H. D. BOKOP.

CRATE.

APPLICATION FILED AUG. 20, 1912.

1,068,038.

Patented July 22, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

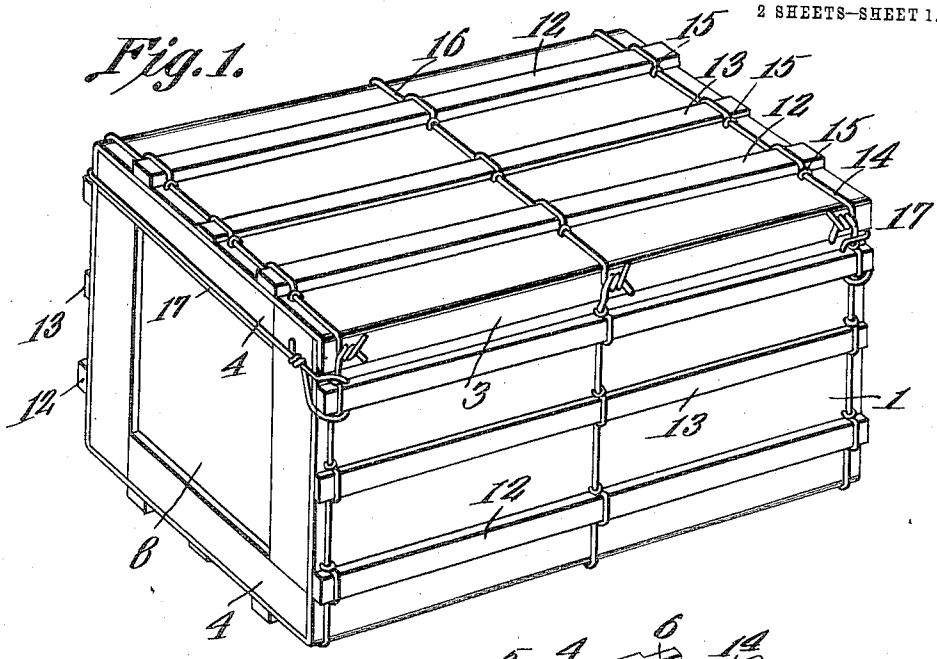
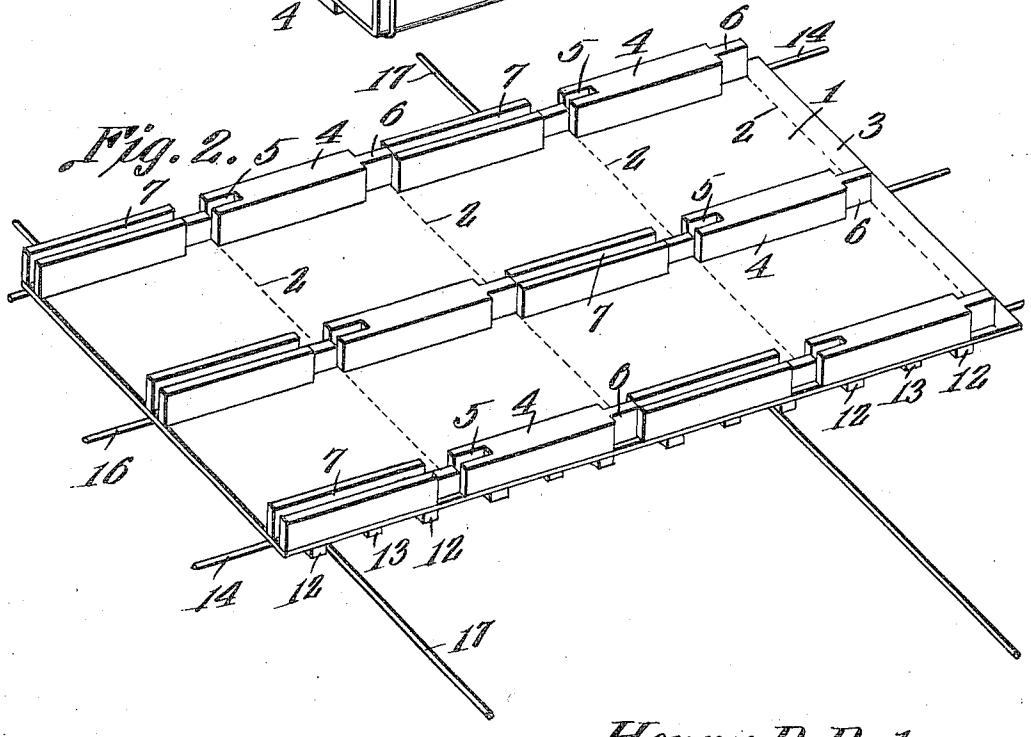


