Jan. 1, 1929. 1,697,379

F. L. ARDUSER

COLLAPSIBLE CRATE

Filed April 18, 1927 3 Sheets-Sheet 1

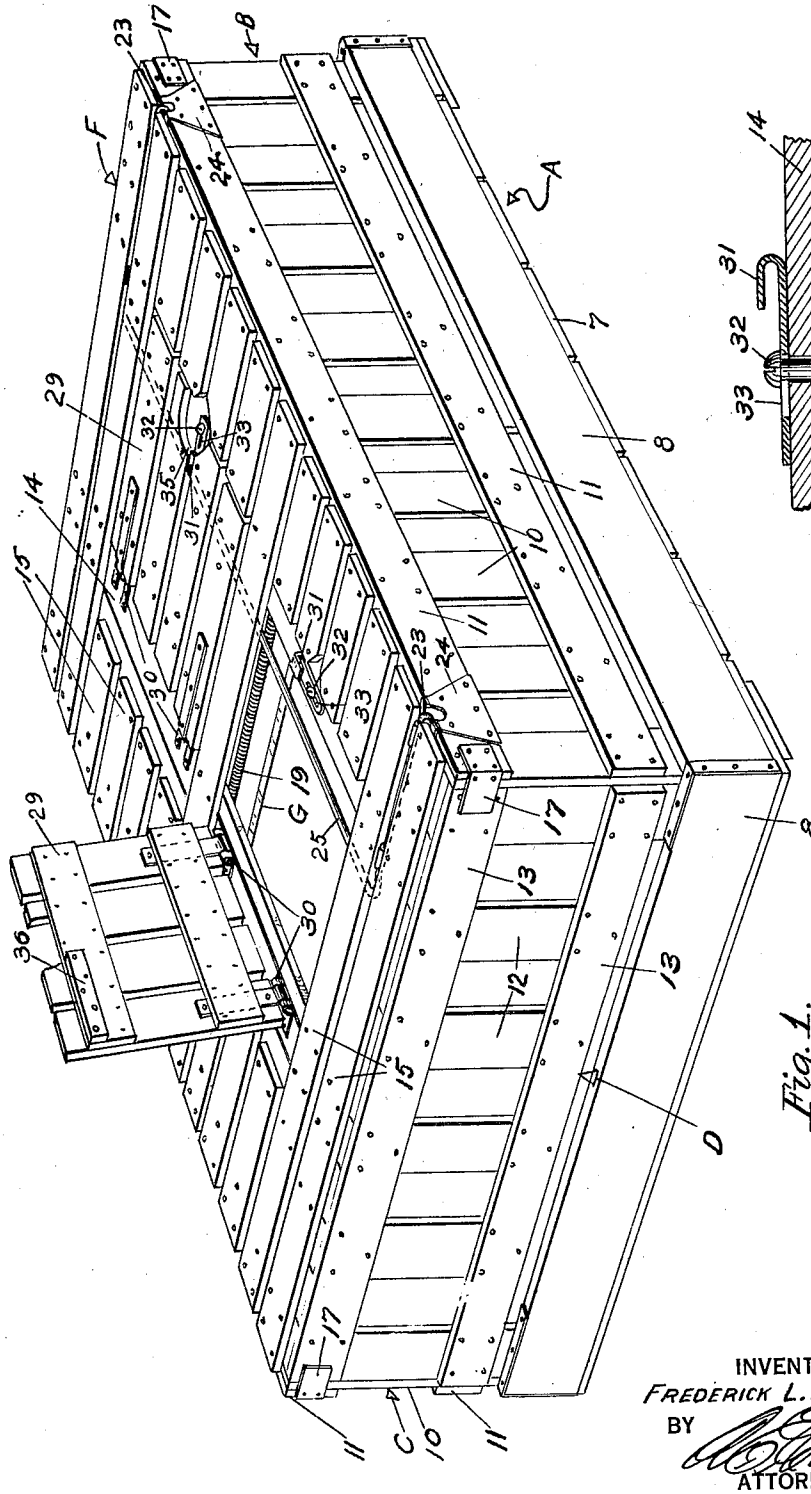


Fig. 1.

