May 19, 1936. J. R. WHEELING 2,041,582

COLLAPSIBLE CRATE

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Fig. 1.

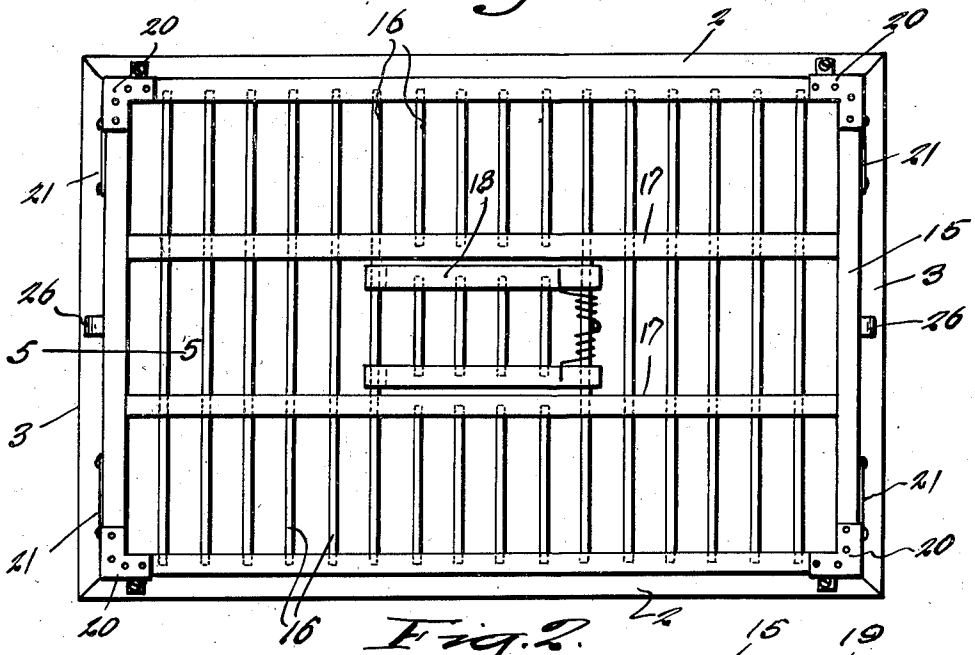


Fig. 2.

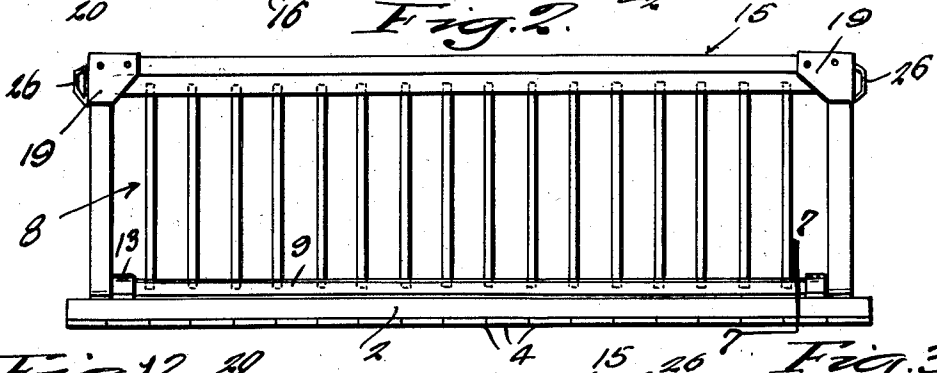


Fig. 12.

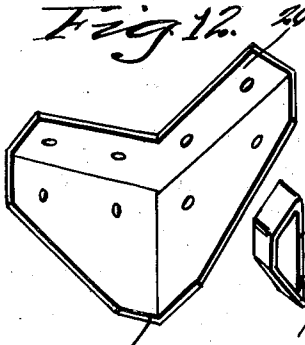


Fig. 3.

