H. T. FOGG.

CRATE LAYER CONSTRUCTION.

APPLICATION FILED MAR. 6, 1916.

1,202,986. Patented Oct. 31, 1916.

Fig. 2.

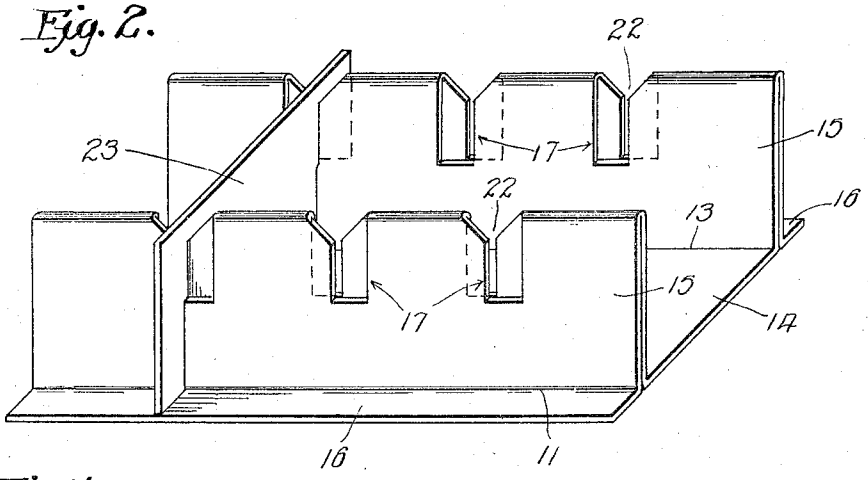


Fig. 1.

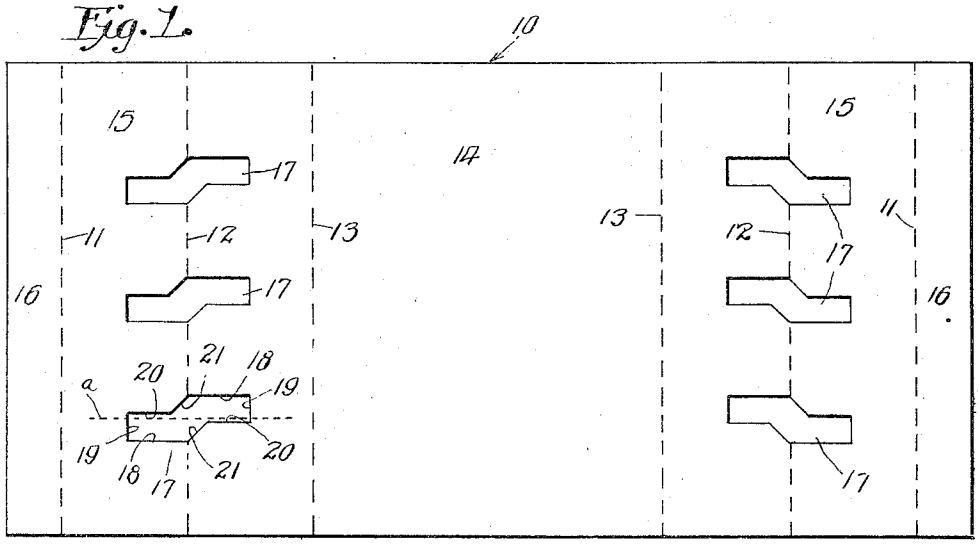
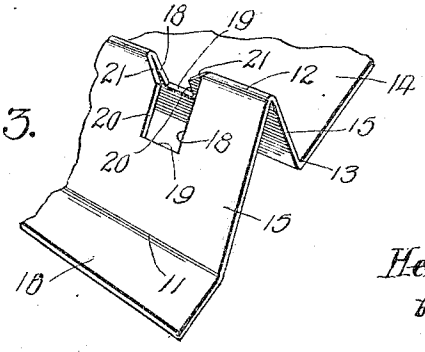


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CRATE LAYER CONSTRUCTION.

1,202,986. Specification of Letters Patent. Patented Oct. 31, 1916.

Application filed March 6, 1916. Serial No. 82,289.

To all whom it may concern:

Be it known that I, HERBERT T. FOGG, a citizen of the United States, and a resident of East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Crate Layer Construction; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the reference characters marked thereon, which form a part of this specification.

This invention relates to improvements in separators, or crate layers, made of relatively stiff card or fiber-board and used in the packing of biscuits, crackers, or like bakery products in containers or "caddies" for the purpose of separating the several superimposed layers of the biscuits or the like, thereby preventing the damaging of the same in the handling or shipment of the packed containers.

