

No. 844,955.

PATENTED FEB. 19, 1907.

R. MORGAN.
CRATE.

APPLICATION FILED JULY 3, 1906.

3 SHEETS—SHEET 1.

Fig. 1.

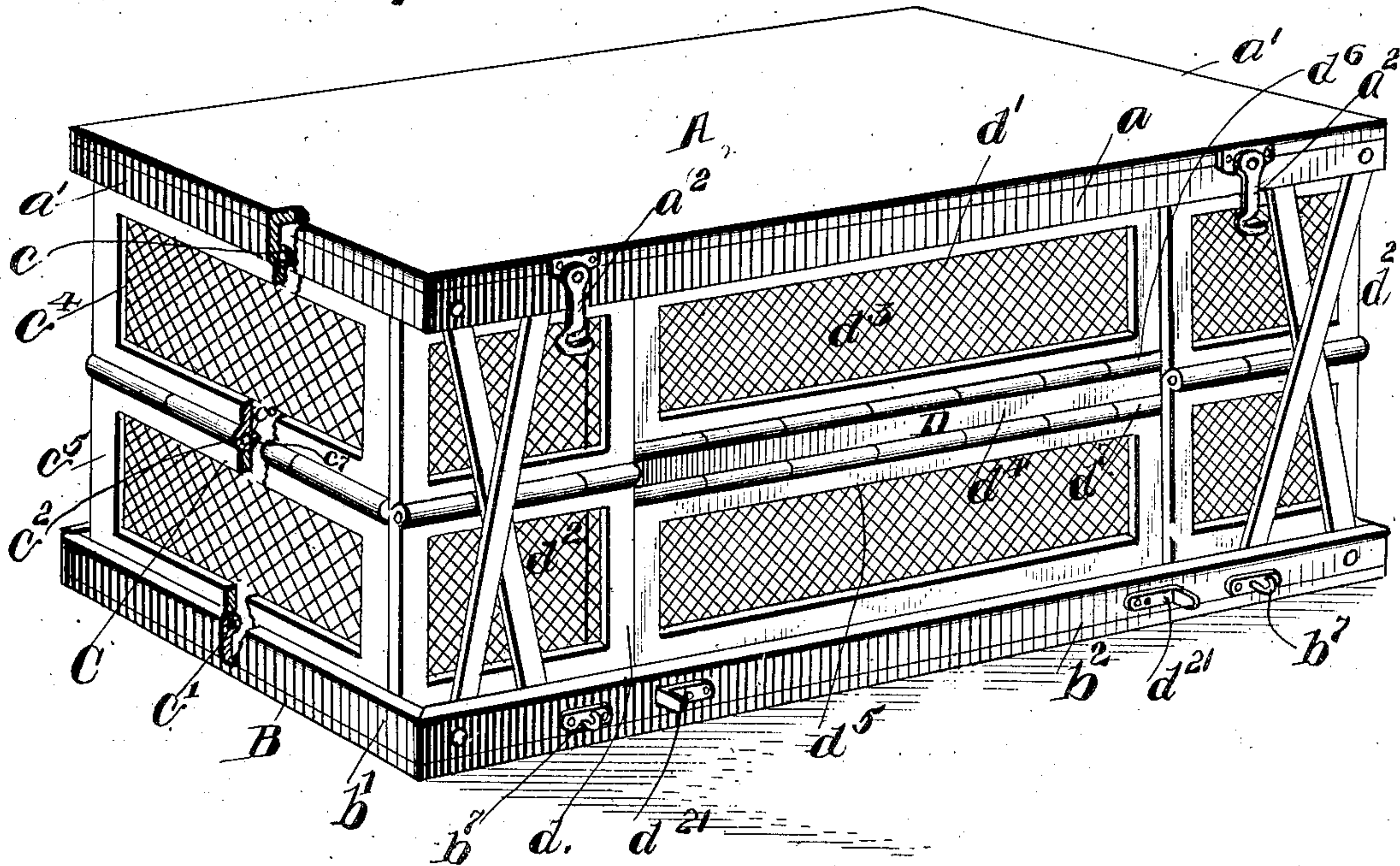
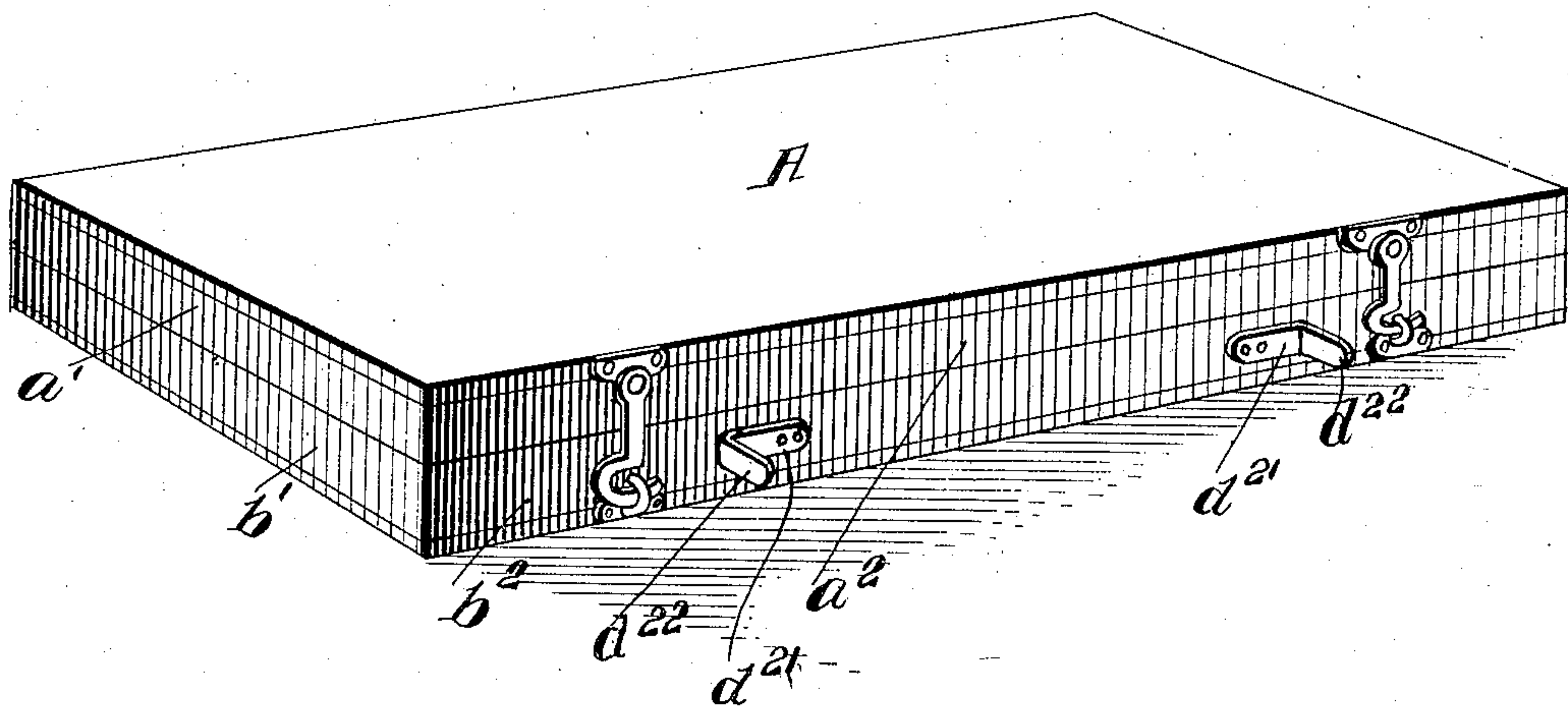


