

No. 807,837.

PATENTED DEC. 19, 1905.

A. S. MANN.
BOX OR CRATE HEAD.
APPLICATION FILED JULY 20, 1903.

3 SHEETS—SHEET 1.

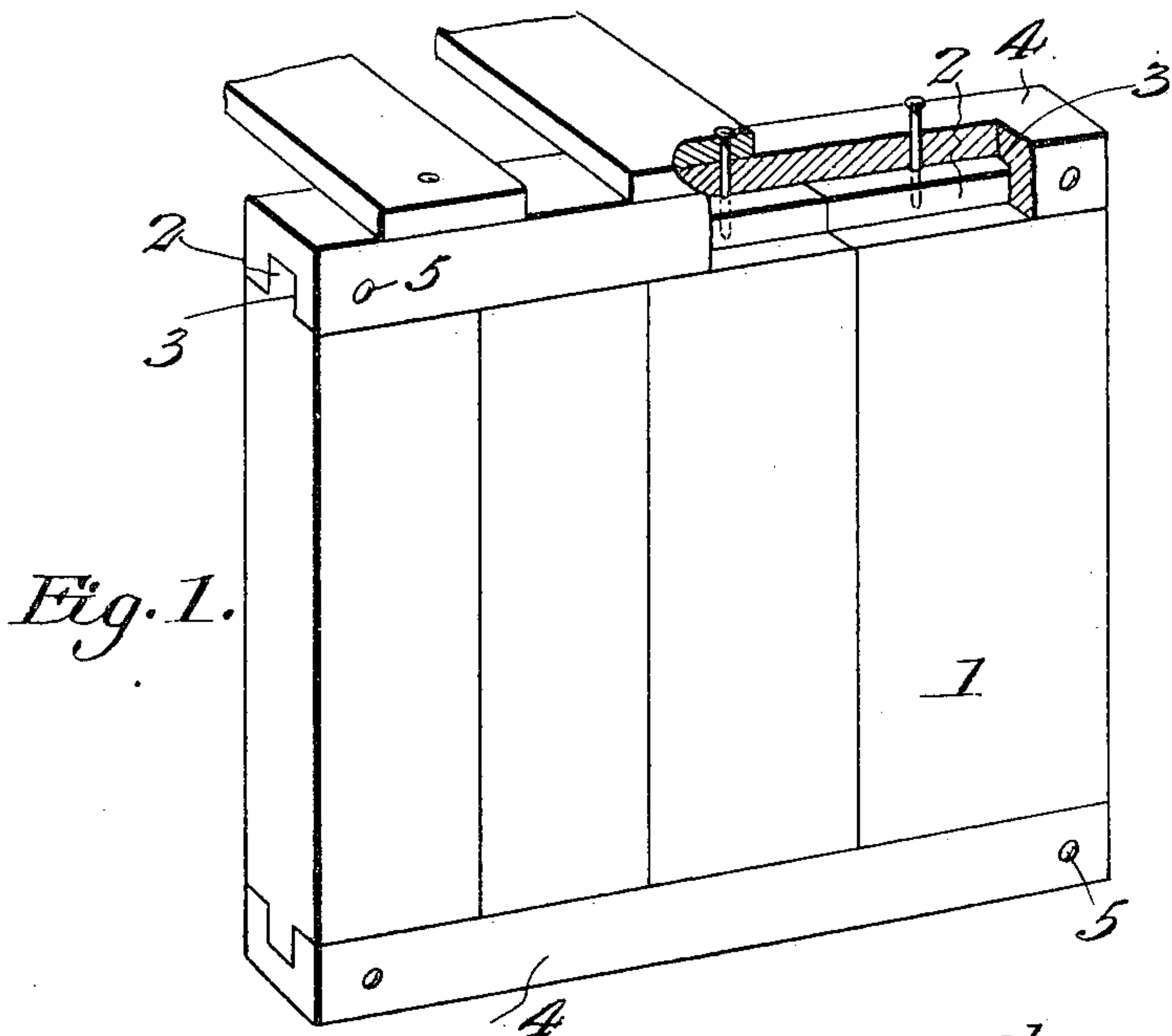
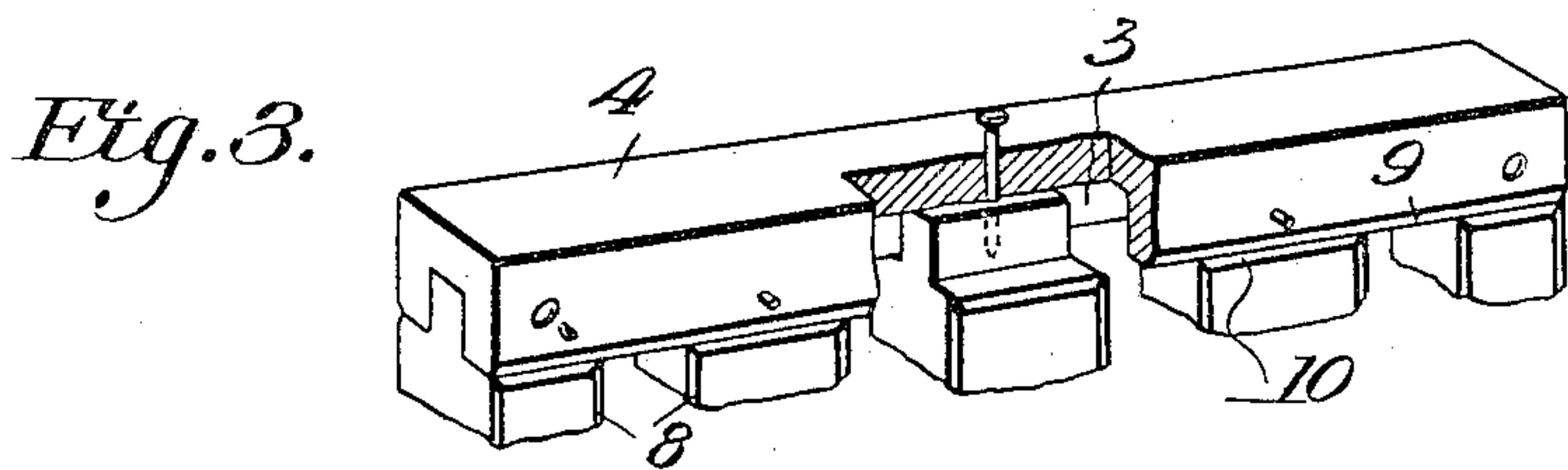