The particular type of separator to which this invention relates was the subject-matter of a prior application filed by me in the United States Patent Office on December 1, 1915, for improvements in "separators" and bearing the Serial Number 64,398 and wherein the method of construction and purpose thereof were fully set forth and described.

The present invention relates to a particular and improved method of forming the notches in the upright flanges of the separator, said notches being adapted to interlock with transversely arranged strips having similarly shaped notches, said flanges and strips forming a series of compartments adapted to receive the contents in the manner fully set forth in said application.

In the particular form of separator to which this invention relates the upright flanges consist of a double thickness of sheet material formed by bending the blank along fold lines so arranged as to provide a fold line along the upper margin of each flange. The notches are formed in the flanges when the separator is in blank form, assuming the form of slots extending on either side of the fold line. When the blank is folded, the portions of the slot on either side of the fold line are brought into registering relation, thereby forming the notches. Inasmuch as the width of the notches is substantially equal to the width of the single thickness of material, considerable difficulty is encountered in the formation of the slots in the blanks, by reason of the inability to sever the narrow strip or "trim" from the slots and at the same time to produce clean and sharply defined margins, due to the fact that a considerable number of blanks are usually operated upon simultaneously, and as a result the stock or "trim" tends to buckle and shear along the edges, rather than be severed by the cutting instrument. Furthermore, the narrowness of the slots increases the difficulty of removing the material from the slots after the cutting operation. It is proposed, therefore, to cut or form the notches in the blank in such a manner as to avoid the difficulties hereinbefore recited, as will now be described in detail and as clearly illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a separator blank, showing the irregular configuration of the slots prior to folding the blank in final form; Fig. 2 is a view of the separator folded in final form, showing a transverse strip in position: and Fig. 3 is a detail of a portion of the blank folded, to show the manner in which the narrow form of slot is derived from the irregular slots cut in the blank.

Referring now to the drawings the blank shown in Fig. 1 consists of a rectangular sheet 10 of material, preferably a comparatively stiff paper-board, fiber-board, or the like. Spaced inwardly from each of the opposite and narrower edges of the blank is provided a series of three equidistantly spaced fold or score lines 11, 12, and 13. The innermost fold lines 13, 13 separate the blank into its central body portion 14, namely, that portion included between said fold lines 13, 13. The portions 15, 15, included between the fold line 11 and 12, constitute the upright flanges or strips of the separator, when the blank is folded, said portions being divided into two parts or strips of equal width, by the fold lines 12. The outermost fold lines 11, 11 are spaced a short distance from the transverse edges of the blank, thereby forming narrow marginal end strips 16, 16. Each of the flange portions 15, 15 is provided with a series of slots 17, spaced apart at equal distances

along the fold lines 12, 12, the corresponding slots in each flange portion being arranged in longitudinal alinement with each other.

The blank is set up or assembled to form the separator by bending or folding the same portions along the several fold or score lines 11, 12, and 13 and in such manner that the parts or strips constituting the flange portions 15, 15 will be brought into contact with each other and extend upwardly at right angles to the body portion 14, thereby forming the upright flanges consisting of a double thickness of material, as shown in Fig. 2. The end margins 16, 16 are bent at right angles to the upright flanges 15, 15 along the fold lines 11, 11, and lie in the plane of the body portion 14.

Referring now to the slots 17 and the manner in which they are formed in the blank, it will suffice to describe but one of them in detail. To assist in a clear understanding of the formation of a slot 17, the same will be described as being formed by a series of cuts and each cut forming one edge of the slot, although it is to be understood that the entire slot is formed in a single cutting operation. Therefore, considering a slot on the left side of the blank, two parallel cuts 18, 18, of equal length, extend in opposite directions from the fold line and are spaced apart a distance measured along said fold line, substantially six or eight times the width of the notch desired. These cuts extend from said fold line to points substantially one-half the distance to the fold lines 11 and 13. From the outer ends of each of the cuts 18, 18 are provided cuts 19, 19, extending parallel to the fold line 12 and at right angles to the cuts 18, 18. Each of said cuts 19, 19 extends toward the cut 18 on the opposite side of the fold line, and terminates at a point slightly beyond an imaginary line, such as *a* (Fig. 1), extending at right angles to said fold line and bisecting the space between the points of intersection of the cuts 18, 18 and said fold line 12. From the ends of the cuts 19, 19 extend cuts 20, 20, which are parallel to the cuts 18, 18, and extend toward the fold line 12, but terminate short thereof. From the ends of the cuts 20, 20 extend oblique cuts 21, 21, which intersect the fold line 12 at the point of intersection of the cuts 18, 18 with said fold line.

