

UNITED STATES PATENT OFFICE

2,089,067

CONTAINER

Harold L. Myers, Morristown, N. J.

Application May 11, 1935, Serial No. 20,953

3 Claims. (Cl. 229-27)

My invention relates to containers and more particularly to boxes made of cardboard or similar material, and has for its object to provide a folding box of novel type constructed from a foldable blank to include interior partitions whereby the body of the box is divided into compartments of predetermined form and arrangement. Other and more specific objects will appear from the description hereinafter and the features of novelty will be pointed out in the claims.

In the accompanying drawings which illustrate several examples of the invention without defining its limits, Fig. 1 is a perspective view of one form of the novel box; Fig. 2 is a sectional perspective on the line 2-2 of Fig. 1; Fig. 3 is a sectional view on the line 3-3 of Fig. 1; Fig. 4 is a perspective view showing the box in a partly folded condition; Fig. 5 is a face view on a relatively reduced scale showing the blank from which the box is constructed; Fig. 6 is an inverted plan view of the box partly folded; Fig. 7 is a perspective view of another form of the novel box; Fig. 8 is a plan view thereof partly in section; Fig. 9 is a sectional view on the line 9-9 of Fig. 8; Fig. 10 is a perspective view of still another form of the novel box, and Fig. 11 is a plan view thereof.

In the form illustrated in Figs. 1 to 5 inclusive, the box comprises a rectangular body 15 consisting of a continuous strip of cardboard or other suitable material divided into a plurality of sections which for convenience have been designated herein as a front panel *a*, a rear panel *b* and opposite end panels *c* and *d* respectively. The several sections or panels are foldably connected with each other along score lines 16 and are secured in the intended rectangular relation by means of a tab 17 located at one end of said continuous strip and foldably connected along a score line 18 for instance with one end of the rear panel *b* to form an extension thereof; the tab 17 is glued or otherwise suitably secured in surface connection with the end panel *c* as shown in Fig. 4.

The specific form of box selected for purposes of description and illustration, and without any intention of defining the limits of the invention includes two transverse interior partitions 19 and 20 located in spaced parallel relation to each other in the operative condition of the box. The one transverse partition 19 consists of a partition member or panel *e* dimensioned to fit between the front panel *a* and rear panel *b* and corresponding in vertical width to the vertical width

of said front and rear panels in the illustrated example; the member or panel *e* constitutes an extension of a bottom member or panel *f* and is foldably connected therewith along a score line 21, said bottom panel *f* in turn being foldably connected along a score line 22 with the lower edge of the end panel *d*. In the illustrated arrangement a slot 23 extends transversely across the panel *f* and partly across the panel *e* at a predetermined point between the opposite free edges of said panels *e* and *f*, the portion 23' of the slot 23 located in the panel *e* constituting a downwardly open notch in the upright operative position of the panel *e* for the purpose to be more fully set forth hereinafter. Similarly the other transverse partition 20 consists of a partition member or panel *e'* dimensioned to fit between the front and rear panels *a* and *b* and of corresponding vertical width in the illustrated example; the panel *e'* constitutes an extension of a bottom member or panel *f'* and is foldably connected therewith along a score line 21', said bottom panel *f'* in turn being foldably connected along a score line 22' with the lower edge of the other end panel *c*. In the form of box under discussion the panels *e'* and *f'* are not provided with a slot corresponding to the slot 23 although in some forms of this box said panels *e'* and *f'* might include such a slot.

The particular box shown in Figs. 1 to 5 inclusive further includes a longitudinal partition 24 which in the specific example selected for descriptive purposes extends between the end panel *d* and the transverse partition 20 and is in intersecting interlocking engagement with the transverse partition 19 as will be more clearly set forth hereinafter. In the illustrated box the longitudinal partition 24 may be of approximately the same vertical dimensions as the end panels *c* and *d* and the transverse partitions 19 and 20, although as specifically shown said longitudinal partition 24 is slightly lower than said end panels and transverse partitions. The longitudinal partition 24 consists of two corresponding partition members or panels *g* and *g'* of a length corresponding to the distance between the end panel *d* and the transverse partition 20 and provided with registering open notches 25 for the accommodation of the transverse partition 19 as will appear more fully hereinafter. The panel *g* is foldably connected along a score line 26 with a bottom panel *h* which itself is foldably connected along a score line 27 with the lower edge of the front panel *a* and corresponds in length thereto; similarly the panel *g'* is foldably connected

along a score line 26^a with a second bottom panel 5
 h' which in turn is foldably connected along a
 score line 27^a with the lower edge of the rear
 panel b and corresponds in length thereto. With
 the described and illustrated arrangement the
 panels g and g' are somewhat shorter than the
 respective panels h and h' with which they are
 connected, this being due to the fact that the
 longitudinal partition 24 terminates at the trans-
 verse partition 20 and does not cross the same;
 obviously this is not an arbitrary arrangement
 as the longitudinal partition 24 might extend be-
 tween the opposite end walls c and d in which
 case the panels g and g' would be dimensioned
 to provide this result.

