T. M. BYARS.

COLLAPSIBLE EGG AND FRUIT CASE.

APPLICATION FILED MAR. 24, 1919.

1,320,312.

Patented Oct. 28, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

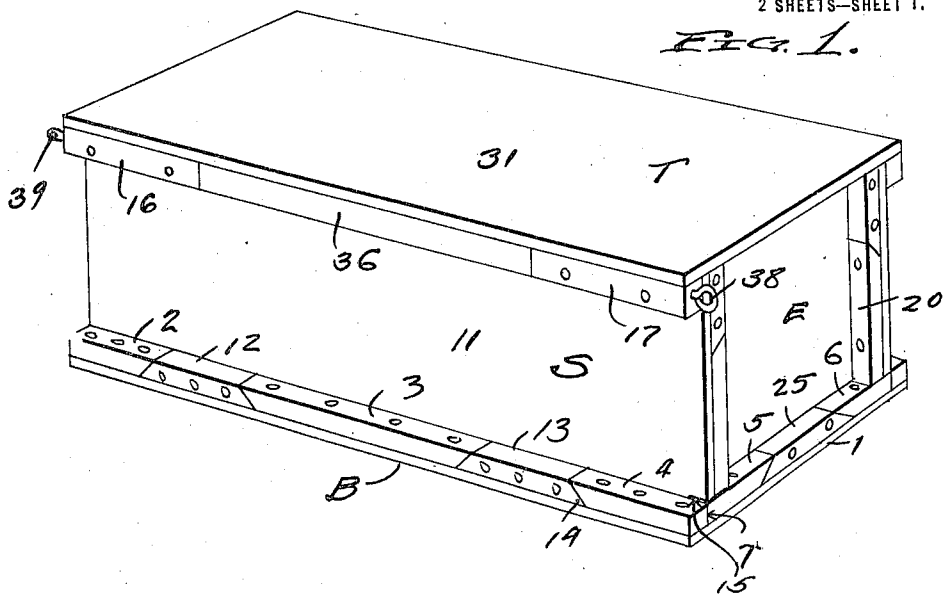


Fig. 2.

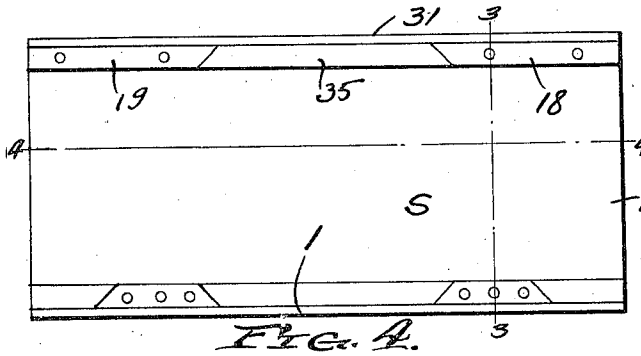


Fig. 3.

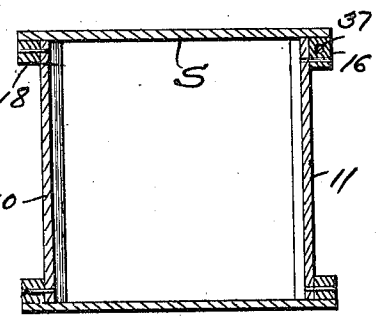


Fig. 4.

