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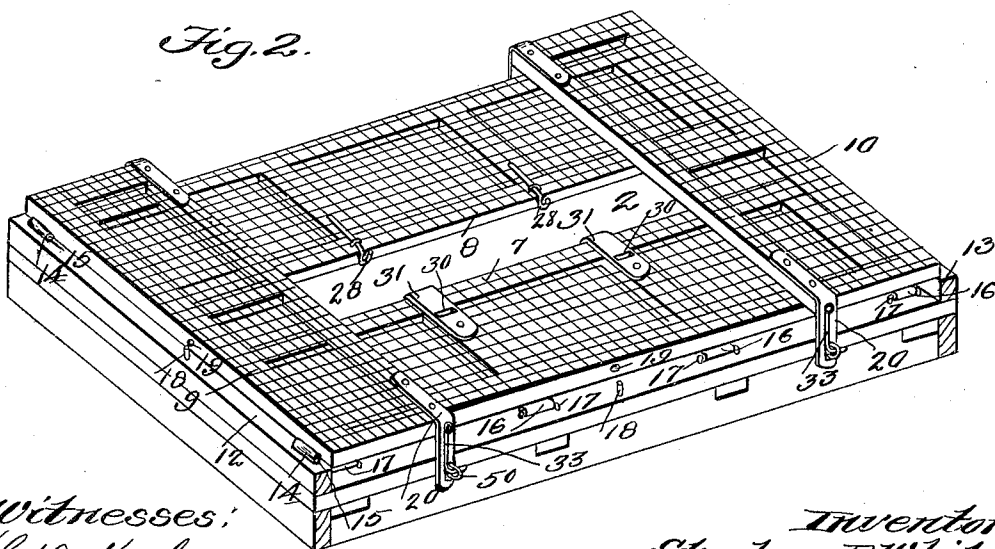
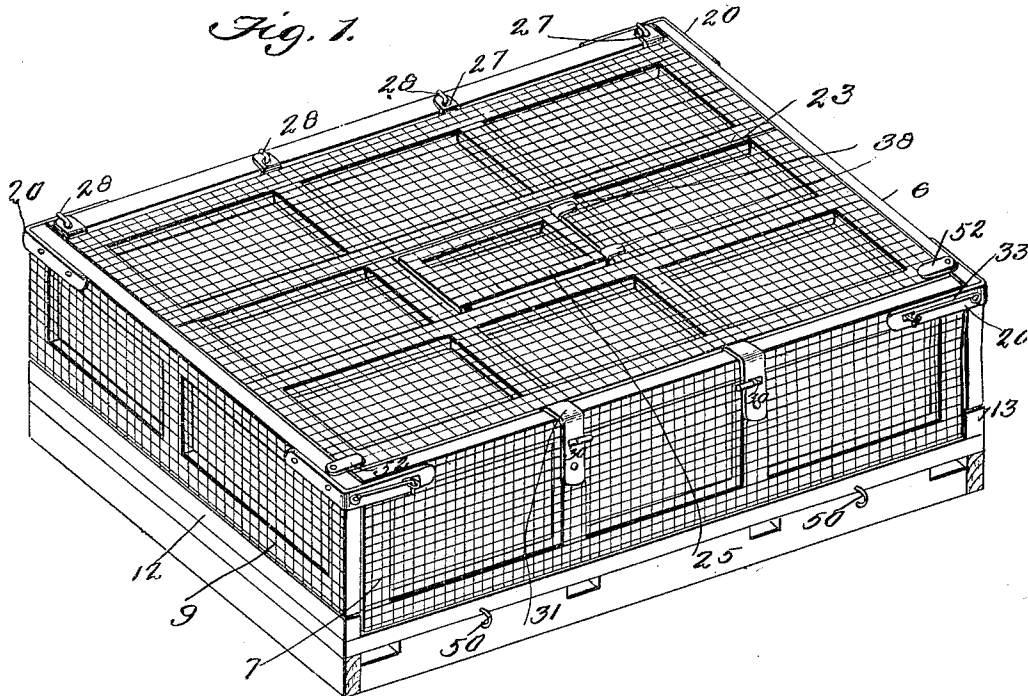
S. P. WHITE & J. C. MILLER.

