

No. 774,301.

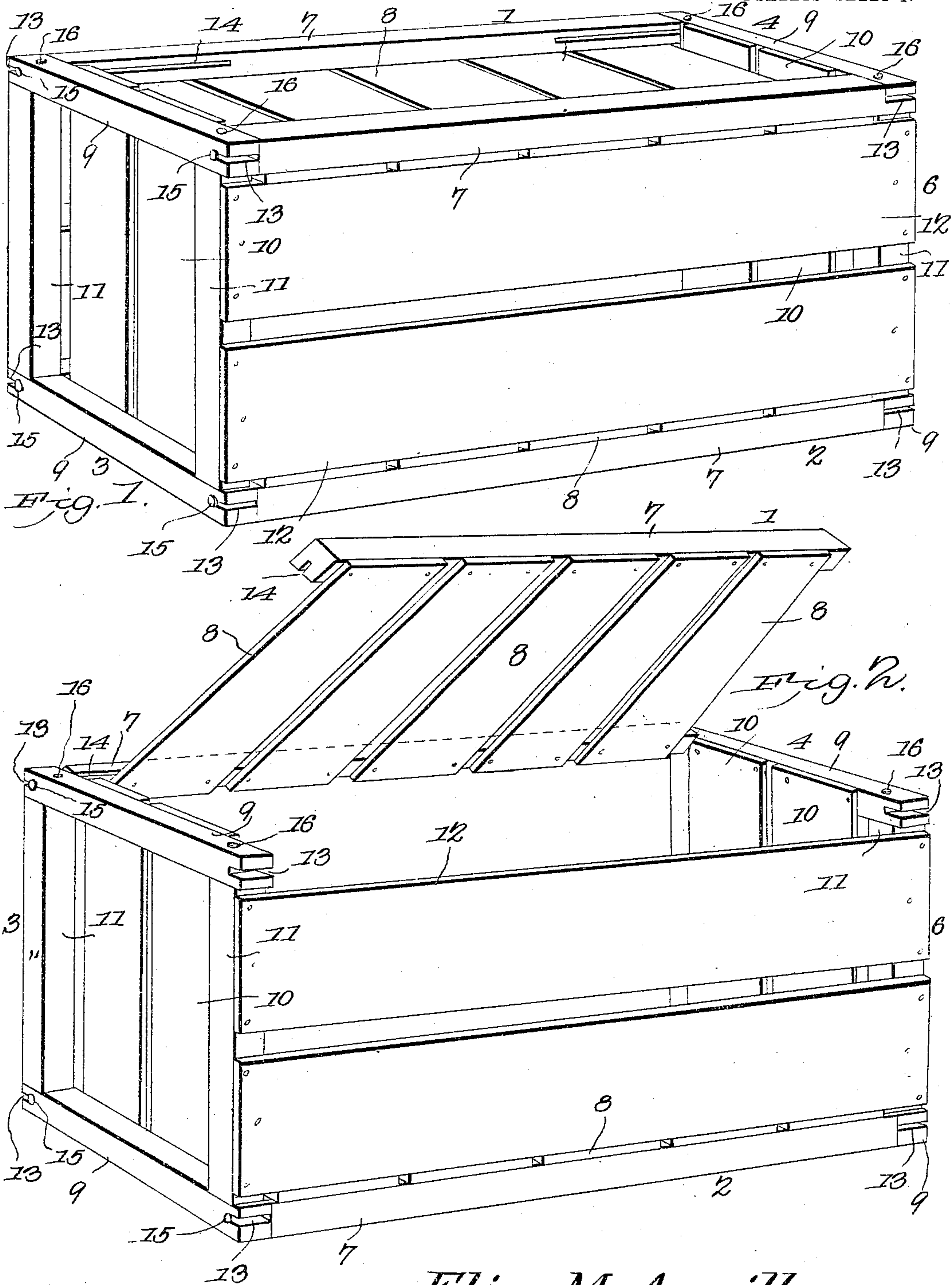
PATENTED NOV. 8, 1904.