In the folded operative condition of the illus-
 trated form of the novel box the bottom panels
 h and h' together constitute the bottom thereof
 and are dimensioned to provide such bottom.
 The relative dimensions of the bottom panels h
 and h' with respect to each other depend upon
 the predetermined location of the longitudinal
 partition 24 in the box; in any case when the
 box is of the constructive type shown in the
 drawings the sum of the dimensions of the two
 panels h and h' is always such as to cause said
 panels together to form a complete bottom for
 said box. It will be obvious that in some forms
 the bottom of the box may be otherwise formed
 than by the panels h and h' in which case the
 latter are correspondingly foldable into horizon-
 tal relation to the body and simply serve to pro-
 vide and position the longitudinal partition 24.

The box illustrated by way of example in Figs.
 1 to 5 inclusive includes a main cover 28 and
 auxiliary covers 29 and 30, which covers may in
 some cases be modified or even omitted if desired.
 The main cover 28, in the form shown, is foldably
 connected with the upper edge of the rear panel
 b along a score line 31, and at its free end is
 provided with a tongue 32 foldable on a score line
 33 for fixing the cover in its closed position.

The auxiliary covers 29 and 30 which are in-
 cluded in the box shown in Figs. 1 to 5 inclusive
 each consist of a closing panel i foldably con-
 nected with the upper edges of the end panels
 c and d respectively along score lines 34, and
 locking tongues j foldably connected along score
 lines 35 with the respective panels i; the locking
 tongue j of the auxiliary cover 29, in the form of
 box illustrated in Figs. 1 to 5 inclusive, is pro-
 vided with an open notch 36 for the purpose to
 be more fully described hereinafter.

In constructing the form of box shown in Figs.
 1 to 4 inclusive from the blank shown in Fig. 5,
 the rectangular body 15 is first completed by fold-
 ing the respective sections or panels a, b, c and d
 upon the score lines 16 into proper relative posi-
 tions and then folding the tab 17 on the score line
 18 into surface engagement with the inner face
 of the end panel c and pasting or otherwise se-
 curing it thereto. It will of course be obvious
 that the tab 17 or its equivalent may form a
 foldable part of one of the other panels which
 constitute the body 15 and be connected with a
 co-operating panel other than as illustrated if
 this should be desirable or convenient. After
 the body 15 has been completed the bottom panels
 f and f' are folded inwardly on the score lines 22
 and 22^a into horizontal relation to said body
 or in other words to positions at right angles to
 the end panels c and d as indicated in Fig. 6; as
 the next step the panels e and e' are folded on
 the score lines 21 and 21^a respectively to upright
 positions within the body 15 as also shown in Fig.

6. At this stage the panels e and e' are located
 in spaced parallel relation to each other and to
 the end panels c and d and extend vertically be-
 tween the front panel a and the rear panel b to
 form the transverse partitions 19 and 20 as shown
 in Fig. 1.

The bottom panels h and h' are now folded in-
 wardly on the score lines 27 and 27^a into hori-
 zontal relation to the body so as to lie over and
 in surface engagement with the lower faces of
 the panels f and f' and in position at right angles
 to the front panel a and rear panel b respectively;
 at an appropriate stage in these latter operations
 the panels g and g' are passed upwardly through
 the slot 23 so as to lie in upright surface engage-
 ment with each other to form the longitudinal
 partition 24 in the body 15 between the end panel
 d and the transverse partition 20 as shown in
 Fig. 1. In the final position of the panels g and
 g' the registering notches 25 thereof receive the
 notch 23' of said panel e accommodates the
 panels g and g' as shown in Fig. 2; in other
 words, the transverse partition 19 and the longi-
 tudinal partition 24 are interlocked at their in-
 tersection through the co-operation of the notch-
 es 23' and 25.

