

Aug. 4, 1942.

T. R. ERICKSEN ET AL

2,291,888

FOLDING BOX

Filed April 24, 1939

FIG. 1.

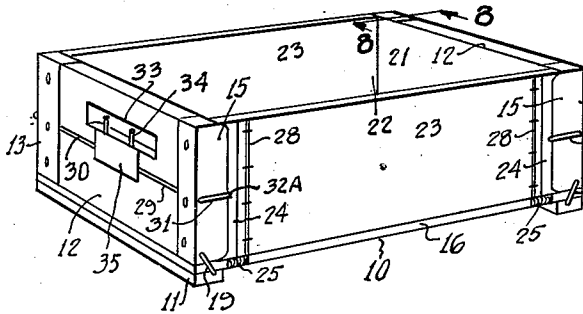


FIG. 4.

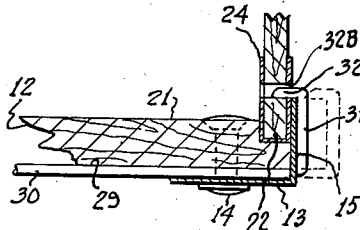


FIG. 2.

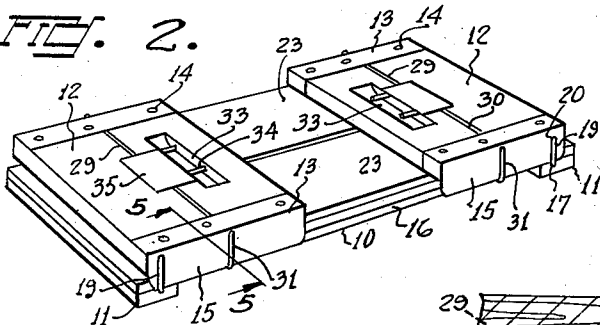


FIG. 5.

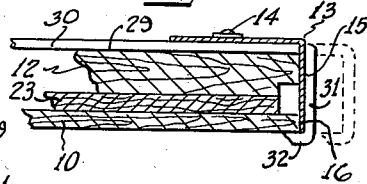


FIG. 6.

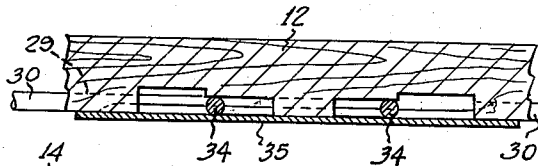


FIG. 3.

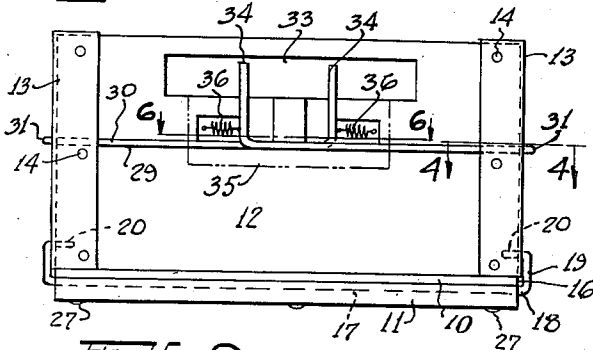


FIG. 7.

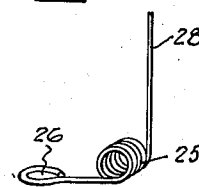


FIG. 9.

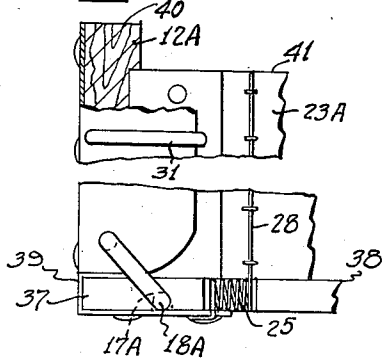
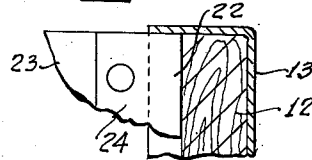


FIG. 8.



INVENTOR  
T. R. ERICKSEN  
G. D. FEHLY

BY *G. D. Fehely*  
ATTORNEY

## UNITED STATES PATENT OFFICE

2,291,888

## FOLDING BOX

Toralf R. Ericksen and Glenn D. Fehely,  
Portland, Oreg.

Application April 24, 1939, Serial No. 269,680

3 Claims. (Cl. 217—15)

This invention relates generally to containers, and particularly to a folding box.

The main object of this invention is to construct a folding box especially adapted for use in conveying fruit from the orchard or field to the cannery, warehouse or packing shed.

The second object is to construct a box of the class described which will be light in weight, exceedingly durable and economical of space when not containing fruit.

The third object is to construct a knock-down box which will not only reduce the freight rates for return shipments but will also make it possible to hold approximately seven times as many empty boxes on a given vehicle as was previously the case.

The fourth object is to so construct the box that it can be set up or knocked down by an unskilled person in a very short space of time.

The fifth object is to so construct the box that although inferior grades of lumber may be employed, the portions of the box will not become inoperative due to breakage in view of the fact that all of the thinner working parts of the box are metal bound.

