J. F. MYSER.

FOLDING SHIPPING CRATE.

APPLICATION FILED MAR. 17, 1911.

1,050,378.

Patented Jan. 14, 1913.

2 SHEETS—SHEET 1.

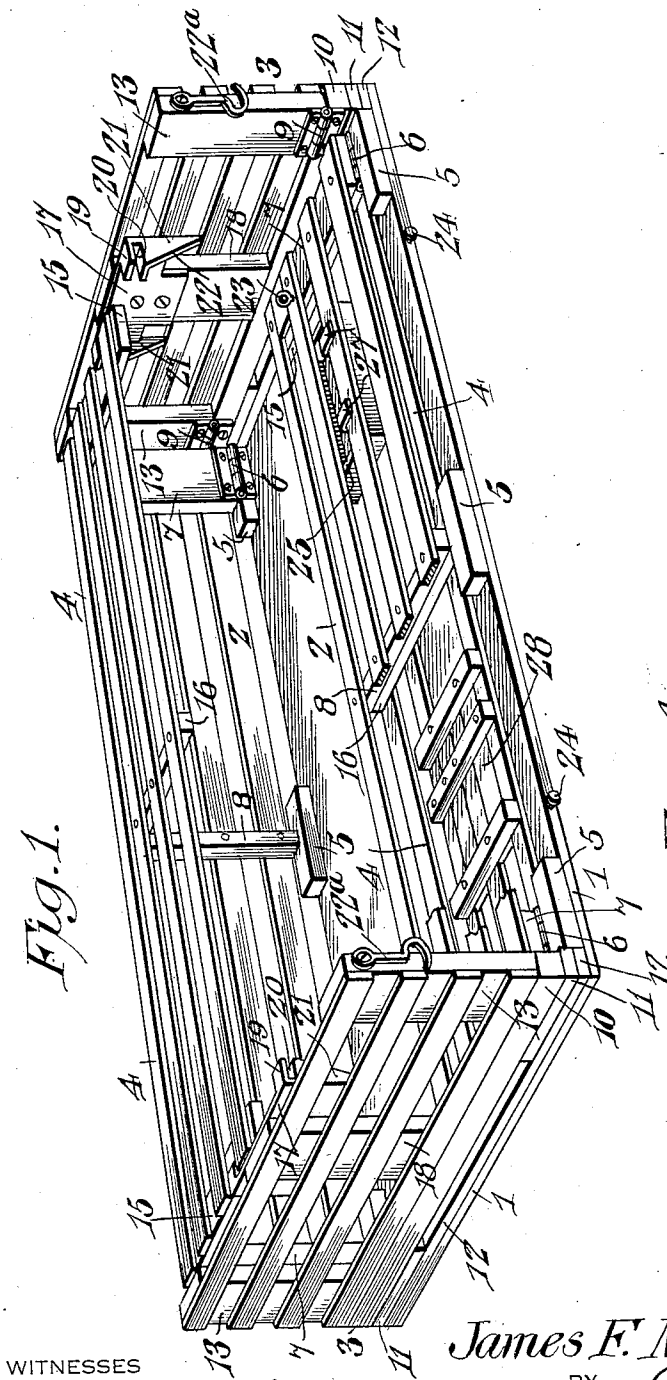

Fig. 1.

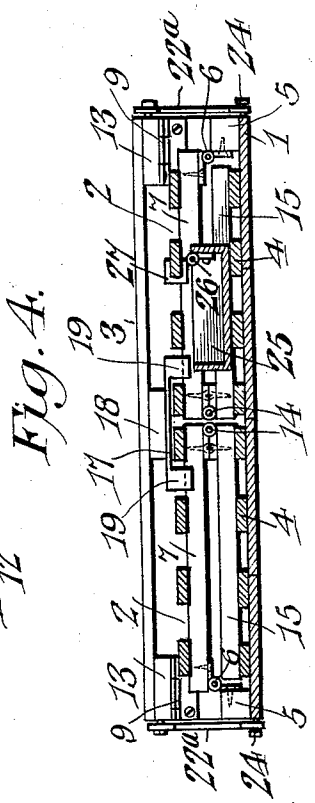

Fig. 4.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 2.

