Aug. 21, 1934. N. OTTINGER 1,971,198

BOX CONSTRUCTION

Filed Nov. 22, 1932

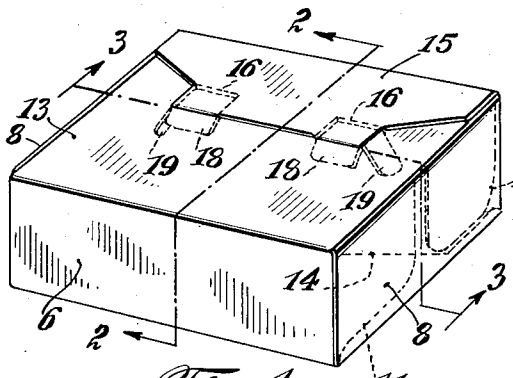


Fig. 1.

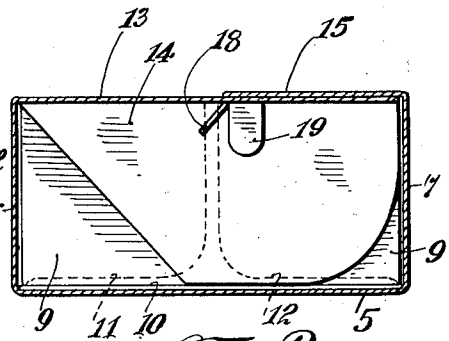


Fig. 2.

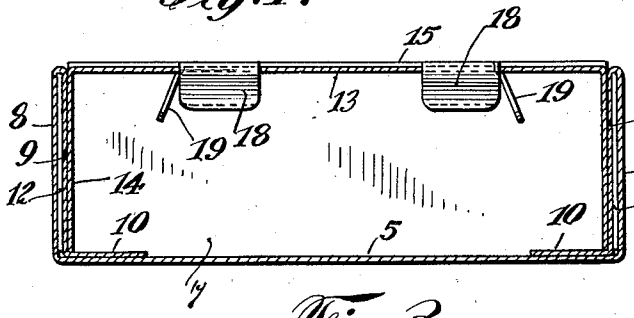


Fig. 3.

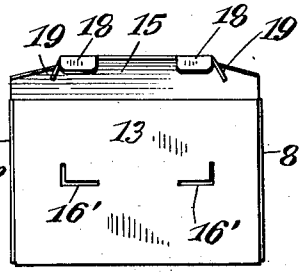


Fig. 5.

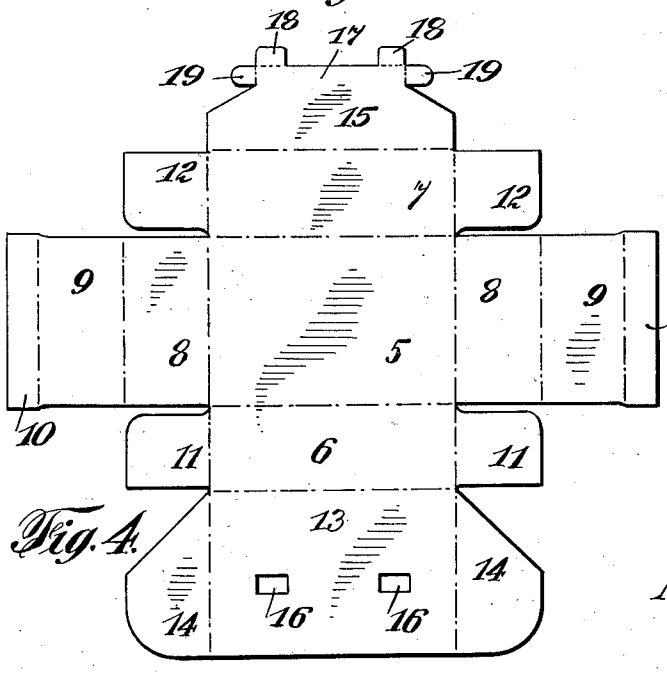


Fig. 4.