E. M. AVERILL.  
FOLDING CRATE.

APPLICATION FILED MAY 23, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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*Elias M. Averill*, Inventor,

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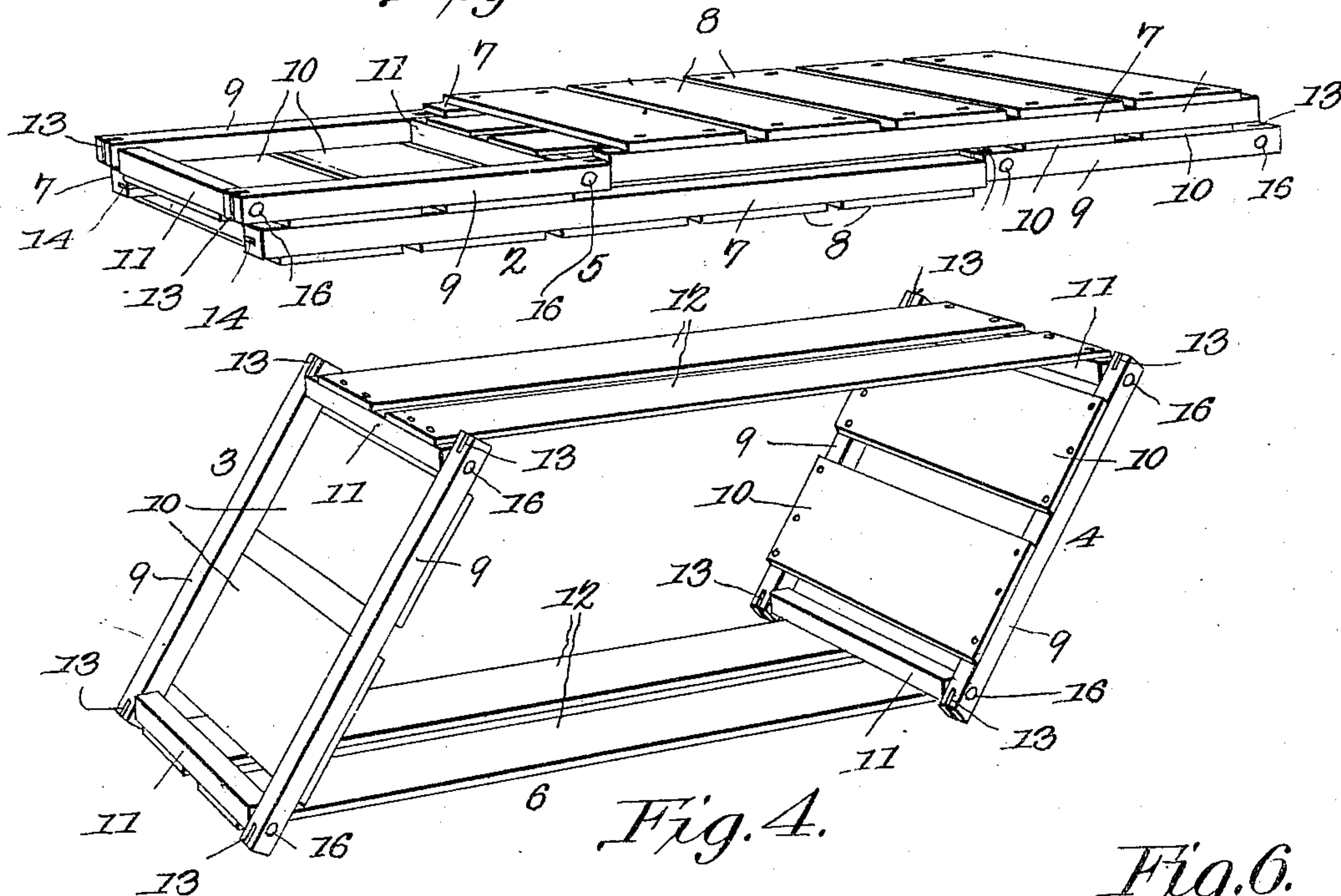
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2 SHEETS—SHEET 2.

