

E. GARVEN & N. OSBORN.

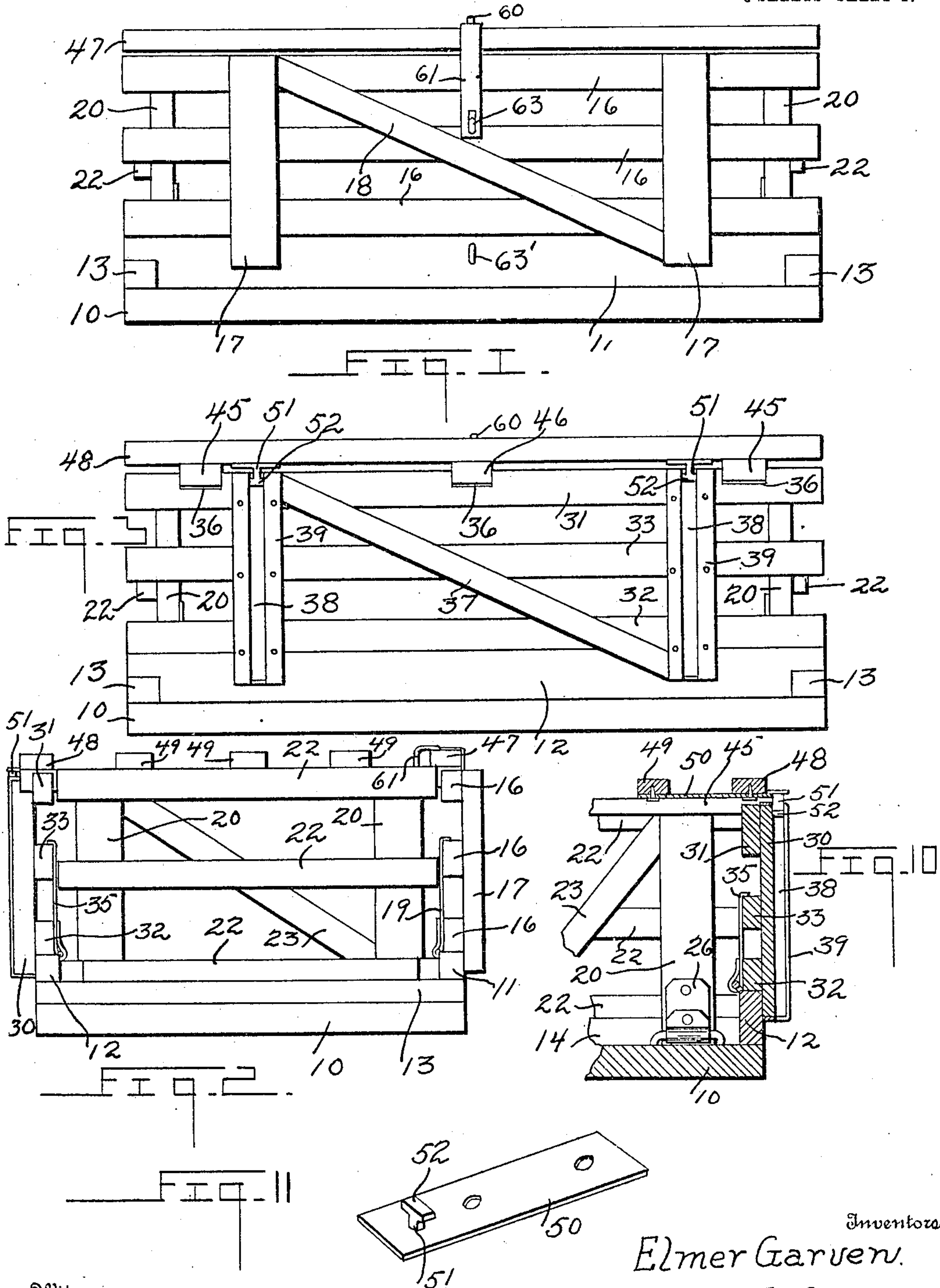
FOLDING CRATE.

APPLICATION FILED MAY 5, 1909.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 1.

944,028.