With the described arrangement the body of
 the completed box is provided with two end com-
 partments A and B, and two intermediate com-
 partments C and D; as shown in Fig. 2 the com-
 partment A is divided into two independent sub-
 compartments by the one end portion of the lon-
 gitudinal partition 24. It will be apparent that
 the combination of compartments is capable of
 wide variation by simply arranging the several
 partitions in any predetermined manner within
 the range of the novel construction. As shown
 in Fig. 1 the end compartments A and B may be
 closed by folding the panels i into closing position
 and tucking the locking tongues j into said com-
 partments in surface engagement with the panels
 e and e' of the transverse partitions 19 and 20
 as shown in Fig. 3; the notch 36 located in the
 locking tongue j of the auxiliary cover 29 in this
 case fits over the longitudinal partition 24 and
 permits said cover 29 to be readily adjusted to its
 closed position. It will be obvious that the
 tongues j of the auxiliary covers 29 and 30 may be
 tucked into position exteriorly of the end cham-
 bers A and B instead of into the same to lock
 said covers 29 and 30 in their closed position.
 To completely close the box the main cover 28
 is adjusted into its closed position with the tongue
 32 tucked into the body 15 in interior surface en-
 gagement with the front panel a; in this position
 of the main cover 28, the tongue 32 is frictionally
 held between said front panel a and the contig-
 uous ends of the auxiliary covers 29 and 30, and the
 corresponding ends of the transverse partitions 19
 and 20.

Because of the inherent elasticity of the card-
 board or equivalent characteristics of other mate-
 rials of which the boxes are made, the panels e
 and e' constituting the transverse partitions 19
 and 20, and the panels g and g' constituting the
 longitudinal partition 24 possess an inherent ten-
 dency to assume their normal horizontal positions
 relatively to the panels with which they are fold-
 ably connected. In the case of the panels e and
 e' this tendency is counteracted by the inter-
 locking notches 23' and 25' and the one end of
 the longitudinal partition 24 respectively, while
 in the case of the panels g and g' this tendency
 is opposed by the panels themselves which tend

to flatten out in opposite directions and also by the action of the notch 23' of the panel *e* which fits over said panels *g* and *g'* as shown in Fig. 2. As a result the aforesaid inherent tendency of the several panels in co-operation with adjacent panels is converted into a force whereby the different partitions are rigidly maintained in upright positions to provide efficient partitions within the body 15.

10 The form of the novel box illustrated in Figs. 7, 8 and 9 includes a body 15^a consisting of continuous strip of cardboard or other suitable material divided into a plurality of sections designated as a front panel *a'*, a rear panel *b'* and opposite end panels *c'* and *d'* respectively. The several panels are foldably connected with each other along score lines 16^a and are secured in the intended rectangular relation by means of a tab 17^a located at one end of said continuous strip and foldably connected along a score line 18^a for instance with the rear panel *b'* to form a continuation thereof; the tab 17^a is glued or otherwise suitably secured in surface connection with the end panel *c'* as shown in Fig. 8.

25 The specific form of box shown by way of example in Figs. 7 and 8 includes a single transverse interior partition and a single longitudinal partition extending at right angles thereto, it being understood that this arrangement is subject to change in accordance with the predetermined purposes for which the particular box is designed. The transverse partition 20^a corresponds to the transverse partition 20 of the form of box first described and likewise consists of a partition member or panel *e*² dimensioned to fit between the front panel *a'* and the rear panel *b'* and corresponding in vertical width thereto. The member or panel *e*² constitutes an extension of a bottom member or panel *f*² and is foldably connected therewith along a score line 21^b, said bottom panel *f*² in turn being foldably connected along a score line 22^b with the lower edge of the end panel *c'*.

45 The longitudinal partition 24^a in the form of box now being described consists of two corresponding partition members or panels *g*² and *g*³ of a length corresponding to the distance between the end panel *d* and the transverse partition 20^a. The panel *g*² is foldably connected along a score line 26^a with a bottom panel *h*² while the panel *g*³ is similarly connected along a suitable score line with a second bottom panel *h*³; the bottom panels *h*² and *h*³ are foldably connected along suitable score lines with the lower edges of the front panel *a'* and the rear panel *b'* respectively in a manner corresponding to the arrangement shown and described with respect to the first form of the novel box. Because of the fact that the longitudinal partition 24^a terminates at the transverse partition 20 and does not cross the same, the panels *g*² and *g*³ are somewhat shorter than the respective panels *h*² and *h*³; obviously this arrangement is subject to change and is not to be regarded as arbitrarily limiting the construction of the particular form of box now being described. The latter as shown in Figs. 7 and 8 further includes independent bottom panels *f*³ and *f*⁴ which are foldably connected along score lines 22^c with the lower edge of the end panel *d'* as illustrated in Fig. 9. At their opposed free edges the panels *f*³ and *f*⁴ are provided with recesses 23^a and adjacent projections 23^b. The form of box under discussion may also include a main cover 28 and auxiliary covers 29, 30 similar to the corresponding covers of the form of box first

described, it being understood in some forms of this box any or all of these covers may be omitted.