Fig. 2.



WITNESSES

R. C. Wilson
C. E. Trainor

INVENTOR
ROBERT MORGAN.

BY *Munn & Co.*

ATTORNEYS

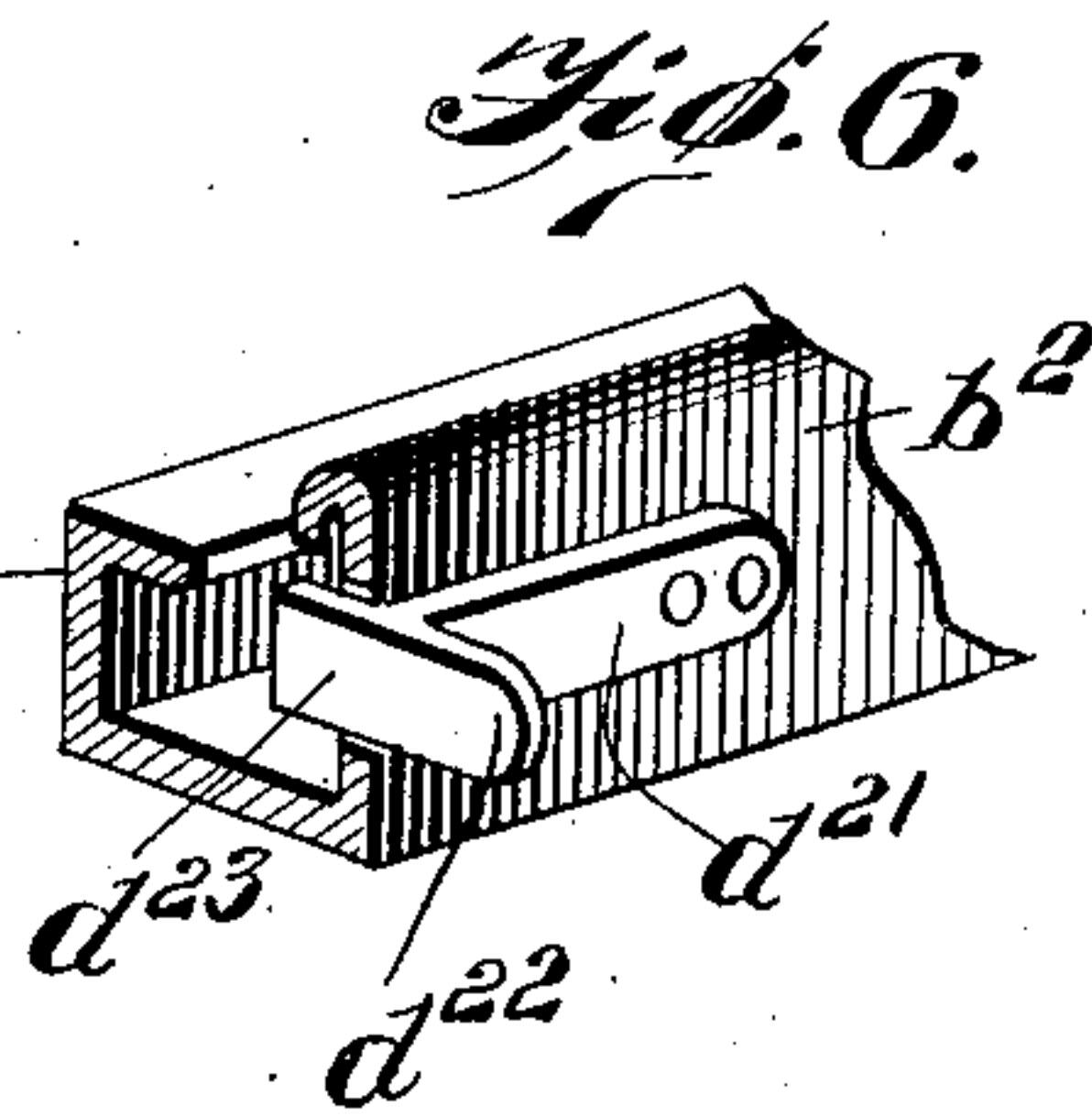
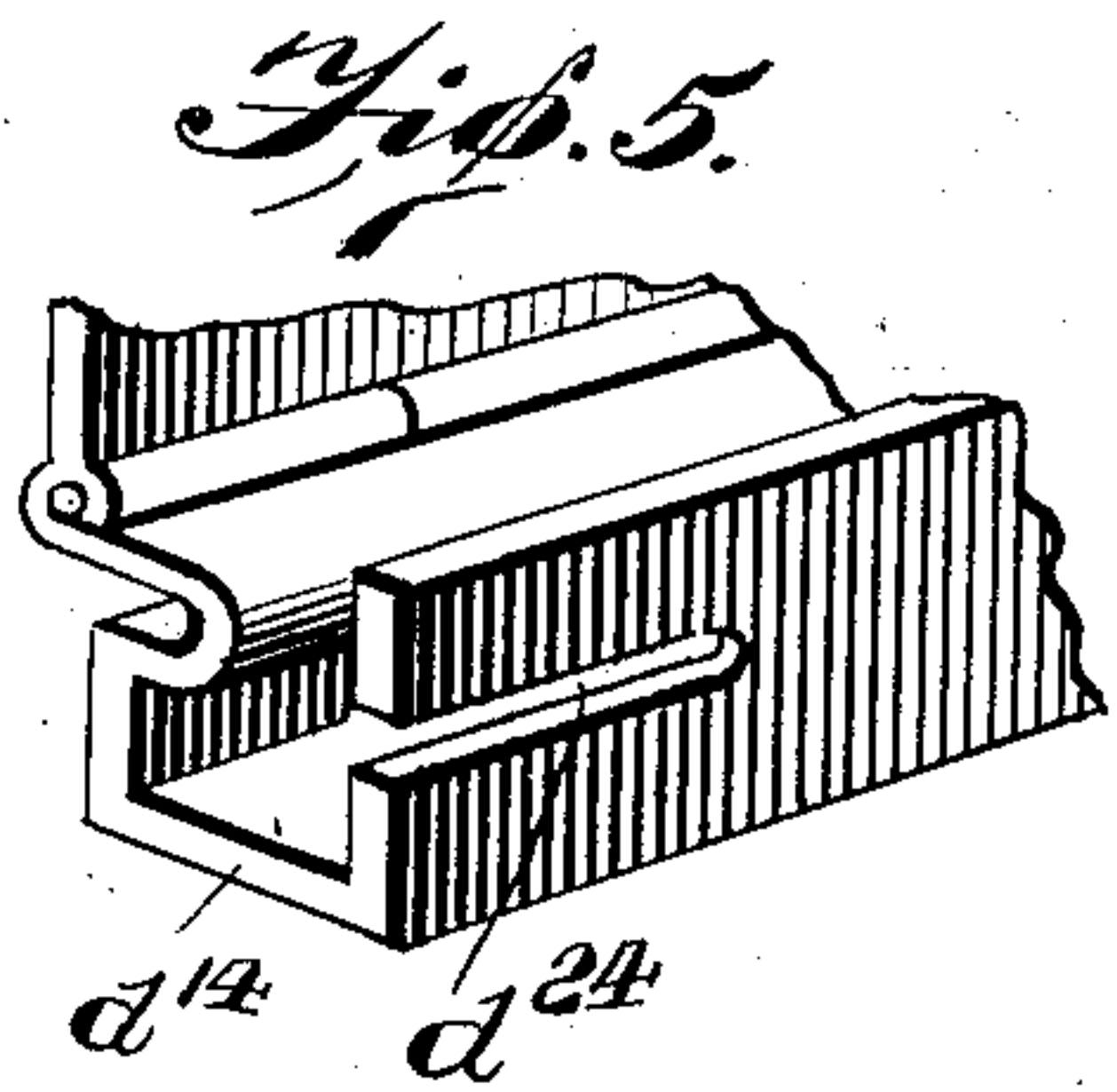