Witnesses
C. E. Johansen
E. L. Chaudree

Inventors
Elmer Garven.
Nerte Osborn.
By Woodward & Looney
Attorneys

E. GARVEN & N. OSBORN.

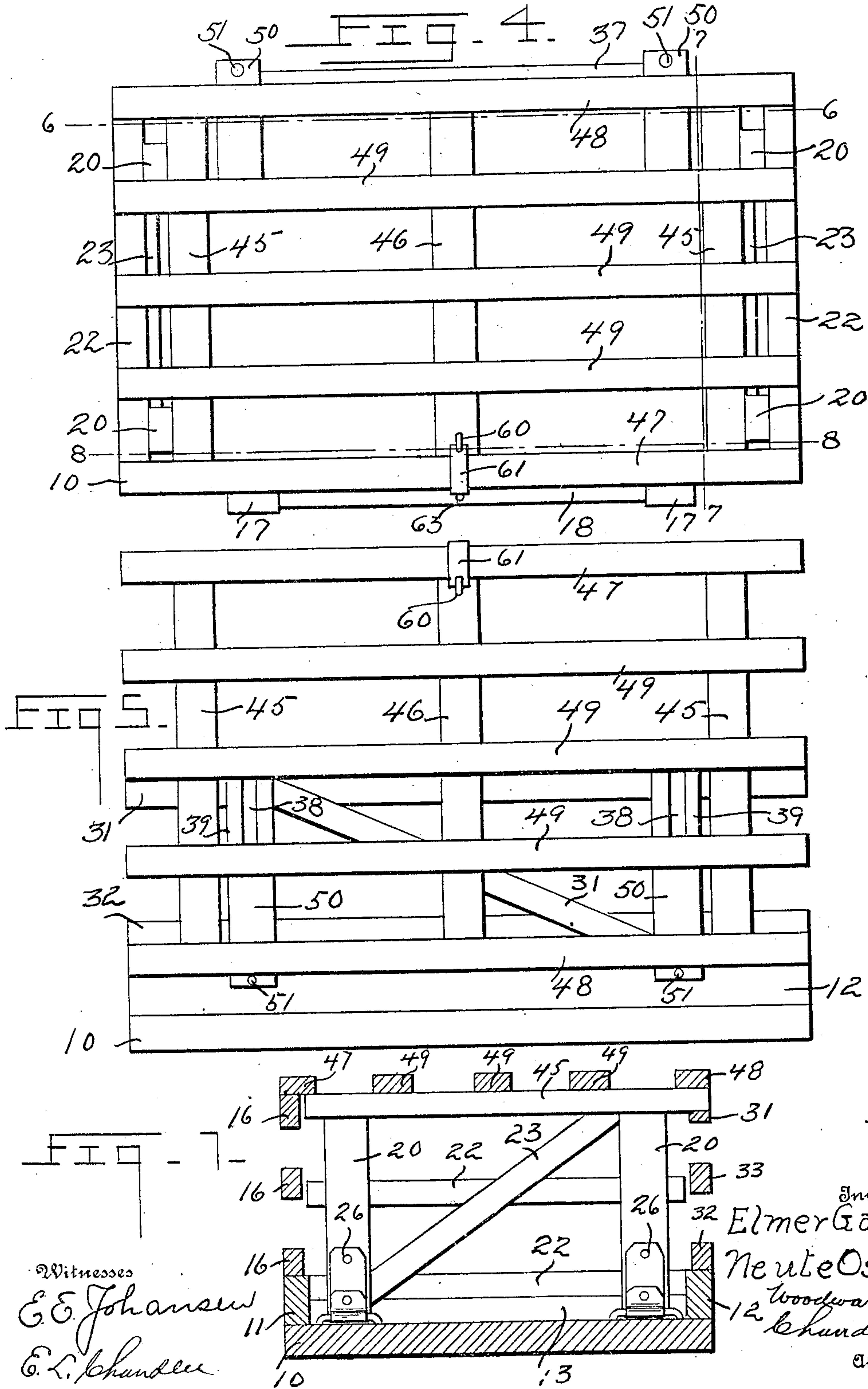
FOLDING CRATE.

APPLICATION FILED MAY 5, 1909.

Patented Dec. 21, 1909.

3 SHEETS—SHEET 2.

944,028.



