

A. C. MICHAEL.
FOLDING CRATE.
APPLICATION FILED APR. 17, 1909.

Patented Apr. 5, 1910.

2 SHEETS—SHEET 1.

954,322.

Fig. 1.

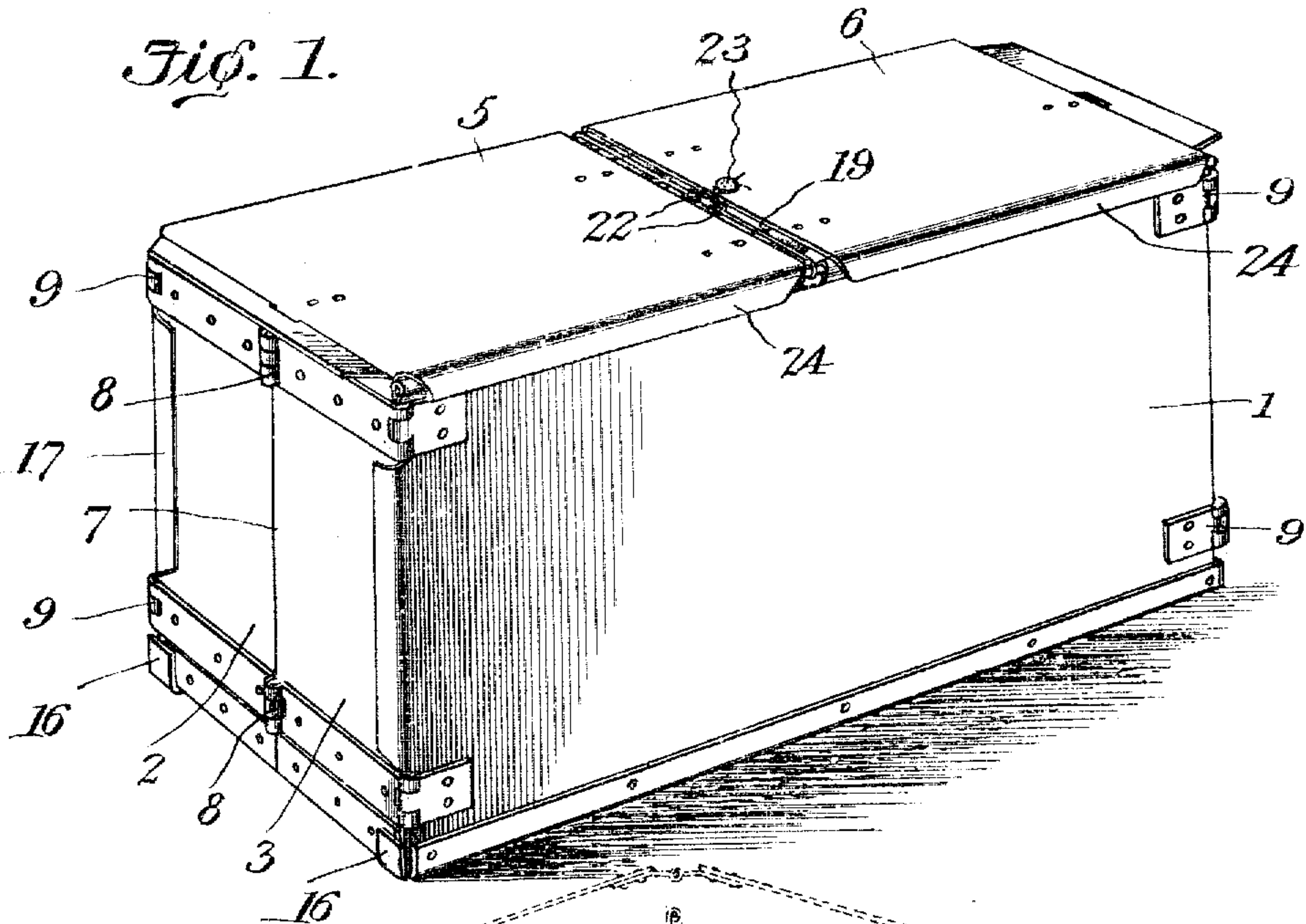


Fig. 2.