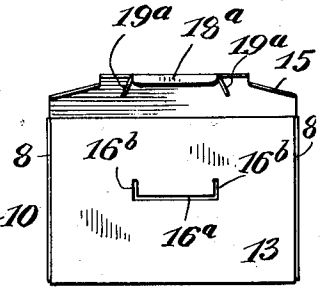


Fig. 6.

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1,971,198

BOX CONSTRUCTION

Nathan Ottinger, New York, N. Y.

Application November 22, 1932, Serial No. 643,843

6 Claims. (Cl. 229—33)

This invention relates to boxes, and more particularly to cardboard boxes composed of a plurality of relatively foldable parts or sections including a cover member for the box, the present improvement having for its primary object and purpose to provide easily manipulable relatively bendable parts for quickly and securely connecting the cover member in its closed position with one of the other box sections, but which will nevertheless also admit of the easy release of said cover member when access to the interior of the box is desired.

It is a further object of the invention to provide such improvements in a box of the type shown and described in my co-pending application, Serial No. 614,693, filed October 6, 1932, but without providing the integral carrying handle for the box as disclosed in said pending application. One of the features of such application disclosure in one embodiment of the invention provides upon a free edge of a cover section for the box relatively bendable angularly related parts which are together insertable through an opening in another box section, so that each will cooperate with the latter section of the box to retain the cover member in closed position. In my present invention, I provide a preferred embodiment of this closure retaining or securing means in which the relatively bendable parts are not directly connected with each other, and are relatively free for independent movement into co-acting engagement with angularly related edges of a suitably formed opening in another box section, whereby the said bendable parts serve to securely lock or hold the cover member against shifting movement in its own plane, as well as in an angular direction relative to the box section with which it is connected.

It is a further object of the invention to provide a folding box having the present above described improvement which may be die cut in the form of a single blank from cardboard material and with a minimum of waste, the said construction being such that when the various relatively foldable parts or sections are secured in their erect positions and the box closed, a very strong container, resistant to collapsing pressures and of neat appearance is obtained.

With the above and other objects in view, the invention consists in the improved folding box, and in the form, construction and relative arrangement of its parts as will be hereinafter more fully described, illustrated in the accompanying drawing and subsequently incorporated in the subjoined claims.

In the drawing wherein I have disclosed several simple and practical improvements of the invention, and in which similar reference characters designate corresponding parts throughout the several views,—

Figure 1 is a perspective view showing the several parts of the box in their relative set up positions;

Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a plan view of the box blank;

Fig. 5 is a plan view of the box in folded or set up position and illustrating an alternative locking means for the box cover; and

Fig. 6 is a similar view showing another modified embodiment of the invention.

Referring in detail to the drawing and for the present more particularly to Fig. 4 thereof, I preferably provide a box blank, which may be cut by means of a suitable die from cardboard of the requisite weight and thickness, or other suitable material, includes the bottom section 5, front and rear walls 6 and 7 respectively and the opposite end walls 8. The latter walls are preferably provided with the relatively foldable extensions 9, and the narrow foldable strips 10 at the outer ends of said extensions. At the opposite ends of the side walls 6 and 7, foldable wings 11 and 12 respectively are provided.

Along the free longitudinal edge of the front wall 6, a closure section 13 is integrally connected therewith and foldable relative to said side wall, said section 13 being of substantially equal length and width to the bottom wall or section 5. The opposite ends of this closure section 13 are provided with the relatively foldable wings 14. A complementary foldable closure section 15 is also provided along the free edge of the rear side wall 7. The closure section 13 at longitudinally spaced points and in suitably spaced relation from its free longitudinal edge is provided with the rectangular openings 16, the purpose of which will presently appear.