E. GARVEN & N. OSBORN.

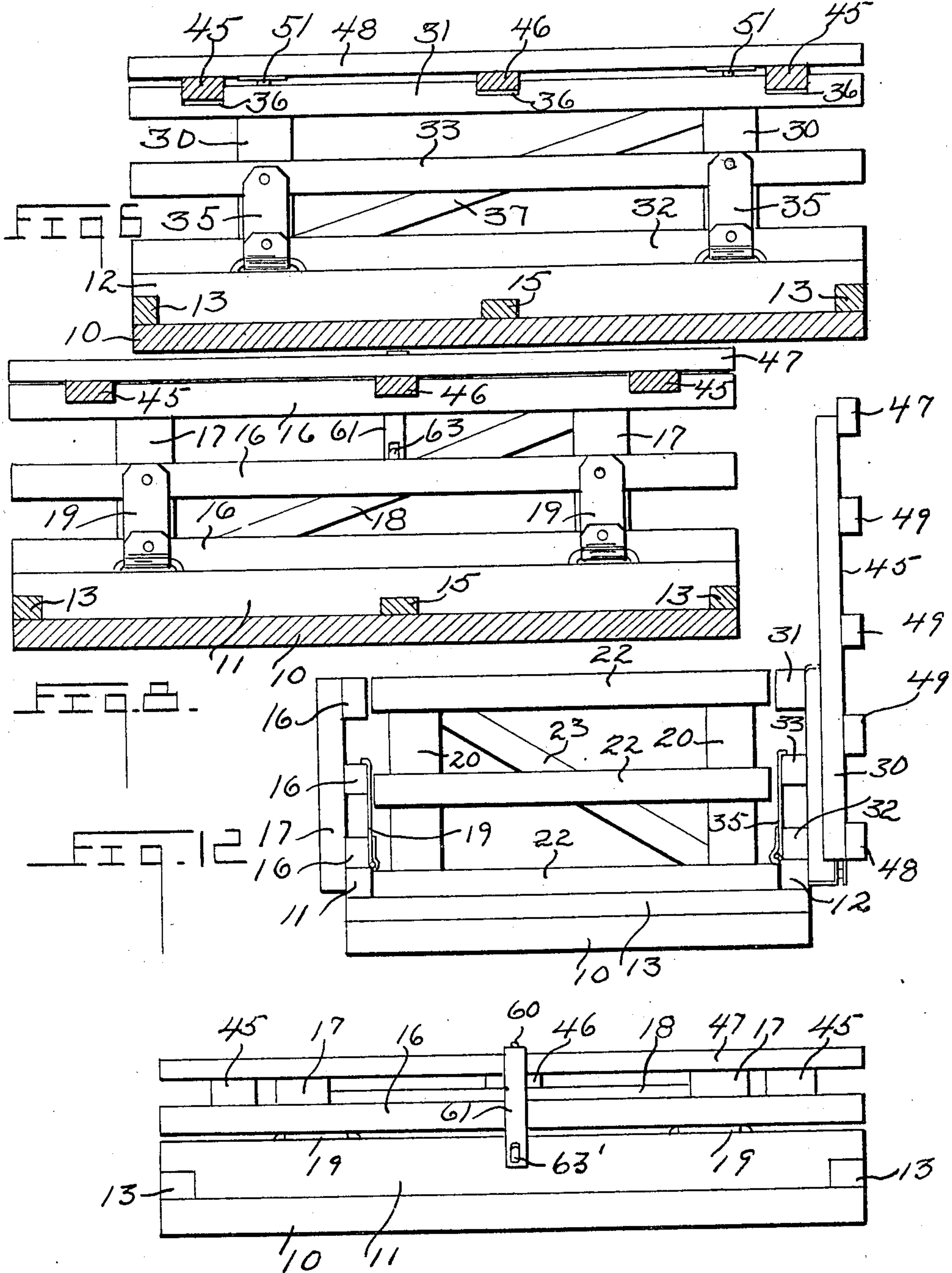
FOLDING CRATE.

APPLICATION FILED MAY 5, 1909.

Patented Dec. 21, 1909.

944,028.

3 SHEETS—SHEET 3.



Witnesses
E. E. Johansen.
C. L. Chandler

Inventors
Elmer Garven.
Neute Osborn.

By Woodward & Looney

Attorneys.

UNITED STATES PATENT OFFICE.

ELMER GARVEN AND NEUTE OSBORN, OF COULTERVILLE, ILLINOIS.

FOLDING CRATE.

944,028.

Specification of Letters Patent. Patented Dec. 21, 1909.

Application filed May 5, 1909. Serial No. 494,073.

To all whom it may concern:

Be it known that we, ELMER GARVEN and NEUTE OSBORN, citizens of the United States, residing at Coulterville, in the county of Randolph and State of Illinois, have invented certain new and useful Improvements in Folding Crates, of which the following is a specification.

This invention relates to certain new and useful improvements in folding crates.

The object of our invention is, to provide a crate particularly adapted to be used as a coop in transporting poultry and the like, which in an empty condition can be returned folded or knocked down in a firm compact condition.

A further object is to provide a folding crate of the class described which will be light, neat and simple of construction, and be so arranged that when the crate is in its unfolded condition, the crate forming elements will be securely locked one to the other, to form a firm rigid structure.