Fig. 2.

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Fig. 2.

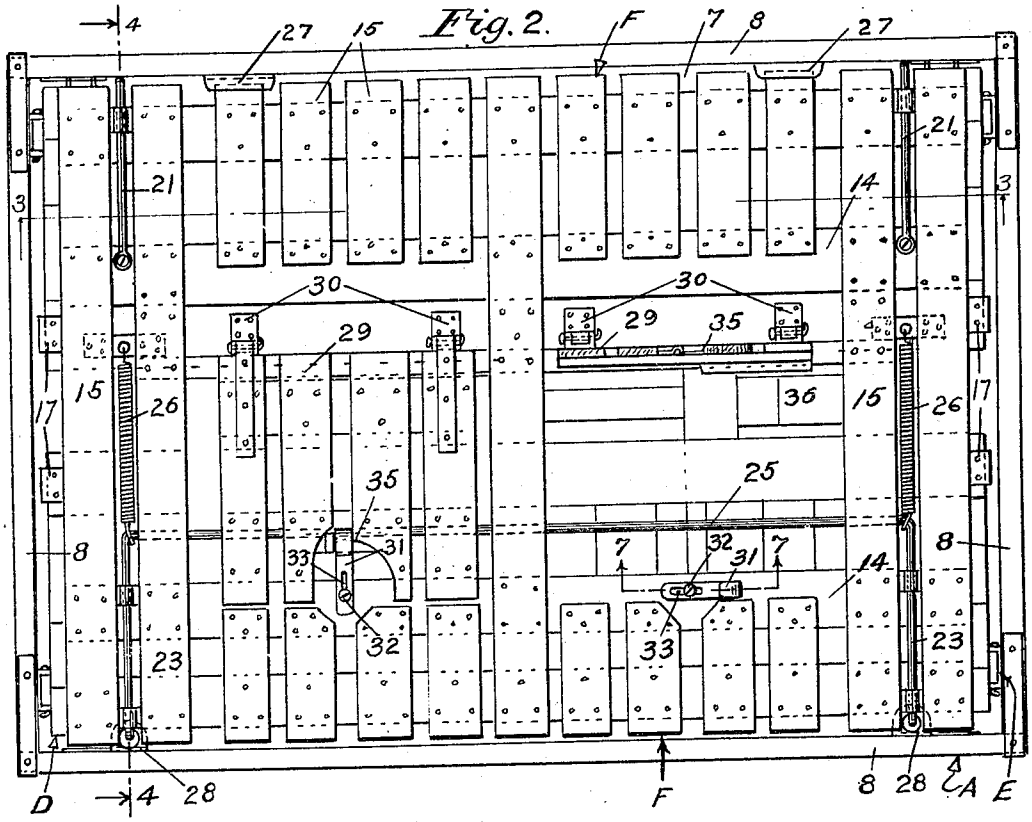


Fig. 3.

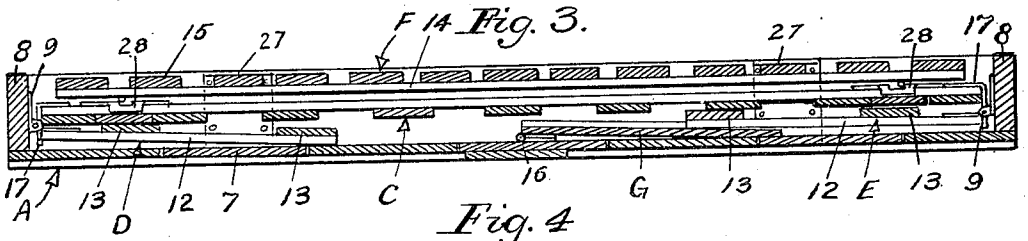
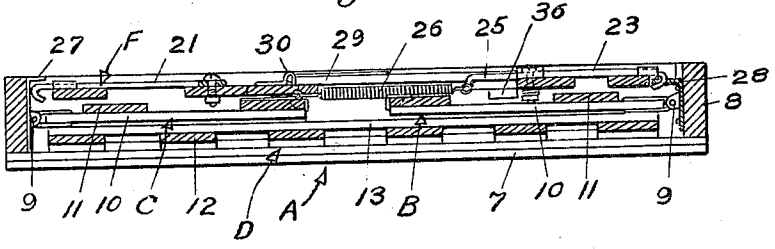


