

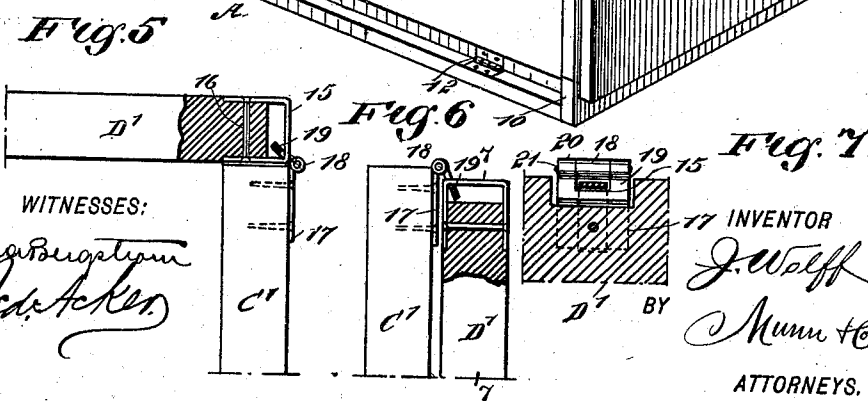
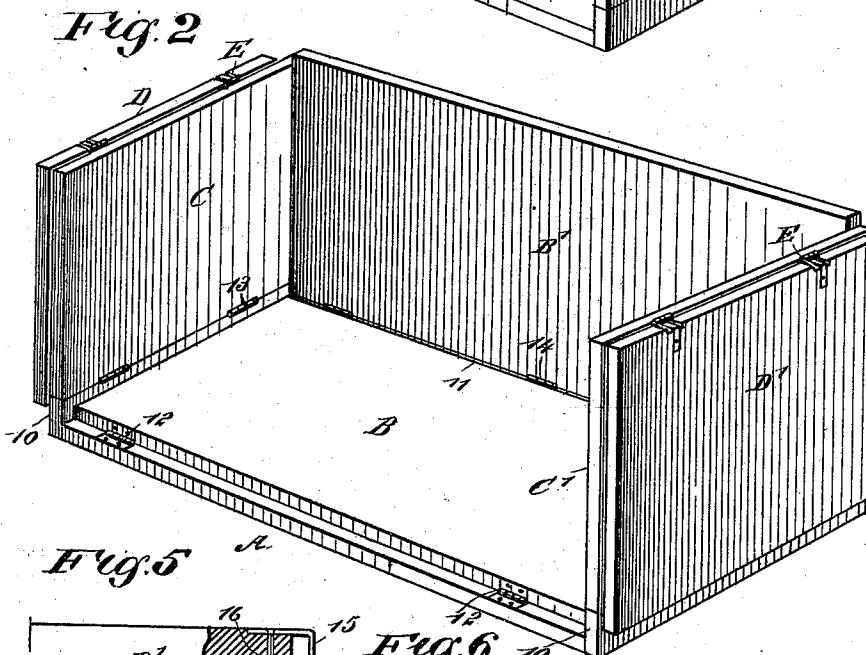
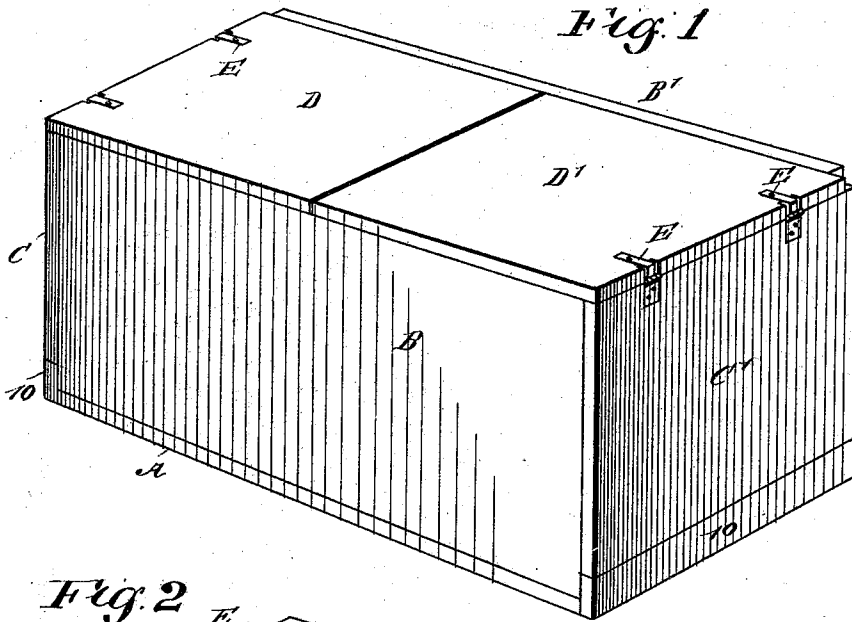
(No Model.)

2 Sheets—Sheet 1.

J. WOLFF.
FOLDING CRATE.

No. 545,930.

Patented Sept. 10, 1895.