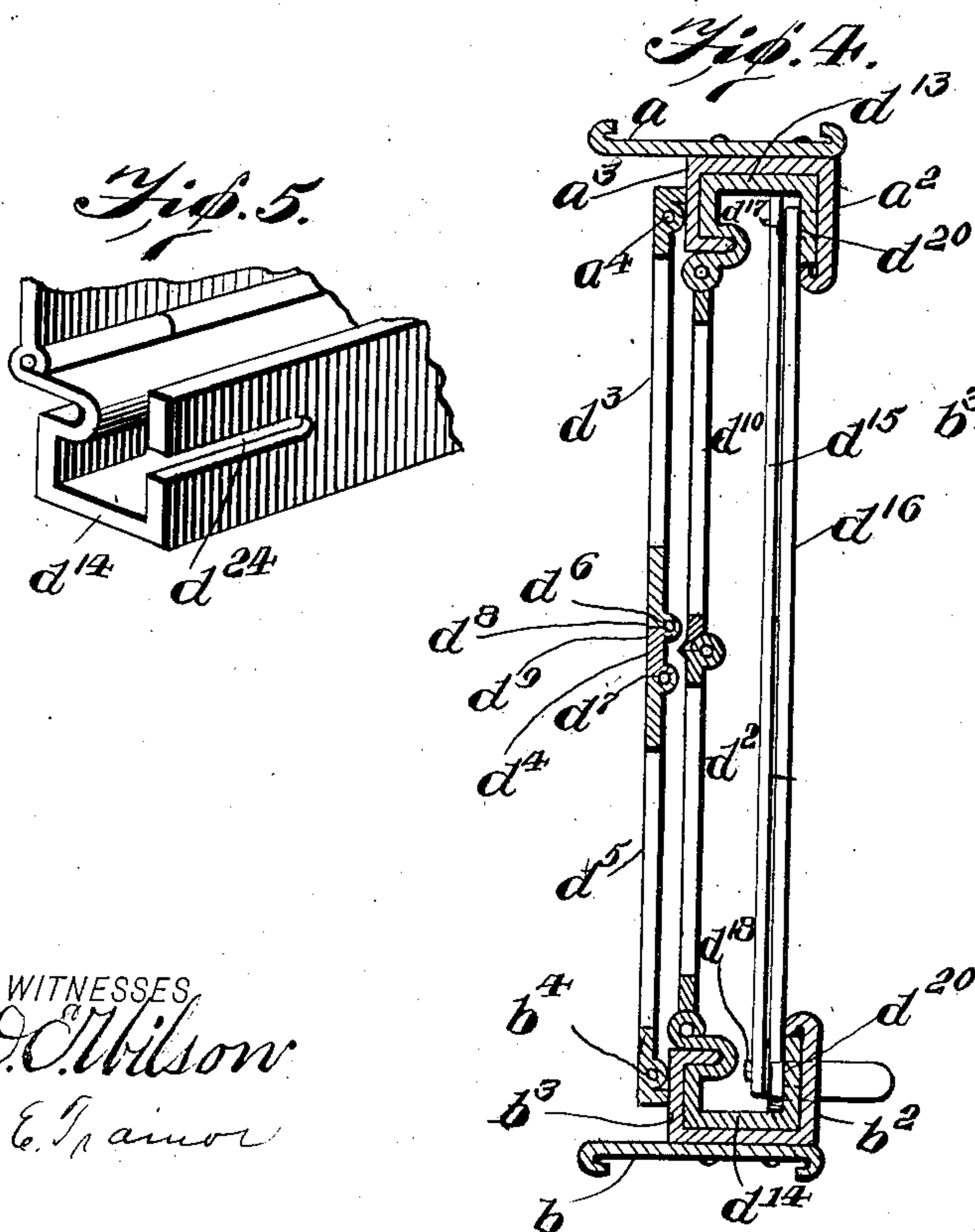
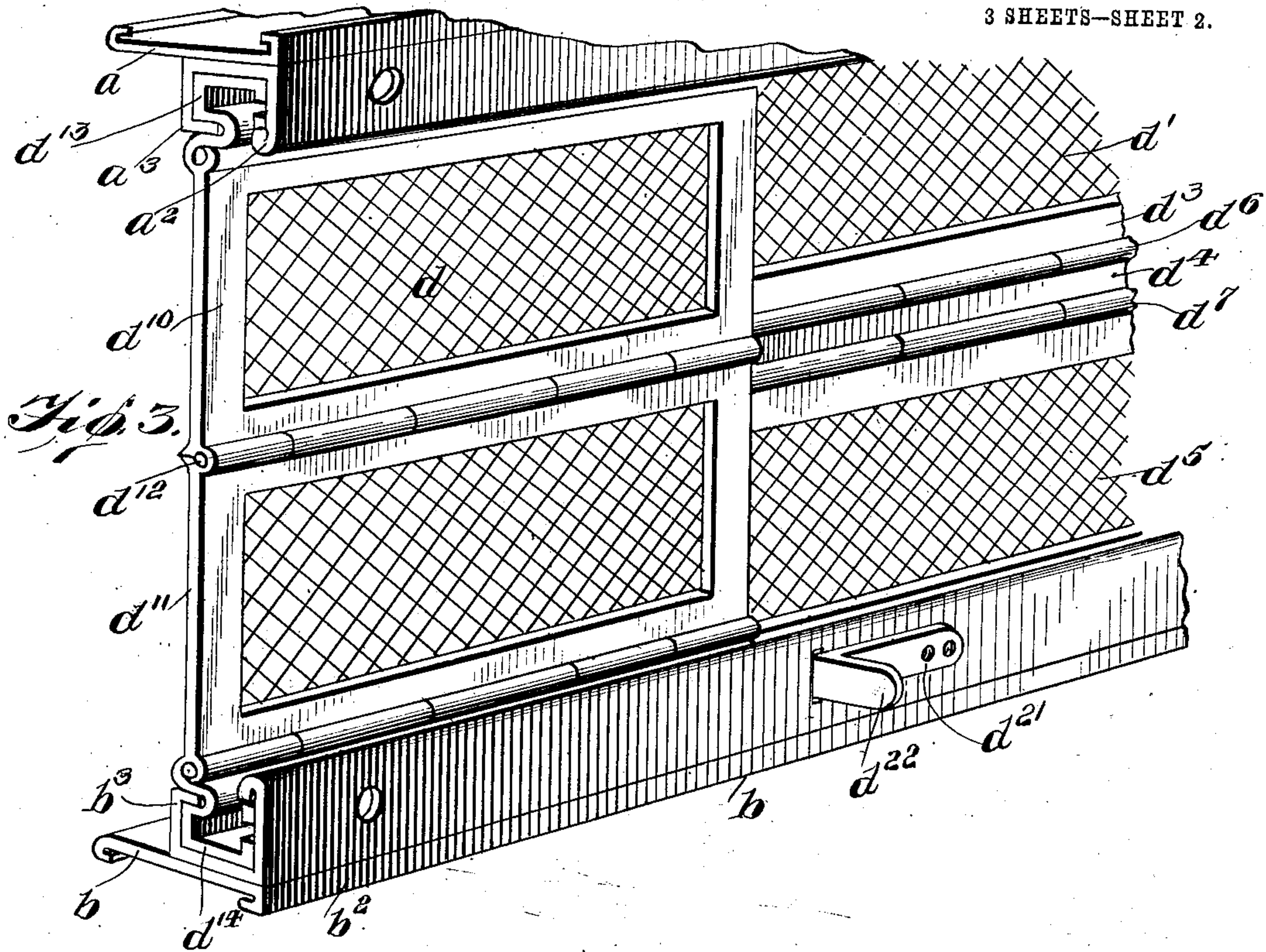
No. 844,955.