Fig. 4



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Fig. 5

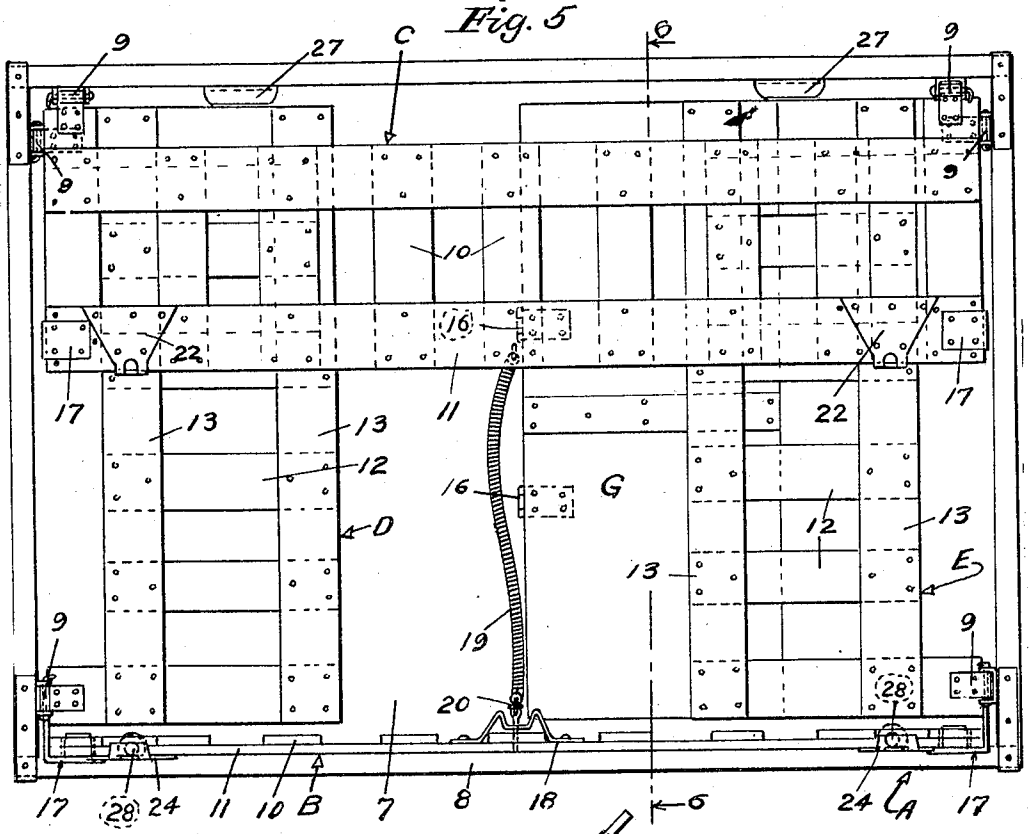
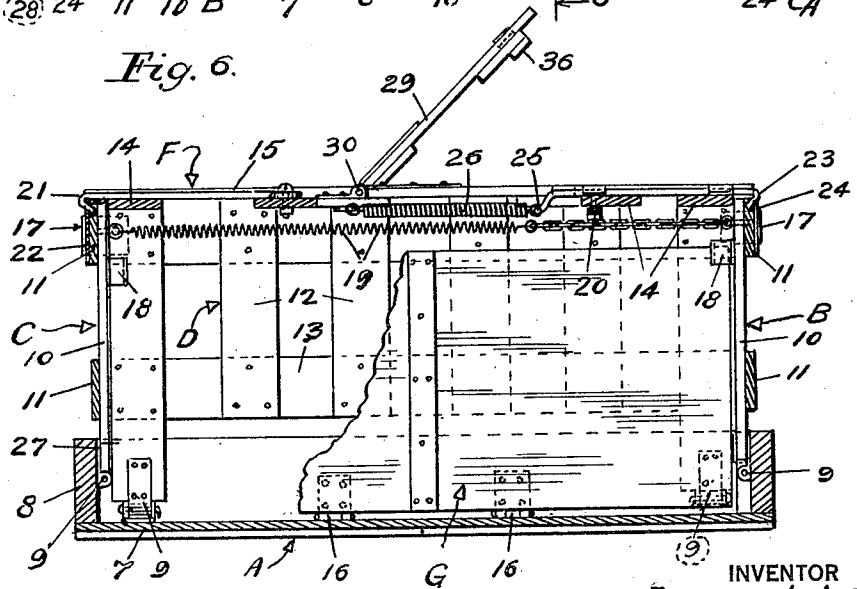