The free end of the closure section 15 is preferably of reduced width, as indicated at 17, and at each end thereof is formed with the relatively bendable locking tabs or tongues designated 18 and 19 respectively. Preferably, these tongues project in right angular relation to each other, the tongues 19 being integrally joined with the closure section 5 in alignment with the outer side edges of the tongues 18. It will therefore be understood that the tongues 18 and 19

in each pair are in closely contiguous relation to each other.

The box blank is of course provided with the usual score lines between the relatively foldable parts thereof as indicated by the broken lines in Fig. 4 of the drawing. In folding these parts to their set up positions, the front and rear side wall sections 6 and 7 are first bent upwardly to erect positions along the longitudinal edges of the bottom wall 5, and the wings 11 and 12 are then folded inwardly to extend at right angles to the walls 6 and 7 along the end edges of the wall 5. End walls 8 are now folded upwardly against these wings and the sections 9 are folded inwardly over and upon the inner faces of said wings, while the narrow end strips 10 extend horizontally upon the surface of the bottom wall of the box as clearly shown in Fig. 3 of the drawing.

The wings 14 are now bent into right angular relation to the closure section 13 and said closure section then folded inwardly and downwardly from the upper edge of the front wall 6, said wings 14 projecting into the box body in frictional bearing contact against the inner faces of the parts 9. The tendency of these parts or sections 9 to spring inwardly, which is resisted by the outward pressure of the wings 14, materially aids in retaining the closure section 13 in its horizontal position extending over the top of the box.

The other closure section 15 on the rear wall 7 is now folded inwardly and downwardly into superimposed relation upon the rear part of the section 13. With the thumbs and fingers of the two hands, the tongues 18 and 19 of each pair are together inserted through the respective openings 16 in the closure section 13 of the box. Upon release of the locking tongues and their complete projection through the respective openings 16, the said tongues expand or tend to resume their normal positions relative to the cover section 15 and are thereby caused to exert a constant frictional pressure against one of the longitudinal and one of the end edges of the openings 16. Such pressures applied both transversely and longitudinally of the cover section 13 effectively act to prevent relative shifting movement of the two cover sections, and to also hold the section 15 in closely superimposed relation from the surface of the section 13 and strongly resist any tendency through agitation of the box contents or otherwise for the locking tongues to work outwardly through the openings 16. Therefore, it will be evident, as seen in Fig. 1 of the drawing, that the box is tightly and securely closed by a very simple, easy and quick manipulation of the relatively bendable locking tongues. The box, when closed, also presents a very neat appearance and the several relatively foldable parts thereof are strongly supported to enable the same to effectually resist either inward or outward collapse by unusual pressures incident to abusive handling of the box.

In Fig. 2 of the drawing, I show a slightly different form of the device in which instead of providing the closure or cover section 13 with the rectangular openings 16, reversely arranged narrow L shaped slots 16' are formed through said cover section, the locking tabs 18 and 19 in each pair being readily insertable through the communicating longitudinal and transverse portions of the respective slots when the cover section 15 of the box is moved into its superimposed closed position on the section 13. These locking tabs cooperate with the angularly extending edges of said slots in the same manner as above described in connection with the openings 16.

In Fig. 6 of the drawing, another alternative embodiment is illustrated in which the cover section 13 is centrally provided with a longitudinally extending slot 16^a communicating at its opposite ends with one end of the relatively short transverse slots 16^b. The cover section 15 on its free edge is centrally provided with a longitudinally extending locking tongue 18^a and at the ends of said tongues with the independently bendable tongues 19^a for insertion through the slots 16^a and 16^b respectively.