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

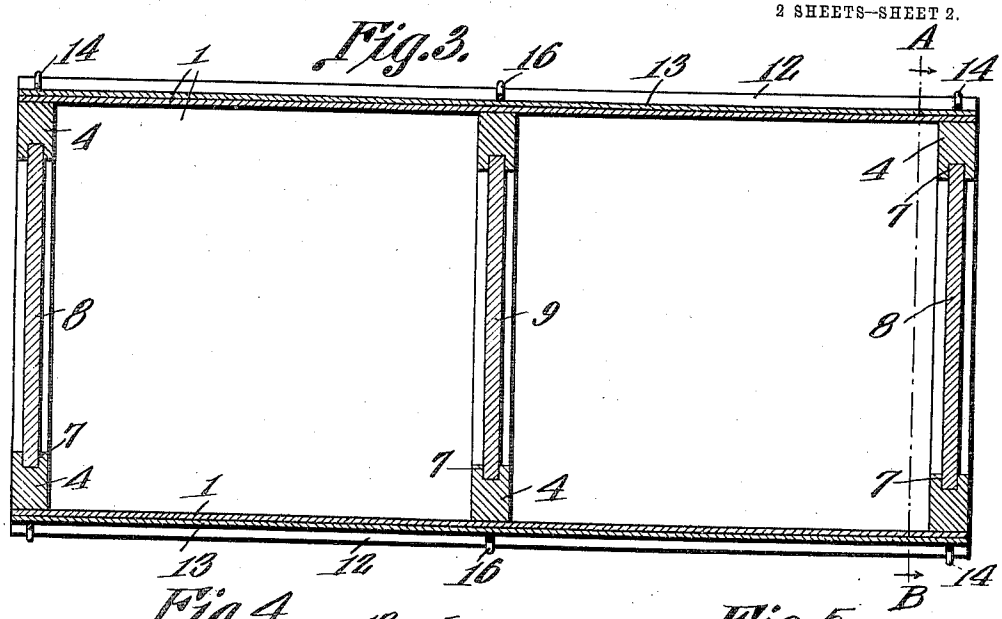


Fig. 4.

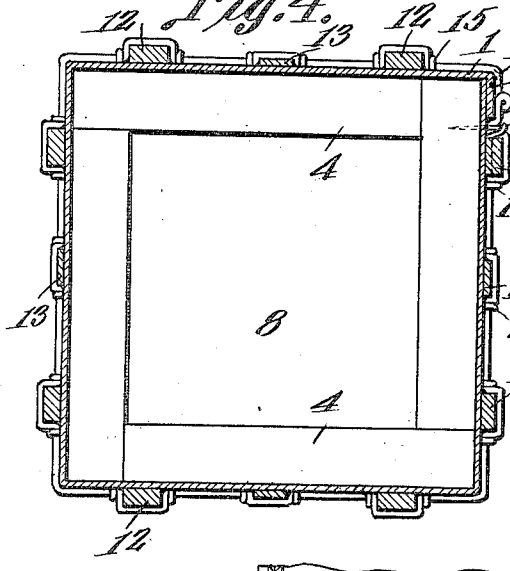


Fig. 5.