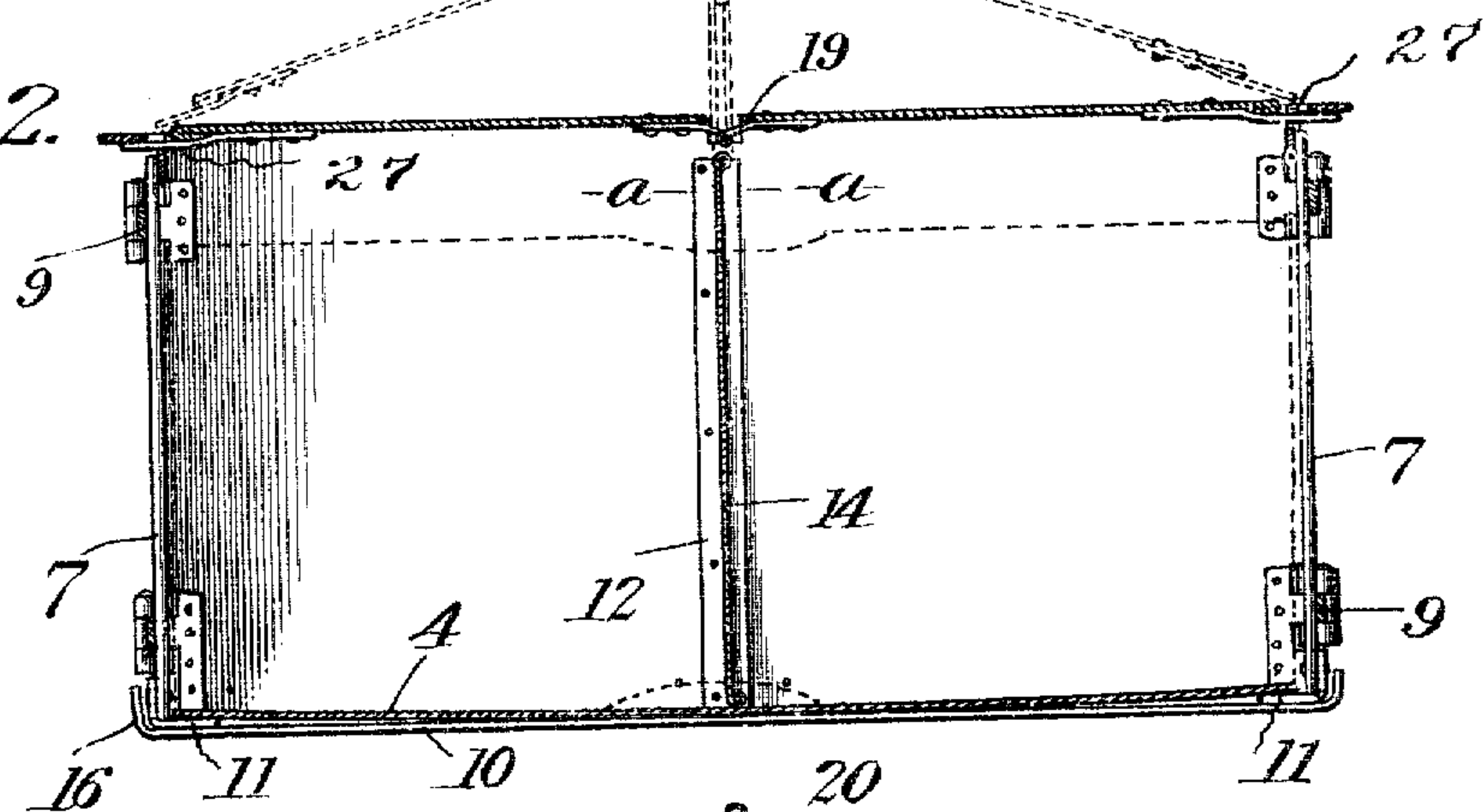
