W. J. SMOUSE.

FOLDABLE BOX.

APPLICATION FILED AUG. 2, 1918.

1,373,365. Patented Mar. 29, 1921.

FIG. 1.

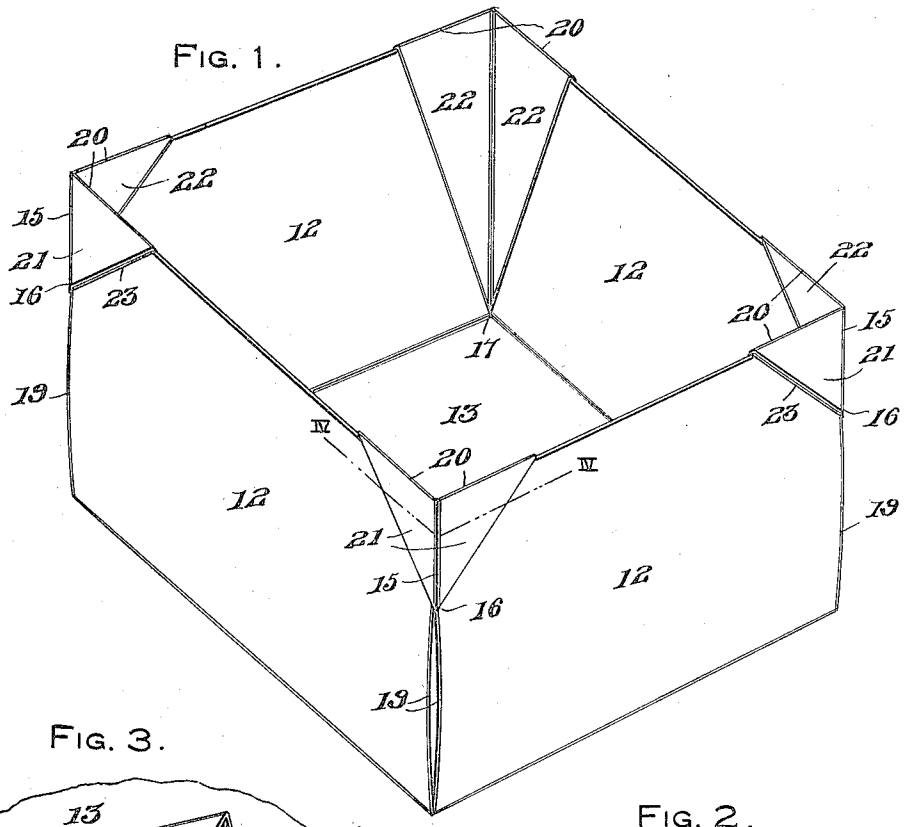


FIG. 3.

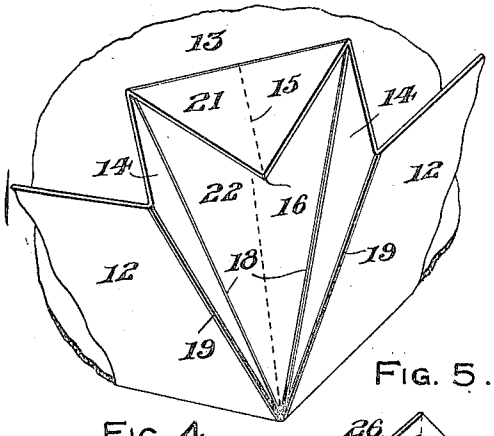


FIG. 2.

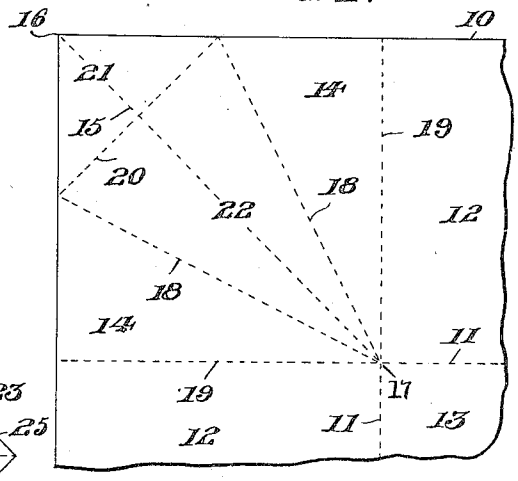


FIG. 5.

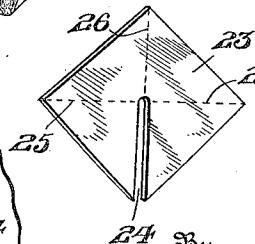
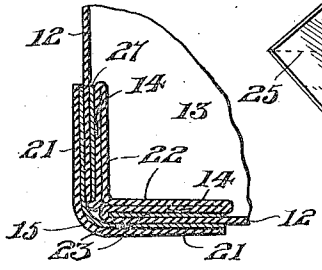


FIG. 4.



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FOLDABLE BOX.

1,373,365. Specification of Letters Patent. Patented Mar. 29, 1921.

Application filed August 2, 1918. Serial No. 248,012.

