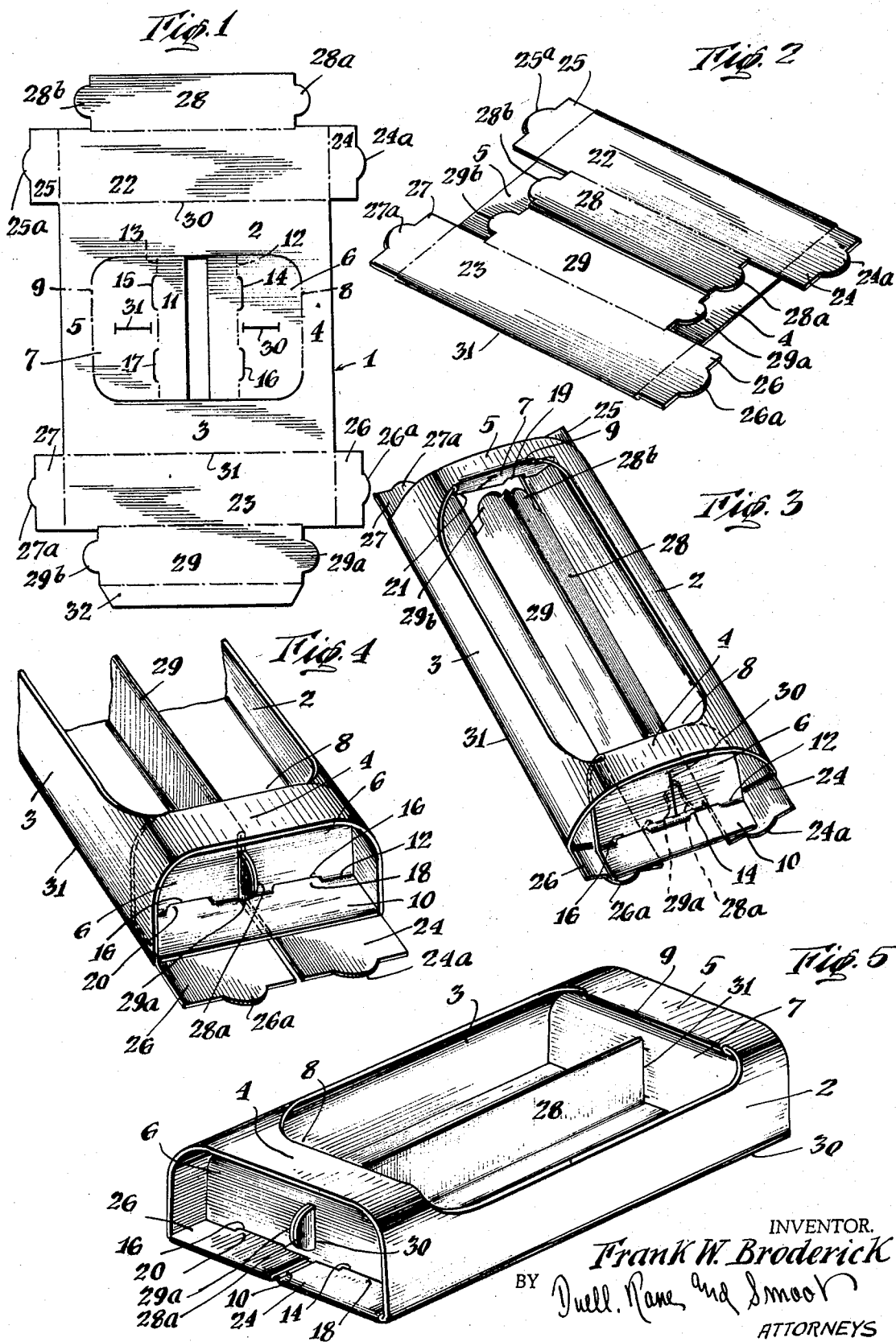
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F. W. BRODERICK

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DIVIDED CARTON

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INVENTOR.

Frank W. Broderick

BY

Duell, Rane and Smoot

ATTORNEYS

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DIVIDED CARTON

Frank W. Broderick, New Brighton, N. Y., assign-
or to Reynolds Metals Company, Richmond,
Va., a corporation of Delaware

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This invention relates to a new and unique one-piece collapsible carton. It is well recognized in the carton field that a prime object is the production of cartons which may be shipped to the person utilizing them in a flat, foldable condition and then assembled on the premises of the packer. The assembly of the carton must be simple and the carton must be capable of placement into final condition for packaging without the need of additional machinery or the use of skilled labor, and in completed form the carton must present an attractive and desirable appearance.

While numerous collapsible cartons have heretofore been made, many of them have lacked the readiness of assembly and the final rigidity which the present structure achieves.

The major object of the present invention has therefore been the provision of a flat, foldable, collapsible unitary carton which, upon assembly, presents a rigid structure capable of withstanding severe use without coming apart or being damaged.