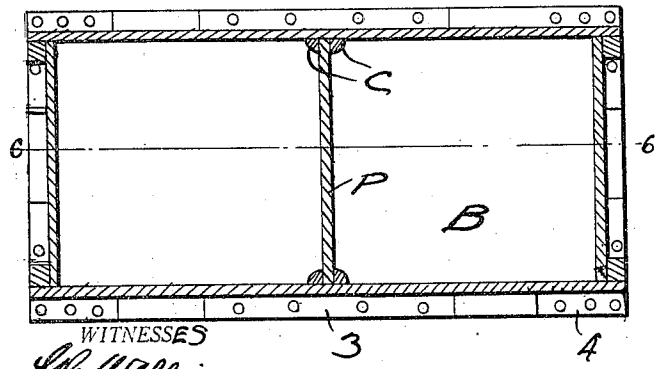
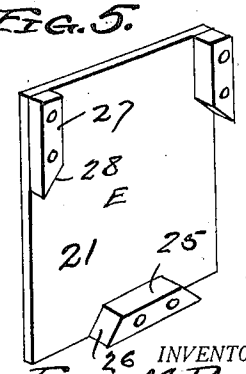


Fig. 5.



WITNESSES

H. E. Walling

N. L. Coblamer.

INVENTOR.

Travis M. Byars

BY

Richard Gleason.

ATTORNEY.

T. M. BYARS.

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2 SHEETS—SHEET 2.

Fig. 6.

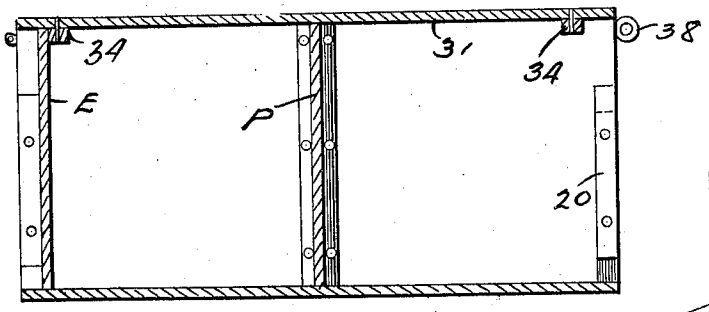


Fig. 7.