PATENTED FEB. 19, 1907.

R. MORGAN.
CRATE.

APPLICATION FILED JULY 3, 1906.

3 SHEETS—SHEET 2.



WITNESSES
D. C. Wilson
C. E. Trimmer

INVENTOR
ROBERT MORGAN
BY *Munn & Co.*
ATTORNEYS

No. 844,955.

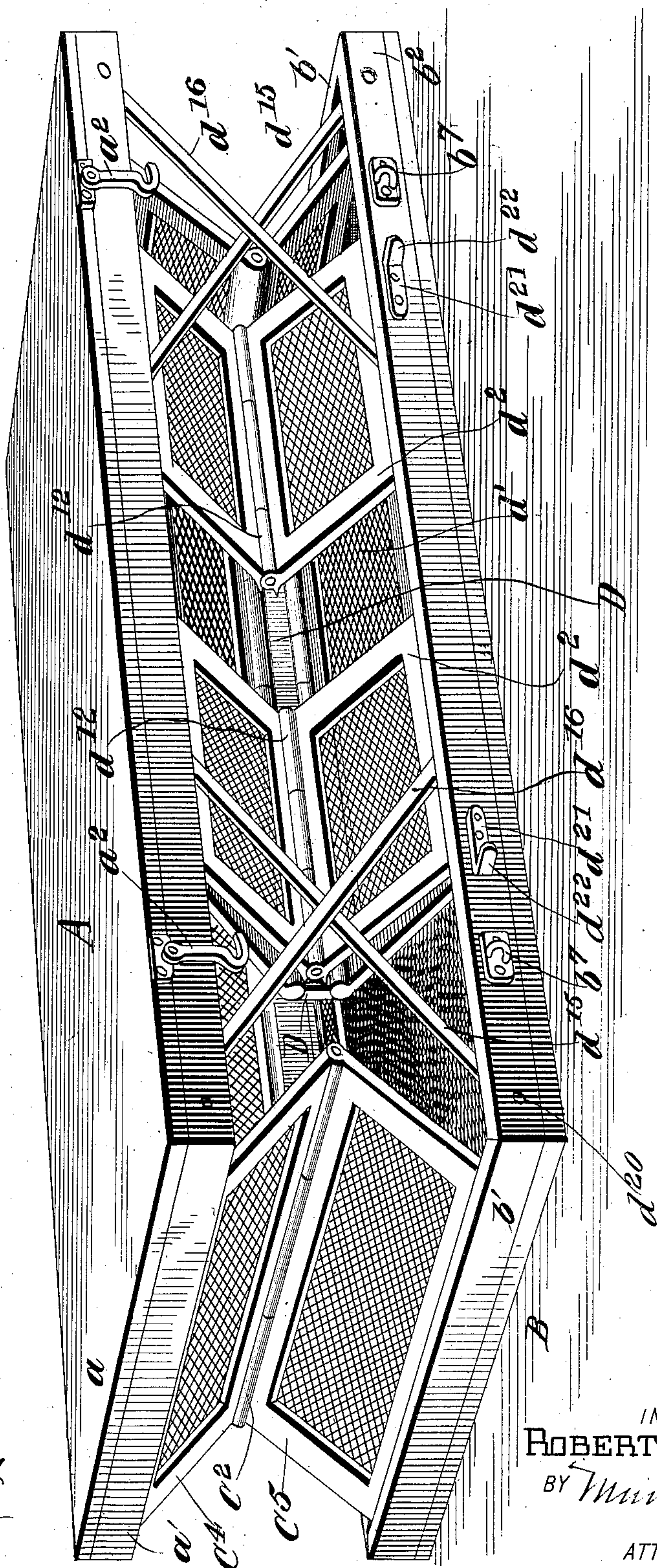
PATENTED FEB. 19, 1907

R. MORGAN.
CRATE.

APPLICATION FILED JULY 3, 1906.

3 SHEETS—SHEET 3.

Fig. 7



WITNESSES

C. C. Ruffey
C. E. Trimmer

INVENTOR

ROBERT MORGAN

BY *Winn & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE.

ROBERT MORGAN, OF ELLSWORTH, KANSAS, ASSIGNOR OF ONE-FOURTH
TO J. S. COX AND ONE-FOURTH TO IMAN C. McKALLIP, OF PUEBLO,
COLORADO.

CRATE.

No. 844,955.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed July 3, 1906. Serial No. 324,598.

To all whom it may concern:

Be it known that I, ROBERT MORGAN, a citizen of the United States, and a resident of Ellsworth, in the county of Ellsworth and State of Kansas, have made certain new and useful Improvements in Crates, of which the following is a specification.

My invention is an improvement in crates of the collapsible type, and consists in certain novel constructions and combinations of parts hereinafter described and claimed.

Referring to the drawings forming a part hereof, Figure 1 is a perspective view of my improved crate set up. Fig. 2 is a similar view of the crate knocked down. Fig. 3 is a partial perspective view of one side of the crate. Fig. 4 is a vertical section through the side. Fig. 5 is a detail view of a part of the slide; and Fig. 6 is a similar view of the flanges of the bottom, showing the spring-catch. Fig. 7 is a perspective view of the crate, showing it partially folded.

In the present embodiment of my invention the crate comprises a top A, a base B, the top and base being duplicates of each other, ends C, and sides D. The top A comprises a rectangular plate a , having end flanges a' and spaced inner and outer side flanges a^2 a^3 , the flanges projecting at right