Fig. 6.



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UNITED STATES PATENT OFFICE.

FREDERICK L. ARDUSER, OF MINNEAPOLIS, MINNESOTA.

COLLAPSIBLE CRATE.

Application filed April 18, 1927. Serial No. 184,777.

This invention relates to collapsible carriers, of the type particularly adapted for use in shipping poultry or other animals, and the primary object is to provide a simple, practical and efficient crate in which side and end sections are hingedly secured to a shallow base, so as to be foldable thereinto, and in which a cover section has means whereby it may be detachably secured, either to the vertical sections when the crate is set up, or to the base section when the crate is collapsed so as to lock all the parts in a closely nested condition. Further and more specific objects will be disclosed in the course of the following specification, reference being had to the accompanying drawings, wherein:

Fig. 1 is a perspective view of the crate, in its set up position, and showing one of the handhole doors open.

Fig. 2 is a top view of the crate when in its collapsed condition.

Fig. 3 is a sectional view on the line 3—3 in Fig. 2.

Fig. 4 is a section on the line 4—4 in Fig. 2.

Fig. 5 is a top or plan view of the crate in a partly collapsed condition and with the cover removed.

Fig. 6 is a sectional view of the crate, about as on the line 6—6 in Fig. 5, but showing the complete crate in its set up position and with a portion of the center partition broken away for purpose of illustration.

Fig. 7 is an enlarged detail section on the line 7—7 in Fig. 2.

The crate consists, in the main, of a shallow base A, having a bottom 7 and an upstanding rim 8, a pair of side sections B and C, a pair of end sections D and E, and a cover section F. The end and side sections are hingedly secured to the base, as at 9, so as to be foldable thereinto when the crate is collapsed, and the cover section is arranged and constructed so that it may be secured either to the vertical sections, when the crate is set up, or to the base, when the crate is collapsed.

The side sections B and C consist of vertical slats 10 and horizontal slats 11. The end sections D and E consist of vertical slats 12 and horizontal slats 13; and the cover section F consists primarily of longitudinal slats 14 and transverse slats 15. Suitably secured, as by hinges 16, to the base A, is a central partition member G for dividing the crate into two compartments.

As indicated in Figs. 3, 4 and 5, the sections G, D and E are first folded down upon the base. The side sections B and C are then folded down, and then the cover F is secured in place. When the crate is to be set up the cover is first removed. The side sections are then raised to vertical positions, after which the end and partition sections are raised into place. The end sections each stop against a pair of brackets 17, carried by the side sections, and are thus prevented from being moved beyond a vertical position, and are normally held in such vertical positions by the ends of lower longitudinal slats of the cover section, when the latter is in place. The partition G is normally held in a vertical position, by engaging a pair of notched brackets 18, carried by the side sections (see Figs. 5 and 6). The engagement is effected by springing the side sections beyond their vertical positions, and the partition may be dissengaged from the brackets in a similar manner. The side sections are normally held in close contact with the ends of the end and partition sections by a connecting device consisting of an elongated spring 19 and a chain 20. The spring, which is under considerable tension when the crate is set up, not only holds the side sections in, but also tends to hold all the vertical sections together in such a manner as to prevent play and eliminate noise and vibration to a large extent. The chain element of the connecting device not only offers a convenient means for lengthening or shortening the same, but also makes it more flexible so that it can be more conveniently folded into the crate when the latter is to be collapsed.