FOLDING OR KNOCKDOWN CRATE OR COOP.

(Application filed Jan. 23, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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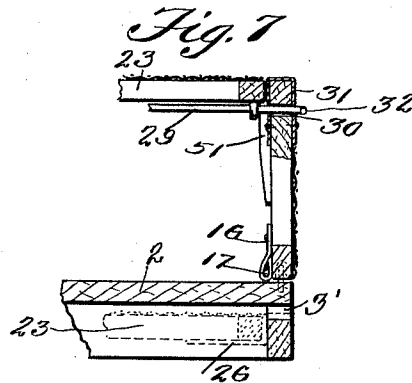
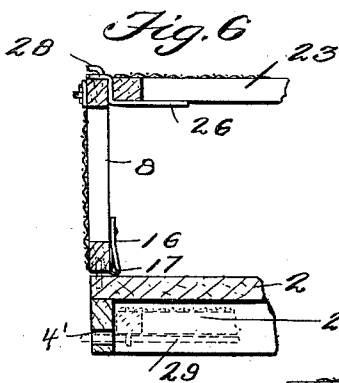
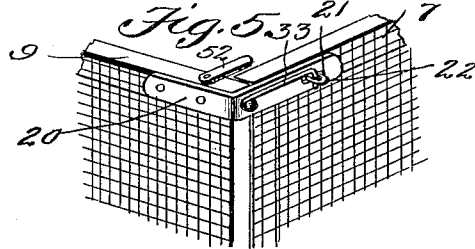
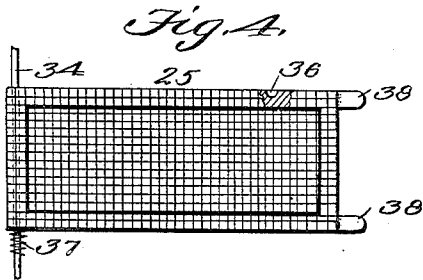
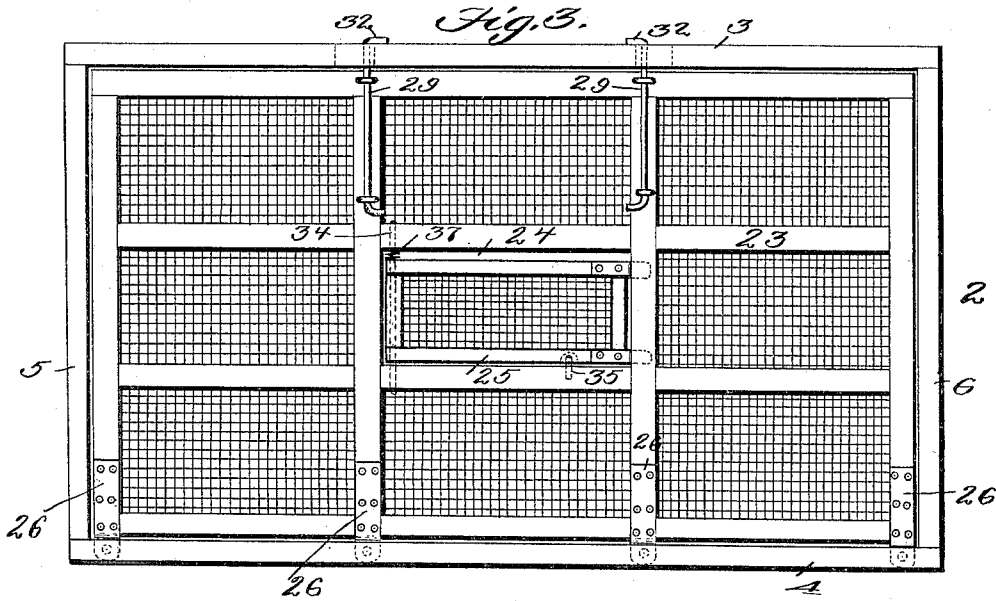
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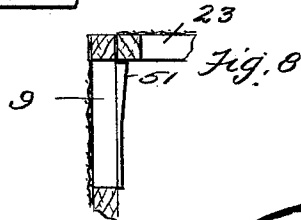
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(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