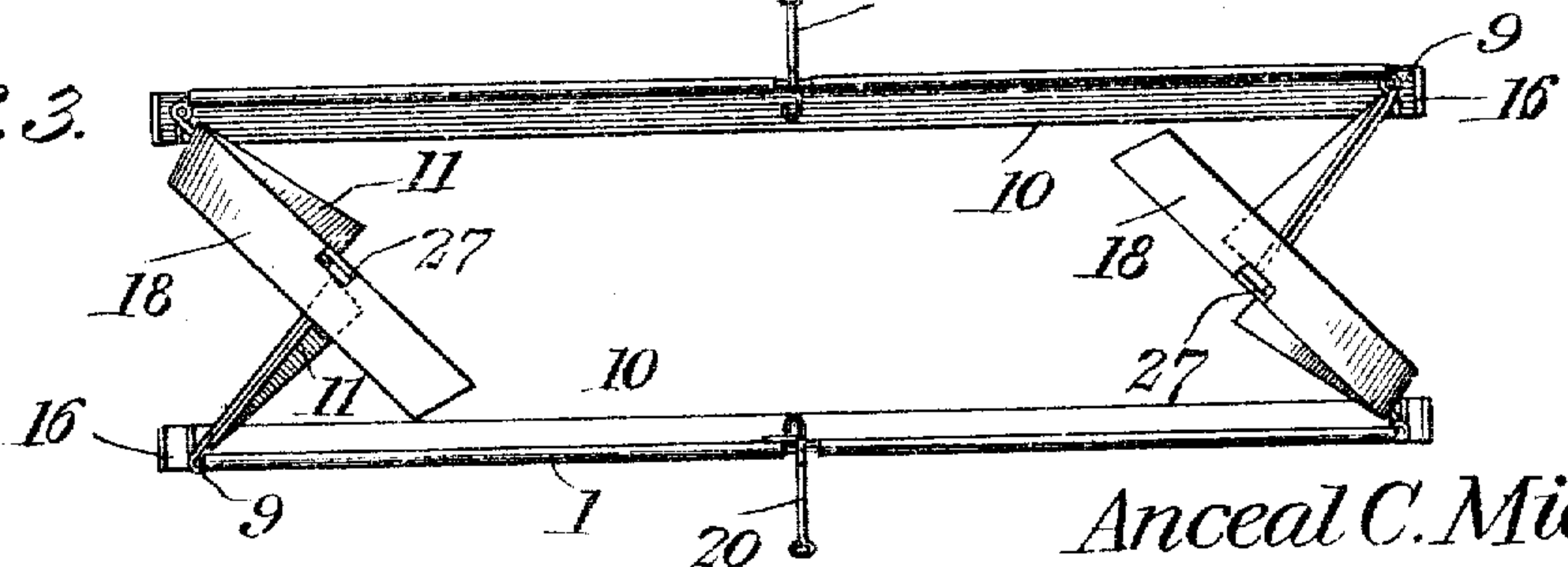