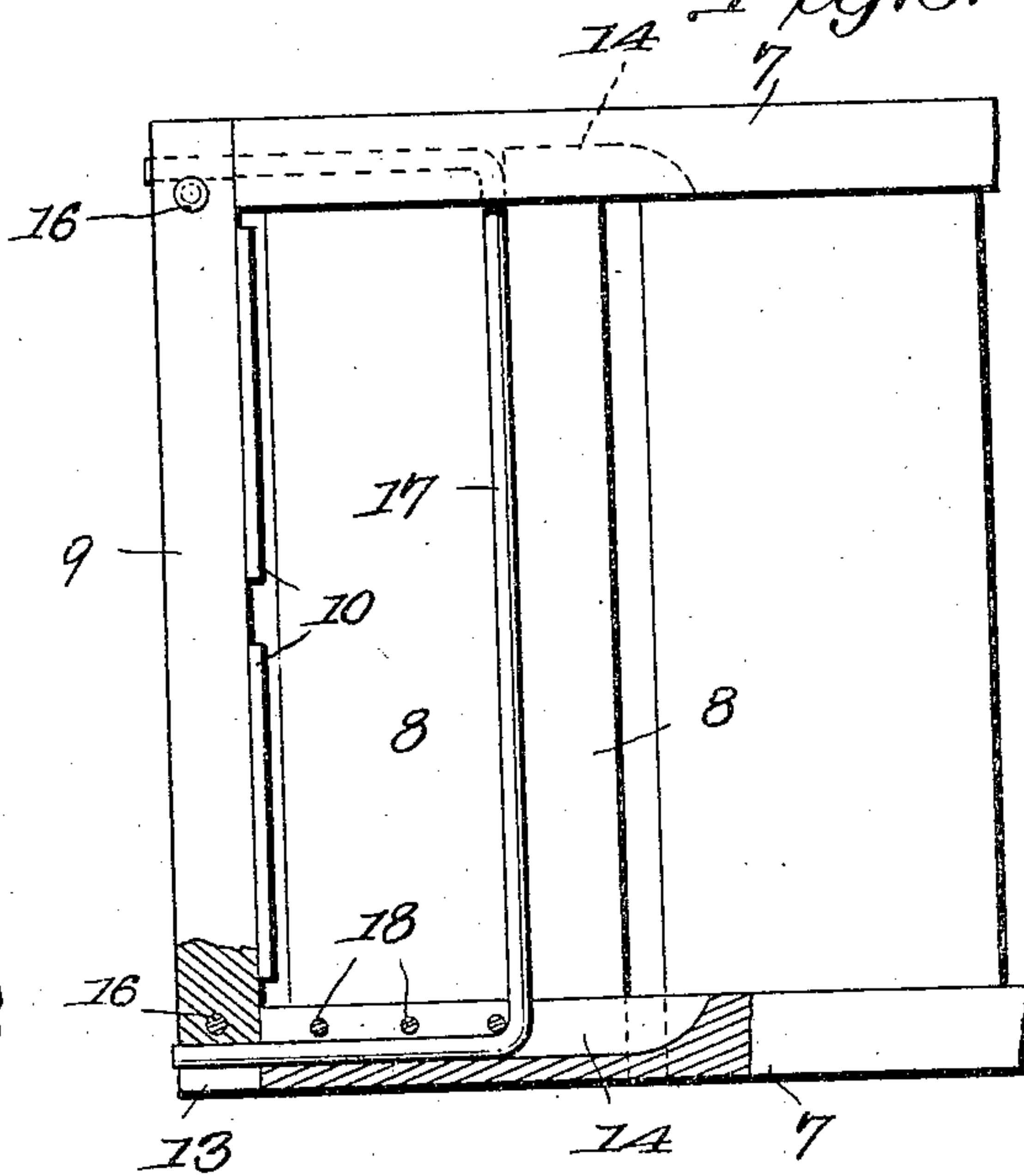
NO MODEL.

