Jan. 31, 1933. N. OTTINGER 1,895,768

FOLDING BOX

Filed June 1, 1932

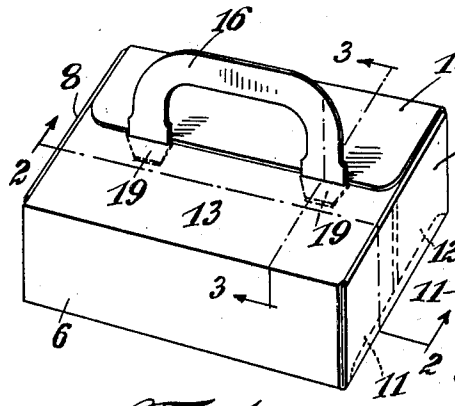


Fig. 1.

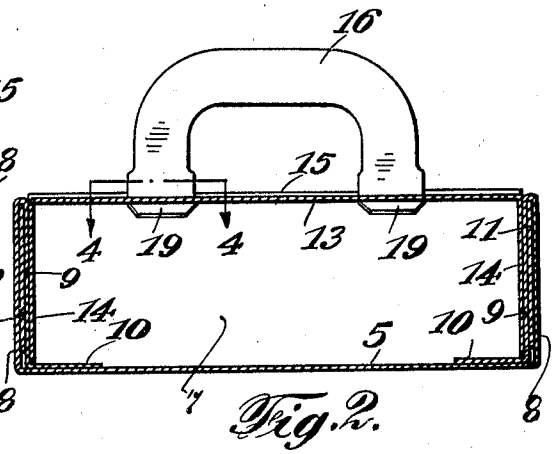


Fig. 2.

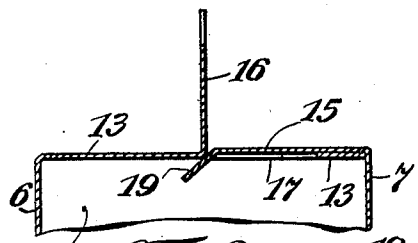


Fig. 3.

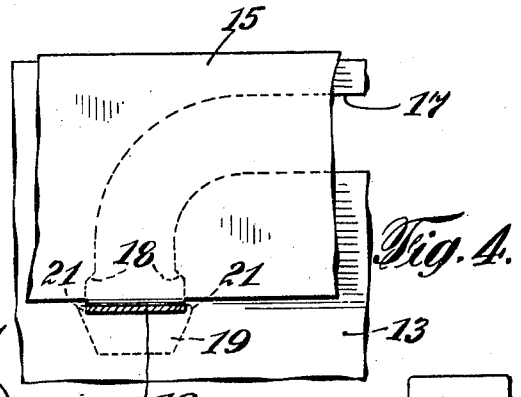


Fig. 4.

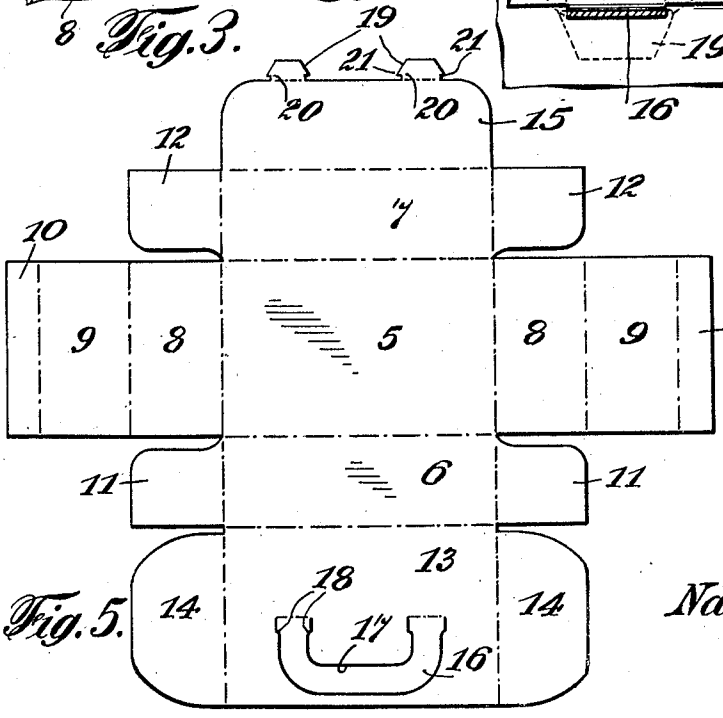


Fig. 5.