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

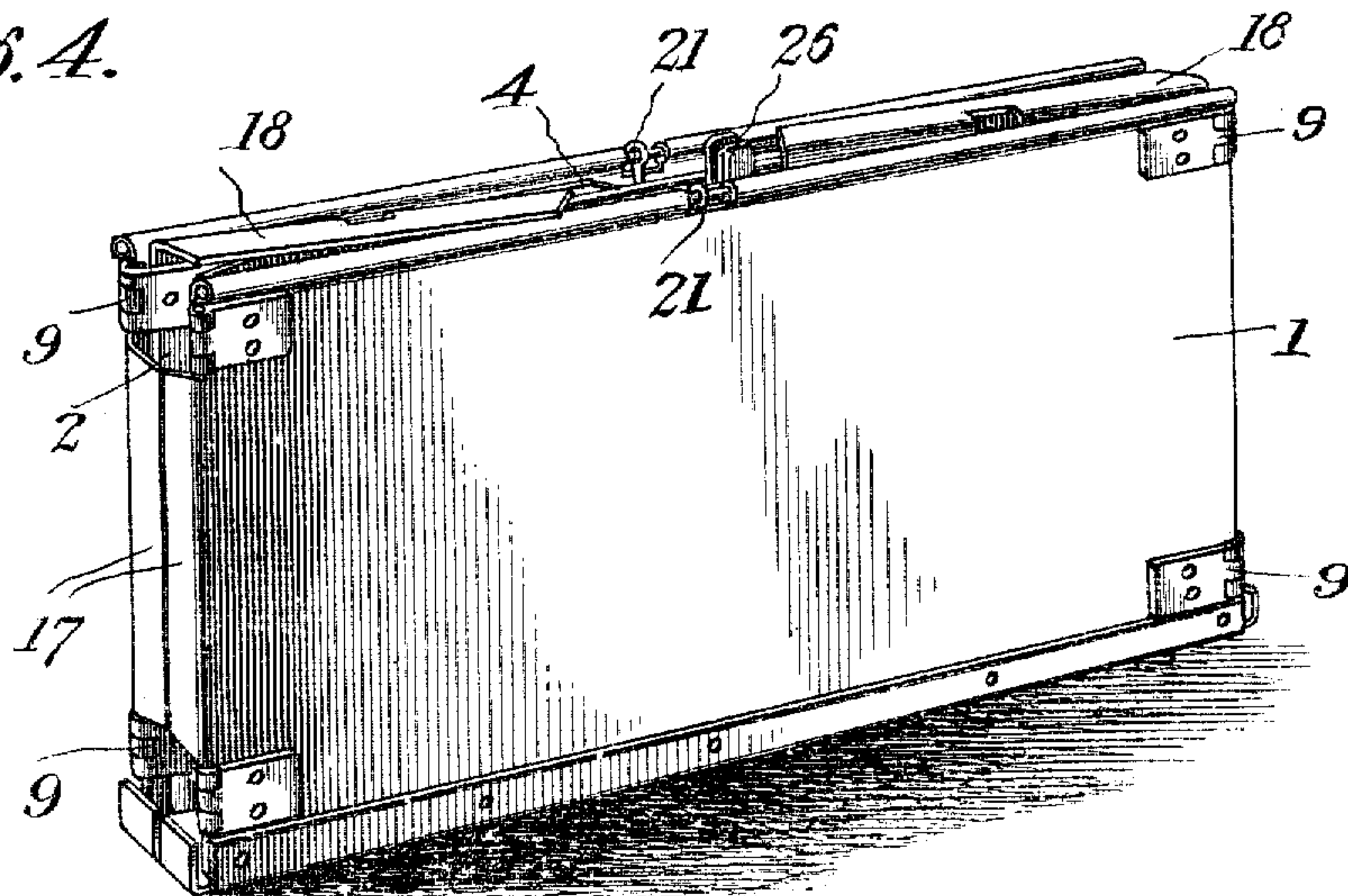


Fig. 5.