To all whom it may concern:

Be it known that I, WILL J. SMOUSE, a citizen of the United States of America, residing at Cedar Rapids, in the county of Linn and State of Iowa, have invented certain new and useful Improvements in Foldable Boxes, of which the following is a specification.

The primary object of the invention is the provision of a box formed of sheet material such as pasteboard and the like, easily and quickly manufactured without wasting the material and having corner portions formed without employing any holding means or devices by means of bending portions of the material from which the box is formed and such material being uncut and unperforated.

A further object of the invention is to provide a box formed by folding a rectangular blank of sheet material, the employment of cutting dies and holdfast devices being unnecessary and the box when formed possessing great strength.

A still further object of the invention is the provision of a box completely formed by bending and folding a rectangular blank, the structure when assembled having locked corners and being capable of use for many purposes such as a fruit and berry box.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists of the arrangements of parts hereinafter fully described in connection with the accompanying drawing and in which like reference characters designate corresponding parts throughout the several views.

In the drawing,

Figure 1 is a perspective view of the invention assembled;

Fig. 2 is a plan view of a corner portion of the blank from which the box is formed illustrating the required folds in the material by means of dotted lines;

Fig. 3 is a perspective view of a corner portion of the box partially folded;

Fig. 4 is a sectional view through a corner portion of the complete box taken upon line IV—IV of Fig. 1 and illustrating the use of a metallic locking plate that may be employed if desired; and

Fig. 5 is a perspective view of a locking plate designed for employment with the corner structure of the box.

It will be understood that my box is formed of a rectangular piece of sheet material such as paper or pasteboard and constituting a blank 10. Scorings 11 are provided in the blank 10 perpendicular with each other and parallel with the adjacent edges of the blank-forming portions 12 at each of the four edges of the blank of equal and suitable width for forming sides of the completed box. The rectangular central portion 13 of the blank 10 formed by the lines 11 constitutes the bottom of the box when the device is set up for use.

The corner portions 14 of the blank 10 formed by the scorings 11 are square and a scoring 15 is made diagonally through each corner 14 connecting the corner 16 of the blank 10 with the adjacent traversing point of the scorings 11 at 17. Scorings 18 are then made through each corner portion 14 beginning with the traversing point 17 and terminating at the adjacent edges of the blank 10, the scorings 18 equally dividing the angle between the diagonal scoring 15 and the adjacent outer terminal portions 19 of the scorings 11.

The outer ends of the scorings 18 are connected together by a scoring 20 and each corner portion 14 of the blank 10 being scored as described, the blank is ready to be folded into box formation. The sides 12 are bent upon the scoring 11 to positions perpendicular to the bottom 13, and the corner portions 14 are bent upon the scorings 18 with said points of scoring 18 being brought together at the corner of the box, as indicated in Figs. 1 and 3 of the drawing. While the triangular portion 21 at each corner of the blank 10 is bent upon its scoring 20 and is moved outwardly overlying the adjacent sides 12 and upon bending the blank upon the scoring 15, the corner assumes its position with the sides 12 perpendicularly arranged and the triangular portion 21 securely positioned outwardly of the adjacent sides 12 with the central triangular portion 22 of the corner portion 14 positioned inwardly of said sides.

The complete box is hereby formed of the blank 10 by scoring the same in the manner described and then bending the blank with the bent corner portions 14 providing secure and serviceable corner formations for the completed box.

If greater strength is required, a wire in the form of a hairpin or a locking plate 23 having a diagonal slot 24 therein may be employed with each corner of the box for

overlying the outer ends of the scorings 19 between the corner portions 14 and the adjacent sides 12 of the box. The plate 23 is of rectangular form having one-half thereof at the opposite side of the plate from the slot 24 substantially conforming in size and shape to the triangular corner portion 21 of the blank 10 and whereby when the corner portion 21 is folded upon the scoring 20 of the blank, the plate 23 will fold upon its diagonal scoring 25.

The bending of the corner portion 21 upon its scoring 15 is accompanied by a corresponding bending of the plate portion 23 upon its scoring 26. In this manner, the sheet metal plate 23 will be bent simultaneously with the formation of the box corners after the manner of a reinforcement, thereby adding strength to the box by inexpensive means which is easily applied during the formation of the box. It will be understood that the locking plate 23 is only employed when the occasion demands the same as the box formation possesses considerable strength without the employment of an additional locking means so that by folding the corner portions as described, the box will be retained in its setup condition for all ordinary uses to which the box is adaptable.

What I claim as new is:—

In combination with a box, including a blank of sheet metal having bent-up side portions with rectangular corner portions therebetween, said corner portions each being divided into triangular portions and each having a central diagonal fold whereby one of the triangular portions is folded so as to engage the adjacent triangular portions after the said last named portions have been folded to engage the inner face of the adjacent side portions, the remaining triangular portions being folded on a diagonal line so as to engage the outer surface of the adjacent corners thereof, of a sheet metal locking plate substantially rectangular and having a slot therein, said plate being disposed over the folds of the blank at the ends of the adjacent sides with a portion of the plate conforming to the shape of the corner portion of the blank whereby the plate and corner portion may be bent together to reinforce the latter.

In testimony whereof I affix my signature.

WILL J. SMOUSE.