It will further be evident that as to each of the above described forms of my invention, the contiguous relatively bendable locking tongues on the cover or closure member, instead of being insertable through openings in a complementary top or closure section, might be arranged by obvious modification of the form of the closure section 15 for insertion through slots or openings provided in one or the other box sections. It is accordingly to be understood that while I have herein more or less specifically referred to certain preferred and satisfactory embodiments of the invention, the essential features thereof might also be incorporated in various other equivalent box constructions. In each of the disclosed arrangements, it will be evident that the box blanks can be cut out by simply constructed dies and with a minimum waste of material, and that the simple folding operations which are required may be very quickly executed. By means of my invention, although quite heavy loads may be contained within the box, liability of accidental or casual opening movement of the box top or closure is reduced to a minimum. It will further be evident that such boxes or containers incorporating my present invention may be produced in various other sizes and shapes than that which I have selected for the purpose of illustration. It is accordingly to be understood that the essential features of the present disclosures may be exemplified in numerous other alternative structural forms, and I accordingly reserve the privilege of resorting to all such legitimate changes therein as may be fairly embodied within the spirit and scope of the invention as claimed.

I claim:

1. A container having a plurality of walls, one of said walls having connecting slots therethrough extending at right angles to each other, and a closure member for the container hingedly connected with another wall thereof and provided on one of its free edges with closely contiguous tongues projecting at right angles to each other and unconnected at their adjacent edges, said tongues being bendable relative to said member and insertable through the respective slots to substantially completely close the same and releasably lock said cover member in its closed position.

2. A container constructed of sheet material including relatively foldable sections, a closure section hingedly connected with one of the first named sections and foldable into superimposed relation upon another section of the container, said latter container section having an opening therethrough provided with adjoining angularly related edges, and said closure section on a free edge thereof having closely contiguous angularly projecting tongues, unconnected at their adjacent edges and bent angularly in respect to the face of said closure section, and bent angularly

in respect to each other for insertion through said opening when in one angular position in respect to said section to frictionally cooperate with the respective edges of the latter and releasably lock said closure section in its closed position when taking another position in respect to said section.

3. A container constructed of sheet material including relatively foldable sections, a closure section hingedly connected with one of the first named sections and foldable into superimposed relation upon another section of the container, said latter container section having spaced openings therethrough each provided with adjoining angularly related edges, and said closure section on a free edge thereof having spaced pairs of locking tongues, the tongues in each pair being contiguously related, unconnected at their adjacent edges and bendable angularly in respect to the face of said closure section, and bent angularly in respect to each other for insertion through the respective openings when in one angular position in respect to said section to frictionally cooperate with the said edges thereof and releasably lock the closure section in its closed position when taking another position in respect to said section.

4. A container constructed of sheet material including relatively foldable sections, a closure section hingedly connected with one of the first named sections and foldable into superimposed relation upon another section of the container, said latter container section having a narrow slot therethrough, portions of said slot extending longitudinally and transversely of said container section, and said closure section on a free edge thereof having closely contiguous locking tongues bendable angularly in respect to the face of said closure section, and bendable angularly in respect to each other for insertion through the respective portions of said slot when in one angular position in respect to said section to frictionally operate with the edges thereof and releasably lock said closure section in its closed position when taking another position in respect to said section.

5. A container of sheet material having a plurality of walls, one of said walls having an opening therethrough provided with angularly related adjoining edges, and a closure member for the container hingedly connected with another wall thereof and provided on one of its free edges with closely contiguous angularly projecting tongues, unconnected at their adjacent edges and bendable relative to said member and to each other for insertion through said opening while bent into a position substantially at right angles to the face of the closure member to frictionally cooperate with the respective edges of the opening and releasably lock said member in its closed position, the tongues springing back due to their inherent resiliency into the positions in which their faces frictionally contact with the respective edges of the opening.

6. A container having a wall with an opening therein presenting a marginal contact edge, and a closure member for the container adapted to overlap the wall, said closure member having a pair of contiguous tongues to register with said opening in the wall, said tongues normally outstanding from the closure member substantially in the plane thereof and disposed in angular relation to each other, said tongues being yieldably connected to the closure member and adapted to yield under pressure and swing into angular relation to the closure member and to each other for passage into said opening in the wall, said tongues adapted to spring out toward their normal positions when released in the opening and engage said marginal contact edge thereof to resist in any edgewise direction of the tongues longitudinal and transverse relative movements of the wall and closure member.

NATHAN OTTINGER.