A further object is the provision of such structure having a dividing section for dividing various rows of articles packed, and of providing a visual top opening for ready display of the contents.

A further object is the provision of such a structure in which the dividing panel or panels serve as a rigidifying and securing means to prevent collapse of the carton.

The structure which achieves these and other objects will be readily understood by reference to the accompanying drawing, in which:

Fig. 1 shows a plan view of the flat die-scored and die-cut blank;

Fig. 2 shows the blank of Fig. 1 folded back on itself and secured adhesively along one edge thereof;

Fig. 3 is a perspective view showing the beginning of the folding operation in order to place the carton into usable form;

Fig. 4 is a perspective view of one end of the box in detail after the end flap has been placed into position and prior to the time that the flap retaining tabs have been folded inward; and

Fig. 5 is a perspective view of the completed box.

Referring to Fig. 1, 1 represents a flat blank, die-cut and die-scored from a single sheet of flexible material, preferably cardboard, coated paper or other similar materials.

It is preferred that the die-cutting and die-scoring be effected during a single operation.

Two side sections, 2 and 3, with their connecting top portions, 4 and 5, are formed and the central section, lying between sides 2 and 3 is die-cut to provide two end flaps, 6 and 7, hingedly secured respectively to top members 4 and 5 along score lines 8 and 9. Secured to the free ends of said end flaps are foot extensions 10 and 11. These foot extensions are preferably secured to the end flaps along broken score lines 12 and 13 which score lines are interrupted at intervals by complete and indented cuts 14 and 15, 16 and 17. By this structure, it is obvious that there is provided two flaps capable of a swinging motion relative to the top members 4 and 5 and which have foot members which may be bent at an angle to said flap members and which are provided at spaced intervals with openings due to the complete severances, such as 14 and 15. Reference to perspective Fig. 3 shows rather clearly the swinging motion of the end flaps 6 and 7 as the box is being assembled, and reference to Fig. 4 shows two of the openings 18 and 20 which are formed respectively at the complete severance lines 14 and 16, when the foot extension 10 is bent at right angles to the end flap 6.

Referring back now, to Fig. 1, it will be observed that secured to the side sections 2 and 3 are the respective bottom sections, and integral therewith are the end flap retaining tabs 24, 25, 26 and 27. Each of these flap retaining tabs is provided with a lug extension referred to respectively as 24a, 25a, 26a, and 27a. These lug extensions are of a size adapted to fit into the openings 18, 19, 20 and 21, which are formed when the feet 10 and 11 are bent with respect to each of the side flaps with which they are associated. Fig. 4 shows the end flap retaining tabs 24 and 26 with their respective lug extensions 24a and 26a prior to the time that the tabs are folded inward to overlie the foot 10 and to be secured in the openings 18 and 20.

Extending from the bottom portions 22 and 23 are the two dividing members 28 and 29 which members are in assembled position brought together to form the dividing partition for the box which dividing partition is clearly shown in Figs. 3, 4 and 5. Each of these dividing partitions are formed at their ends with extension tabs 28a and b and 29a and b. To cooperate with these tabs, compressive slots 30 and 31 are formed respectively in each of the end flaps. As illustrated, these slots take the form of a vertical slit when the box is in assembled condition. It should be clear, however, that the angularity of this slot

may be changed should it be desired to provide for other than a vertical partition.

Fig. 4 shows clearly how the tabs 28a and 29a project through and are secured in the slot 30 of the end flap 6. Attention is called to the fact that due to the compressive action of this slot 30, the carton will retain its shape and form without the end flaps falling out of position. However, in the preferred embodiment of my invention, additional securing of the end flaps, retaining them from being forced outwardly, is obtained by means of the extensions 24, 26, 25 and 27 which overlie the respective end feet 10 and 11, and which are secured in position by means of the lug extensions 24a and 26a being inserted into the openings 18 and 20.

While it is clear that this box may be folded into position from the single unitary flat die-scored sheet of Fig. 1 without the use of any adhesive whatsoever, it has been found, in one aspect, that the assembly operation has been facilitated by first bending the flat blank back on itself along the lines of scoring 30 and 31 which separate the side sections 2 and 3 from the bottom sections 22 and 23 respectively and securing the carton in this position. To provide for this securing, the dividing partition 29 is provided with the extension 32 which is provided so that when partitions 28 and 29 are brought adjacent one another after the folding operation just described so as to achieve the form illustrated in Fig. 2, the extension 32 will overlie a small portion of partition 28 and provide a margin for a line of adhesive by means of which the folded position of the box bent back on itself along score lines 30 and 31 may be retained.

