Dec. 4, 1923. 1,475,983

C. C. CASEY

COMPARTMENT TRAY

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Fig. 1.

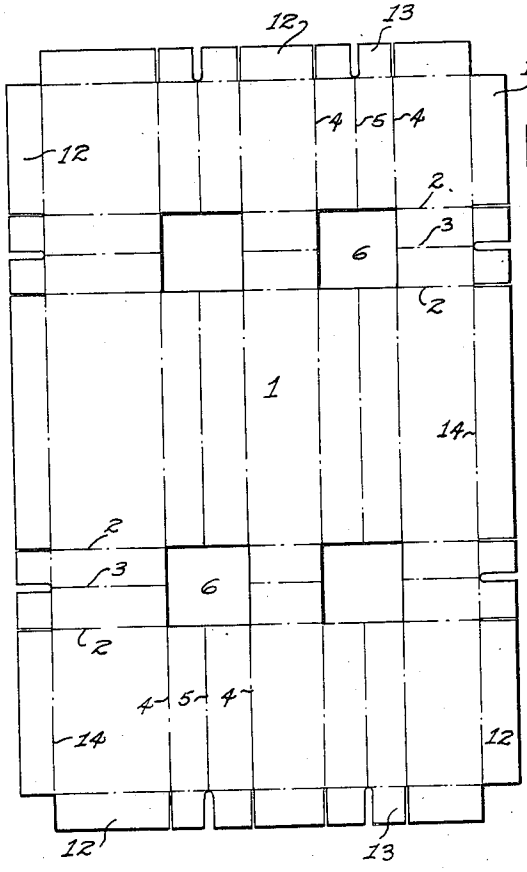


Fig. 2.

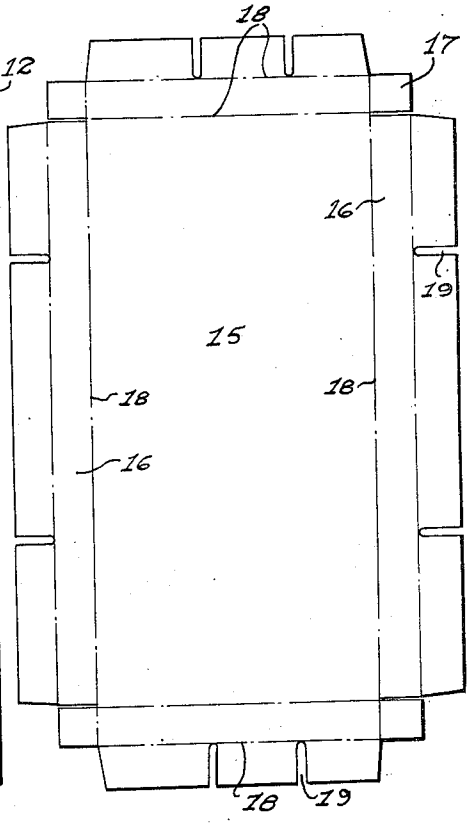


Fig. 3.

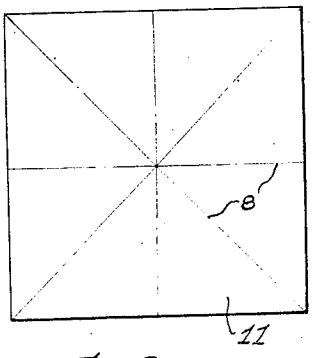


Fig. 4.

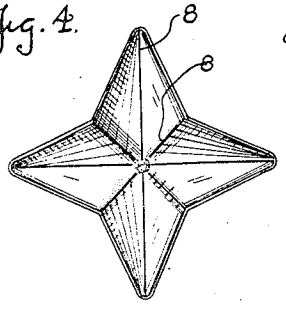
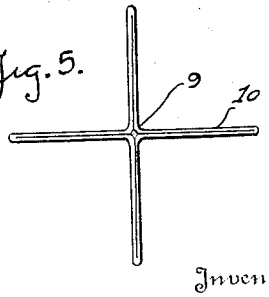


Fig. 5.



