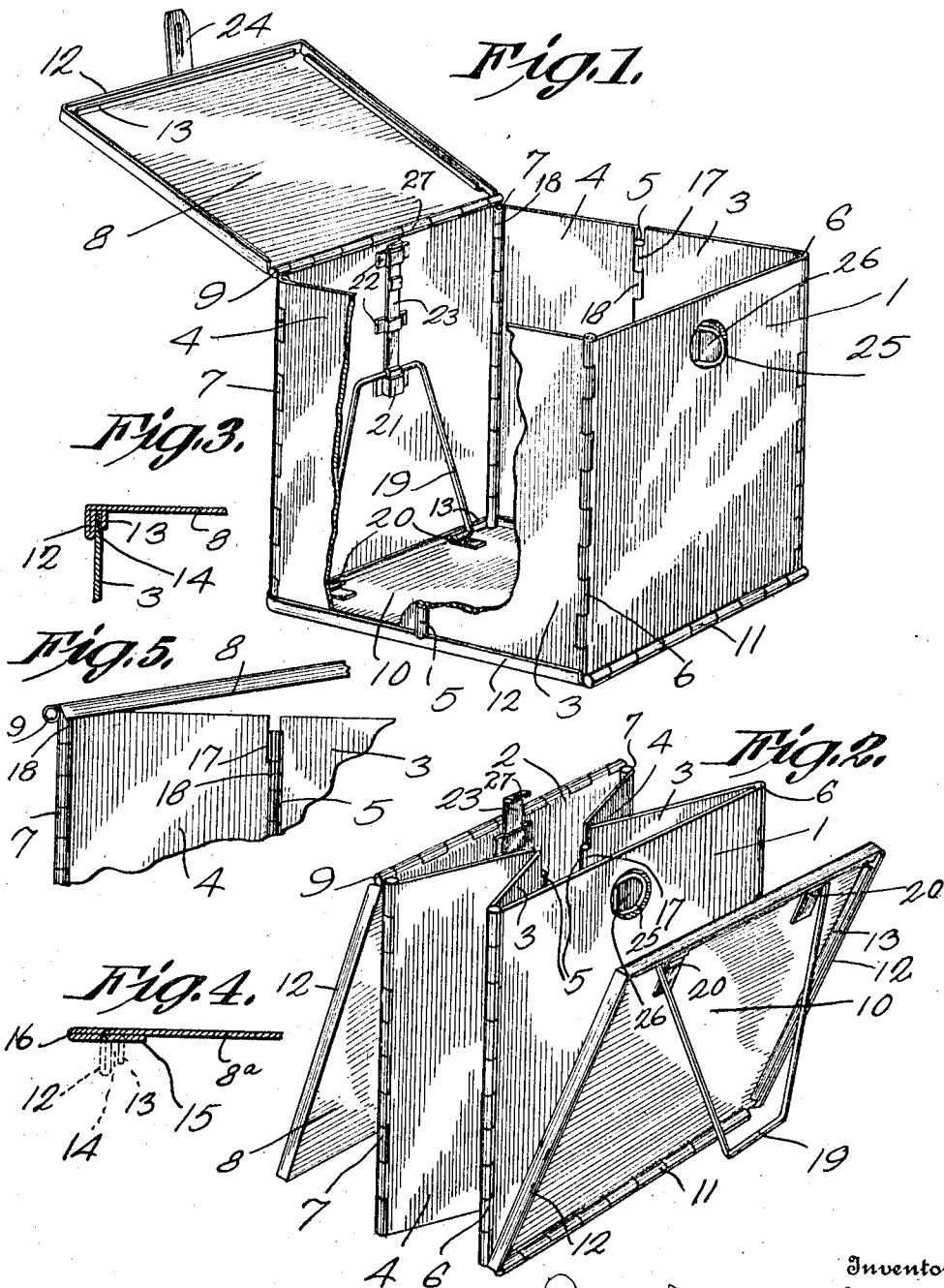


L. GOTTSCHALL.  
FOLDING BOX.  
APPLICATION FILED MAY 14, 1917.

1,241,844.

Patented Oct. 2, 1917.



Witness  
R. W. Hoagland  
R. Parker

Inventor  
Lionel Gottschall  
By J. L. Walker  
Attorney

# UNITED STATES PATENT OFFICE.

LIONEL GOTTSCHALL, OF DAYTON, OHIO.

## FOLDING BOX.

1,241,844.

Specification of Letters Patent.

Patented Oct. 2, 1917.

Application filed May 14, 1917. Serial No. 168,532.

*To all whom it may concern:*

Be it known that I, LIONEL GOTTSCHALL, citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Folding Boxes, of which the following is a specification.

My invention relates to collapsible or folding receptacles.

The object of the invention is to improve the structure as well as the means and mode of operation of such devices whereby they will not only be cheapened in construction, but will be more efficient in use, positive in operation, secure and safe, and unlikely to get out of repair.

One of the primary objects of the invention is to provide a container or box which may be folded or collapsed to a compact and convenient form for storage when not in use, or for shipping when empty.

A further object of the invention is to provide improved means for interlocking the yielding or relatively movable sections to secure the structure in upright or erected position.