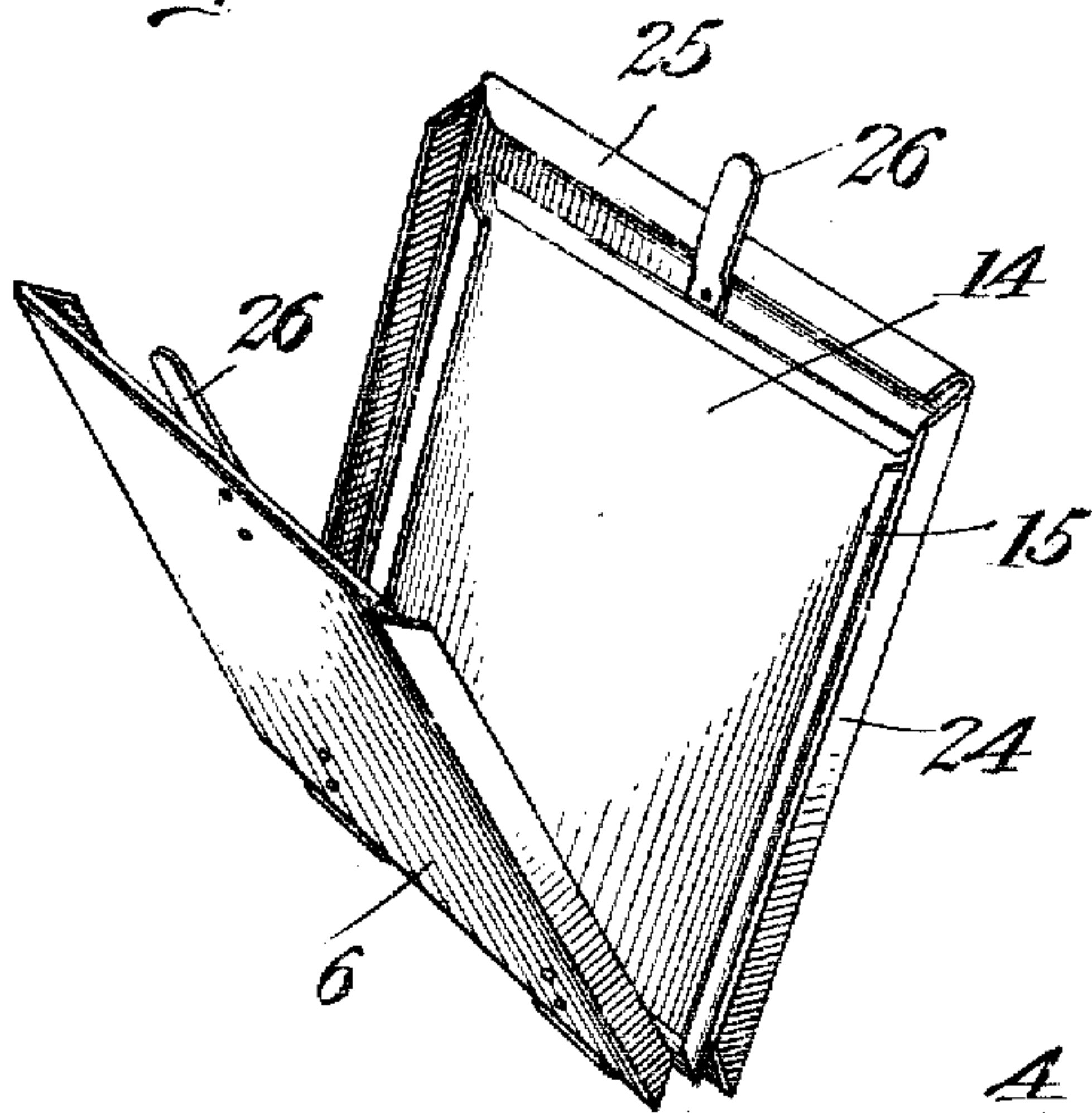


Fig. 6.