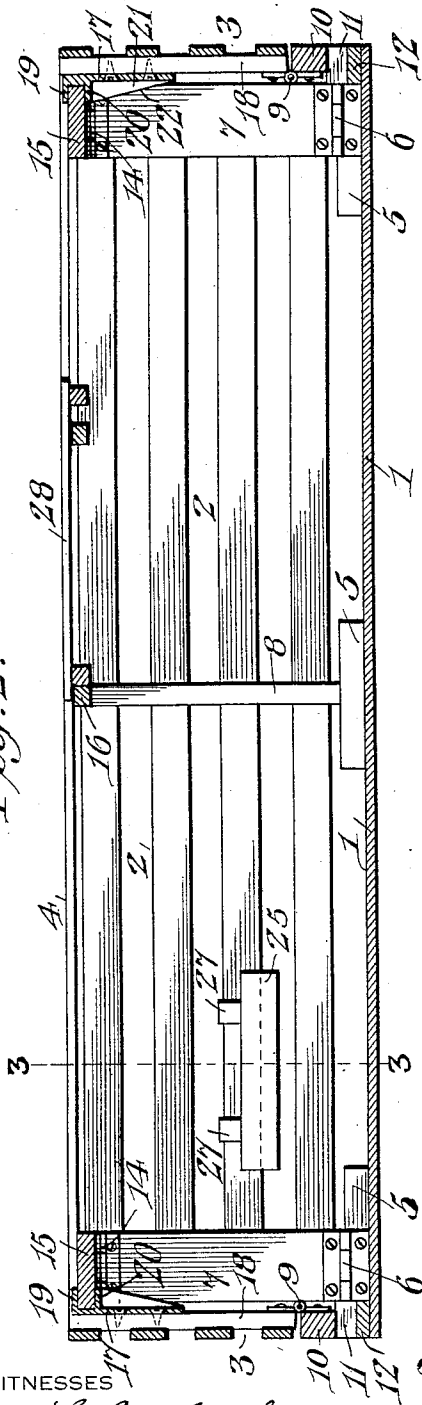


Fig. 5.

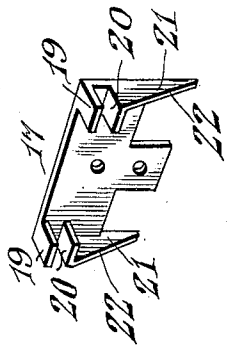
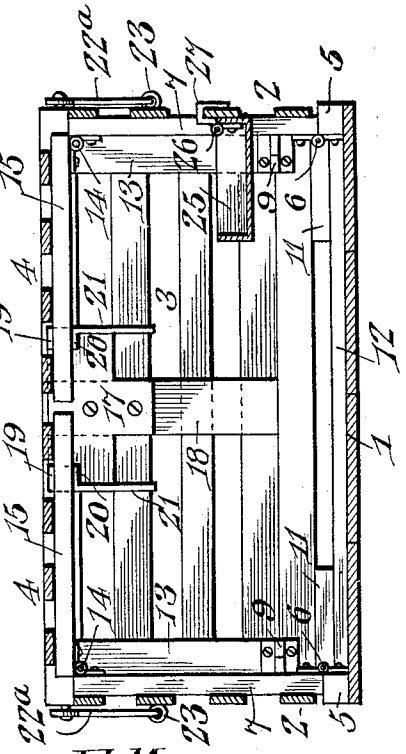


Fig. 3.



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FOLDING SHIPPING-CRATE.

1,050,378. Specification of Letters Patent. Patented Jan. 14, 1913.

Application filed March 17, 1911. Serial No. 615,138.

To all whom it may concern:

Be it known that I, JAMES F. MYSER, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented a new and useful Folding Shipping-Crate, of which the following is a specification.

The invention relates to improvements in folding shipping crates.