A further object of the invention is to provide improved form of locking means for the movable bottom section which will insure the maintenance of the structure in upright or erected position so long as the top or cover is closed, and to further provide interlocking joints between the bottom, top and the side sections, tending to maintain such parts in adjusted position, and to further arrange the side portions that they may readily enter the interlocking joints or grooves of the top and bottom sections.

With the above primary and other incidental objects in view as will more fully appear in the specification, the invention consists of the features of construction the parts and combinations thereof, and the mode of operation or their equivalents, as hereinafter described and set forth in the claims.

Referring to the drawings Figure 1 is a perspective view of the assembled container or box with the top or lid open and one side partly broken away to disclose the internal locking features of the bottom section. Fig.

2 is a perspective view of the box or container partly collapsed. Figs. 3 and 4 are detail views of the interlocking joints between the side sections and the top and bottom sections. Fig. 5 is a detail side elevation.

Like parts are indicated by similar characters of reference throughout the several views.

The collapsible container or box forming the subject matter hereof is particularly adapted for use as a ballot box. The collapsible feature enables it to be stored in small space during the periods of non-use. Also it may be used as a shipping box or container which may be folded compactly into a small compass for return shipment, but which when erected will be sufficiently durable and strong to withstand hard usage incident to freight and express shipment. It will be understood that the box or receptacle may be formed in any desired size or proportion.

Referring to the drawings the collapsible receptacle forming the subject matter hereof comprises front and rear wall sections 1 and 2 to which are hinged at each vertical edge side sections, by hinge joints 6 and 7. Each side comprises two sections or leaves 3 and 4 hinged one to the other by a medially disposed vertical hinged joint 5. The vertical hinge joints 6 and 7 connecting the side portions or leaves 3 and 4 with the front and rear wall sections 1 and 2 respectively are so arranged that the leaves or portions 3 and 4 are foldable inward, as indicated in Fig. 2, to parallelism one with the other, and with the front and rear wall sections 1 and 2. The top section 8 is joined to the upper horizontal edge of the rear wall section 2, by a hinged joint 9 while the bottom section is similarly joined to the lower horizontal edge of the front wall section 1 by a hinge joint 11. The hinge joints 9 and 11 are so constructed and arranged that the top and bottom sections are foldable outwardly to parallelism with the wall sections 1 and 2 and against the outer sides thereof. Both the top and bottom sections 8 and 10 are provided about their marginal free edges with parallel flanges 12

and 13 forming a groove or channel 14 intermediate said flanges. The channel or groove 14 is adapted to receive the corresponding edge of the side sections 3 and 4.

5 It is to be noted that the flange or grooved margins of the top and bottom sections are formed integral with such top and bottom sections by folding upon itself the material from which the cover and bottom are made.

10 It is obvious that this double flange section may be formed separately and subsequently attached to the cover section by soldering, welding or other methods, but for the purpose of strength and durability as well as

15 economy of manufacture and maintain a uniform appearance, the double flanged margins are preferably formed integrally with the cover and bottom sections from single sheets of material. To perform the

20 several bending operations in the sequence in which they occur is a somewhat difficult mechanical feat. There is illustrated in Fig. 4 a very simple and convenient method of forming the double flanged marginal

25 construction with minimum operations, and which will result in uniform production. To this end the marginal portion of the cover or bottom section indicated at 8<sup>a</sup> is overlapped upon itself to parallelism a distance equal to the combined height of the

30 two flanges and the width of intervening space. The inner or free edge 15 is then bent upward perpendicular to the plane of the section 8 by use of a tinner's break or

35 some other tool performing like operations, thereby forming the inner marginal flange 13. The outer doubled edge or bight 16 is then bent in like manner along a line spaced from the inner upper edge or flange 13 by

40 a like operation to form the outer marginal flange 12.

In order that the edges of the side sections may readily enter and follow into the grooves or channels 14 of the top and bottom sections, the terminal hinge knuckles

45 of the joints 5 and 7 are integral with the side portions or sections 3 and 4 respectively. By this means the portion of the side section 4 adjacent to the hinged joint

50 7 which is the portion first extended within the marginal groove or channel of the top and bottom sections, is held rigidly in position to enter said groove or recess during the closing movement of the cover and bottom sections. If the opposite edge of the

55 section 4 or that edge adjacent to the medial hinge joint 5 is bent laterally or accidentally thrown out of line such deviation is immaterial inasmuch as the initial corner of

60 the side section having been rigidly held and entered within the groove or channel by the integral terminal hinge knuckle 18, the remaining portion of the side section will be led automatically into the channel

65 or groove. Likewise the hinge knuckle 17

formed integral with the side section 3 at the end of the medial hinge joint 5, rigidly holds the initial corner of the side section 3 in position to enter within the groove or channel of the cover or bottom section, while the final corner of such side section will be automatically led into the channel even though it may be bent or deflected out of its normal plane. While this feature of construction comprising forming the terminal hinge knuckle integral with the side section at the initial corner in relation with the direction of engagement of the side section and the cover and bottom portions is seemingly a small detail it has become quite

70 75 80

important in insuring easy and rapid closure operation.