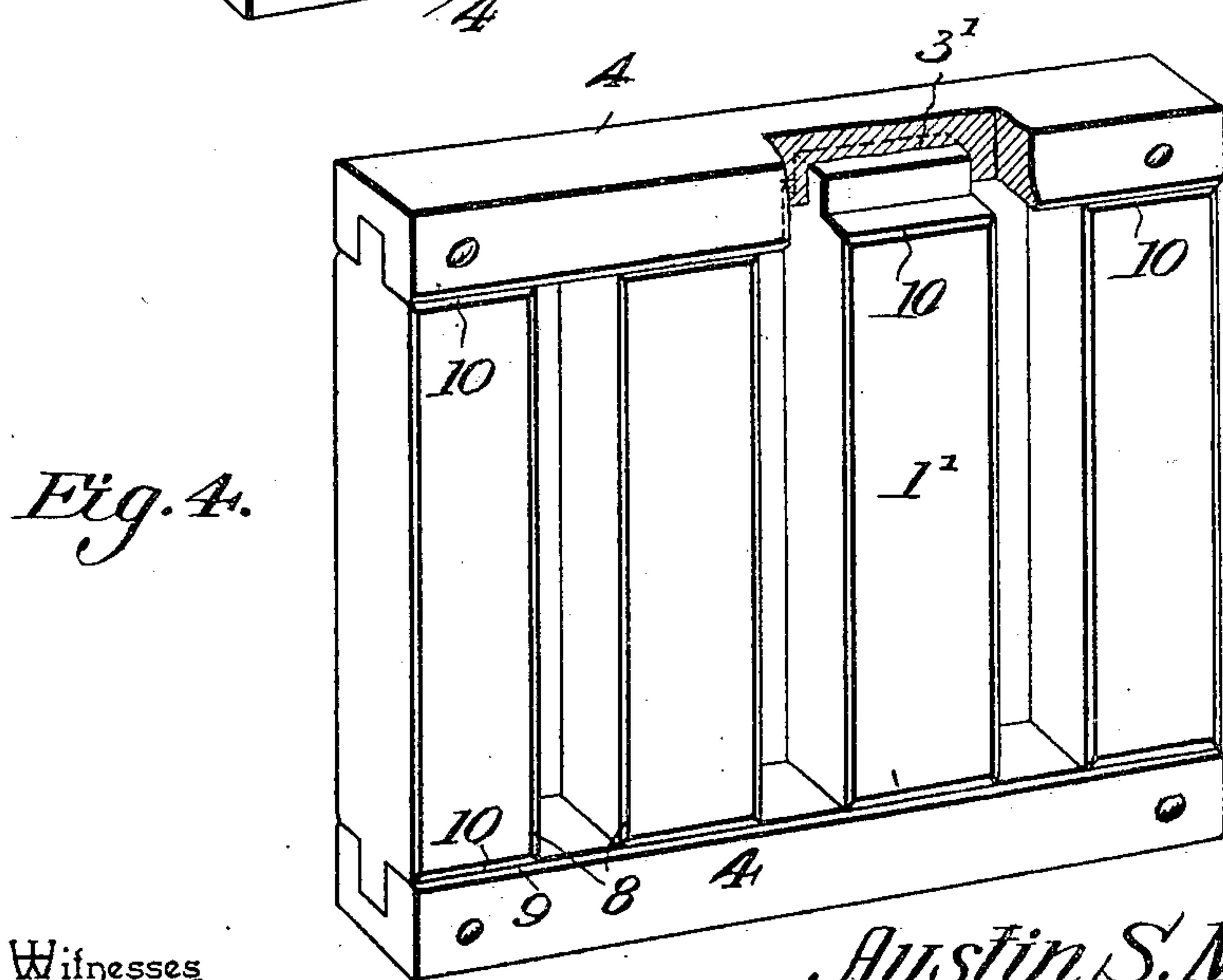
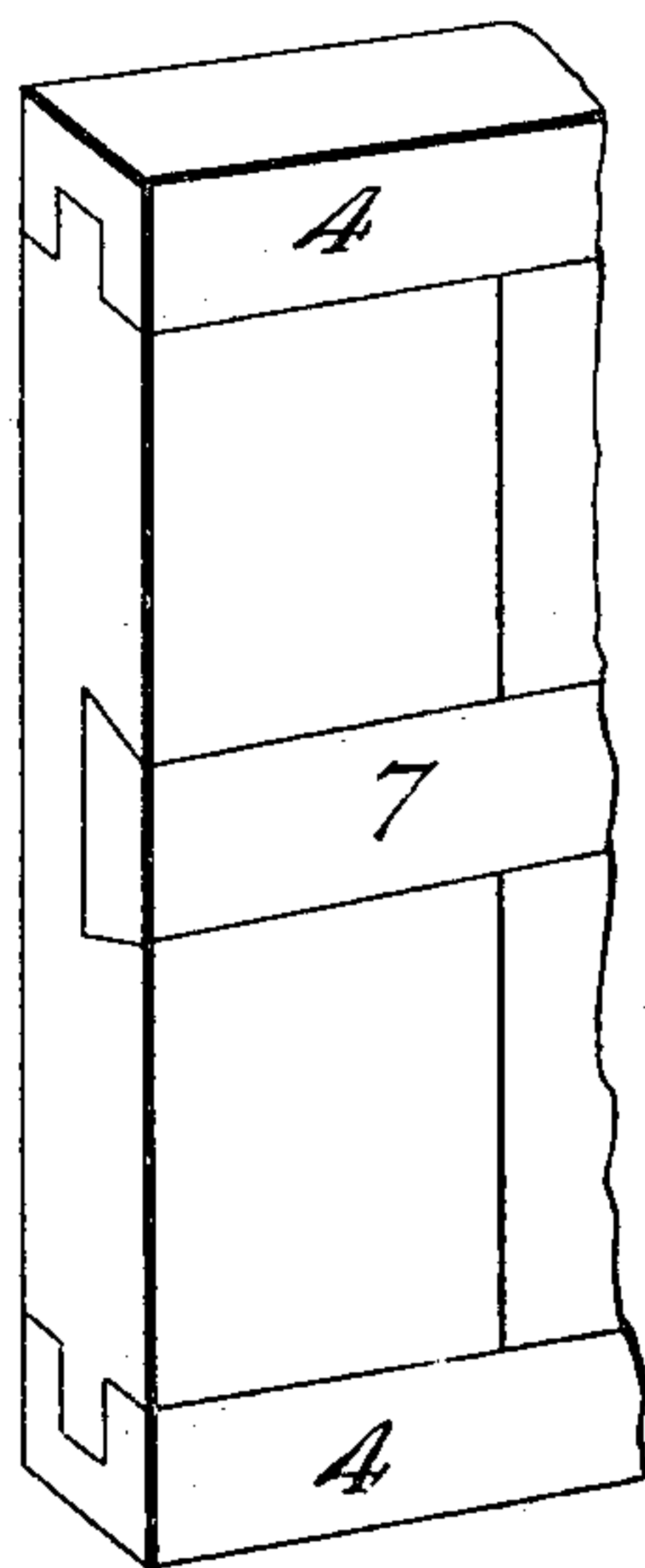