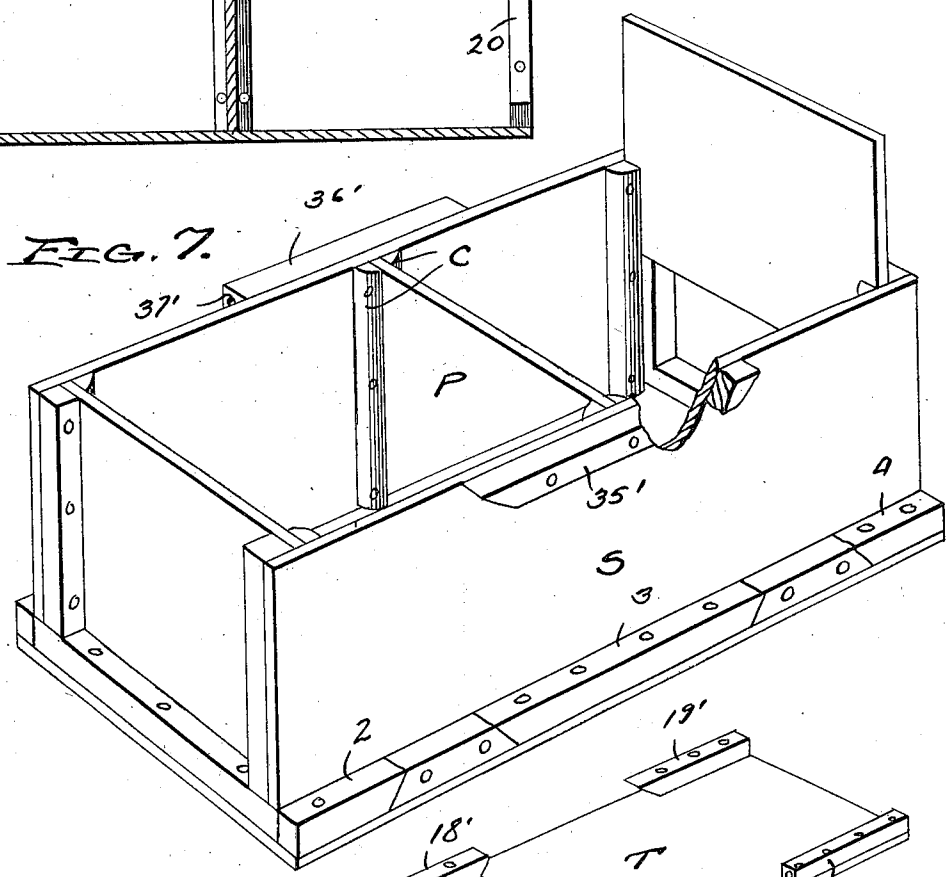


Fig. 8.

WITNESSES

G. Walling

N. L. Coldamer.

INVENTOR.

Travis M. Byars

BY

Richardson

ATTORNEY.

UNITED STATES PATENT OFFICE.

TRAVIS M. BYARS, OF BLOUNT SPRINGS, ALABAMA.

COLLAPSIBLE EGG AND FRUIT CASE.

1,320,312. Specification of Letters Patent. Patented Oct. 28, 1919.

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To all whom it may concern:

Be it known that I, TRAVIS M. BYARS, a citizen of the United States, residing at Blount Springs, in the county of Blount and State of Alabama, have invented certain new and useful Improvements in Collapsible Egg and Fruit Cases, of which the following is a specification.

This invention relates to wooden receptacles, and more especially to those which knock down or collapse; and the object of the same is to produce a shipping box or crate for eggs, fruit, vegetables and the like which may be sent loaded to its destination, and returned in small compass and in knocked down condition.

While I speak of the device as a wooden receptacle or box, it is obvious that it could be made of other materials. While I have shown its several elements as solid, it is obvious that they could be slatted or perforated, as they should be if the articles being transported need ventilation. I will describe a partition which may be used to divide the interior into two compartments, and obviously it is quite possible that this idea could be elaborated and the entire interior divided into cells or smaller compartments.

The primary feature of the invention is a novel form of connection between the upright panels and the bottom, between the ends and sides, and finally between the top and sides, the last-named connection permitting the box to be locked in closed condition.

One object of the invention is to provide ready means whereby the several elements can be connected and disconnected, and yet whereby they are relatively braced when connected.

Another object is the production of a box which when collapsed can be quickly set up element by element, and which when so set up will retain its form while it is being packed and, therefore, before the cover has been put on.

Another object of the invention is to utilize the same form of connection at one edge of the cover and between it and one side, and a slightly different form of connection between the other edge of the cover and the remaining side, to adapt the device to be locked.

Other objects and details are set forth in the following specification and claims.

In the drawings—

Figure 1 is a perspective view of this improved box set up and closed, the same being viewed from what might be called the front side.

Fig. 2 is a side elevation taken from the rear side,

Fig. 3 is a vertical section on the line 3—3 of Fig 2, and

Fig. 4 a horizontal section on the line 4—4 of Fig. 2.

Fig. 5 is a perspective detail of one end.

Fig. 6 is a vertical longitudinal section taken on about the line 6—6 of Fig. 4.

Fig. 7 is a perspective view of a slightly modified and in fact a slightly simpler type of this invention, with its parts set up but its cover omitted.

Fig. 8 is a perspective view of the cover of this type, taken on a smaller scale.

For distinguishing purposes rather than for reference purposes I have employed throughout the drawings the letters S to designate the sides, E the ends, B the bottom and T the top, and P a partition which may sometimes be employed, whose ends are disposed between ordinary cleats C secured to the inner faces of the sides. With the exception of said partition and the ordinary cleats, each element is made up of a body member or panel which may be of wood, compo board, metal or other material, perforated or slatted and needing no further description, and the additional elements described below. The materials and proportion of parts are not essential, but when made of the relative sizes illustrated the device becomes a shipping crate or box which is extremely useful for eggs, fruits and vegetables.