With these and other objects in view, the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claims, it being understood that changes in the specific structure shown and described may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming a part of this specification; and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a front elevational view of a crate embodying our invention disclosing the same as open, Fig. 2 is an end elevation thereof, Fig. 3 is a rear elevation thereof, Fig. 4 shows a top view, Fig. 5 is a rear view showing the lid as opened and lowered, Fig. 6 is a view on line 6—6 of Fig. 4, showing the inner face of the rear crate section, Fig. 7 is a view on line 7—7 of Fig. 4, showing an inner face view of one of the inner end sections, Fig. 8 is a longitudinal sectional view on line 8—8 of Fig. 4, Fig. 9 shows a front view of the crate as folded, Fig. 10 is a transverse sectional view of the crate through one of the runners, Fig. 11 is an enlarged detached detail of one of the ear plates, Fig. 12 is an end view of the folded crate showing the lid as open

disclosing the first step in the operation of unfolding the crate.

In the shipping of poultry, eggs, and other produce and fruit to the market, it is highly desirable to ship the articles in a crate, which may be folded on being returned in an empty condition.

In the accompanying drawings, 10 represents the solid bottom of a tray constructed according to our invention, which along its forward edge is provided with the upwardly extending batten 11, a batten 12 extending upwardly from the rear edge of the bottom, while between these front and rear battens are held the two end battens, these end battens being of a height less than the front and rear end battens. These battens as disclosed in the drawings skirt the four edges of the base 10. Intermediately the bottom 10 is strengthened and reinforced by means of the cross-bar 15.

The top or lid, as well as the front, rear and end sections of the crate are each in the form of a grate, as shown.

The front crate section comprises a plurality of battens 16, which are secured to the stay bars 17, and are reinforced by means of the cross bar 18. As shown the stay bars 17 have their upper ends flush with the upper edge of the uppermost positioned batten 16, while the lower ends of the stay bars, however, project beyond the lower end of the batten 16 and lie adjacent the front face of the front batten 11 secured to the base 10. This front crate section rests upon the upper edge of the front batten 11 and is secured to this member 11 by means of the hinges 19. As shown, this front crate section folds inward. In the folded condition, the lower edge of this front crate section ends flush with the front batten 11 as shown in the top view.

Each end crate section, comprises two similar end bars 20 which are connected by the cross bars 22, these bars 22 again being connected to the cleat 23. Each lowermost cross bar 22 is arranged to lie flush upon the adjacent end batten 13 when these crate ends are in a vertical position. In this position the lower ends of the end bars 20 are held against the end battens 13, these end bars 20 are secured to the battens 13, by means of the hinges 26, the instrumentalities being so arranged that when the crate ends are in a

vertical position, the end bars 20 are firmly held between the end battens 13 and the hinges 26. The lower cross bar 22 of each end member is of a width so that when these members 22 are upon the battens 13 their upper edges register with the upper edges of the front and rear battens 11 and 12. The end bars 20 and the cross bars 22 are of such a thickness that when these end members are in their folded position and rest upon the bottom 10, the upper edges of these cross bars 22 will again register with the upper edges of the front and rear cleats 11 and 12. As shown two such end grate sections are used in connection with our crate construction.

The rear section of our crate comprises the two similar stay bars 30, 30 which are connected by means of the upper recessed batten 31, the lower batten 32, and the intermediately positioned battens 33 as shown.

The lower batten 32 rests upon the rear skirting batten 12 secured to the bottom when the rear portion of the crate is in an upright position as shown. This lower member 32 is connected by means of hinges 35 to the rear batten 12, so that this rear section of the crate may be folded inward. The upper batten 31 is provided with the three recesses marked 36. These battens are strengthened by means of the cross cleat 37.

The stay bars 30 each have a central lengthwise positioned slot marked 38 while these rear stay bars are covered by means of a metal plate 39 which is provided with a central slot registering with the slots within the stay bars, while the ends of these plates are bent around the ends of the stay bars as disclosed.

The crate sections as shown are of a width so that when both of these sections are folded inward upon the crate members when in a folded condition, the upper battens of each front and rear sections are held proximal to one another. These slotted stay bars 30 end at their upper ends flush with the upper edge of the batten 31, the lower ends of these stay bars, however, projecting beyond the lower batten 32 so that the same may be brought against the outer face of the rear bottom batten 12 when the crate is in an unfolded condition.