In constructing the form of box shown in Figs. 7 and 8, the rectangular body 15^a is first completed as in the first form after which the bottom panel *f*² is folded inwardly on the score line 22^b into horizontal relation to the body or in other words to a position at right angles to the end panels *c'* as shown in Fig. 9. The transverse partition member or panel *e*² is then folded to an upright position on the score line 21^b as illustrated in Figs. 7 and 9. At this stage or at any predetermined time the panels *f*³ and *f*⁴ are likewise folded inwardly on the score lines 22^c into horizontal relation to the body of the box or in other words to positions at right angles to the end panel *d'*. In this condition the panels *f*³ and *f*⁴ occupy a common horizontal plane with the projections 23^b extending toward each other in spaced relation to each other and with the recesses 23^a of the respective panels *f*³ and *f*⁴ in registering alignment as illustrated in Fig. 8.

The bottom panels *h*² and *h*³ are now folded inwardly into horizontal relation to the body so as to lie over and in surface engagement with the lower faces of the panels *f*², *f*³ and *f*⁴ as illustrated in Fig. 9; at an appropriate stage in these latter operations the partition members or panels *g*² and *g*³ are passed upwardly between the adjacent recessed ends of the panels *f*³ and *f*⁴ so as to lie in upright surface engagement with each other to form the longitudinal partition 24^a within the body 15^a and between the end panel *d'* and the transverse partition 20^a as shown in Fig. 8. The panels *f*³ and *f*⁴ are dimensioned to fit snugly between the front panel *a'* and the panel *g*² and between the rear panel *b'* and the panel *g*³ respectively; with this arrangement the projections 23^b of the panels *f*³ and *f*⁴ are in engagement with the opposite faces of the longitudinal partition 24^a and serve to maintain the latter in its intended upright position. This upright position is further maintained by reason of the fact that the panels *g*², *g*³ have an inherent tendency to flatten out in opposite directions which tendency is accordingly converted into a force acting to maintain the longitudinal partition 24 in its intended upright position. The several covers if included in the particular box may be adjusted to their closed positions in the same manner as described with respect to the first form of the novel box.

With the partition arrangement shown and described the box specifically illustrated in Figs. 7, 8 and 9 includes an end compartment B' and two longitudinal compartments C' and D'. The partitioning arrangement may obviously be changed to provide any number or type of interior compartments desired.

The form of box shown in Figs. 10 and 11 is provided with a single longitudinal partition 24^b which extends between the opposite end panels *c*² and *d*² and divides the interior of the box into two adjacent chambers C² and D² respectively. The longitudinal partition 24^b is formed by two panels *g*⁴ and *g*⁵ arranged in upright surface engagement with each other and foldably connected along suitable score lines with bottom members similar to the bottom members previously described, it being understood that the bottom members of the form of box now being described are foldably connected with the front panel *a*² and the rear panel *b*² respectively as in the forms of boxes previously referred to herein. The panels *g*⁴ and *g*⁵ extend upwardly be-

tween bottom panels f^5 , f^6 , f^7 and f^8 foldably connected in co-operating pairs with the bottom edges of the end panels d^2 and c^2 respectively. The bottom panels f^5 , f^6 , f^7 and f^8 have their opposed edges recessed and provided with projections in the same manner and for the same purposes as shown and described with respect to the panels f^3 and f^4 of Fig. 8.

This last form of box may be constructed and set up in the same manner as previously described so that in the final condition the panels f^5 and f^6 extend in horizontal relation to the body of the box toward the panels f^7 and f^8 which likewise project in horizontal relation to said body as illustrated in Fig. 10. The longitudinal partition 24^b projects upwardly between the opposed edges of said panels f^5 , f^6 , f^7 and f^8 with the projections of said panels in engagement with the opposite surfaces of said longitudinal partition 24^b in the same manner and for the same purposes as set forth with respect to the second form of box described herein, the bottom panels with which the panels g^4 and g^5 are foldably connected lying in surface engagement with the panels f^5 , f^6 , f^7 and f^8 . The form of box shown in Figs. 10 and 11 may also include a main cover 28 and auxiliary covers 29 and 30 any or all of which may be omitted if desired.

