

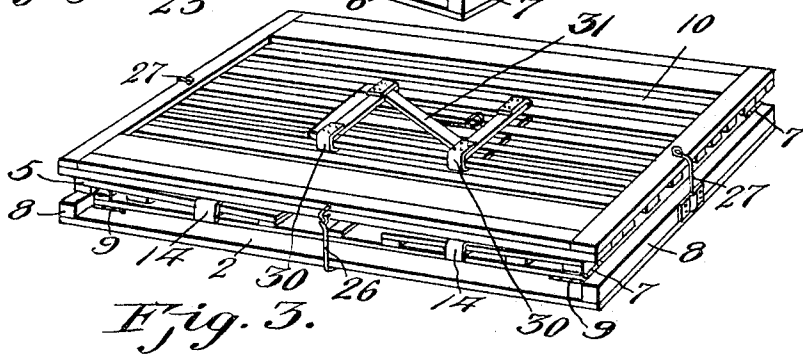
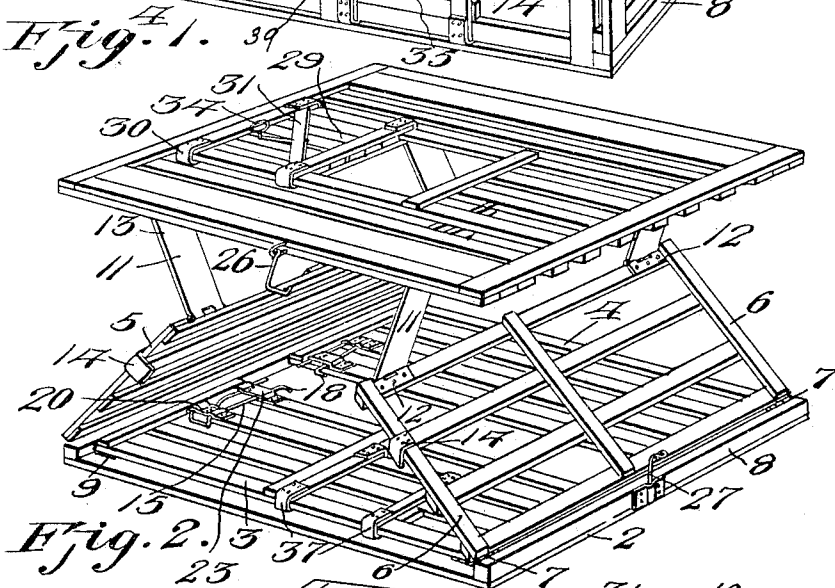
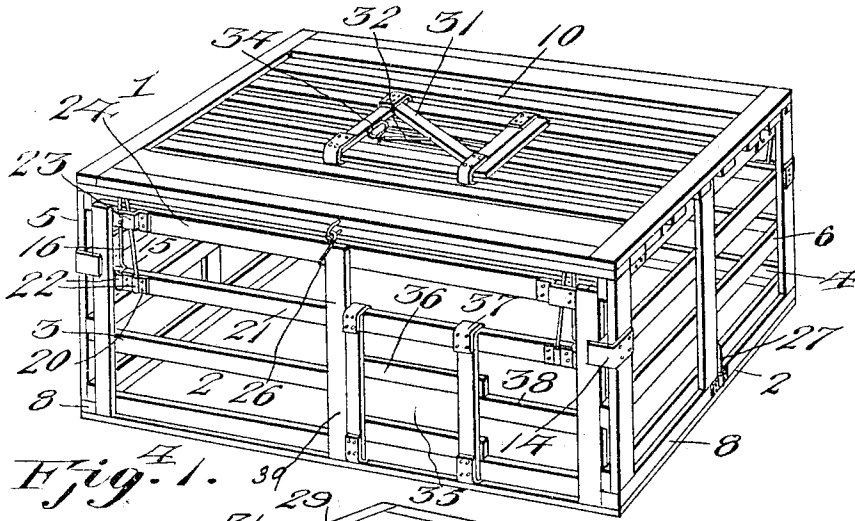
No. 801,817.

PATENTED OCT. 10, 1905.

S. TARNER.
FOLDING CRATE.

APPLICATION FILED APR. 27, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 4.