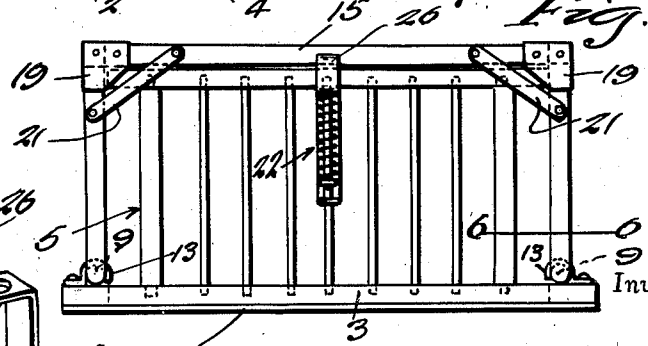


Fig. 11

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Fig. 4

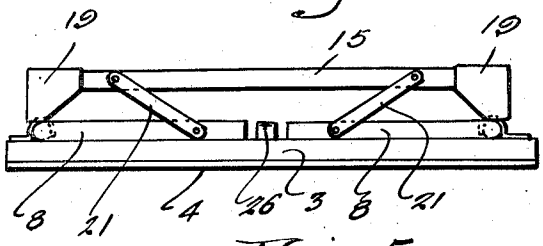


Fig. 6

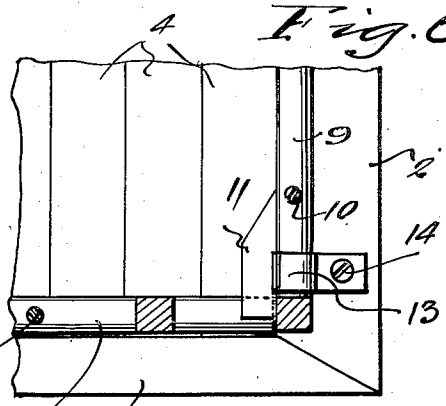


Fig. 5.

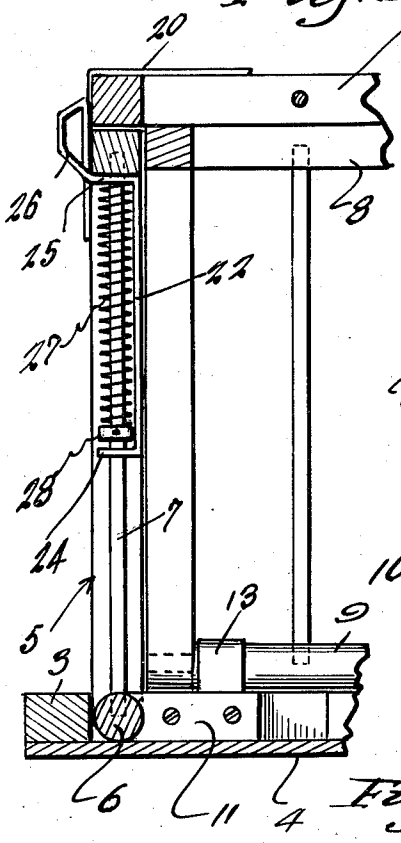


Fig. 7.

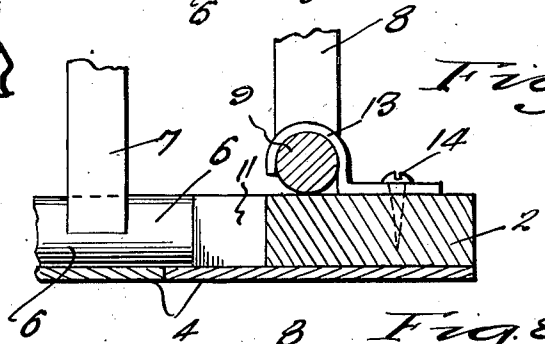


Fig. 8.