With the top and bottom edges of the side sections 3 and 4 the top edge of the section 1 and the bottom edge of the rear section 2

85 firmly seated within the marginal groove or channel of the top and bottom sections a strong rigid construction is provided. In order that the bottom section may not become accidentally disengaged while in use, and further to prevent entrance to the box being gained through the bottom when the top section is locked there is provided a locking means for the bottom section so constructed and arranged that it cannot become

90 95

disengaged nor be released so long as the top section is closed. To lock the bottom section in its adjusted position there is provided a bight or bail of wire 19 hinged at 20 to the inner side of the bottom section adjacent to its marginal flange. This bight or bail is adapted to be turned upward to a position parallel with and against the inner side of the rear wall section 2, where it extends above a socket or keeper 21 attached to the inner side of the rear wall section 2.

100 105

Reciprocating within suitable guides or keepers 22 secured to the inner side of the wall section 2 is a reciprocatory bolt 23 the lower or inner end of which is adapted to extend over the bight or bail 19 and engage within the keeper or socket portion 21, thereby locking the bight or keeper in its adjusted position. The locking bolt 23 is of such length that when in its depressed or locked position its upper end will extend substantially level with the top of the box or container and when unlocked the bolt 23 extends above the top of the container and into the path of the cover section 8. The construction is such that the bolt or locking member 23 must necessarily be depressed to locking position before the cover section 8 may be closed. The releasing movement of the bolt 23 is prevented by the cover section 8 so long as the cover is closed. This insures the proper interlocking of the box or receptacle bottom in closed or adjusted position before the top section 8 may be closed. It thereby prevents oversight or accidental re-

110 115 120 125 130

lease of the bottom. Likewise it prevents the intentional opening of the bottom section by unauthorized persons or those who have not the necessary key to unlock the top  
5 section.

The top or cover section 8 is adapted to be secured in its closed or locked position by any suitable or convenient form of lock. However in the drawings there has been  
10 shown a simple form of hasp 24, hinged to the top or cover section 8 at its forward or free edge and adapted to be engaged over loop or keeper 25 pivoted to the front section 1 of the box, in depression or recess 26.  
15 The loop or keeper 25 is so arranged that it may be folded flatly to a position well within the recess or depression, where it will in no way interfere with the folding of the bottom section and the front wall section 1  
20 to parallelism. The cover may be secured by an ordinary form of padlock introduced through the loop or keeper 25 over the hasp 24. The mode of folding or collapsing the receptacle will be clear by an examination  
25 of Fig. 2. After disengaging the double flanged margins of the top and bottom sections from the sides, the side portions or leaves 3 and 4 are folded inward intermediate the front and rear wall sections 1 and 2.  
30 The cover section 8 is folded rearwardly and downwardly to parallelism with the rear wall 2, the hasp 24 having been first folded to a position parallel with the cover 8, whereby it will extend intermediate the  
35 cover section 8 and the rear wall 2 when the box is in final collapsed position. The loop or keeper 25 is folded flatly into the recess or pocket 26 and the bight or bail 19 is folded about its hinge connections 20 to a  
40 position parallel with the inner side of the bottom section 10. The locking bolt or plunger 23 is pushed inward to avoid interference with external objects. The upper end of the bolt 23 is offset or bent laterally  
45 as at 27 to form a limiting stop and also to facilitate the withdrawal of the bolt. Likewise a stop lug is provided to limit the outward movement of the locking bolt. When folded as heretofore described the structure  
50 presents no extension of parts projecting beyond the marginal lines of the folded body as the structure is thus contained within a

compass or area substantially equal to a single side or cover section.

Having thus described my invention, what 55 I claim is:—

1. In a collapsible box of the character described, top, bottom and side wall sections hinged one to another and foldable to parallelism, a locking bail carried by the bottom section and extending within the structure when erected, a locking bolt carried by one of the side sections and adapted to be engaged with the bail to hold the bottom in adjusted position, said locking bolt being adapted to extend into the path of the top section when in disengaged position whereby said locking bolt must be moved to locking position before the top section may be closed and will be retained in locked position by said top section. 60

2. In a collapsible box of the character described, top, bottom and side sections hinged one to another and foldable to parallelism, a locking arm carried by the bottom section, and extending within the box when erected, a projection carried by one of the side sections engaged by the arm, and a detent within the box adapted to lock the arm in engagement with the projection, substantially as specified. 75

3. In a collapsible box of the character described, top, bottom and side sections hinged one to another and foldable to parallelism, double marginal flanges on the top and bottom sections intermediate which the edges of the side sections project, and an integral hinge knuckle at the corner of each side section which initially engages in the groove intermediate the marginal flanges of the top and bottom sections. 80

4. In a collapsible box, a plurality of side sections hinged one to another, a bottom section, a flanged cover section, hinged to a side section, and integral hinge knuckles located at the corners of the side sections nearest the hinge connection of the flanged cover. 85

In testimony whereof, I have hereunto set my hand this 5th day of May A. D. 1917.

LIONEL GOTTSCHALL.

Witnesses:

D. F. GOTTSCHALL,  
E. E. DUNCAN.