The bottom B has a body panel 1 which is slightly longer and slightly wider than the interior of the box as is perhaps best seen in Figs. 1 and 4. Upon and along each side edge of this body are secured blocks 2, 3 and 4 which are spaced and undercut at their contiguous ends to produce two dove-tailed recesses. Upon and across the ends of the body panel are also secured two blocks 5 and 6 whose inner ends are spaced and undercut to produce similar dove-tailed recesses, and the outer ends of these blocks may abut the ends of the endmost blocks 2 and 4 as best seen at the point 7 in Fig. 1.

The front side panel has a body portion

11 which is as long as the bottom, and to permit its lower edge to pass down inside the blocks 2, 3 and 4, its ends are notched out as indicated at 15 so that they may pass over the end blocks as seen in Fig. 1. Secured upon and to the outer side of this body at its lower edge are dove-tailed blocks 12 and 13 whose extremities are flared as indicated at 14 to fit the undercut ends of the blocks 2, 3 and 4, the blocks 12 and 13 being of proper size to fill the recesses above referred to. It will be obvious that each side panel can be stood on edge within the bottom and then moved outward, its notch 15 sliding over the end block 5 and its blocks 12 and 13 entering the dove-tailed recesses described in the paragraph above. Along the upper edge of the front side panel 11 on its exterior are secured two blocks 16 and 17 which are flat or abrupt at their inner ends as seen, while the rear panel body 10 shown in Fig. 2 has blocks 18 and 19 with undercut ends along its upper edge, for a purpose to appear. Otherwise the sides S are duplicate. Also the modification in Fig. 7 yet to be described embodies sides of this construction excepting for slight differences which will be explained, but in the first six views each side panel has at each end an upright block 20 beveled off at its upper extremity for a purpose yet to appear.

Each end E has a body 21 of the same height as the side, of a width to fit between the sides when in place. To the outer face of this body across its lower edge is secured a block 25 having flaring extremities 26 to fit between the undercut blocks 5 and 6. To said outer face at the upper corners of the body are secured blocks 27 whose lower extremities 28 are shaped to fit the undercut upper extremities of the blocks 20 on the sides. The two ends of the construction shown in the first six views are duplicates of each other. As suggested above, cleats C, may be secured to the inner faces of the sides, and a partition P dropped down between them to subdivide the interior of the box. This is best seen in Figs. 4 and 6. No novelty is claimed for the partition itself or its removability, but it is obvious that when it is in place it prevents the sides from falling inward before the ends have been put in place.

The top T has a flat body 31 of equal size with the bottom so that when in place it overlies the upper edges of the sides and ends, as does the bottom. Along one edge of said body there is secured beneath it near its midlength a block 36 having flat or abrupt ends, this block being of a length to fill the space between the blocks 16 and 17 at the front of the box, as best seen in Fig. 1. I might here say that an appropriate fastening device for locking the cover consists of a pin or rod 37 which may be run through longitudinal holes in the three blocks 17, 36 and 16, the rod having a handle 38 at one end and an eye 39 at the other to hold a padlock or seal fastener. However, I do not wish to be limited to the closure fastener. Secured beneath the other edge of the cover body 31 is a dove-tailed block 35 whose downward flaring extremities are adapted to engage the undercut inner extremities of the blocks 18 and 19 on the body 10 of the rear side. Finally there is secured beneath the top body 31 and near each end thereof a transverse cleat 34 as shown in Fig. 6, its position being such that it stands just inside the upper edge of each end panel when the latter stands upright.