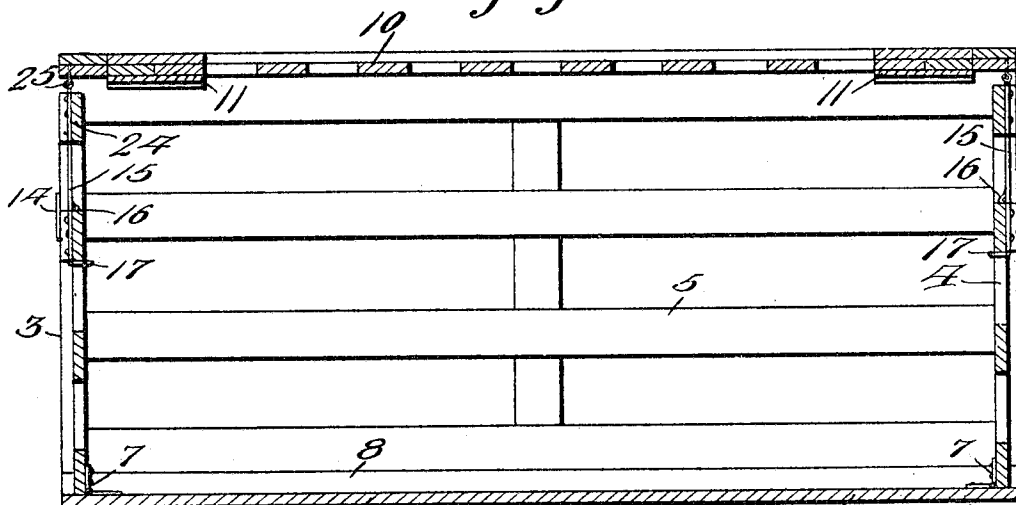


Fig. 5.

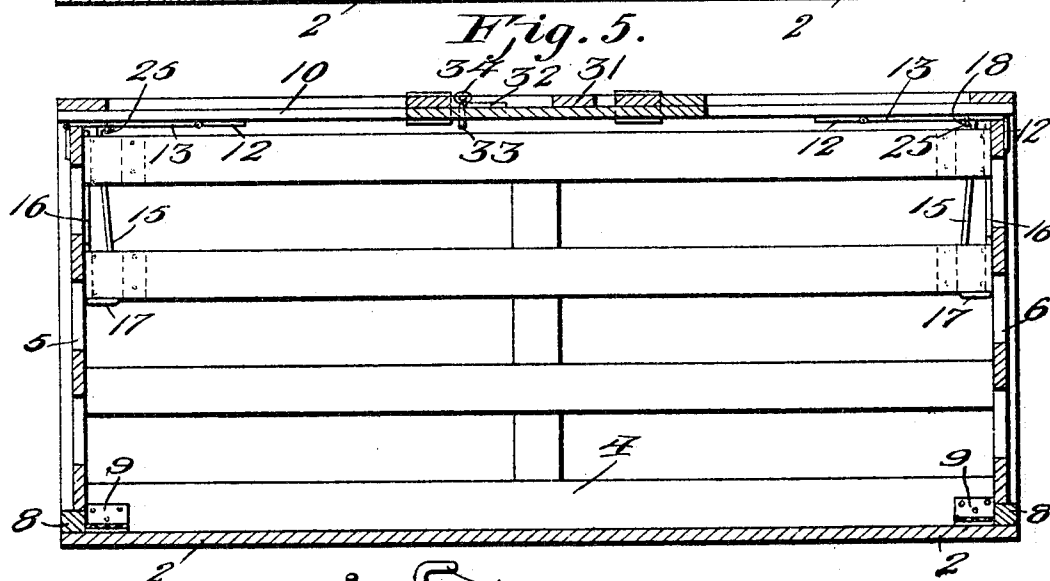


Fig. 6.

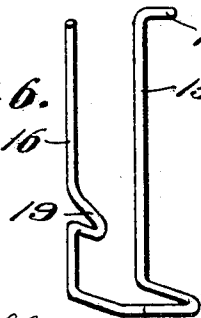
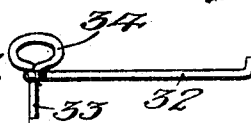


Fig. 7.



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UNITED STATES PATENT OFFICE.

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FOLDING CRATE.

No. 801,817.

Specification of Letters Patent.

Patented Oct. 10, 1905.

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To all whom it may concern:

Be it known that I, SAMUEL TARNER, a citizen of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented new and useful Improvements in Folding Crates, of which the following is a specification.

This invention relates to a folding crate, coop, or packing-box designed especially for confining and shipping poultry, game, and the like, but which may be employed generally for shipping various goods and merchandise.

One object of the invention is to provide a collapsible container which may be conveniently collapsed or "knocked down" in close compass for storage and return shipment and which when set up for use will be staunch and rigid and will securely confine or hold the contents thereof.

Another object of the invention is to provide a container of this class which affords manifold conveniences in setting it up for use, folding it for storage or shipment, and admitting or packing the poultry or goods to be shipped therein and removing the same therefrom.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing my improved collapsible container as it appears when set up for use. Fig. 2 is a similar view showing the container partly folded or collapsed. Fig. 3 is a perspective view showing the container completely folded for storage or shipment. Fig. 4 is a vertical transverse section through the container set up as shown in Fig. 1. Fig. 5 is a central vertical longitudinal section of the same. Fig. 6 is a detail view of one of the spring-catches for connecting the folding sides with the lid or top, and Fig. 7 is a similar view of the spring-fastening of the door or gate in the lid or top.