The assembly operation is readily seen by referring to Figs. 3, 4 and 5. First, the end flaps 6 and 7 which in the form shown in Fig. 2 are lying underneath the dividing portions 28 and 29, are swung outwardly as shown in Fig. 3. Then the dividing partitions 28 and 29 are pushed together and drawn toward the inside of the box. In Fig. 2, this would mean pushing partitions 28 and 29 inwardly along the line separating the two, or as shown from the reverse side, namely, Fig. 3, pulling the partitions inwardly along the same line. When the partitions 28 and 29 have been brought together so that they lie adjacent one another, the end flap 6 is pushed inwardly toward the inside of the box, and of course, the end slit 30 then engages the tabs 28a and 29a and by means of the compressive action of the slit securely holds the box in position. The foot extensions 10 and 11 during this operation, automatically assume a position in which they bear against a portion of the bottom of the box. This bearing action of the foot extensions also aids in the frictional retention of the box in position. Thereafter, flaps 24 and 26 are pushed upwardly and inwardly to overlie the foot extensions and so that the lug extensions thereof fall into the openings 18 and 20. The length of the tabs 24 and 24a are sufficient so that it requires a slight bending inwardly of the flaps 6 and 7 in order to provide engagement of the lugs 24 and 24a into the openings 18 and 20. When these lugs are in position and the flaps as well as the lugs assume their normal shape, the lugs are retained in locked engagement. The end flap 7 and its associated parts are secured in the same manner as that just described.

It is obvious that by means of the present construction an extremely rigid carton is formed

which is reinforced not alone by the double dividing partition but also by means of the end panels 6 and 7 and the foot extensions 10 and 11 which give added frictional bearing and strength. If desired, the number of dividing partitions can be multiplied so that a box might be provided having three, four or more dividing partitions. While in the present construction there has been shown a box having a slightly rounded top portion 4 and 5, it is clear that the shape of this portion can be varied depending upon the shape of the end flaps and the cut of the side portions. The present invention is, however, equally applicable to other shapes. It is also obvious that other changes of design or structure might be resorted to without in the slightest departing from the spirit or scope of this invention which is defined by the following claims.

I claim:

1. A collapsible carton having an open top except at its ends and comprising a bottom, side walls, and top members connecting said side walls at the ends of the carton, end flaps hingedly secured to said top members for swinging movement in reverse directions, foot extensions attached to said end flaps for frictional engagement with said bottom, and flap retaining tabs extending outwardly from the bottom and foldable to overlie said foot extensions and to lie in engagement with said end flaps.

2. In a flat, foldable box having side walls, a top portion connected thereto and a bottom portion, a securing means comprising end flaps hingedly secured to said top portion and foldable to lie vertically within the ends of the carton, a partition section secured to said bottom portion, slot means on said end flaps, tongue means on said partition for cooperating with said slot means, an extended foot portion secured to each of said end flaps and foldable for frictional engagement with said bottom portion whereby when said end flaps are folded to vertical position within the ends of the carton, said tongue means are secured in said slot means and said foot extension frictionally engages said bottom.

3. In a flat, foldable box having side walls, end top portions and a bottom portion, a dividing and securing means comprising end flaps each hingedly secured to one of said top portions at the inner edge thereof, two mutually hinged partition sections being attached to said bottom portion and adapted to be pushed inwardly into said box, said sections being provided on their ends with tongue means and said end flaps being provided with slot means, whereby when said partition sections are brought together inside of the box, said end flaps may be hingedly swung towards said partition sections, and thereby causing a locking engagement between said tongue means and said slot means.

4. In a flat foldable box having side walls, a top portion and bottom portions, a securing means comprising end flaps adapted for swinging movement into and out of said box, longitudinally extending partition sections hingedly secured to said bottom portions intermediate the same, one of said sections provided with an overlap to overlie and be secured to the other of said sections, said sections being adapted to be pushed inwardly into vertical position within said box and thereby be brought in abutment after a movement of the bottom sections toward each other, securing means on the ends of said partition sections, and securing means on said end

flaps whereby when said partitions are pushed inwardly into said box and said end flaps swung inwardly into said box, said respective securing means engage and thereby secure said carton in position.

5. A foldable box comprising a blank folded to form an upper section and two overlapping lower sections, the lower sections being joined and being scored for folding at such joint and also on longitudinal lines spaced from the joint at opposite sides thereof to provide two centrally disposed partition walls and two outermost bottom walls, the partition walls being foldable upwardly into abutting relation as a two-ply partition, the upper section of the blank being formed with op- 15

posed longitudinally extending cuts and with an intermediate transverse cut providing at each end of the section a flap adapted to be folded inwardly forming an end wall, slots in the end walls 5 and tongues on the partition walls adapted to enter the slots, and foot extensions on the end walls adapted to abut the bottom sections of the box.

10 6. A foldable box constructed in accordance with claim 5, in which each bottom wall section is provided with an end projecting tongue scored to fold over upon one of the foot extensions of the end walls.

FRANK W. BRODERICK.