In both of the last mentioned two forms of boxes the bottom panels h^2 and h^3 of Figs. 7-9 and the corresponding bottom panels of Figs. 10 and 11 are dimensioned to constitute the bottoms of the box and have relative dimensions depending upon the location of the longitudinal partitions 24^a and 24^b in the bodies of the respective two boxes. The projections 23^b shown in Fig. 8 and the corresponding projections shown in Figs. 10 and 11 and the adjacent slots 23^a prevent excessive binding of the parts and at the same time provide sufficient bearing engagement between the respective bottom panels and the respective longitudinal partitions 24^a and 24^b to assist in maintaining said longitudinal partitions in their intended upright positions; in some constructions the slots 23^a and the projections 23^b may be omitted in which case the opposed edges of the panels f^3 and f^4 may be in unbroken engagement with the opposite faces of the longitudinal partitions 24^a and 24^b .

In all of its forms the novel box is capable of being easily set up in operative condition from suitable blanks to provide boxes partitioned in any predetermined manner dependent upon the purposes for which the particular boxes are designed. The novel boxes are specially adapted for use for instance as first-aid kits and similar purposes and do not require any materially greater amount of stock in their construction than is necessary in the construction of folding boxes of customary type. The boxes are also easy and economical to manufacture and require no particular skill in the folding or setting up thereof. In their initial unfolded condition the blanks from which the boxes are constructed occupy a minimum amount of space and accordingly are capable of being efficiently stored and shipped in large quantities.

Various changes in the specific forms shown and described may be made within the scope of the claims without departing from the spirit of the invention.

I claim:

1. A container comprising a rectangular body consisting of a plurality of sections foldably connected with each other, a bottom member fold-

ably connected with one of said sections and provided with a slot, said bottom member being foldable into horizontal relation to said body sections, a transverse partition member foldably connected with said bottom member and provided with a notch forming a continuation of said slot, said partition member being adjustable to an upright position in said body to form a transverse partition therein, a pair of bottom members foldably connected with opposed sections of said body at right angles to said first named bottom member, and longitudinal partition members foldably connected with said pair of bottom members and provided with registering notches, said longitudinal members being adjustable to upright positions in surface engagement with each other to form a longitudinal partition, the latter intersecting the transverse partition and projecting upwardly through said slot with registering notches of said longitudinal partition and the notch of said transverse partition in interlocking engagement with each other whereby said partitions are maintained in said upright positions.

2. A container comprising a rectangular body consisting of a plurality of sections foldably connected with each other, a first bottom member foldably connected with one of said sections and provided with a slot, said bottom member being foldable into horizontal relation to said body sections, a first transverse partition member foldably connected with said first bottom member and provided with a notch forming a continuation of said slot, said first transverse partition member being adjustable to an upright position in said body to form a first end compartment therein, a second bottom member foldably connected with an opposed section of said body and foldable into horizontal relation thereto, a second transverse partition member foldably connected with said second bottom member and adjustable to an upright position in said body to form a second end compartment therein, a third bottom member foldably connected with a body section at right angles to said first and second bottom members and foldable into horizontal relation to said body sections, a longitudinal partition member foldably connected with said third bottom member and provided with a notch, said longitudinal partition member projecting upwardly through said slot with its notch in interlocking engagement with the notch of said first transverse partition member and its one end in engagement with said second transverse partition member whereby said two transverse partition members are maintained in said upright positions, said longitudinal partition member forming a longitudinal compartment in said body and dividing said first end compartment in two, and means for completing the bottom of said body to form a second longitudinal compartment in said body.

3. A container comprising a body, a bottom member foldably connected with said body and foldable into horizontal relation thereto, said bottom member being provided with a slot, a partition member foldably connected with said bottom member and provided with a notch forming a continuation of said slot, said partition member being adjustable to an upright position in said body to form a compartment therein, another bottom member foldably connected with said body and foldable transversely to said first mentioned bottom member into horizontal relation to said body, a partition member foldably

5 connected with said last mentioned bottom member and provided with a notch, said last named partition member being arranged to project upwardly through said slot with its notch in interlocking engagement with the notch of said first mentioned partition member to form a second

compartment in said body and to divide said first mentioned compartment and to fix said partition members in upright position, and foldable means for completing said container.

HAROLD L. MYERS.