These and other objects are accomplished in the manner set forth in the following specification as illustrated in the accompanying drawing, in which:

Fig. 1 is a perspective view showing the box set up.

Fig. 2 is a perspective view showing the box knocked down.

Fig. 3 is an end elevation of the box.

Fig. 4 is a section taken along the line 4—4 in Fig. 3.

Fig. 5 is a section taken along the line 5—5 in Fig. 2.

Fig. 6 is a fragmentary section taken along the line 6—6 in Fig. 3.

Fig. 7 is a fragmentary perspective showing a spring hinge.

Fig. 8 is a fragmentary section taken along the line 8—8 in Fig. 1.

Fig. 9 is a fragmentary elevation showing a modified form of the device.

Similar numerals refer to similar parts throughout the several views.

Referring in detail to the drawing, there is shown a bottom 10 which is made of a thin strong wood and supported at its ends by the cleats 11 to which the bottom 10 is riveted. At each end of the bottom 10 is disposed a box end 12 which is preferably of a somewhat heavier material than is the bottom 10.

Each box end 12 has secured thereto the upright corner angles 13 by means of the rivets 14. Each angle 13 has a side 15 which extends parallel with and along the lateral edge 16 of the bottom 10.

Each cleat 11 is provided with a channel 17 in which is pivotally disposed a rod 18 whose out-turned ends 19 are provided with an inturned portion 20 which passes through the side 15 into the box end 12 thereby forming an offset hinge for the lower end of the member 12 which will permit the lower edge of the end 12 to rest on the flat top of the bottom 10 as shown in Fig. 1 or to provide a space between the members 10 and 12 when in parallelism as shown in Fig. 2.

Each end 12 has its side 21 cut away as shown in Fig. 4 to receive the end 22 of the box sides 23. The end 22 is preferably sheathed with a light metal channel 24. Each side 23 is attached to its adjacent bottom edge 16 by means of the spring hinges 25, one side of which is provided with an eye 26 which is attached to the rivet 27 and the other side 28 is stapled to the side 23.

In each end 12 is formed a channel 29 adapted to slidably receive the rods 30 whose outwardly turned ends 31 are provided with the inturned ends 32 which pass through corresponding holes 32A in the side 15 and the holes 32B in the sheathing channel 24 and the side 23.

The cut-out portion 33 is used as a handhold and the ends 34 project into the cut-out portion 33. It follows that when the ends 34 are moved toward each other that the ends 31 will be moved apart, that is, out of engagement with the sheathed end of the side 23.

It is desirable to cover the members 34 with a suitable plate 35 and to urge the members 34 apart by means of the springs 36.

In this form of the device, the operation is as follows:

When it is desired to open the box for use, it being in the condition shown in Fig. 2, it is only necessary to move the ends 34 in each box end 12 toward each other. This causes the inturned ends 32 to disengage the bottom 10 and to permit the ends 12 and the sides 23 to move to the position shown in Fig. 1. If the ends 34 are then released and permitted to separate, the inturned ends 32 will engage the holes 32A and 32B thereby locking the members rigidly into a set-up position.

In the form of the device shown in Fig. 9, the ends 37 of the bottom 38 are sheathed by means of the channels 39. In this form of the device the rod 18A journals in the channel 17A which

is formed transversely across the bottom 38. The upper edge 40 of the end 12A is raised above the edge 41 of the side 23A to provide the desired air space.

The purpose of this modified construction is to provide smooth bottoms for the boxes in order to better adapt them for use on conveyors.

We are aware that folding boxes have been constructed in the past and it is not our intention to cover such devices broadly, but we do intend to cover all such forms and modifications thereof which fall fairly within the appended claims.

We claim:

1. A folding box having in combination a flat topped bottom having inwardly foldable sides and ends, the ends having channels to receive the sides, the ends having horizontally slidable latching rods mounted therein each of which has an outwardly turned end, the end of which is intumed, said sides having holes formed therein to receive said intumed ends when the box sides occupy the channels in the box ends and means for urging the intumed ends toward each other.

2. In a box of the class described, the combination of a flat topped bottom having a pair of opposite sides attached thereto by means of spring hinges adapted to urge said sides toward an upright position or permit same to be folded downwardly against the box bottom, a pair of box ends associated with said bottom having upright channels formed therein to receive the op-

posite ends of the sides, said box ends having dual axis hinges consisting of a rod journalling in said bottom, said rod having outturned ends terminating in intumed portions pivotally connected to the box end whereby a hinging action may take place on either axis of the hinge in a manner to permit the box end to rest upon the box bottom when in an open position or to receive the box sides between the box end and box bottom in a closed position, and spring latches between said box ends and sides whereby said members may be latched in open or closed positions.

3. A folding box of the class described including a flat bottom having end members disposed at opposite ends thereof, said end members having upright channels formed at the corners of the box, side members disposed between said ends and adapted to occupy said channels when the box is in an open position, spring hinges between said sides and bottom normally urging the sides to an open position, spring latches on said ends comprising hooks having intumed ends for engaging holes in said sides when in an open position or for engaging the under side of the bottom in a closed position, and offset hinges for said ends having dual axes, one of which journals in the box bottom and the other of which journals in the box end.

TORALF R. ERICKSEN.  
GLENN D. FEHELY.