The object of the present invention is to improve the construction of folding shipping crates, and to provide a simple, practical and comparatively inexpensive shipping crate, designed particularly for shipping poultry, hogs, sheep, etc., and adapted to be quickly folded and unfolded.

A further object of the invention is to provide a shipping crate of this character, equipped with feed and water troughs, capable of folding compactly with the walls and top of the crate, and adapted when folded to occupy an upright position.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a collapsible crate, constructed in accordance with this invention and shown partly folded. Fig. 2 is a longitudinal sectional view, the crate being arranged for use. Fig. 3 is a transverse sectional view of the same on the line 3—3 of Fig. 2. Fig. 4 is a similar view, the crate being folded. Fig. 5 is a detail perspective view of one of the catches.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention, the crate comprises in its construction a solid bottom 1, foldable side walls 2, foldable end walls 3 and a foldable top composed of sections 4, connected with and carried by the foldable side walls 2. The side walls, the end walls and the sections of the top are duplicates of each other, and are preferably constructed of spaced wooden slats and connecting bars or posts, and they are adapted to be cheaply and conveniently constructed. Instead of employing wooden slats, other material may be used in the construction of the crate. The side walls are of a height to extend to the median line of the bottom of the crate when the latter is folded.

The side walls 2 are mounted upon blocks 5, suitably secured to the upper face of the bottom and arranged at the ends and centers of the side edges of the same and forming supports for the side walls, which are connected to the end blocks by hinges 6. The hinges 6 are arranged at the inner faces of the end posts 7 of the side walls and are secured to the inner edges of the blocks, and the lower ends of the posts 7 abut against the upper faces of the blocks and limit the outward swing of the side walls, when the crate is unfolded and arranged for use. The intermediate blocks support connecting bars 8, secured to the inner faces of the slats of the side walls and resting upon the intermediate blocks, when the side walls are arranged in a vertical position. The blocks 5 besides constituting firm supports for the side walls provide spaces beneath the same to enable the bottom of the crate to be easily cleaned.

The end walls 3 are connected by hinges 9 to transverse bars 10, mounted upon end blocks 11, which are fastened to the upper faces of transverse cleats 12, and the latter are secured to the upper face of the bottom and connect the boards or pieces composing the same. The bars 10, the blocks 11 and the cleats 12 support the end walls in an elevated position to enable them to fold flat upon the side walls, as hereinafter fully explained, and the arrangement of the hinges 9 at the inner faces of the posts or bars 13 and the transverse bars 10 cause the lower ends of the posts to abut against the bars 10 and limit the opening movement of the end walls 3.

The sections of the top are connected at their outer edges to the upper edges of the side walls by hinges 14, secured to the inner faces of the posts 7 and to the inner or lower faces of end connecting bars 15 of the top sections. The slats of the top sections are also connected by intermediate bars 16, and

the intermediate and end connecting bars of the top sections abut against the posts and the intermediate bars of the side walls and limit the upward or outward swinging movement of the top sections. The hinges of the folding parts are all at the inner faces of the same, and they are concealed when the crate is arranged for use, and also are arranged to cause the hinged parts to abut and form a firm structure when the crate is unfolded and set up for use.