STEPHEN P. WHITE AND JACOB C. MILLER, OF PULASKI, TENNESSEE.

FOLDING OR KNOCKDOWN CRATE OR COOP.

SPECIFICATION forming part of Letters Patent No. 674,805, dated May 21, 1901.

Application filed January 23, 1901. Serial No. 44,464. (No model.)

To all whom it may concern:

Be it known that we, STEPHEN P. WHITE and JACOB C. MILLER, citizens of the United States, residing at Pulaski, in the county of Giles and State of Tennessee, have invented new and useful Improvements in Folding or Knockdown Crates or Coops, of which the following is a specification.

This invention relates to a folding or knockdown crate or coop; and the object of the invention is to provide an improved article of this character which is much stronger yet no heavier than the ordinary types of shipping-crates and which when in its collapsed condition occupies a relatively small amount of space, but which when assembled for shipment is thoroughly substantial and safe.

The invention includes as one of its novel features a crate having a recess in its bottom on the under side thereof to receive the top, hinged sides and ends connected with the bottom and adapted to fold downward when the empty crate is being returned for shipment, and dowel pins or studs carried by the bottom and projecting into seats or openings in the under sides of the hinged sides, these pins when the crate is set up for shipment being to rigidly maintain the sides in a perpendicular or upright position, thereby enhancing the strength of the crates. The top has an opening through which the poultry or live stock can be entered into the crate, said opening being closed by a door hinged to the top and slidably mounted for sidewise movement. The crate is provided with a projection or stud adapted to enter a recess or seat in the door, such relation being maintained by a spring bearing against the top and door, respectively. By sliding the door free of the locking projection the door may be readily opened.

There is provided at the corners of the crates braces which materially add to the stability of the same, and in addition to this certain of the hinge members serve in maintaining a desired degree of rigidity.

In the drawings showing the improved crate in a simple form thereof, Figures 1 and 2 are perspective views of the crate in its assembled and knockdown condition, respectively. Fig. 3 is an under side view of the crate. Fig. 4 is a detail in plan view of the

door in the top. Fig. 5 is a detail in perspective of a corner of the crate, showing an angle-brace. Figs. 6, 7, and 8 are transverse sectional views through opposite sides of the crate.

Similar characters refer to like parts in all the figures of the drawings.

The crate constituting the subject-matter of this application may be employed to advantage for many different purposes, though it is found a useful adjunct in the shipment of poultry, in such a use as this it having reticulated sides, ends, and top for the proper ventilation of the interior thereof.

The major portion of the crate may be of any suitable material, and its size may be varied in accordance with the nature of the things shipped therein, and said crate is shown as embodying in its construction a bottom 2, from which depend the side strips 3 and 4 and the end strips 5 and 6, the several strips being united to the bottom in some convenient manner, and the end strips being fitted against the side strips, so as to form a recess on the under side of the crate to receive the top of said crate when the parts thereof are separated for storage or return shipment, thereby securing compactness without materially adding to the weight of the crate. These several strips also strengthen the device.