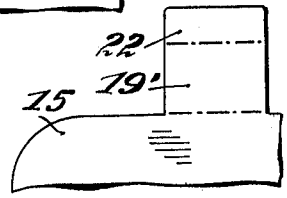


Fig. 6.

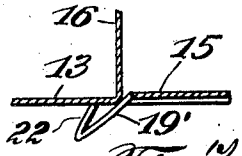


Fig. 7.

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UNITED STATES PATENT OFFICE

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FOLDING BOX

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This invention relates to folding boxes, and more particularly to a box of that type formed from a single blank of cardboard or other suitable material, and having a carrying handle for the box constituting an integral part of said blank.

It is the primary object and purpose of my present invention to provide a folding box of this character in which a relatively small number of folding operations is required which can be easily and quickly executed, and in which novel means is provided for interlocking overlapping top or closure sections of the box blank with each other, and retaining the carrying handle stamped from one of said sections in proper relation to the box structure.

It is a more particular object of the invention in one embodiment thereof to provide a box having the top or closure section extending substantially the entire distance between the side and end walls of the box, and an overlapping top section on the rear side wall, said first named section having the carrying handle projected therefrom and providing a slot therein, and said overlapping section having spaced interlocking tongues or extensions insertable through the ends of said slot closely adjacent the ends of the carrying handle and cooperating with opposite edges of the slot to securely retain said closure sections in connected relation.

In another embodiment of the invention, I propose to provide foldable interlocking tongues whereby, after said tongues are inserted through the ends of the slot, a portion of each tongue resiliently bears against the underside of one of the closure sections and acts as an inclined strut to resist accidental detachment of said interlocking tongues.

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 several parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and subsequently incorporated in the subjoined claims.

In the drawing wherein I have illustrated several simple and practical embodiments of the device, 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 longitudinal section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary transverse section taken on the line 3—3 of Fig. 1;

Fig. 4 is a fragmentary horizontal section on an enlarged scale taken on the line 4—4 of Fig. 2;

Fig. 5 is a plan view of the box blank; and

Figs. 6 and 7 are fragmentary plan and sectional views respectively showing an alternative construction of the interlocking tongues.

Referring in detail to the drawing, and for the present more particularly to Fig. 5 thereof, the box blank which may be cut by means of suitable dies 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 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 longitudinal free 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 has a carrying handle of suitable form or shape indicated at 16 cut therefrom, said handle at its ends remaining integrally connected with said closure section. Thus, when this handle is projected to a position in right angular relation to the section 13, the slot 17 is provided in said closure section. Preferably, the ends

of this handle 16 are slightly widened, thus forming the shoulders indicated at 18 in the edges of the slot 17 adjacent each end thereof.

The other closure section 15 is provided with spaced interlocking tongues 19 which are preferably tapered and are connected at their wider ends with section 13 by the relatively narrow neck portions 20, thus forming the shoulders 21. The neck portions 20 of these tongues are of a width substantially equal to the width of the widened ends of the slot 17 beyond the shoulders 18.

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. 5. 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 then folded upwardly against these wings and the sections 9 are folded inwardly over the inner faces of said wings, while the narrow end strips 12 extend horizontally upon the surface of the bottom wall of the box, as clearly shown in Fig. 2 of the drawing. After projecting the handle 16 from the plane of the closure section 13, said closure section is folded inwardly and downwardly from the upper edge of the front wall 6, the wings 14 being first bent into right angular relation therewith so as to frictionally bear upon 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 entire 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. The interlocking tongues 19 are bent to a slight angle and inserted through the ends of the slot 17. Owing to the fact that tongues 19 at the shoulders 21 are of greater width than the width of the ends of the slots, said tongues as they are forced through the slots will be slightly flexed until after said shoulders are disposed below the plane of the closure section 13. The tongues will then resume their normal position so that the shoulders 21 will underlie the section 13 at opposite edges of the slot. In any tendency to relative movement between the closure sections 13 and 15, the shoulders 21 coact with shoulders 18 and effectually prevent disconnection of said closure sections by the tongues working outwardly through the slot 17.

It will be apparent from the foregoing description that my improved folding box construction, when the parts are arranged in erect or set-up position, possesses great strength and durability, and even when filled to capacity with comparatively heavy material, may be conveniently carried by means of the handle 16 without danger of separation of the closure sections 13 and 15 and the opening of the box.