When setting up the box already described, the bottom B is laid flat, then each side S is brought into position and the blocks 12 and 13 moved out into the recesses between the blocks 2, 3 and 4 on the bottom; then each end panel E is brought into position between the two sides and its block 25 moved outward between the undercut blocks 5 and 6 on the bottom, while its blocks 27 are moved outward over the beveled upper ends of the blocks 20 on the sides, thus preventing the sides from falling outward so long as the end panels are in place; now the partition may be inserted if it is used, or the cells if a cellular filler is to be employed; next the box will be filled or packed; the top T is now applied, its block 35 drawn inward between the undercut ends of the blocks 18 and 19 at one side, and its other edge brought downward until its block 36 stands between the blocks 16 and 19, at which time the cleats 34 will stand just inside the upper edges of the ends E; and finally the fastener is applied, or as herein illustrated the rod 37 is run through the alined holes in the blocks 17, 26 and 16. Now the box or crate is shipped to its destination, where the fastener can be removed and the cover taken off to take out part or all of the contents. Eventually, the members of this device will be disconnected and the box collapsed and returned to the shipper, and manifestly it then occupies less space than in its set up condition.

I make use of Figs. 7 and 8 to show modifications which may be adopted to produce a simpler form of box which is built on the same principle.

I prefer to fasten the lower edges of the sides to the bottom by means already described, but instead of fastening its ends to the sides as hitherto explained, I here employ ordinary cleats and panels as shown. The means for connecting the cover to the sides is the same as described above, but reversed. That is to say, at the rear the sides contain a single dove-tailed block 35′ and the top a pair of blocks 18′ and 19′, whereas at the front the sides contain a single inter-

mediate block 36′ and the top a pair of blocks 16′ and 17′. These three blocks have alined holes 37′ for the pin fastener described above. In a word, the top T has four blocks instead of two, but the use of partition panels P avoids the necessity for cleats 34. Again I might suggest that the intermediate partition could be replaced by cellular structure or other packing for the contents, as described.

The foregoing description and the drawings have reference to what may be considered the preferred, or approved form of my invention. It is to be understood that I may make such changes in construction and arrangement and combination of parts, materials, dimensions, et cetera, as may prove expedient and fall within the scope of the appended claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. In a knock down box, the combination with a bottom, and blocks secured upon the same around its edge and spaced and undercut at their ends to produce dove-tailed recesses; of side and end panels fitting at their lower edges inside said block on the bottom, and blocks on the outer faces of said panels dove tailed to fit said recesses.

2. In a knock down box, the combination with a bottom, and blocks secured upon the same around its edge and spaced and undercut at their ends to produce dove-tailed recesses; of side and end panels fitting at their lower edges inside said blocks on the bottom, blocks on the outer faces of said panels dove tailed to fit said recesses, a top panel adapted to overlie the sides and ends, connections between one edge of this panel and one side, and separate connections between its other edge and one other side.

3. In a knock down box, the combination with a bottom, and blocks secured upon the same around its edge and spaced and undercut at their ends to produce dove-tailed recesses; of side and end panels fitting at their lower edges inside said blocks on the bottom, blocks on the outer faces of said panels dove tailed to fit said recesses, a top panel adapted to overlie the sides and ends, blocks on one side and under one edge of the top forming a dove-tailed connection between these elements, blocks on the other side and under the other edge of the top adapted to aline when said top is in place, and fastening means for holding these blocks in alinement.

4. In a knock down box, the combination with a bottom, sides detachably secured at their lower edges thereto, upright blocks secured to the inner faces of the sides at their ends and having their upper extremities undercut, and a top; of ends adapted to stand between the sides, and blocks on the outer faces of said ends dove-tailed at their lower extremities to engage the upper extremities of the blocks on the sides, as described.

5. In a knock down box, the combination with a bottom, sides detachably secured at their lower edges thereto, upright blocks secured to the inner faces of the sides at their ends and having their upper extremities undercut, and a top; of ends adapted to stand between the sides, a dove-tailed connection between each end and the bottom, and blocks on the outer faces of said ends dove-tailed at their lower extremities to engage the upper extremities of the blocks on the sides, as described.

In testimony whereof I affix my signature in presence of two witnesses.

TRAVIS M. BYARS.

Witnesses:
A. H. SINCLAIR,
JOHN H. GAMBLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."