The sides of the crate are denoted by 7 and 8 and the ends by 9 and 10, and these several parts may be of frame-like structure covered by light metal netting, the end pieces being mounted upon the transverse bars or strips 12 and 13 and having at their lower corners strap-hinges, as 14, to receive the pivot-pins 15 on the bars 12 and 13. The height of the bars or strips is slightly more than the thickness of the sides 7 and 8, so that when the latter are folded upon the upper side of the bottom the ends can be placed upon the sides. The sides have upon the lower inner sides hinge members, as 16, the eyes of which receive pins, as 17, on the bottom.

When the crate is set up for shipment, the sides thereof are disposed between and are engaged by the ends, thereby holding the latter upright. To assist in securing the sides in a perpendicular position, there are provided a plurality of vertical projections or

pins, as 18, upon the upper face of the bottom 2, the function of which is to enter into seats or openings, as 19, in the adjacent portion of the sides to hold the latter up and relieve the strain on the hinges. Any number of these projections or pins may be employed, though only two are illustrated, one at each side of the crate.

The corners of the crate are made rigid by the use of a plurality of braces, as 20, of cast or wrought iron or, in fact, any other material convenient for the purpose. The braces are illustrated as being of right-angular shape, and one branch or arm of each of them is rigidly secured to the outer faces of the ends, while the free branches or arms overlap the upper ends of the sides when the latter are up or standing vertically. Said free arms or branches are slotted, as at 21, to receive staples, as 22, on the adjacent portion of the sides when the crate is in condition to receive its supply of stock.

The top of the crate is designated by 23 and, like the ends and sides, consists, preferably, of a frame covered with netting, it having an opening, as 24, covered by a door, as 25, hereinafter more particularly described. The top 23 fits within the upper side of the crate, and it has secured to its under side L-shaped brackets or plates, as 26, shown as four in number, fitting around the edges of the same and increasing the strength of the top. Said plates or brackets have slotted offsets, as 27, the slots thereof receiving the hooks 28 on the upper edges of the side 8, the shanks of said hooks being conveniently driven into said side. The top 23 has on its under side, opposite to that provided with the plates 26, the sliding bolts 29, sustained by suitable staples or eyes. The working ends of these bolts are adapted to pass through aligned slots, as 30, in the branches of the U-shaped keeper-plates 31. Said keeper-plates straddle the sides of the crate in such manner that their registering slots are brought into the path of the sliding locking-bolts 29, the side 7 of course being also slotted to permit the passage of the bolts. The opposite ends of the bolts are cranked, as at 32, the inner cranks providing finger-pieces for the ready operation of said bolt and the opposite ones after the bolts are in their effective positions serving as stops to prevent the accidental withdrawal of said bolts.

The crate is provided at its corners with latches, as 33, pivoted upon the L-shaped braces 20, and the free hooked ends of which are designed to pass through the staples 22 upon the hinged sides, so as to maintain both the sides and ends in their upright positions. The top being off, the crate can be collapsed by disconnecting the latches 33 from the catches or staples, after which the sides can be swung in and down onto the bottom and a like operation repeated with respect to the ends until they rest upon the sides.

It will be remembered that the top of the

crate has an opening 24, by which poultry or, in fact, anything else can be passed into the crate, said opening being closed by the door 25. The door swings upon a pivot, as 34, extending entirely across the same and supported in properly-positioned bearing-openings in the top, the pivot having a sliding movement transverse of the top. A projection or stud, as 35, is situated in the opening 24, it being rigid with the top and being adapted when the door is closed to fit into the hole or opening 36 in the door, this relation being positively maintained by a spring, as 37. The spring 37 is of the coiled protractile type, and it surrounds one end of the pivot 34 and bears, respectively, against the door and top, so as to hold the stud 35 seated in the opening 36, so as to secure the door in its shut position. By sliding the door until the stud is carried free of the same it can be easily swung open. To prevent the door from swinging inward, there are mounted on the same stops, as 38, engaging the top of the crate.