WITNESSES:

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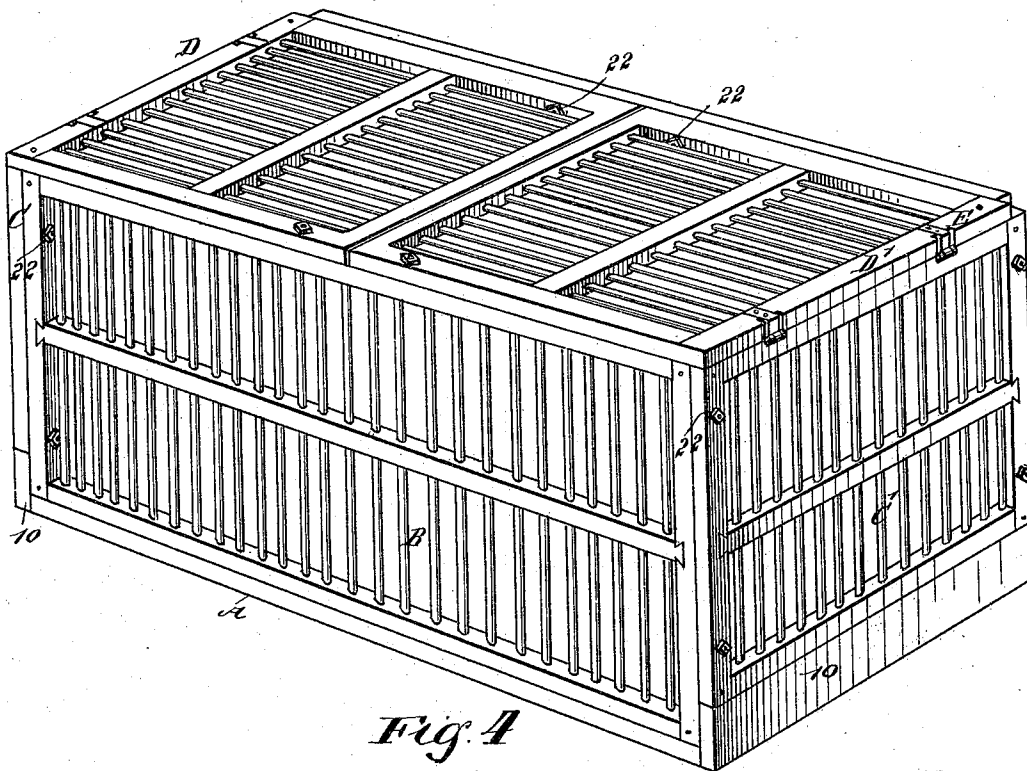
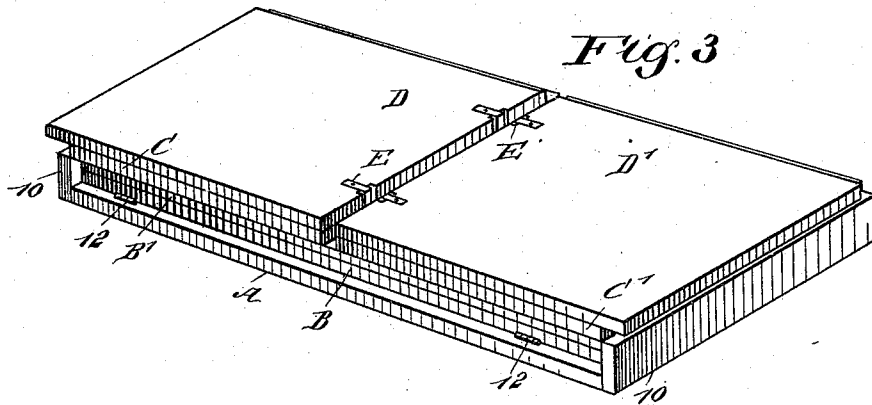
(No Model.)

2 Sheets—Sheet 2.

J. WOLFF.
FOLDING CRATE.

No. 545,930.

Patented Sept. 10, 1895.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JULIUS WOLFF, OF NEW YORK, N. Y.

FOLDING CRATE.

SPECIFICATION forming part of Letters Patent No. 545,930, dated September 10, 1895.

Application filed December 14, 1894. Serial No. 531,799. (No model.)

To all whom it may concern:

Be it known that I, JULIUS WOLFF, of New York city, in the county and State of New York, have invented a new and Improved Folding Crate, of which the following is a full, clear, and exact description.

My invention relates to a folding or knock-down crate, and has for its object to so construct a packing box or crate that after its contents have been removed its parts may be compactly folded one upon the other without entirely separating the parts and thus form a compact parcel capable of being returned to the shipper in an economic manner.

Another object of the invention is to so construct the crate or box that its parts may be expeditiously and conveniently set up again, and whereby when the box is set up the cover thereof will be in sections capable of being carried without being disconnected from the ends downward, parallel and in engagement with the outside faces of said ends.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view of a box set up and constructed in accordance with my invention. Fig. 2 is a perspective view of the box shown in Fig. 1, with the top and one of the sides of the box in folded position. Fig. 3 is a perspective view of the box fully folded. Fig. 4 is a perspective view of a crate constructed in accordance with my invention. Fig. 5 is a sectional view of a portion of one of the cover-sections and an edge view of one of the end sections of the box, illustrating the peculiar shape of hinge employed, the cover-section being in covering position. Fig. 6 is a view similar to Fig. 5, the cover-section being in folded position; and Fig. 7 is a section taken substantially on the line 7 7 of Fig. 6.