*Fig. 3.*

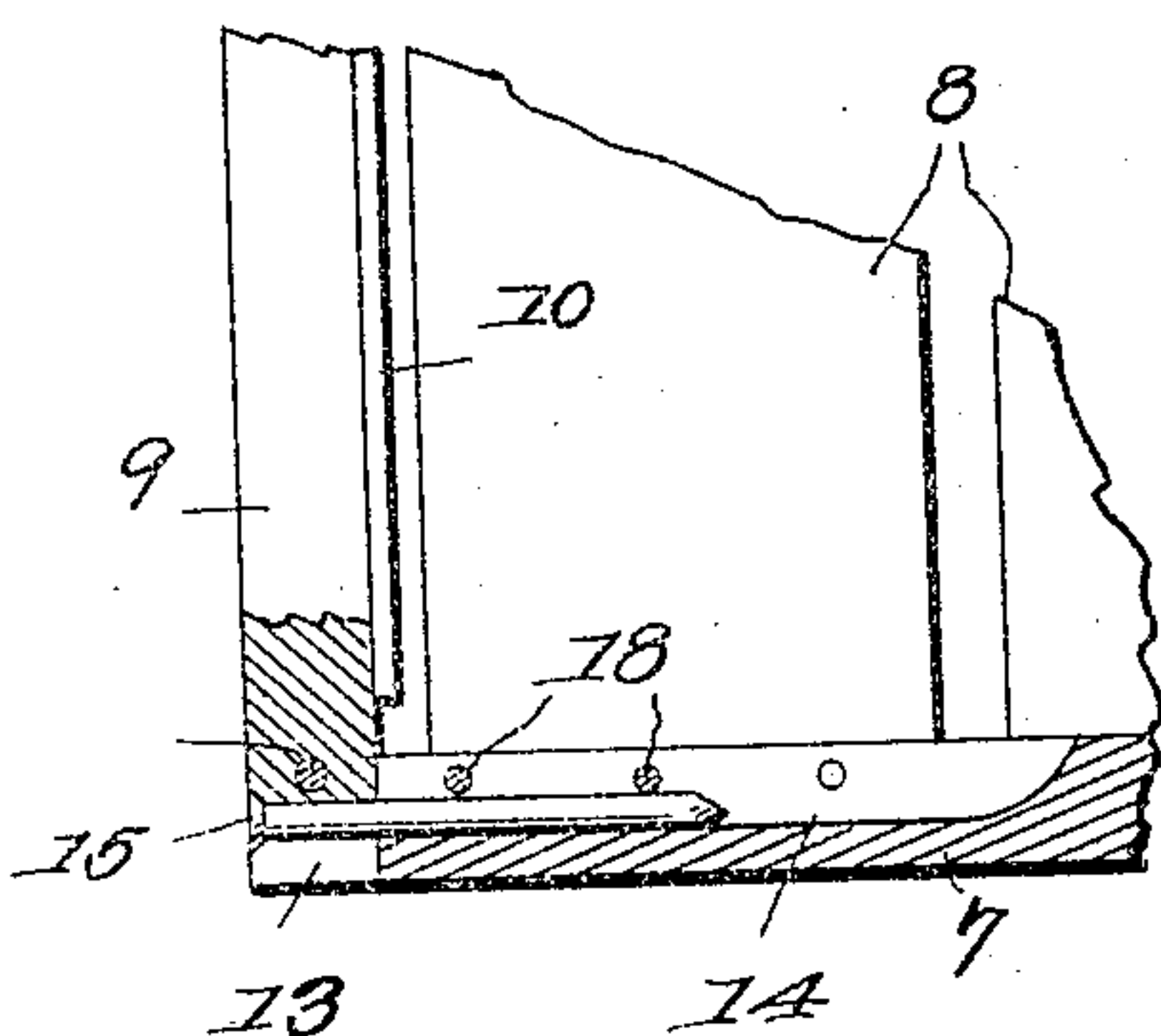


*Fig. 4.*

*Fig. 6.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

ELIAS M. AVERILL, OF SPARTA, MICHIGAN.

## FOLDING CRATE.

SPECIFICATION forming part of Letters Patent No. 774,301, dated November 8, 1904.

Application filed May 23, 1904. Serial No. 209,342. (No model.)

*To all whom it may concern:*

Be it known that I, ELIAS M. AVERILL, a citizen of the United States, residing at Sparta, in the county of Kent and State of Michigan, have invented a new and useful Folding Crate, of which the following is a specification.

This invention relates generally to shipping-crates, and particularly to one adapted for use in the transportation or storage of fruits, such as peaches, plums, apples, boxed berries, and the like.

The object of the invention is to present a crate which will combine simplicity and cheapness of construction with the highest efficiency and durability in use and one which may be readily collapsed or knocked down when desired.

A further object of the invention is to reduce the cost of production of the crate to the lowest possible figure by dispensing with expensive forms of fastening devices and other accessories in the nature of hinges, staples, and the like and relying entirely upon nails for holding the parts of the crate assembled and also for presenting the necessary hinge members to permit the top to be opened and to allow the crate to be collapsed.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a shipping-crate, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof.

In the drawings, Figure 1 is a view in perspective of a crate constructed in accordance with the present invention, the cover being closed. Fig. 2 is a similar view with the cover raised. Fig. 3 is a perspective view of the crate, showing the same collapsed. Fig. 4 is a perspective view exhibiting the body

portion of the crate partially collapsed. Fig. 5 is a detail view showing one manner of assembling the frame-sections of the crate. Fig. 6 is a similar view showing a slightly-modified form of fastener for holding the top or bottom from accidental opening.

The crate comprises an upper and lower section 1 and 2, either of which may constitute the top, two end sections 3 and 4, and two side sections 5 and 6, the end and side sections being assembled in such manner as to permit of their being folded flat when collapsed, as shown in Fig. 3.

Each of the sections 1 and 2 consists of two frame-pieces 7, connected and held in parallelism by slats 8, nailed to their inner sides, each of the end sections 3 and 4 of two frame-pieces 9, connected and held in parallelism by slats 10, nailed to their inner sides, and each of the side sections 5 and 6 by two frame-pieces 11, connected and held in parallelism by slats 12, nailed to their outer sides. This arrangement is adopted to permit the crate to be folded flat when knocked down and will also insure ample ventilation of the contents, as where a series of crates are superposed one upon the other there will always be space for entrance of air through the top, bottom, and ends.