Having described the steps in the formation of the slot as a series of cuts, it is apparent that the result is an irregularly shaped opening or slot, consisting of two identical portions disposed on either side of the fold line and in reversed relation. The particular feature to be noted at this time is the relation between the corresponding cuts 19, 19, to wit, that the lines of these cuts extended do not coincide but are offset from each other a distance exactly equal to the width of a notch 17 in the upright flange of the blank when folded.

Referring now to Fig. 3, it will be seen how the slots formed in the blank in the manner described are disposed when the flange portions 15, 15 of said blank are folded along the fold line 12. The act of folding the blank in the manner described amounts to revolving or superposing the portion of the slot on one side of said fold line upon the portion on the opposite side, with the result that the cuts 20, 20 overlap each other, leaving a space equal to the width of the narrower portion of the notch, and the margins of the cuts coincide throughout the overlapping portions thereof and form the lower margin or bottom edge of said notch. So, also, each of the oblique cuts 21, 21 is found to be disposed on opposite sides of the narrower portion of the notch, thus forming a tapered or flared entrance 22 (Fig. 2) to said narrower portion of the notch. By reason of the extreme width of the space between the pairs of parallel cuts 18, 18 and 20, 20, it will be noted that only a single thickness of the material remains on either side of the notches, and that each sheet of the material constituting the flange of double thickness provides one-half the margin or edge of each notch.

The separator, with the notches formed in the manner hereinbefore described, is completed by inserting transversely of the flanges 15, 15 a series of partition strips 23, one of which is shown in Fig. 2. The transverse strips 23 are preferably of a single thickness of material, and are provided with notches disposed inwardly from the ends of the strips and arranged along the lower margins of said strips so as to interlock with the notches of said flanges 15, 15.

Inasmuch as the invention relates more particularly to the manner of forming the notch in a separator having upright flanges of a double thickness of material, it is apparent that the exact form of separator may be varied without departing from the spirit of the invention. For this reason I do not wish to be limited in the scope of the invention, except in so far as specifically pointed out in the appended claims.

I claim as my invention:—

1. A separator comprising a strip of a double thickness of sheet material, bent along a longitudinal fold line and provided with a slot extending on opposite sides of said fold line, the portions of said slot on either side of said fold line being offset laterally to form a marginal notch, when said strip is folded, narrower in width than said slot.

2. A separator comprising a strip formed of a double thickness of sheet material,

folded upon itself along a longitudinal fold line and provided with a slot extending on opposite sides of said fold line and having at least two of its opposed edges on opposite sides of said fold line laterally offset to form a marginal notch, when said strip is folded.

3. A separator comprising a flange of a double thickness of sheet material, folded upon itself along a longitudinal fold line and provided with a slot extending on opposite sides of said fold line, said slot having at least two of its parallel transverse edges on either side of said fold line laterally offset to form the opposed edges of a marginal notch, when said flange is folded.

4. A separator comprising a flange formed of a double thickness of sheet material, folded upon itself along a longitudinal fold line and provided with a slot comprising similar portions disposed in laterally offset relation on either side of said fold line, and at least two opposed and parallel margins of each of said portions forming the edges of a marginal notch, when said flange is folded.

5. A separator comprising a flange of a double thickness of sheet material, folded upon itself along a longitudinal fold line and provided with a slot comprising similarly shaped portions located on either side of said fold line in laterally offset relation, said portions being provided with corresponding edges arranged transversely and obliquely to said fold line and forming the opposite edges of a marginal notch, when said flange is folded.

6. A separator comprising a flange made of a double thickness of sheet material, bent along a longitudinal fold line and provided with a slot having similarly shaped portions located on either side of said fold line and provided with corresponding parallel margins arranged transversely and obliquely to said fold line and in laterally offset relation, said oblique and transverse margins forming, when said flange is folded, the opposite edges of a marginal notch narrower in width than said slot and provided with a tapered entrance.

In testimony that I claim the foregoing as my invention, I affix my signature in the presence of two witnesses, this first day of March, A. D., 1916.

HERBERT T. FOGG.

Witnesses:
GEO. E. W. DE CLERCQ,
WALTER E. LOWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."