In Figs. 6 and 7 of the drawing, I show an alternative form of the interlocking tongues, in which each tongue 19′ is of uniform width, and is scored intermediate of its ends to be folded on itself. There is thus provided an end section 22 on each tongue which, after the folded tongues are inserted through the ends of the slot 17, tends to resume a normal position in alignment with the inner portion of the tongue. Therefore, the free end of each tongue portion 19 exerts a resilient frictional bearing pressure upwardly against the underside of the closure section 13, said portions 22 being of such length that they act as obliquely inclined struts, as clearly shown in Fig. 7, to effectually resist outward movement of said tongues through the end of the slot. In this case, if desired, the handle part 16 and the slot 17 may be of uniform width throughout the length thereof.

From the foregoing description considered in connection with the accompanying drawing, the construction, manner of use and several advantages of my improved folding box will be clearly and fully understood. It will be evident that the box blanks can be cut out by simply constructed parts and with a minimum waste of material, and that the simple folding operations required may be very quickly executed. The interlocking tongues and the longitudinal edge of the closure section 15 being in close abutting relation to the ends of the handle 16, provide reinforcing means for the handle at its connection with the closure section 13. Thus, although quite a heavy load may be contained within the box, liability of rupture or separation of the ends of the handle from the closure section 13 is reduced to a minimum. Of course, it will be apparent that boxes or containers as above described may be produced in various other sizes and shapes than that which I have selected for the purpose of illustration, and that the handle part 16 can also be of any desired ornamental configuration. Therefore, while I have herein shown and described several simple and practical embodiments of my present improvements, it is nevertheless to be understood that the essential features thereof may be incorporated in various 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 folding box comprising a blank hav-

ing relatively foldable parts to form a bottom, side and end walls of the box, said blank also including closure sections connected with the opposite side walls and foldable into superimposed relation with each other, one of said closure sections having a carrying handle struck therefrom and providing a slot in said section, and the other of said closure sections being provided along its free longitudinal edge with spaced tongues insertable through the ends of said slot closely adjacent to the handle ends and cooperating with said first named section to retain the closure sections in superimposed relation.

2. A folding box comprising a blank having relatively foldable parts to form a bottom, side and end walls of the box, said blank also including closure sections connected with the opposite side walls and foldable into superimposed relation with each other, one of said closure sections having a carrying handle struck therefrom and providing a slot in said section, the opposite edges of said slot adjacent each end thereof having shoulders, and the other of said closure sections having spaced interlocking tongues on its free longitudinal edge each provided with shoulders adjacent its connection with the edge of said section, said tongues being insertable through the ends of said slot closely adjacent to the ends of the handle and the shoulders thereof adapted to cooperate with the shoulders on the edges of said slot to limit relative movement between the closure sections and retain the same in superimposed relation.

3. A folding box comprising a blank having relatively foldable parts to form a bottom, side and end walls of the box, said blank also including closure sections connected with the opposite side walls and foldable into superimposed relation with each other, one of said closure sections having a carrying handle struck therefrom and providing a slot in said section, the other of said closure sections having spaced interlocking tongues on its free longitudinal edge each provided with relatively foldable portions to be inserted through the ends of said slot closely adjacent to the handle ends, one portion of each tongue having resilient bearing engagement against the underside of the first named closure section and constituting an inclined strut cooperating with the other portion of the tongue to resist outward movement of said tongues through the slot and thereby retain said closure sections in superimposed relation.

4. A container constructed of sheet material including a body, opposing closure sections for one side of said body hingedly connected therewith and foldable into superimposed relation with each other, one of said closure sections having a carrying handle struck therefrom and providing a slot in said section, and the other of said closure sections being provided along its free longitudinal edge with spaced bendable parts insertable through the ends of said slot closely adjacent to the handle ends and cooperating with said first named section to retain the closure sections in superimposed relation.

5. A container constructed of sheet material including a body, opposing closure sections for one side of said body hingedly connected therewith and foldable into superimposed relation with each other, one of said closure sections having a carrying handle struck therefrom and providing a slot in said section, and the other of said closure sections being provided at each of two spaced points along its free longitudinal edge with relatively bendable angularly related parts, both insertable through one end of said slot closely adjacent to the handle end and each cooperating with said first named section to retain the closure sections in superimposed relation.

In testimony that I claim the foregoing as my invention, I have signed my name hereto.

NATHAN OTTINGER.