The ends of the frame-pieces 9 are provided with kerfs 13, and the inner sides of the frame-pieces 7 are provided with longitudinal kerfs 14, these kerfs being provided to receive the assembling devices 15, which are preferably wire nails of any desired size and are made detachable by engagement with the kerfs 14, thus to permit of the parts of the crate to be separated when being transhipped. The walls of the kerfs 14 exert a clamping action upon the nails, which will operate to hold the parts of the crate positively assembled and will at the same time permit removal when necessary for the purpose above stated.

The frame-pieces 11 are combined with the frame-pieces 9 through the medium of nails 16, which are driven vertically into the parts and are arranged back of the center in order to allow the crate to be folded in the manner shown in Fig. 3. Otherwise if these nails 16 were placed centrally of the frame-pieces 9 they would not only interfere with the nails



15, but would also prevent the crate from being folded flat in the manner shown in Fig. 3.

As before stated, the slats are secured to the inner sides of the upper, lower, and end sections of the crate and the outer sides of the side sections, and by this arrangement thorough ventilation of the contents of the crate is assured when the crates are superposed.

While this is the preferred form of arranging the sheathing formed by the slats, it is to be understood that all the slats may be placed on the inner sides of the sections or all on the outer sides thereof without departing from the spirit of the invention.

The nails 15, which serve to hold the frame-pieces assembled, also constitute locking means to prevent the top or bottom from accidentally opening, it being seen that either the upper or lower section may constitute the top or bottom, according to which of the nails are withdrawn to permit the part to be thrown back. Instead of employing nails as fastening and assembling devices for these parts a wire bail 17 may be employed, the sides of which will rest in the kerfs 14 and will be movable therein, so that when pulled outward the terminals of the side members of the bail will enter the kerfs 13, and thus hold the parts of the crate with which they coact properly assembled. The bails will be held from accidental separation from the frame-pieces 7 through the medium of the nails 18 that serve to hold the sheathing assembled with the upper and lower sections.

As will be readily understood, in order to manufacture and sell crates of this character they must be made at the very lowest possible cost, and to secure this result all superfluous lumber and fastening devices or hinges must be dispensed with. It will be seen by the arrangement shown that the least possible lumber is employed in the construction of the crate, that the parts are so assembled as to present a strong and substantial structure, and that hinges and locking devices are dispensed with, the nails employed at the corners of the frame-pieces serving a dual function of assembling devices and hinges.

When the crate is to be knocked down for the purpose of transshipment, the nails 15 are withdrawn and the top and bottom sections removed, as shown in Fig. 4, after which the side and end sections are folded flat upon themselves, with the upper and lower sections disposed against the opposite sides of the folded structure, as shown in Fig. 3.

A further advantage of the crate herein

disclosed is derived from the fact that the end walls have the slats or filling members secured to the inner surfaces of the frame members, thus providing suitable grips or handles at the ends of the crate by which the receptacle may be conveniently carried. Moreover, it is preferred similarly to construct the top and bottom walls—namely, with the slats or fillers secured to the inner surfaces of the frame members. This arrangement of the top, bottom, and end walls provides for ventilation when the crates are packed closely together in transit or when stored, while the disposition of the slats or fillers of the side walls on the exterior surfaces of the frame members economizes space, while permitting a close, compact, and efficient folding of the crate members when in a knocked-down condition.

Having thus described the invention, what is claimed is—

1. A crate comprising side and end sections each of which consists of frame-pieces and slats secured thereto and held in parallelism, the frame-pieces of the end sections being provided at their terminals with kerfs, nails passing through the last-named frame-pieces to one side of the center thereof and entering the ends of the frame-pieces of the side sections, top and bottom sections having frame-pieces provided on their inner faces with longitudinal kerfs to aline with those of the frame-pieces of the end sections, and detachable fastening devices engaging the two sets of kerfs.

2. A crate comprising side, end, top and bottom sections, each of which is composed of two frame-pieces connected and held in parallelism by slats, the frame-pieces of the end sections being provided at their terminals with kerfs, nails passing through the frame-pieces of the said ends and entering the frame-pieces of the side sections to hold the parts pivotally connected, frame-pieces provided with longitudinal kerfs adapted to aline with those of the frame-pieces of the end sections, and bails movably mounted in the longitudinal kerfs and adapted to have their terminals moved into engagement with the kerfs of the end frame-pieces.

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

ELIAS M. AVERILL.

Witnesses:

A. B. CHENEY,  
ETTA NORTON.