angles from the plate. The bottom B is similar in all respects to the top A and comprises the rectangular plate b , having the end flanges b' and the spaced inner and outer side flanges b^2 b^3 . The ends C are composed of a plurality of hinged frame-sections c^4 c^5 , covered with netting, one of the sections being hinged to the top A, as at c , and the other being hinged to the bottom B, as at c' . The sections c^4 c^5 are of equal size, and the central hinge c^2 is so arranged that the sections fold inwardly upon each other, shoulders c^6 c^7 being provided for preventing the outward movement of the central hinge. The sides D are composed of a central frame portion d' and side frame portions d^2 . The central portion d' is composed of three sections d^3 , d^4 , and d^5 , the section d^4 , comprising a horizontal plate, having the sections d^3 d^5 hinged to each side thereof, as at d^6 d^7 , and the section d^3 is also hinged to the inner side flange a^2 of the top A, as at a^4 , while the section d^5 is hinged to the inner side flange b^2 of the bottom B, as at b^4 . The hinges d^6 d^7 are also provided with shoulders d^8 d^9 , whereby to permit the

sections to fold inwardly and to prevent them from folding outwardly.

The side portions d^2 of the sides D comprise each a plurality of sections d^{10} d^{11} , covered with netting and hinged together, as at d^{12} , one of the sections d^{10} being hinged to a slide d^{13} , movable in the space between the inner and outer flanges a^2 a^3 of the top A, and the other section d^{11} being hinged to a slide d^{14} , movable in the space between the inner and outer flanges b^2 b^3 of the bottom B.

Arms d^{15} d^{16} are pivotally connected at one end, as at d^{19} d^{20} , to the outer flanges a^2 b^2 of the top and bottom, respectively, at the corners thereof, the opposite end of the arm being pivoted, as at d^{17} d^{18} , to the slide in the opposite groove.