Fig. 2.



Witnesses
E. P. Stewart
John C. Parker

Austin S. Mann, Inventor.
by *C. H. Snow & Co.*
Attorneys

No. 807,837.

PATENTED DEC. 19, 1905.

A. S. MANN.
BOX OR CRATE HEAD.
APPLICATION FILED JULY 20, 1903.

3 SHEETS—SHEET 2.

Fig. 5.

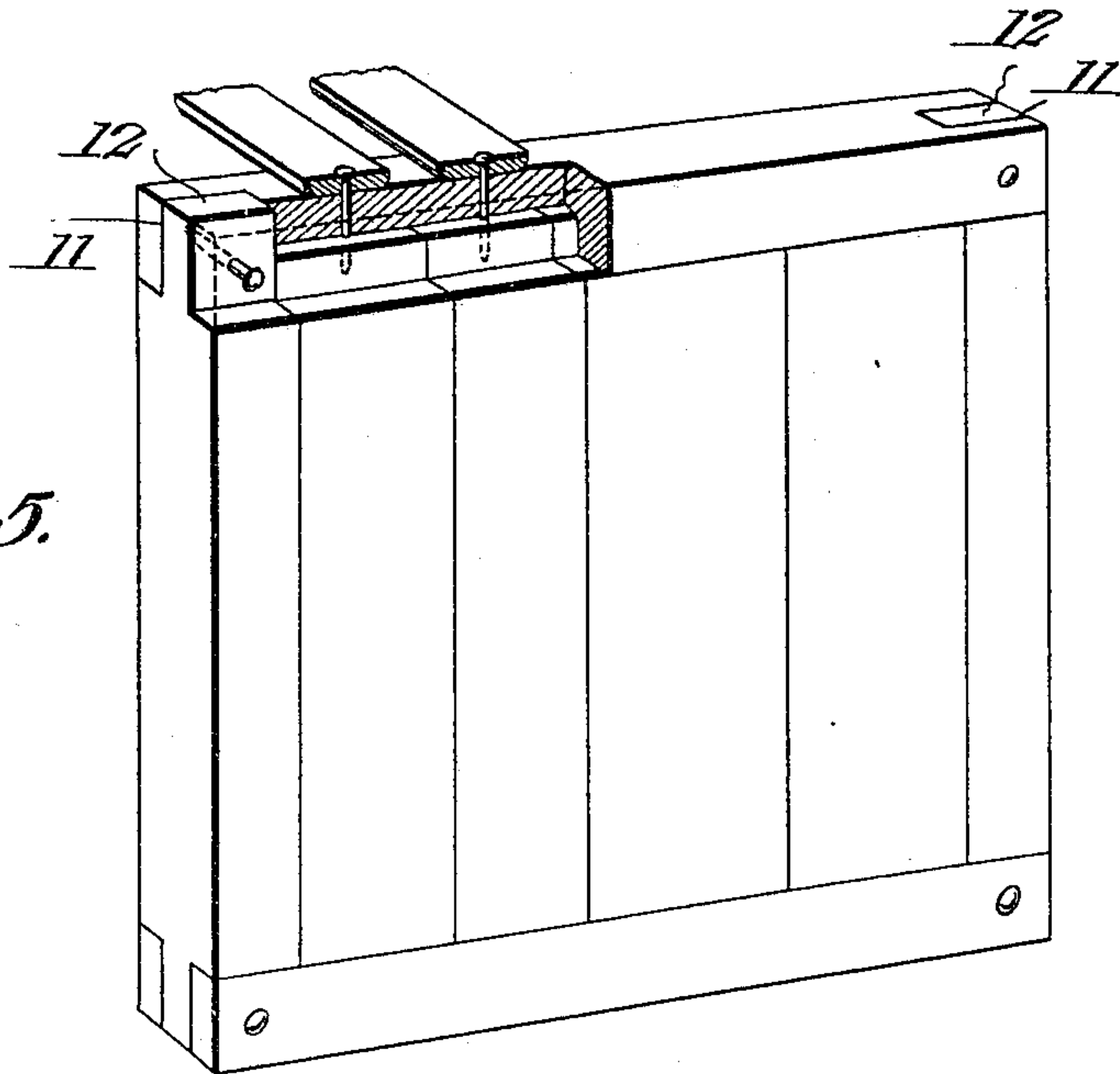