Inventor

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Fig. 6.

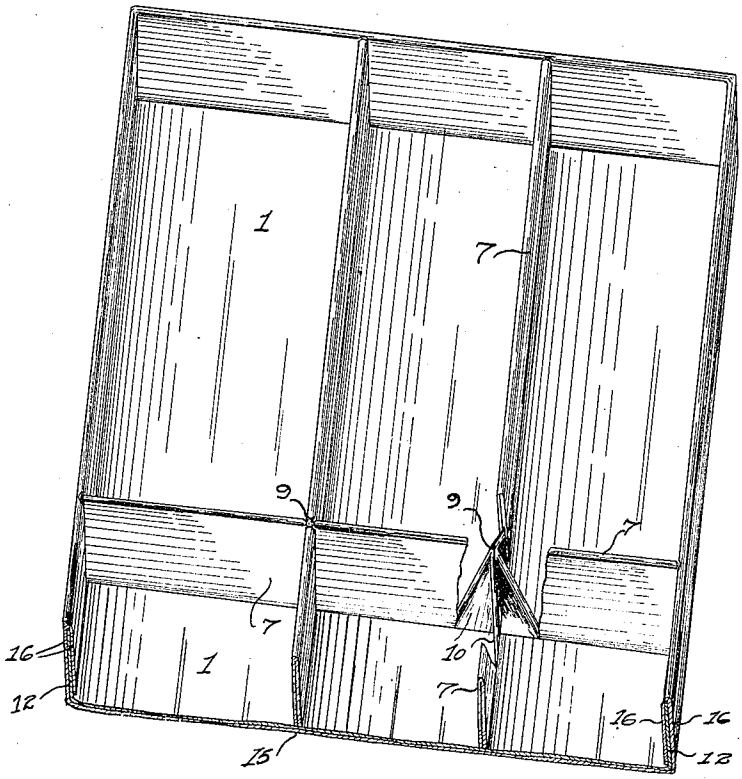


Fig. 8.

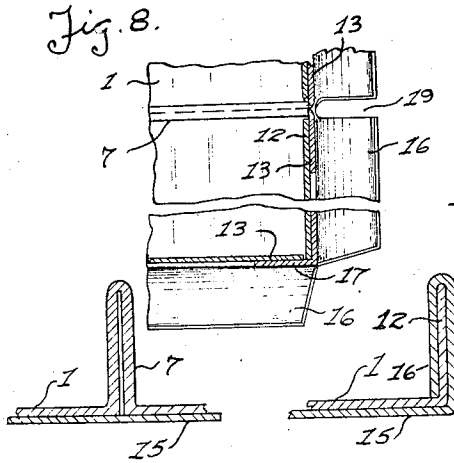


Fig. 9.

Fig. 7.

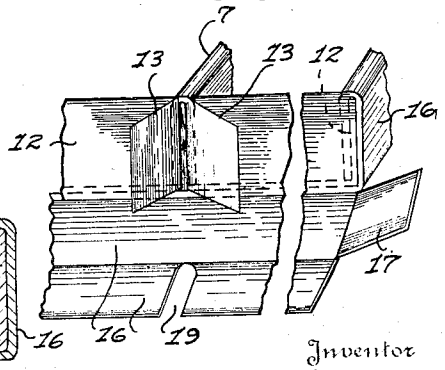


Fig. 10.

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Patented Dec. 4, 1923. 1,475,983

UNITED STATES PATENT OFFICE.

CHARLES C. CASEY, OF DETROIT, MICHIGAN, ASSIGNOR TO WORK-ORGANIZER SPECIALTIES COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

COMPARTMENT TRAY.

Application filed May 23, 1921. Serial No. 472,026.

To all whom it may concern:

Be it known that I, CHARLES C. CASEY, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Compartment Trays, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to compartment trays that may be made of cardboard, fiberoid or any light and durable material cut to provide blanks that may be folded and secured together to form a tray having a plurality of compartments.

The primary object of my invention is to provide blanks which may be placed in matched registration to form a tray having three-ply end and side walls and two-ply partitions, the walls and partitions being connected in a manner which insures rigidity and strength for the entire tray.