The lid as used in our invention comprises the two similar end cleats 45 which are connected by means of the upper batten 47, the lower batten 48 and the intermediately positioned battens 49. Intermediate of their ends these lengthwise positioned battens are secured by means of the cleat 46. Secured to the two lowermost battens 48 and 49 are the two similar ear plates 50, each plate being provided with a stem 51, having a transversely positioned ear bar 52 held below the slotted plates secured to the stay bars 30. As shown the recesses 36 within the batten

31 are so positioned that when the lid is closed, the end cleats 45 as well as the intermediately held cleat 46 will rest within these recesses, so that the lid cannot be displaced when the same is folded upon this rear crate section as employed in our invention.

As a portion of each plate 50 extends beyond the stem 51, the lid may be held at an angle at any point within the slot when the rear crate section is in a vertical position. When these ear bars 52 have however been carried downward their full limit the lid will be held at right angles to the rear crate section, the ends of the ear plates resting below the slotted stay bars. As shown, the instrumentalities are so arranged that in its folded condition the crate sections form a solid, compact structure in that the end sections fold flat upon the bottom, the front and rear sections firmly upon the end sections, while the lid in turn folds firmly upon the outer faces of the front and rear crate sections.

Secured to the intermediately positioned cleat 46 of the lid is the securing staples 60 to which is secured the slotted hasp plate 61 the slotted end of which receives the pin receiving staple 63, so that this hasp plate may be secured to the receiving staple by means of a pin or a suitable lock.

In its unfolded condition, the crate members form a firm rigid coop structure, the lid cleats 45 and 46 have their front ends resting against the inner face of the upper batten 16 while the rear ends of these cleats are held within the slot 36. The end bars 20, 20, of each end crate section are positioned against the end cleats 25, when the lid is in a closed condition. As the lowermost member of each crate section rests upon the adjacent skirting bottom batten, the sections are all firmly held.

The crate can be folded or unfolded with ease, despatch and accuracy.

Having thus described our said invention, what we claim as new and desire to secure by United States Letters Patent is:

1. A crate of the character described, comprising a bottom, a front and a rear batten secured near the edges of said bottom, two end battens held between said front and rear battens said end battens being of a height less than said front and rear battens, two end crate sections having their lower ends hinged to said bottom and held against said end batten, a front crate section hinged at its lower edge upon the side to the upper edge of said front batten, two transverse stay bars secured to the front batten upon the inside and arranged to have their lower ends stopped against the outer faces of said front batten, a rear crate section hinged at its lower edge upon the inside to the upper edge of said rear batten, stay bars secured

transversely to the outside of said rear crate section, runners secured to said rear stay bars, a lid, and two ear plates carried by said lid, the ears of said plate being slidably held within said runners.

2. A crate of the character described, having in combination a base provided with skirting edged battens, a front crate section provided with two stay bars having their ends projecting beyond the front crate section and resting against the face of said base batten, two similar end crate sections, said end sections having two end bars which at their lower end are held against the inner faces of the end batten of said base, hinges to secure said end bars to the base of said crate, a rear crate section, slotted stay bars secured to the outside of said rear crate section and extending below the lower end thereof, hinges to secure said crate section to the upper edge of the batten of said base, slotted plates held to each slotted stay bar, a lid, and two ear plates secured to said lid, each plate having an ear slidably held within the slot of said stay bars and below said slotted plate, as and for the purpose set forth.

3. A crate having in combination, a base, a front and a rear batten secured to said base, two end battens secured to said base, said end battens being of a height less than said front and rear battens, a front crate section, hinges to secure said front crate section at its lower end to the upper edge of said front batten, stay bars secured to said front crate section and arranged to lie

against the outer face of said front batten, two similar end crate sections, end bars secured to said end sections, said end bars having their lower ends held adjacent to the inner faces of said end base battens, hinges to secure said end bars to said base, a rear crate section, two slotted stay bars secured to said rear crate section the lower end of said slotted stay bars projecting below the lower end of said rear crate section and being held adjacent to the outer faces of said rear base batten, slotted plates secured to each slotted stay bar each having its end bent over the ends of said slotted stay bars, said rear crate section provided along its upper edge with recesses, a lid having two end cleats, ear plates secured to said lid, a stem extending from each ear plate, and ear bars secured to each stem, said ear bars being arranged to be held within the slots of said stay bars and below said slotted plates, and means to lock said lid to said front crate section, said instrumentalities being so arranged that when said lid is folded, said lid and cleat will be held within said recesses, said end bars being held against said end cleats, all arranged substantially as and for the purpose set forth.

In testimony whereof we affix our signatures, in presence of two witnesses.

ELMER GARVEN.
NEUTE OSBORN.

Witnesses:

J. H. HIGSING,
R. J. STEWART.