The crate being assembled and it being necessary to collapse the same for shipment, the bolts 29 will be slightly turned and then drawn back, access being had to said bolts through the opening 24. This disconnects one edge of the top from the side 7. The top will then be swung up until its opposite edge can be disconnected from the hooks 28, after which the top can be lifted from the remainder of the crate. The latches 33 will then be lifted to disconnect their hooked ends from the staples 22, so as to separate the sides and ends of the crate. The sides and ends can then be successively swung down and the top placed within the recess in the bottom.

The improved crate possesses the following advantages: lightness, rigidity, compactness, cheapness in manufacture, and ease in assembling or separating its several parts, and the latter may be made in varying size and of different materials to suit different cases.

The invention is not limited to the precise construction previously set forth, as it may be somewhat varied within the scope of the accompanying claims.

When the crate is in its knockdown condition, staples, as 50, are adapted to pass through the longitudinal slots 21 in the free branches of the angular braces 20, and the hooks or latches 33 engage the staples to hold the several hinged parts down against the bottom of the box.

The crate has on its inside projections, as 51, to sustain the top thereof, the latter being securely fastened by one or more turning buttons, as 52. In some cases the door in the top may be dispensed with and one or more buttons of the kind illustrated may be provided for securely holding the same down. The side strips 3 and 4 have elongated slots, as 3' and 4', respectively, to receive the bolts 29 and the projecting portions of the brackets 26.

Having described the invention, what is claimed is—

1. A crate including a bottom having a top-receiving recess in its under side; sides and ends hinged to the bottom; studs on the bottom to enter seats in one or more of said last-mentioned parts, and means connecting the ends and sides.

2. A crate including a bottom having depending strips on the under side thereof arranged to form a top-receiving recess and having transverse bars at its opposite ends on the upper side thereof; ends hinged to said bars, sides hinged to the bottom and fitted between the ends, and means for connecting the ends and sides.

3. A crate including a bottom, sides and ends hinged to the bottom, depending strips secured to the under side of the bottom certain of the strips having slots, and said strips being arranged to form a top-receiving recess.

4. A crate including a bottom, sides and ends, cross-bars at the ends of the bottom on the upper side thereof to which said ends are hinged, strips on the under side of the bottom arranged to form a top-receiving recess and certain of them being slotted, a top adapted to be arranged within the ends and sides, and supports for the top connected to the ends.

5. A crate including a bottom having depending strips on its under side arranged to form a top-receiving recess cross-bars on the upper side of the bottom at the opposite ends thereof, ends hinged to said cross sides fitted between the ends and hinged to the bottom; right-angular braces for the corners of the crate one arm of the braces being rigidly united to the ends, and the other arm thereof overlapping and free of the sides, said free arms being slotted staples on the sides ex-

tending through the slots in said branches; and hooked latches pivoted upon the braces and adapted to engage the staples.

6. A crate including a bottom, sides and ends hinged to the bottom, hooks carried by one of the sides, a plurality of U-shaped reinforcing-plates straddling the other side, the branches of said plates having registering slots, a top having brackets slotted to receive said hooks, a plurality of bolts carried by the top; a series of depending strips on the under side of the bottom arranged to form a top-receiving recess, certain of said strips having slots to receive said brackets and bolts; and means for rigidly uniting the ends and sides.

7. A crate including a bottom, sides and ends hinged to the bottom, hooks carried by one of the sides, a plurality of U-shaped reinforcing-plates straddling the other side, the branches of said plates having registering slots, a top having brackets slotted to receive said hooks, a plurality of bolts carried by the top; a series of depending strips on the under side of the bottom arranged to form a top-receiving recess, certain of said strips having slots to receive said brackets and bolts; supports for said top connected to the ends, right-angular corner-braces, one arm of each being rigidly secured to an end and the other arm thereof overlapping a side, and being slotted, staples on the sides passing through the slots in said braces, and hooks carried by the braces for engaging the staples.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

STEPHEN P. WHITE.
JACOB C. MILLER.

Witnesses:

CHAS. P. JONES,
GEO. B. MCCALLUM.