The end walls are equipped with catches 17, constructed of suitable material and secured to the central connecting bars 18 of the said end walls, and projecting laterally therefrom and provided with spaced upper and lower horizontally disposed lugs or flanges 19 and 20, forming intervening recesses of a size corresponding to the thickness of the top sections, and adapted to receive the same, whereby the upper and lower flanges or lugs of the catches are adapted to securely hold the top sections against upward and outward movement. The catches are also provided with vertical side flanges 21, tapered toward their lower ends and forming inner inclined edges 22, which are adapted to direct the sections of the top into engagement with the recesses, formed by the upper and lower lugs 19 and 20. When the sections of the top are raised to a horizontal position, they ride up the inclined or beveled edges of the flanges 21 and force the end walls outwardly, which spring or snap back into position when the top sections are brought into alinement with the recesses between the lugs or flanges 19 and 20. The lugs or flanges 19 and 20 engage the end connecting bars of the sections of the top in the spaces between the longitudinal slats, and the said lugs or flanges are received in the spaces between the slats when the crate is folded. The crate is also equipped at the side edges of its end walls, which are located beyond the terminals of the side walls, with hooks 22^a, adapted to engage eyes 23 of the side walls or projections 24 of the bottom. The eyes 23 are arranged to be engaged by the hooks, when the crate is unfolded and the sides are in a vertical position, and the hooks engage the projections 24 when the crate is folded. The projections or studs 24 are preferably formed by headed fastening devices. The sections of the top fold downwardly and inwardly against the inner faces of the side walls of the crate, and the latter fold downwardly and inwardly to the bottom, the sections of the top being interposed between the side walls of the crate and the bottom thereof, when the crate is folded. The end walls fold inwardly upon the side walls and fit flat against the same. In unfolding the crate the end walls are first swung upwardly to a vertical position, and the sides are raised to arrange them in a vertical position, after which the sections of the top are swung upwardly to a horizontal position, which engages them with the catches of the end walls. As none of the parts are detachable, it will be apparent that the crate may be quickly folded and unfolded.

The connecting bars or posts of the side walls are arranged at the inner faces of the slats, and the connecting bars of the sections of the top are also arranged at the inner or lower faces of the slats and they abut against the posts or bars of the side walls, when the parts are folded, and the slats or body portion of the side walls and the top sections are spaced apart sufficiently to receive feed and water troughs 25. Only one is illustrated in the accompanying drawings, but two or more may be employed. The trough or receptacle 25 is equipped at its outer wall with hinges 26, having leaves or elements 27 extended and angularly bent to form hooks for engaging the upper edge of one of the horizontal slats of the side walls. By this construction, the trough or receptacle is detachable, and is also adapted to be folded against the inner face of the side wall, and it occupies an upright position between the side wall and the adjacent section of the top when the crate is folded.

The top of the crate is equipped with a slidable door 28 of any preferred construction, and while only one of the sections of the top is shown equipped with a sliding door, both may be provided with the same. Also either one of the sections of the top may be swung downward to provide an enlarged opening when a number of fowls are to be placed in or removed from the crate.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A crate including a bottom, side walls hinged to the bottom and foldable inwardly over the same, a top composed of sections hinged to the side walls at the upper edges thereof, and end walls hinged to the bottom and foldable inwardly over the side walls, and a catch mounted on the end walls at the central portion thereof and having opposite recesses to receive the sections of the top and provided with inclined guiding edges or faces extending upwardly to the said recesses.

2. A crate including a bottom, side walls hinged to the bottom and foldable inwardly over the same, a top composed of sections hinged to the side walls at the upper edges thereof, and end walls hinged to the bottom and foldable inwardly over the side walls, and a catch mounted on the end walls and provided with opposite horizontal lugs or flanges arranged in pairs and providing recesses to receive the sections of the top, said

lugs or flanges holding the sections of the top against upward and downward movement.

3. A crate including a bottom, side walls hinged to the bottom and foldable inwardly over the same, a top composed of sections hinged to the side walls at the upper edges thereof, and end walls hinged to the bottom and foldable inwardly over the side walls, and a catch mounted on the end walls and provided with opposite horizontal lugs or flanges arranged in pairs and forming recesses to receive the sections of the top, said catch being also provided with flanges extending downwardly from the lower lugs or flanges and tapered to form inclined edges for guiding the sections of the top to the said recesses.

4. A crate including a bottom, side walls composed of slats and connecting bars and hinged to and foldable over the bottom, a top also composed of slats and connecting bars and hinged to the side walls at the upper edges thereof and foldable against the inner faces of the same, end walls hinged to the bottom and foldable inwardly over the side walls and composed of slats and connecting bars, and a catch secured to one of the connecting bars of the end wall and projecting laterally therefrom and provided with spaced lugs or flanges forming recesses to receive the sections of the top and engaging the same between the slats thereof and arranged to extend between the slats of the side walls when the crate is folded.

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

JAMES F. MYSER.

Witnesses:
I. A. MYSER,
W. W. WATSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."