The over F is provided, at one side, with a pair of fixed hooks 21, adapted to engage in socket members 22 carried upon the upper edge portion of the side section C; and the opposite side of the cover is provided with a pair of slidable hooks 23, adapted to engage similar socket members 24 on the upper edge portion of the side section B. The hooks 23 are, in reality, the end extensions of a bar 25, which extends longitudinally of the cover, with freedom for transverse movement with respect thereto. The substantially U-shaped member 23—25

is held in a yieldingly retracted position by a pair of springs 26 (see Figs. 2 and 4). To disengage the cover from the set up crate it is only necessary to move the bar 25 outwardly, to disengage the hooks 23 from the members 24. The cover may now easily be lifted and moved rearwardly to disengage the hooks 21. To replace the cover this operation is reversed. To secure the cover upon the closed or knocked down crate, the rear edge is slipped under a pair of brackets 27, carried by the base section, at one side, after which the hooks 23 may be engaged with a pair of socket brackets 28, carried by the opposite side of the crate.

In order to gain access to both chambers or sides of the crate I provide the cover section F with a pair of hand hole doors or lids 29, hinged as at 30. These doors are each releasably held closed by a latch member 31, the same being pivotally secured by a bolt 32 to the cover section, and is provided with a slot 33, whereby it will have a limited sliding movement with respect to the bolt. This bolt 32 is held down, against the latch lever 31, by a spring 34 (see Fig. 7), thereby tending to hold the lever 31 in any position to which it may be adjusted. When the lever 31 is in the position shown at the right in Fig. 2 the door with which it is associated is free to be opened or closed, as may be desired. When the door is to be secured in its closed position the lever 31 is turned ninety degrees and then moved backward, i. e., toward the side section C, as far as the slot 33 will permit, as at the left in Fig. 2. In this position it engages a stop or shoulder 35 which prevents it from swinging open accidentally. To open the door it is first necessary to slide the lever forward against the friction created by the spring 34, after which the lever may be swung or turned to release the door.

It may here be noted that the doors 29 each carries, near its swinging end, a cleat or stop 36, and when the door is closed this cleat engages the rod or bar 25 and thus prevents the hooks 23 from becoming disengaged accidentally at any time and also prevents a manual opening of the cover section unless both of the doors 29 are first opened. Thus the cleats 36 also serve to lock the cover section in place both when the crate is set up and when closed or collapsed.

It is understood that suitable modifications may be made in the general design and structural details of the invention as herein shown, provided, however, that said modifications come within the spirit and scope of the appended claims.

Having now therefore fully shown and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. A crate comprising hingedly connected sections, a cover for closing the crate, said cover having a hand hole door whereby access to the interior of the crate may be had without removing the cover, means for detachably securing the cover to the crate, comprising a substantially U-shaped member slidably carried by the cover and having hooks at its ends for engagement with the crate, said U-shaped member being interlockably associated with said hand hole door.

2. A crate comprising hingedly connected sections, a cover for closing the crate, said cover having a hand hole door whereby access to the interior of the crate may be had without removing the cover, means for detachably securing the cover to the crate, comprising a substantially U-shaped member slidably carried by the cover and having hooks at its ends for engagement with the crate, and means carried by the door for engaging the member to prevent the disengagement of the hooks from the crate.

3. A crate comprising hingedly connected sections, a cover for closing the crate, said cover having a hand hole door whereby access to the interior of the crate may be had without removing the cover, means for detachably securing the cover to the crate, comprising a substantially U-shaped member slidably carried by the cover and having hooks at its ends for engagement with the crate, spring means for normally holding the hooks in a retracted position, and means operative by closing the hand hole door for locking the hooks in a retracted position.

4. A crate comprising hingedly connected sections, a cover for closing the crate, said cover having a hand hole door whereby access to the interior of the crate may be had without removing the cover, means for detachably securing the cover to the crate, comprising a substantially U-shaped member slidably carried by the cover and having hooks at its ends for engagement with the crate, spring means for normally holding the hooks in a retracted position, and means, carried by the door, for positively holding the hooks in a retracted position when the door is closed.

In testimony whereof I affix my signature.

FREDERICK L. ARDUSER.