Another object of this invention is to provide a tray including a blank from which material is removed to facilitate folding and the formation of partitions; the removed material being utilized as coupling members for connecting the partitions and providing good joints therebetween.

A further object of this invention is to provide a cardboard tray having smooth walls and partitions susceptible to any desired finish; it being possible to dip or otherwise coat the tray with a preparation providing a finish in imitation of enamel or metal, and since the tray possesses considerable rigidity it will have the same appearance as though made of metal, yet being much lighter in weight.

The above and other objects are attained by a mechanical construction that will be hereinafter described and then claimed, and reference will now be had to the drawings, wherein

Figure 1 is a plan of an inner blank from which a portion of the tray is made;

Fig. 2 is a plan of an outer blank adapted to form part of the tray;

Fig. 3 is an enlarged plan of a coupling member blank which has been removed from the blank shown in Figure 1;

Fig. 4 is a bottom plan of a partially folded winged coupling member made from the blank shown in Fig. 3;

Fig. 5 is a similar view of the completely folded coupling member;

Fig. 6 is a perspective view of a portion of the inner blank folded to provide partitions and side wall flanges with some of the partitions broken away to show a coupling member;

Fig. 7 is a perspective view of a portion of the tray showing the manner of forming side and end walls thereof;

Fig. 8 is a horizontal sectional view of a portion of the tray;

Fig. 9 is an enlarged cross sectional view of one of the partitions thereof, and

Fig. 10 is an enlarged cross sectional view of one of the side or end walls of the tray.

The tray is made of inner and outer blanks and the shape of said blanks is such that they may be placed in matched registration and parts thereof folded to provide partitions and walls, the ultimate shape of the tray depending on the size and shape of the blank. The tray may have any number of compartments depending on the number of partitions formed, and the compartments need not be the same size, but made suitable for various uses.

Reference will first be had to the inner blank best shown in Fig. 1 and designated 1. This blank is oblong in plan and is provided with longitudinal and transverse scored lines or weakened folding or bending portions 2 and 3, and 4 and 5, the bending lines 2 being parallel with the lines 3 between the lines 2. The bending lines 4 and 5 are similarly formed but are disposed at a right angle to the lines 2 and 3 so as to intersect in the body of the blank. There may be various sets of scored lines or weakened portions, depending on the number of compartments to be formed, and as shown there will be nine compartments formed by the blank 1.

At the intersection of the sets of scored lines the blank 1 is cut or punched and substantially rectangular coupling member blanks removed therefrom, thus leaving the blank with rectangular openings 6. These

openings permit of the blank being reduced in its longitudinal and transverse dimensions to form upstanding partitions which are longitudinally and transversely disposed and formed by material lying between the scored lines 4 at each side of the scored lines 5, and the scored lines 2 at each side of the scored lines 3, the scored lines 3 and 5 being pressed or forced out of the plane of the blank 1 to carry blank material upwardly into parallelism to form partitions 7. In so folding the blank the openings 6 are practically closed and such openings are necessary in order that the blank may be folded, in two directions, without buckling, to form the partition. In folding the blank the partitions are brought into abutting diverging relation at the places represented by the openings 6 and said openings not only permit of the partitions being closely assembled and the blank folded, but afford material which may be utilized for coupling or reinforcing partition members.

One of the blanks removed from one of the openings 6 is shown in Fig. 3 and designated 11. The blank is folded on scored lines or weakened portions 8 to provide a winged coupling member 9 having wings 10 in opposed relation and diverging from the center of said member, with each wing triangular in elevation.

As the inner blank 1 is bent or folded to form the partition 7 the coupling members 9 are set in position between the confronting ends of the partition 7 so that the triangular shaped wings 10 of said coupling member will extend between the two plies of material of each partition, thus completely closing any existing gap at the confronting ends of the partitions and coupling the partitions so as to maintain the same upright and rigid at their point of juncture. This inset coupling member reinforces the inner ends of the partitions making the central portion of the tray very rigid and closing cracks or joints to such an extent as to permit of the folded inner blank being coated with a finishing material that will lend an appearance to the partitions as though integral at their points of intersection.