In carrying out the invention the box or crate comprises a bottom panel A, two side panels B and B', two end panels C and C', and two cover-panels D and D'. The bottom panel

A is provided with a flange or upward extension 10 at each of its ends, the height of the said extension corresponding substantially to the combined thickness of any two of the sections, particularly the combined thickness of the two side panels, and the said bottom panel at one side, which may be termed the "back," is provided with a longitudinal flange or upward extension 11, as shown in Fig. 2, of a height slightly greater than the thickness of the side panel B. The said side panel B is connected with the upper face of the bottom panel by means of two or more hinges 12, of any approved construction, the end panels C and C' being connected by hinges 13 with the upper face of the end flanges or projections 10 of the bottom panel, while the side panel B' is connected by hinges 14 with the upper edge of the side flange or projection 11 of the bottom panel, the hinges upon all of the panels being so placed as to enable the panels to fold inward one upon the other, and when the panels are brought to an upright position their lower edges will contact firmly and truly with the surfaces to which they are hinged.

The two cover-panels D and D' are attached to the upper edges of the end panels by means of hinges E of a peculiar pattern, since these cover-panels are to be folded down in contact and parallel with the outer faces of the end panels, and when the box is to be closed must be carried upward over the top portion of the box to rest upon the top of the said end panels.

The cover-panels D and D' likewise rest, when in their closed position, upon the side panel B, but abut against the inner side face of the opposing side panel B', which is of greater width than the other panels, as shown in Figs. 1 and 4.

The hinge E consists of a yoke, U-shaped, or staple section 15, which is made to receive between its members an edge of the cover, a space intervening between the outer edge of the cover and the vertical member of the staple, as shown best in Fig. 5.

The staple is secured to the cover by passing bolts 16, or their equivalents, through the horizontal member thereof and through the said cover. The second section of the hinge consists of a plate 17, which is to be screwed upon the outer face of the end section, the said

plate extending practically to the upper edge of the end section of the box, and said plate terminates at its upper end in knuckles 18.

A yoke-section 19, provided with suitable
 5 knuckles 20, as shown in Fig. 7, is pivotally
 connected to the knuckle end of the plate-section by means of a pivot-pin 21, and the vertical
 10 member of the staple-section 15, attached to the cover, is passed through the yoke-section 19, connected with the body of the box.
 In this manner the sections of the hinge will have such play as to enable the cover-section to which it is attached to be carried upward
 15 over the edge of the body-section to a horizontal position, or downward over such edge to a vertical position. It will be understood that the body and likewise the cover panels may be made solid, as shown in Figs. 1 and 2,
 20 or said panels may be constructed more or less open to form a crate, as shown in Fig. 4.
 The box being in its set-up form, it is reduced to its folded position by carrying the two cover-panels outward to an engagement with the end panels, as shown in Fig. 2. The
 25 panel B is then folded inward upon the bottom panel A, and the panel B' is then folded over upon the panel B. The two end panels are then folded inward upon the uppermost side panel, carrying with them the cover-panels.
 30 In this manner, as shown in Fig. 3, a series of flat and compactly-placed sections is obtained, enabling the box in its folded position to be returned to the shipper at a minimum of cost or stored away in a small space.
 35 The various panels of the body, when the box is set up, are temporarily secured together by means of bolts 22, or equivalent fastening devices, and it will be understood that when the sections are folded they lie directly one
 40 upon the other, having no intervening supports, and that the folded crate is virtually as compact as a solid block of like dimensions.

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

1. In a folding packing box or crate, the combination with two of the panels, of a hinge connecting the said panels, the said hinge, comprising a yoke member having a hinge connection with one of the panels, and a staple member secured to the other panel, the plane of the staple member being at right angles to that of the yoke member and passing loosely therethrough, substantially as described.

2. In a folding box or crate, the combination with a body panel, and a cover panel, of hinges connecting the said panels, each hinge consisting of a yoke member having a hinge connection with the body panel, and a staple member secured to the edge of the cover panel, the plane of the staple member being at right angles to that of the yoke member and passing loosely therethrough, substantially as described.

3. A folding crate, comprising a bottom panel having upwardly projecting extensions at its ends and one side, side panels, one hinged to the edge of the bottom panel and the other to the side extension thereof, and panels hinged to the end extensions of the bottom panel, cover panels, and hinges connecting the cover panels to the end panels, each hinge consisting of a plate secured to the end panels, a yoke hinged to the plate, and a staple secured to the cover panel, the plane of the staple being at right angles to that of the yoke and passing loosely therethrough, substantially as herein shown and described.

JULIUS WOLFF.

Witnesses:

J. FRED. ACKER,
 NATHAN SCHEYER.