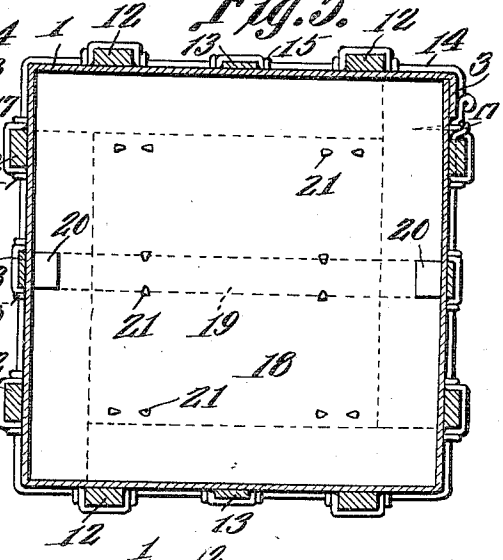
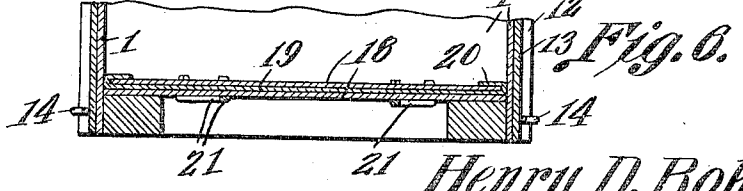


Fig. 6.



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UNITED STATES PATENT OFFICE.

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CRATE.

1,068,038. Specification of Letters Patent. Patented July 22, 1913.

Application filed August 20, 1912. Serial No. 716,089.

To all whom it may concern:

Be it known that I, HENRY D. BOKOP, a citizen of the United States, residing at Defiance, in the county of Defiance and State of Ohio, have invented a new and useful Crate, of which the following is a specification.

This invention relates to crates particularly designed for use as a holder for eggs, oranges, and the like, one of the objects of the invention being to provide a crate which can be readily knocked down and which will lie flat so as to occupy the minimum amount of space while being stored or shipped.

A further object is to provide a crate made up of a combination of wood, fiber or paper, and wires by means of which a light but strong crate is produced and it becomes possible to fasten the crate, while set up, without necessitating the use of nails or the like.

Another object is to provide improved means for holding the end and intermediate panels of the crate in position without the use of special fastening devices.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a perspective view of the crate set up for use. Fig. 2 is a perspective view of the body portion of the crate flattened out or knocked down. Fig. 3 is a horizontal section through the crate. Fig. 4 is a section on line A—B Fig. 3. Fig. 5 is a transverse section similar to Fig. 4 and showing a modified form of end panel. Fig. 6 is a transverse section through said end panel and adjacent parts.

Referring to the figures by characters of reference 1 designates a continuous strip of fiber, heavy paper or the like adapted to be folded along the dotted lines 2 shown in Fig. 2 so as to form the top, bottom, front and back walls of the box and also to form a flap 3. Secured along the side edges of the strip 1 are cleats 4 each of which has a slot 5 extending into one end thereof and a tongue 6 projecting from its other end, the length of each cleat, including its tongue, being equal to the distance between any two adjoining lines 2. The parts are so proportioned, however, that when the strip 1 is folded along the lines 2, the tongues 6 will assume positions within the slots 5 and the four cleats 4 will thus form a rectangular frame. An additional set of similar cleats may be located along the center of the strip 1 or at any other desired point. Alternate cleats of each set are provided with grooves 7, these grooves being adapted, when the crate is set up for use, to receive the front and rear edge portions of panels 8 constituting the ends of the crate. Also, if desired, a central panel 9 may be inserted into the grooves formed in the intermediate or central cleats, as shown in Fig. 3.