The crate being set up, as shown in Fig. 1, when it is desired to knock it down the side portions d^2 of the sides D are pushed inwardly toward each other and at the same time folded, as are also the ends. It will be evident that the pushing of the side portions of the sides toward each other permits the folding of the ends and that the double joint in the central portion of the sides permits said central portion to fold over the side portions. When the sides and ends have been folded inwardly, the flanges of the top and bottom will be in contact with each other, and the top and bottom may be secured together by the hooks a^2 on the top A engaging the eyes b^7 on the bottom B. For the purpose of maintaining the crate in its set-up condition I provide a spring-catch d^{21} , secured to the outer flanges b^2 b^3 and provided with a projection d^{23} , traversing a slot in the said flange, the said projection engaging that end of the arm d^{15} or d^{16} pivoted to the slide, whereby to prevent the movement of the slide, a thumb-piece d^{22} being provided for manipulating the catch. The slides d^{13} d^{14} are slotted at d^{24} to permit the passage of the pivots connecting the respective arms to the flanges.

It will be understood that the top A and bottom B might be composed of frames similar to the ends and sides and the said frames covered with the netting, as shown on the sides and ends. It will be understood that by the peculiar construction of the sides of the crate the said sides may be extended and contracted longitudinally during the folding and opening of the crate, the contraction of

the sides permitting the inward folding of the sides and ends without interfering with each other.

I claim—

5 1. A collapsible crate comprising top and bottom plates having single flanges at their ends and double flanges at their sides, said double flanges being spaced apart from each other to form grooves, slides movable in said
10 grooves at each end thereof, ends comprising frames hinged to the end flanges of the top and bottom and divided horizontally into sections, the sections being hinged together to fold inwardly, sides comprising a central
15 and end portions, said central portion being hinged to the inner flange of the top and the bottom and being divided horizontally into sections, the sections being hinged together to fold inwardly, said end portion of the sides
20 being hinged to the slides in the grooves, and divided horizontally into sections, said sections being hinged together to fold inwardly, bars pivoted to the respective slides at one end, and to the outer flange of the opposite
25 groove, whereby to permit said end portions to slide over the central portion, and means engaging said end portions for normally retaining them in their outward position.

2. A collapsible crate comprising top and
30 bottom plates, ends hinged to the top and bottom plates and divided transversely into sections, said sections being hinged together to fold inwardly, sides comprising a central and end portions, each of said portions being
35 divided transversely into sections, said sections being hinged together whereby to permit said portions to fold inwardly, means for moving said end portions over said central portion, whereby to permit the folding of the
40 sides and ends, and means for normally retaining said end portions in their outward position.

3. A collapsible crate comprising a top and bottom, and folding ends hinged to the top
45 and the bottom, foldable sides comprising a central and end portions, means whereby said end portions may slide over said central portion during the folding of the crate, and means for normally retaining said end portions in their outward position.
50

4. A collapsible crate comprising a top and bottom, foldable ends, and foldable sides, said sides comprising a central and end portions, means whereby said end portions may

slide over said central portion during the 55 folding of the crate, and a spring-catch for normally retaining said end portions in their outward position.

5. A collapsible crate comprising a top and bottom, foldable ends and foldable sides, 60 said sides comprising a fixed central and movable end portions, and means for moving the end portions over the central portion during the folding of the crate.

6. A collapsible crate comprising a top and 65 a bottom, foldable ends, and foldable sides, said sides comprising a plurality of portions, sundry of said portions being slidable on the remaining portions whereby to contract the sides during the folding of the crate. 70

7. A collapsible crate comprising a top and a bottom, inwardly-foldable ends and sides, means whereby to extend and contract said sides during the folding and the opening of the crate, and means for normally retaining 75 the crate in its open position.

8. A collapsible crate comprising a top and a bottom, foldable ends and sides, and means whereby to extend and contract said sides longitudinally during the folding and unfold- 80 ing thereof.

9. A collapsible crate comprising a top and bottom, inwardly-foldable ends and sides, and means whereby to extend and contract said sides during the folding and the opening 85 of the crate.

10. A collapsible crate, comprising a top and bottom, foldable ends, sides comprising a plurality of foldable portions, and means whereby to slide said portions upon each 90 other, whereby to contract said sides during the folding of the crate.

11. A collapsible crate comprising a top and a bottom, foldable ends and sides, and means whereby the folding of the ends and 95 sides will contract the sides in the direction of their length.

12. A collapsible crate comprising a top and a bottom, foldable ends and sides, and a connection between the top and the bottom 100 and the sides, whereby the movement of the top and bottom toward and from each other will contract and extend the sides in the direction of their length.

ROBERT MORGAN.

Witnesses:

ALFRED W. ARRINGTON,
J. E. RIZER.