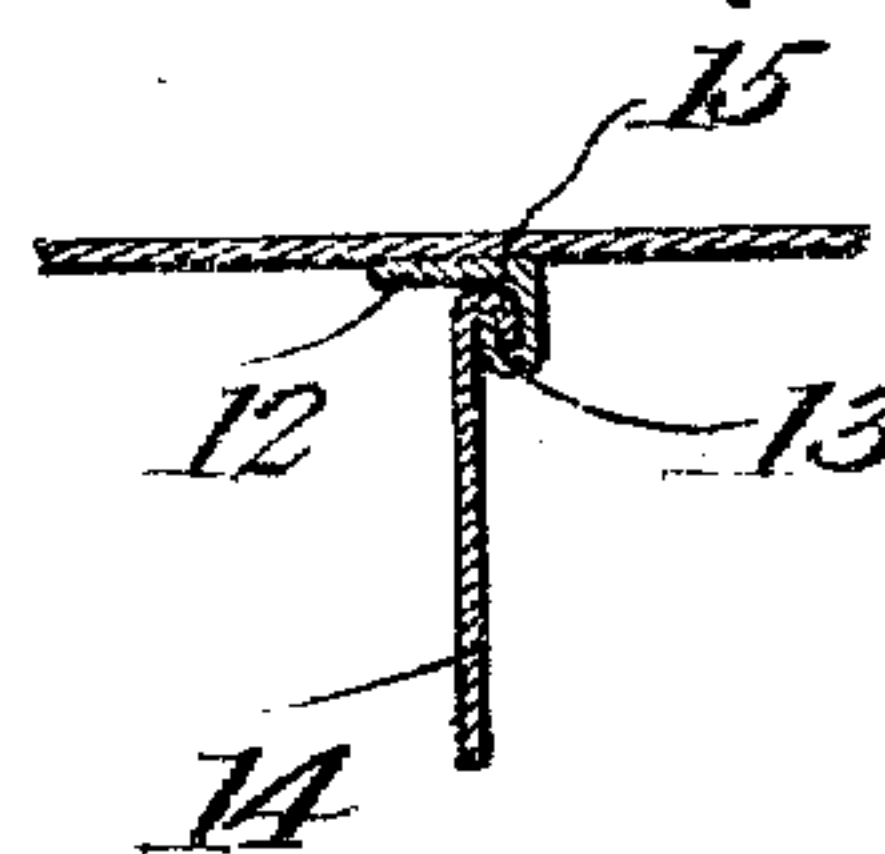
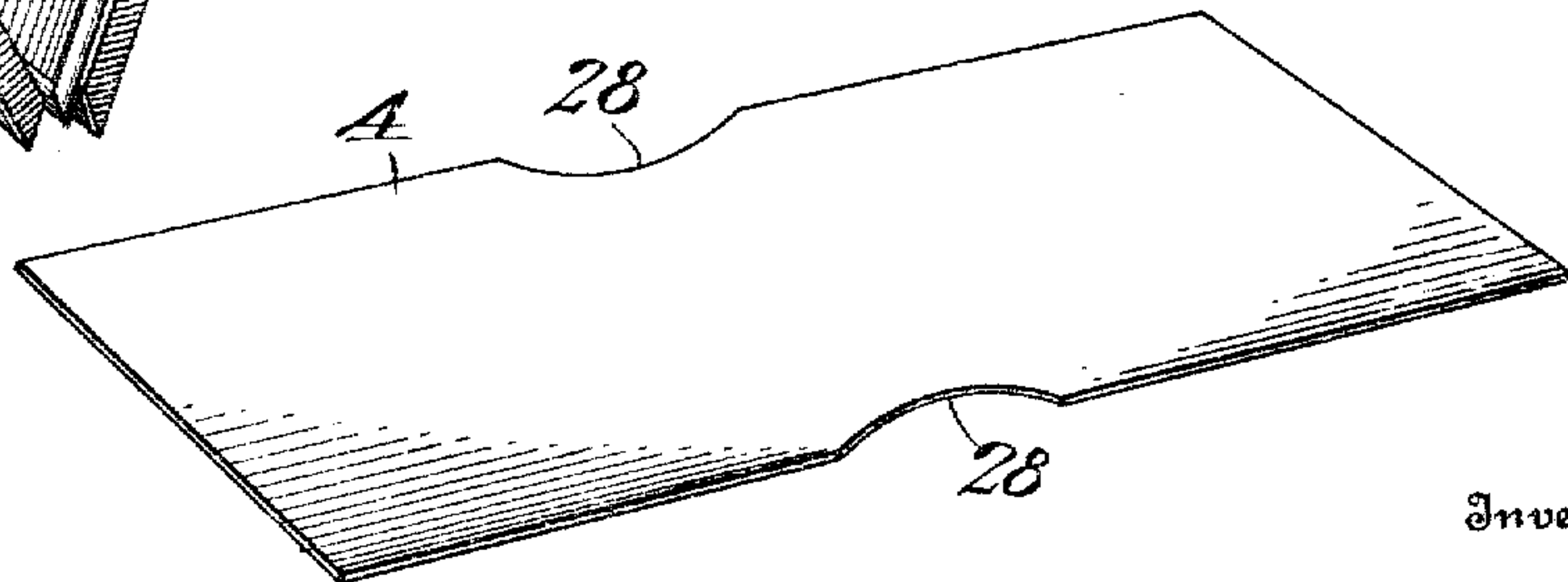


Fig. 7.



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ANCEAL C. MICHAEL, OF FLORA, INDIANA, ASSIGNOR OF ONE-HALF TO SANFORD D. HELM AND ONE-HALF TO CHARLES E. LACEY, BOTH OF CRAWFORDSVILLE, INDIANA.

FOLDING CRATE.

954,322.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed April 17, 1909. Serial No. 490,456.

To all whom it may concern:

Be it known that I, ANCEAL C. MICHAEL, a citizen of the United States, residing at Flora, in the county of Carroll and State of Indiana, have invented new and useful Improvements in Folding Crates, of which the following is a specification.