The inner blank 1 has its marginal edges provided with end and side wall flaps 12 and tongues 13 adapted to be folded upwardly, on the scored lines or weakened portions 14, into planes parallel to the partitions 7. The tongues 13 are adapted to be folded at a right angle to the outer ends of the partitions 7 and are consequently disposed in parallelism with the wall flaps 12, preferably at the outer sides thereof.

The outer blank is designated 15 and best shown in Fig. 2. It is adapted to be placed under the inner blank to form a solid bottom piece for the tray and the marginal edges of the outer blank are cut or stamped to provide two-ply side and end walls 16 and single ply tongues 17, the walls and tongues being foldable on scored lines or weakened portions 18 of the blank. The walls 16 are adapted to be bent upwardly at a right angle to the body of the blank and then folded inwardly, the walls abutting the outer ends of the partitions 7 and the sides of the flaps 12 so that said walls may be bent downwardly between the partitions and against the inner faces of the flaps 12. In order that this may be done the marginal edges of the walls 16 are slotted, as at 19 with the slots of a length corresponding to the depth of the partitions 7 and the material at the inner ends of the slots 19 will tend to close any gap between the partitions 7 and the wall flaps 12.

The tongues 17 of the end walls 16 are sandwiched between the two plies of the side walls of the outer blank and are consequently bent at a right angle to the end walls of the blank.

The tray thus constructed has two-ply partitions and three-ply side and end walls, while at the juncture of the partitions and walls there may be as many as four plies. It is therefore obvious that what may otherwise be considered weak portions of the fabricated tray are strengthened, and with the exception of four joints at the corners of the tray it has an uninterrupted or one piece outer skin or shell which lends solidity to the body of the tray irrespective of the number of partitions therein.

When placing the inner and outer blanks together and forming the walls and partitions any suitable adhesive material may be employed or mechanical fastening means used for retaining the blanks and their parts in the defined folded relation, and such a structure may be dipped into a bath of finishing material, sprayed or otherwise coated so that the finished product will have an appearance as though cast from a single piece of material. The paint, shellac, varnish or finishing material employed will fill all existing cracks or crevices and provide fillets at the corners of the walls of the partitions, therefore it will be impossible to detect, at a mere glance, that the tray is made of cardboard blanks or similar material.

One embodiment of my invention has been illustrated but it is to be understood that the configuration of the blanks and the material employed may be changed to provide a tray of desired size and contour, without departing from the scope of the appended claims.

What I claim is:—

1. A tray having a plurality of compartments made from blanks, one of which blanks is cut and bent to provide openings and partitions, the material entirely cut

from the blank openings being set in adjacent partitions, and the other blank bent to provide side and end walls.

2. A tray as in claim 1, characterized by the material cut entirely from the blank openings being bent to form projecting portions adapted to be secured to and inclosed by the partitions.

3. A tray having a plurality of compartments, said tray being formed from an inner blank folded to form partitions and walls, said inner blank having material removed therefrom to permit of folding and the removed material affording coupling means between said partitions, and an outer blank having its edges folded upwardly and downwardly over the tray walls to provide end and side walls, said blanks being secured together.

4. A tray having a plurality of compartments, said tray being formed from an inner blank folded to form partitions and walls, independent winged coupling members set in the partitions formed by the inner blank, and an outer blank having its edges folded upwardly and downwardly over the tray walls to provide end and side walls, said blanks being secured together.

5. A tray having two-ply diverging partitions, and an independent one-piece pyramidical shaped coupling member having a plurality of wings set in said partitions.

6. A tray as in claim 5, characterized by the partitions being at a right angle to one another and in such proximity as to conceal the greater part of said coupling member.

7. A tray made from blanks folded to provide walls and partitions, one of said blanks having portions removed therefrom and the removed portions folded and set in said partitions as connecting means therefor.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES C. CASEY.

Witnesses:
ANNA BARFOOT,
NORAH MCFARLIN.