Referring now more particularly to the drawings, the numeral 1 designates my improved collapsible coop or container, which may be of true rectangular or oblong rectangular form, as desired. This container comprises a bottom 2, sides 3 and 4, and ends 5 and 6. The bottom 2 preferably consists of an imperforate board, while the other parts of the crate are preferably constructed wholly or partially of slats suitably connected together. As shown, the ends 5 and 6 are hinged, as indicated at 7, to strips 8, secured to the upper surface of the bottom 2, while the sides 3 and 4 are connected by hinges 9

to the bottom 2, so as to fold over upon the same. The strips 8, to which the ends 5 and 6 are hinged, correspond in depth to the thickness of the sides 5 and 6, so that the latter when folded will lie flush therewith, thus permitting the ends 5 and 6 to fold evenly over upon the sides, as shown in Fig. 2. The lid or top 10 is attached at its ends to the upper edges of the end sections 5 and 6 by folding or collapsible strap-hinges 11, each of which is formed with attaching-sections 12 for respective connection with the lid and end sections and an intermediate leaf 13, hinged to the attaching-sections in such manner as to fold horizontally beneath the lid when the container is set up, as shown in Fig. 5, and to swing inwardly and fold downwardly between the lid and end sections 5 and 6 when the crate is folded or collapsed, as shown in Figs. 2 and 3. This construction of the folding hinges and mode of mounting the same permits the lid 10 to fold flat down upon the end sections 5 and 6, so that the container may be knocked down or collapsed into close compass in a substantial flat condition, so that it will occupy but little space when stored or packed for return shipment.

The end sections 5 and 6 are provided upon their front and rear portions with L-shaped plates 14, each having one of its arms secured thereto and its other arm projecting inwardly therefrom, the free arms being arranged to lie outside of the end portions of the side sections 3 and 4 and hold the same from outward movement and prevent pressure thereon from within straining the hinges 9.

The side sections 3 and 4 are held in an upright position and the lid or top section 10 held closed when the crate is set up by means of spring-catches upon the side sections, which engage keepers on the top or lid section. These catches are arranged upon the upper end portion of each side section, and each catch is formed from a single piece of wire bent to provide arms 15 and 16 lying in parallel relation and connected at their lower ends by a return portion 17, bent at right angles thereto to form a stop. The arm 15 has its upper end bent laterally to form a latch or engaging member 18, while the arm 16 is offset adjacent to its lower end to form a stop or detent 19. As shown, each catch is mounted at its lower end in a strap-bracket or attaching-plate 20, secured to one of the slats 21 of the side section upon which it is mounted, the said bracket being

formed with a pair of eyes 22 for the passage of the arms 15 and 16. The stop 17 lies below the slat 21 and engages the same to hold the catch from upward movement, while the detent 19 on the arm 16 engages the upper edge of the slat and holds the catch from downward movement. The free ends of the arms 15 and 16 pass upward through a guide-bracket 23, mounted upon the upper longitudinal slat 24 of the side section, so that the engaging member 18 may engage or hook into a keeper-eye 25, provided for its reception on the contiguous portion of the lid or top section 10. The bracket 23 confines the arm 15 from outward movement, but permits it to have movement in a direction longitudinally of the slat 24 to engage and move out of engagement with the eye 25. By this construction of fastening means the side and top sections will be held securely connected, and as the end sections lie outside of the ends of the side sections when the container is set up the side sections act as stops and braces therefor to prevent the same from having inward movement. In order to further connect and brace the parts of the container, pivoted hooked catches 26 and 27 are respectively mounted upon the side edges of the top section 10 and the strips 8 on the bottom section 2, which catches are adapted to hook under the upper slats of the side sections and the lower slats of the end sections and further hold the same from movement in either direction. The said catches are also adapted to be used to hold the parts of the container in folded or collapsed condition, the catches 26 being adapted to engage beneath the side edges of the bottom 2 and the catches 27 to take over the end strips of the top section 1 to prevent disconnection of the folded parts, as shown in Fig. 3.

As shown, the central portion of the top section 10 is slatted and provided with a central opening 28, through which the poultry or material to be shipped may be introduced into the crate, and this opening is adapted to be closed by a gate or door 29, carrying guide-pieces 30, which slidably engage the slats at the front and rear of the door-opening. The gate or door has a diagonal cross-brace 31, which carries a spring-fastener for securing the door in open or closed position, the said fastener consisting of a single piece of spring-wire having arms 32 and 33 arranged at right angles to each other and connected at their point of junction by an eye 34, formed by looping and twisting the wire at the point of junction. The arm 32 is fitted at its free end in the brace 31 and exerts a spring action to force the arm 33 and eye 34 downwardly and laterally. The arm 33 passes downwardly through adjoining slats of the door and between contiguous slats of the top section 10, and the spring-pressure of the arm 32 serves

to hold it in frictional engagement with one of the slats of the top section, thereby holding the door from movement. By grasping the eye 34, which forms a finger-piece, the fastener may be moved reversely to the direction of pressure of the arm 34 to free the arm 33 from engagement, thus releasing the door, so that it may be adjusted to expose or close the opening 28.