This invention relates to folding crates, the object in view being to provide a crate adapted for shipping purposes which is capable of being folded and set up expeditiously and which, when set up, is effectively braced throughout so as to prevent any liability of accidental collapse. When folded, the entire crate occupies very small space and the detachable portions thereof are adapted to be contained and held within and by the folded sides and ends of the crate, the latter being hinged together and non-detachable.

With the above and other objects in view, the nature of which will fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of the improved crate shown set up. Fig. 2 is a vertical longitudinal section through the same, showing in dotted lines, the manner of applying and removing the cover. Fig. 3 is a top plan view of the crate shown partially folded, with the bottom folded upward and cover and partition removed. Fig. 4 is a perspective view of the crate in a completely folded condition. Fig. 5 is a detail perspective view of the cover partially folded and the partition lying between the hinged sections of the cover. Fig. 6 is a detail horizontal section illustrating the interlocked connection between the partition and the crate sides. Fig. 7 is a perspective view of the bottom detached.

The crate contemplated in this invention is illustrated for convenience as of a shape particularly adapted for use in transporting or shipping eggs but it will be understood as the description proceeds that the size, shape and general dimensions of the crate, as well as the material of which the different parts of the crate are formed, may be varied at will to suit the manufacturer and the purpose for which the crate is to be used.

The improved crate embodies essentially the opposite parallel sides 1, ends each consisting of sections 2 and 3, a bottom 4 and a top comprising sections 5 and 6. Each of the crate ends consists of a pair of twin sections 2 and 3 meeting on a central vertical line 7 and hinged together at 8 to fold inward as indicated in Fig. 3. The end sections 2 and 3 are also hinged at 9 to the sides 1 at the corners of the crate, the last named hinges being also of such a character as to permit the end sections to fold inward as above noted. Under the arrangement described, the sectional ends of the crate may be folded inward as indicated in Fig. 3, so as to lie between the sides 1 when the latter are pressed together and brought to the position shown in Fig. 4.

The sides 1 are provided along their bottom edges with inwardly extending flanges 10 upon which the removable bottom 4 is adapted to rest and be supported as shown in Fig. 2. For a like purpose the end sections 2 and 3 are provided at their bottom edges with inwardly extending bottom supporting flanges 11 of triangular shape, the flanges 11 being widest at their inner ends, as shown in Fig. 3. In this way the removable bottom 4 finds a support along its entire marginal edge.

To the inner surfaces of the sides 1 are secured keeper strips 12 each of which is provided with a hook-shaped flange 13. These keeper strips are arranged directly opposite each other as shown in Fig. 3 and are designed to be engaged by a vertically slidable partition 14 provided at its opposite vertical edges with hook-shaped flanges 15, the latter being adapted to interlock with the flanges 13 as illustrated in the detail section Fig. 6. The partition thus locks the sides 1 together intermediate the ends thereof, preventing movement of the sides both outward and inward.

The flanges 10 above referred to have their opposite ends extended beyond the extreme vertical edges of the sides and bent upward to form stop lips 16 which lie outside of the end sections 2 and 3 and assist in limiting the outward movement of the sections 2 and 3. Each of the sides 1 is also provided at its extreme vertical edges with inwardly bent stop flanges 17 which reinforce the corners of the plate and also assist in limiting the outward movement of the

sections 2 and 3. The outward movement of the end sections 2 and 3 is further limited by means of flanged or angle cleats 18 extending along the top edges of the sections, as illustrated in Fig. 3, each of said cleats being secured to the top edge of one of the sections and being left detached from the remaining section so as not to interfere with the inward folding movement of said sections, as shown in Fig. 3. In such inward folding movement, the angle cleats swing out of contact with the end sections to which they are not connected as clearly shown in said Fig. 3, but when the said end sections are moved outward into a plane perpendicular to the sides, the said angle or flanged cleats engage both end sections and arrest the further outward movement thereof.