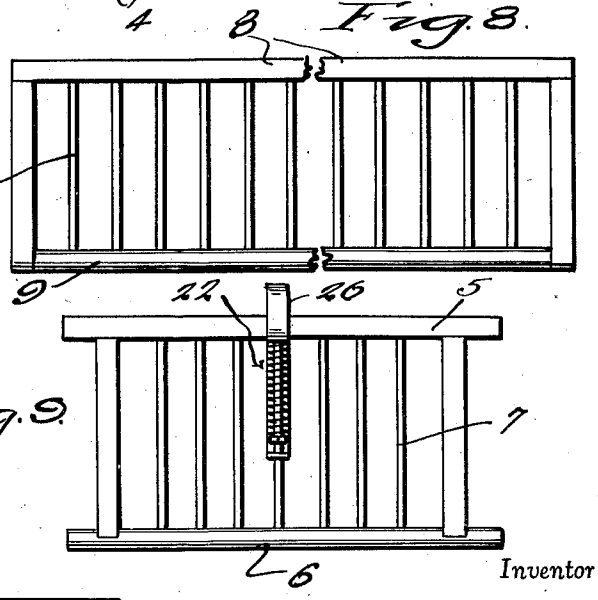
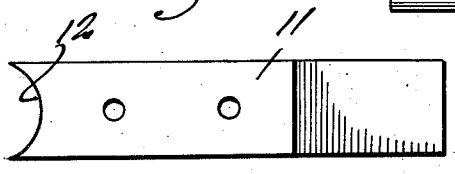


Fig. 9.

Fig. 10.



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UNITED STATES PATENT OFFICE

2,041,582

COLLAPSIBLE CRATE

John Robert Wheeling, Radford, Va.

Application December 18, 1934, Serial No. 758,074

2 Claims. (Cl. 217—47)

This invention relates to crates and more particularly to that type of crate known as the collapsible crate and generally used for the conveying of poultry, eggs and the like; the crate being easily foldable, when not in use for storage or return shipment.

An object of the invention is to provide a crate of the character suggested having novel means of self locking the several parts in operative position so that the crate when set up will be rigid and secure for shipment.

The invention together with its objects and adventages will be best understood from a study of the following description taken in connection with the accompanying drawings wherein:

Figure 1 is a top plan view of crate embodying the features of the present invention.

Figure 2 is a side elevational view of the crate.

Figure 3 is an end view thereof.

Figure 4 is an end view of the crate when in folded position.

Figure 5 is a detail sectional view taken substantially on the line 5—5 of Figure 1.

Figure 6 is a detail view taken substantially on the line 6—6 of Figure 3.

Figure 7 is a detail view taken substantially on the line 7—7 of Figure 2.

Figure 8 is an elevational view of one of the side members.

Figure 9 is an end elevational view of one of the end members.

Figure 10 is an edge elevational view of a hinge block.

Figure 11 is a perspective view of a latch member.

Figure 12 is a perspective view of a corner piece.

Referring to the drawings by reference numerals it will be seen that the crate comprises a bottom consisting of a frame having sides 2 and end members 3; and a flooring consisting of slats 4 which extend between and are secured to the side members 2 of the frame.

The end walls of the crate are indicated by the reference numeral 5 and as clearly shown in Figure 9 consist of a frame having an upper member, end members and a bottom member 6 the latter being round or cylindrical as shown. A plurality of rounds 7 extend between the top and bottom members of the frame as illustrated.

The side members of the frame are indicated by the reference numeral 8 and also consist of a frame having a round or cylindrical bottom member 9 and a series of rounds 10 extending between and connected with the top member of the frame and the lower member 9 as shown in Figure 8.

Mounted within the confines of the bottom frame at the corners thereof are hinge blocks 11 spaced from the ends 3 of the bottom frame and provided with semi-circular notches 12 to accommodate the round or bottom members 6 of the end sections or walls 5.

The side members 8 of the crate are supported by or rest on the blocks 11 and the lower members or rounds 9 of the side members 8 operate in bearing clips 13 that are secured to the tops of the blocks 11 as at 14 and as shown in Figure 7.

From the above it will be seen that the end members 7 are pivotally connected or hingedly secured to the bottom of the crate so as to fold or swing inwardly toward one another within the confines of the frame of the bottom while the side members 8 are mounted to swing inwardly toward one another and upon the inwardly folded end members 5.

The top or lid of the crate is indicated generally by the reference numeral 15 and comprises a substantially rectangular frame between the sides of which extend rounds 16 while brace bars 17 extend between the ends of the frame and are suitably apertured to accommodate the rounds 16. Also provided in any suitable manner within the top 15 of the crate is a suitable door 18 through which access may be had to the interior of the crate.