The frontside section 3 is also provided with a door-opening 35, through which the contents of the container may be permitted to escape or be removed, and this opening is closed by a slatted sliding door 36, provided at its upper and lower ends with hooked guides 37 to slide upon the slats 38 of the front section 3 at one side of the doorway, the slats of the door themselves being also arranged to slide upon the intermediate slats 38. The door is limited in its closing movement by a central vertical slat 39 on the section 3 and may be fastened in closed position in any preferred manner, the frictional engagement of the guides 37 with the cooperating slats 38 ordinarily being sufficient to hold the door securely in adjusted position.

Fig. 1 of the drawings shows the container set up for use. When it is desired to collapse the container for storage or shipment, the catches 26 and 27 are first disengaged and the latch-arms 15 then pressed out of engagement with the keepers 25, thus permitting the side sections 3 and 4 to fold over upon the bottom 2, after which the end sections 5 and 6 may be forced inward and caused to fold down upon said side sections. As the end sections 5 and 6 move inward the folding hinges 11 move therewith, so that when the top section 9 is lowered they will lie horizontally between the end and top sections and permit the parts to assume a substantially flat condition, as shown in Fig. 3. The catches 26 and 27 are then engaged, as shown in Fig. 3, to secure the parts in collapsed condition.

To set up the crate for use, the catches 26 and 27 are disengaged from the bottom and top sections, the top section lifted to restore the end sections 5 and 6 to an upright position, and, finally, the front and rear sections 3 and 4 are swung up and the parts fastened together in the manner previously described.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of use of my improved collapsible crate will be readily understood, and it will be seen that it provides a crate or container which may be conveniently collapsed in close compass and set up for use and that the parts of the device when set up will be securely braced to form a stanch and rigid structure. By providing the front section of the container with the door 36 said door may be opened to permit of the removal of a number of the fowls when the device is used for shipping poultry and the side section 3 then

swung inward upon disengaging the catches 26 and 15 to facilitate the removal of the remaining fowls.

Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

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

1. A folding or collapsible container comprising a bottom, side pieces hinged to the bottom and adapted to fold over upon the same, end pieces also hinged to the bottom and adapted to fold over upon the folded side pieces, a top, and folding hinge members connecting the end pieces with the top, said members being hinged at one end to the upper edges of the end pieces and at the opposite end to the under side of the top inwardly beyond the end edges thereof, whereby said hinge members are adapted to lie horizontally beneath the top when the container is set up and to swing inwardly with the end pieces and lie horizontally between the top and end pieces when the container is collapsed, substantially as described.

2. A folding or collapsible container comprising a bottom, side pieces hinged to the bottom to fold over upon the same, strips secured to the end edges of the bottom and equal in thickness to the sides, end pieces hinged to said strips to fold over upon the folded sides, folding hinges connecting the upper ends of the end pieces with the top at the under side and inwardly beyond the end edges of the latter, whereby said hinges are adapted to lie horizontally beneath the top when the container is set up and to fold inwardly between the top and end pieces when the container is

collapsed, keepers carried by the top, latches carried by the side pieces to engage said keepers and secure said side pieces to the top when the container is set up, and catches provided to the strips and adapted to hook over the end edges of the top to hold the parts in collapsed condition, substantially as described.

3. A container provided with a slatted wall having a door-opening formed therein, a door provided with connecting members slidably engaging the slats of the wall and having a diagonal cross-piece, and a spring-fastener comprising a strand of wire bent intermediately to form a finger-piece and fastening and bearing arms, the said fastening-arm being fixed to the cross-piece and the bearing-arm projecting downward between adjacent slats of the wall and held in engagement with one of said slats to secure the door in adjusted position.

4. A folding or collapsible container comprising a bottom, sides hinged to the bottom and adapted to fold over upon the same, ends also hinged to the bottom and adapted to fold over upon the folded sides, a top provided with keepers, folding or reversible hinges connecting the top with the ends, whereby the top is adapted to fold down upon the ends, and spring-catches upon the sides adapted to engage the keepers on the top when the container is set up, each of said latches comprising a latch-arm, a cooperating arm provided with a detent, and a connecting portion between the arms forming a stop.

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

SAMUEL TARNER.

Witnesses:

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RICA HANSEN.