Secured to that face of the strip 1 opposite to that face on which the cleats 4 are mounted, are wooden slats 12, two of these slats being preferably provided for each division of the strip excepting the flap 3. Interposed between the slats 12 is a metal strip or slat 13. These slats 12 and 13 extend throughout the width of the strip 1 and may be attached thereto by means of nails or the like extending through them, through the strip 1, and into the cleats 4. Tie wires 14 extend along the edge portions of the strip 1 and are looped over the end portions of the slats 12 and 13, these wires being held to the slats and to the strip 1 by means of staples 15 which enter the cleats 4. Another tie wire 16 may be extended along the center of the strip 1 and secured in a similar manner to the central cleats 4 and to the slats 12 and 13. The ends of the wires 14 and 16 are free and are adapted, when the crate is set up for use, to be twisted together so as to thus hold the crate with its parts in proper position.

Retaining wires 17 may be secured to one of the slats of the division of strip 1 constituting the back of the crate and are for the purpose hereinafter set forth.

It is to be understood that when the crate is not in use, the ends of the wires 14 and 16 are disconnected and the strip 1 can thus lie flat, as shown in Fig. 2. In order to set up the crate for use, the strip 1 is folded along the dotted lines 2 so as to cause the cleats 4

to form rectangular frames. The panels 8 and 9 are then inserted into the grooves 7 and the parts are held in this position by bringing the wires 17 across the outer end of the crate and attaching them to one of the slats 12 of that division of the crate 1 constituting the front wall of the crate. This arrangement of the wires 17 has been illustrated in Fig. 1. It will be apparent that when the wires 17 are thus in use, the front and back walls of the crate will be held tightly in engagement with the panels 8 and 9 and the top of the crate can thus be lifted or swung upwardly so as to permit the crate to be filled. After the crate has been filled, the top thereof is lowered onto the front wall of the crate so that the flap 3 will lap the front face of the front wall, as shown in Fig. 1. The ends of wires 14 are then twisted together and the ends of the wires 16 are similarly fastened. Thus the crate will be securely fastened in closed position without the necessity of using nails or other like fastening devices. To open the crate it is merely necessary to untwist the wires 14 and 16 and swing the top of the crate upwardly. By then unfastening the wires 17 from the front of the crate the entire crate can be knocked down and stored in a small space.

Instead of using wooden panels for the purpose of closing the ends of the crate, panels made up of paper or the like, can be employed. As shown in Figs. 5 and 6, each of these modified forms of panels consists of two layers of paper or board, such as indicated at 18, there being flat metal strips 19 interposed between said layers and having their ends folded back onto one of the layers as shown at 20. Staples 21 are then extended through the layers 18 and these staples straddle the reinforcing strip 19. Any desired number of staples may be used for holding the strips 19 together and these staples can be located wherever desired.

In the modified structure shown in Figs. 5 and 6, the end panels bear against the inner sides of the cleats 4 and do not extend into grooves such as shown at 7 in Figs. 2 and 3.

It is to be understood that the various parts of the device can be formed of any suitable material such as paper, metal, wood, fiber, etc. Furthermore instead of forming the strip 1 in a single piece, it can be made up of several pieces joined together where the folds or bends are to be made, these connected portions, however, forming a continuous strip.

What is claimed is:—

A knock-down crate including a single strip of flexible material adapted to be folded transversely to form front, back, top and bottom panels, cleats secured to the side portions of the strip upon one face thereof, each of said cleats having a tongue extending from one end and a recess in its other end, said tongues being adapted to project into the recesses when the strip is folded, alternate strips being formed with longitudinal grooves, end panels removably mounted within said grooves, slats secured transversely of the strip and along the outer sides thereof, said slats being fastened to the cleats, tie wires extending longitudinally of the strip and bridging the end portions of the slats, means engaging the tie wires and the cleats for binding the wires partly around the slats, retaining wires secured to one of the slats upon the back of the crate, said wires detachably engaging one of the slats upon the front of the crate and constituting means for holding the front and back of the crate against the end panels.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

HENRY D. BOKOP.

Witnesses:
CHAS. R. GOLLER,
E. W. COSTELLO.