The top 15 is provided at each corner thereof with an angle plate 19 the flanges of which at their upper edges are formed with an integral attaching flange 20 that is secured to the top faces of the sides and ends of the frame of the top 15 by nails or other suitable fastening means. The side flanges of the plates 19 are also secured by nails or other suitable fastening elements to the side faces of the sides and ends of the frame of the top member 15. The flanges of the corner plates 19 form abutments against which the side members 8 and end members 5 abut when disposed vertically or perpendicular to the bottom 2 as will be clear from a study of Figures 2 and 3. At opposite ends of the frame links 21 are pivoted at one end to the end members of the top 15 and at their respective opposite ends are pivoted to the ends of the side members 8 as best shown in Figures 1 and 3. It will be seen that when the side members 8 are folded inwardly on top of the end members 5 the top member 15 will be caused to move downwardly into the folded position shown in Figure 4, in which figure the crate is shown in completely folded position.

Each end member 5 has associated with an intermediate dowel or round 7 a latch or keeper member indicated generally by the reference numeral 22.

The member 22 is best shown in Figure 11 and is formed of strap metal to provide a flat elongated plate like body 23 bent at right angles at one end and apertured to provide a lug 24, while intermediate its ends the strap is bent in the same direction as the lug 24 and apertured to provide in alignment with the lug 24 a second lug 25. The free end of the strap is bent upwardly at an obtuse angle to the lug 25 and reversely bent to provide a loop like head 26. The apertured lugs 24, 25 receive the intermediate round 7 as best shown in Figure 5 and disposed about the round 7 between the lugs 24 and 25 is a coil spring 27 the upper end of which bears against the lug 25 and the lower end of which bears against a collar 28 secured by a pin or otherwise to the round 7 above the lug 24. The head 26 is disposed to the outer sides of its associated end member 5 and under action of spring 27 the latch is projected upwardly so that the head 26 engages an adjacent end of the top member 15 in the manner clearly shown in Figure 5 to retain the end member 5 in vertical or perpendicular position against accidental collapse.

When it is desired to collapse the crate the latch members 22 are forced downwardly against the action of springs 27 to move the heads 26 of the latch members out of engagement with the top 15 when the end members 5 are then folded inwardly and down onto the bottom of the crate. Next the sides 8 are folded inwardly over the end members 5 and as these side members fold inwardly the top member 15 moves downwardly so that when fully collapsed the crate will appear as illustrated in Figure 4. To set up or unfold the crate a pull in a perpendicular direction and upwardly on the top member 5 results in a swinging of the side members 8 upwardly to a vertical position with the upper corners of the members 8 engaging the flanges on one side of the corner plates 19. The end members 5 are then manually swung upwardly, and when swinging into position the heads 26 of the latch members in passing under the end members of the top 15 are depressed against the action of springs 27 permitting the end members 5 to swing to the vertical or perpendicular position. After the heads 26 of the latch members have cleared the ends of the top member 15 the latch members are projected upwardly under action of springs 27 so that the heads 26 will engage the ends of the top 15 at the outer side of the crate in the manner shown in Figure 5 to secure the end members 5 in position. Thus it will be apparent that when in unfolded or set up position, the crate will present a rigid and efficient structure for the housing of poultry or the like.

In this connection it will be noted that by forming the latch heads 26 in the form of loops the fingers of the operator may be readily engaged with said heads for depressing the latch members against the action of springs 27 to facilitate the collapsing of the crate.

Having thus described the invention, what is claimed as new is:

1. In a collapsible crate, a bottom including side and end frame members, cleats secured to the bottom within the confines of the frame and having end portions spaced from the end frame members and provided with semi-circular notches, end sections having bottom rounds resting on the bottom section and confined between the end frame members and the notched ends of said cleats, and side sections hinged to said cleats to fold inwardly and down upon the end sections.

2. In a collapsible crate having bottom, side, end and top members connected together, said end members including upper and lower rails and rounds connecting said rails; and a latch member carried by each end member, said latch including a flat elongated plate like body having apertured laterally projecting portions through which one of the rounds of the end member extends, and also having a head integral with one of said laterally projected portions adapted to be projected into engagement with the adjacent end of the top of the crate, and a spring device engaged with said round and said one laterally projecting portion of the plate like body for normally urging the latch member into projected position.

JOHN ROBERT WHEELING.