The cover comprises the twin sections 5 and 6 which meet on a central transverse line where they are connected by hinges 19. By reference to Figs. 1 and 2, it will be noted that the leaves and knuckles of said hinges are centrally depressed, this being done to provide room for a pair of fastening links 20 which are pivotally connected at 21 to the top edges of the crate sides and adapted to be swung upward over the cover when the latter is in place, said links resting in the depression referred to and being provided at their free ends with eyes 22 adapted to receive a seal 23 or any suitable fastening device. The cover sections 5 and 6 are provided with the downwardly extending side flanges 24 adapted to embrace the crate sides as shown in Fig. 1 and the opposite end margins of said cover sections are also bent back or folded upon themselves as shown at 25 to stiffen and reinforce such edges. The cover is also provided at its opposite ends with projecting tongues 26 while the angle cleats 18 are provided with slots 27 adapted to receive said tongues and allow said tongues to project under the upper horizontal flanges of the angle cleats in the manner illustrated in Fig. 2.

By the means just hereinabove described, the cover is connected to the crate and held thereon.

The bottom 4 may be notched at opposite sides as shown at 28 to prevent interference with the flanges 13 of the keeper strips 12 hereinabove described.

In the folding operation, after removing the cover the partition and the bottom, the bottom may be disposed vertically against one side of the crate, as shown in Fig. 4, and the partition may be placed between the folded sections 5 and 6 of the cover as shown in Fig. 5 and placed against the opposite side of the crate between the two sides as also indicated in Fig. 4 wherein the tongues 26 appear. Thus, the crate as whole, may be folded compactly and returned to the shipper.

The cover is applied to the crate in the manner illustrated by dotted lines in Fig. 2, wherein it will be observed that the sections 5 and 6 are disposed at such an angle to each other as to enable the tongues 26 to be inserted through the slots 27. When the cover is then pressed downward to a horizontal position, the end sections 2 and 3 of the crate ends are spread apart and held and braced by the cover, the latter being in turn securely held by the fastening links above described.

I claim:—

1. A folding crate comprising sides and ends, the ends each consisting of two sections hinged together on a central vertical line and also hinged to the sides at the vertical corners or angles of the crate and adapted to fold inward between the sides as the latter are pressed toward one another, a removable bottom, angle cleats at the top edges of the crate ends, each of said cleats being attached to one section only of the adjacent crate end so as to fold therewith into and out of contact with the other section and serving to limit the outward movement of both sections and a removable cover having projecting tongues adapted to engage and be held by said angle cleats.

2. A folding crate comprising sides and ends, the ends each consisting of two sections hinged together on a central vertical line and also hinged to the sides at the vertical corners or angles of the crate and adapted to fold inward between the sides as the latter are pressed toward one another, a removable bottom, a removable cover consisting of hingedly connected sections having rigid tongues projecting beyond the ends thereof, and angle cleats at the top edges of the crate ends, each of said cleats being attached to one section only of the adjacent crate end so as to fold therewith into and out of contact with the other section, said cleats having slots to receive said tongues.

3. A folding crate comprising sides and ends, the ends consisting of two sections hinged together on a central vertical line and also hinged to the sides at the vertical corners or angles of the crate and adapted to fold inward between the sides as the latter are pressed toward one another, a removable bottom, a removable cover consisting of hingedly connected sections having projecting tongues, angle cleats at the top edges of the crate ends, each of said cleats being attached to one section only of the adjacent crate end, and provided with a slot to receive one of the tongues on the cover, and links pivoted to the sides and adapted to be swung over the cover and secured together above the cover.

4. A folding crate comprising sides and ends, the ends each consisting of two sections hinged together on a central vertical line

and also hinged to the sides at the vertical corners or angles of the crate and adapted to fold inward between the sides as the latter are pressed toward one another, a removable
5 bottom, a removable cover consisting of hingedly connected sections having projecting tongues, said sections being connected by hinges which are depressed below the plane of the cover sections, angle cleats at
10 the top edges of the crate ends and provided with slits to receive said tongues, each of

said cleats being attached to one section only of the adjacent crate end, and links pivoted to the sides and adapted to be folded upon and in contact with the depressed hinges and 15 secured together.

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

ANCEAL C. MICHAEL.

Witnesses:

JOHN L. FLETCHER,
K. ALLEN.