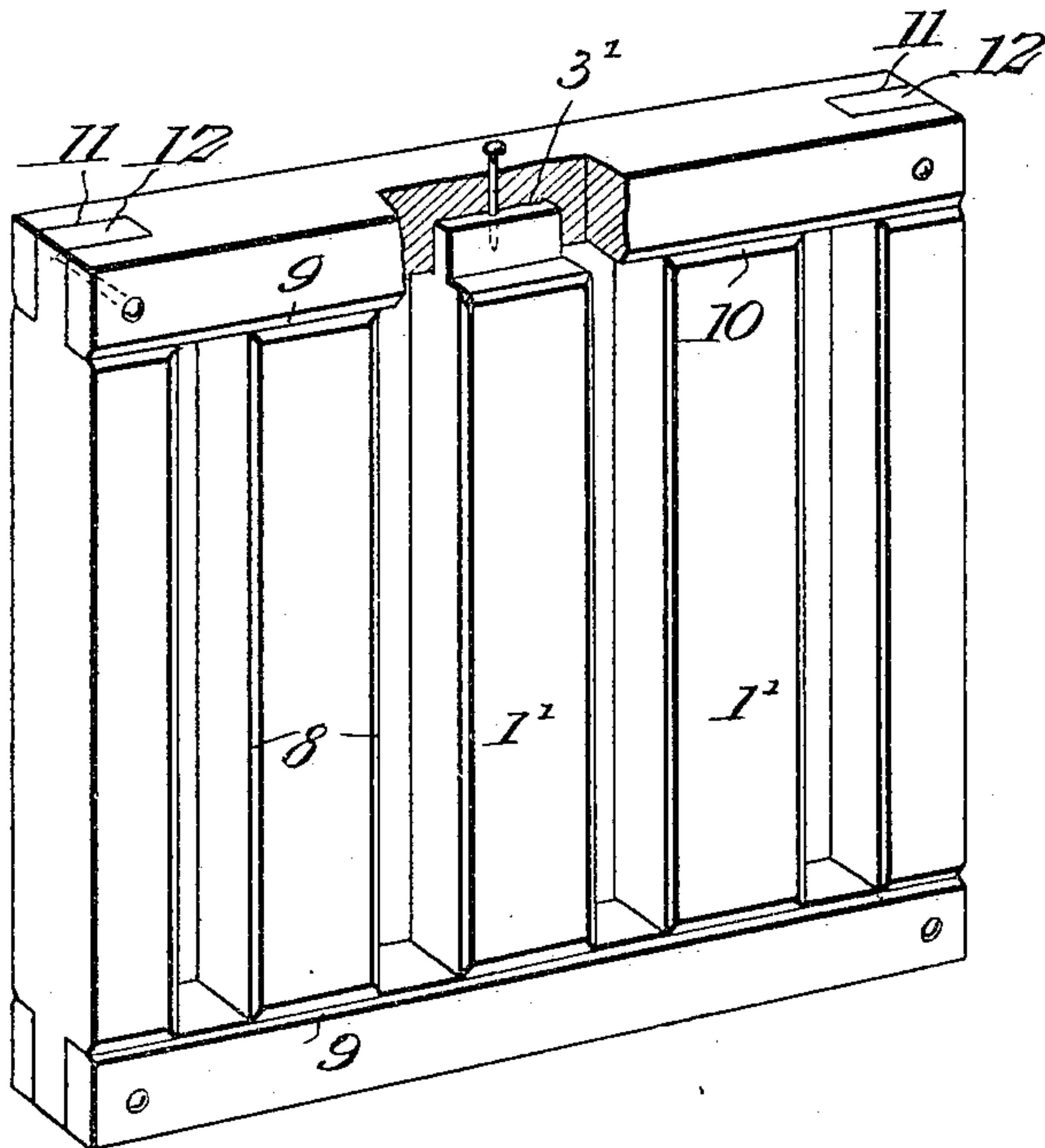


Fig. 6.



Witnesses
E. H. Stewart
John E. Parker

Austin S. Mann Inventor.
by *C. A. Snowles*
Attorneys

No. 807,837.

PATENTED DEC. 19, 1905.

A. S. MANN.
BOX OR CRATE HEAD.
APPLICATION FILED JULY 20, 1903.

3 SHEETS—SHEET 3.

Fig. 7.

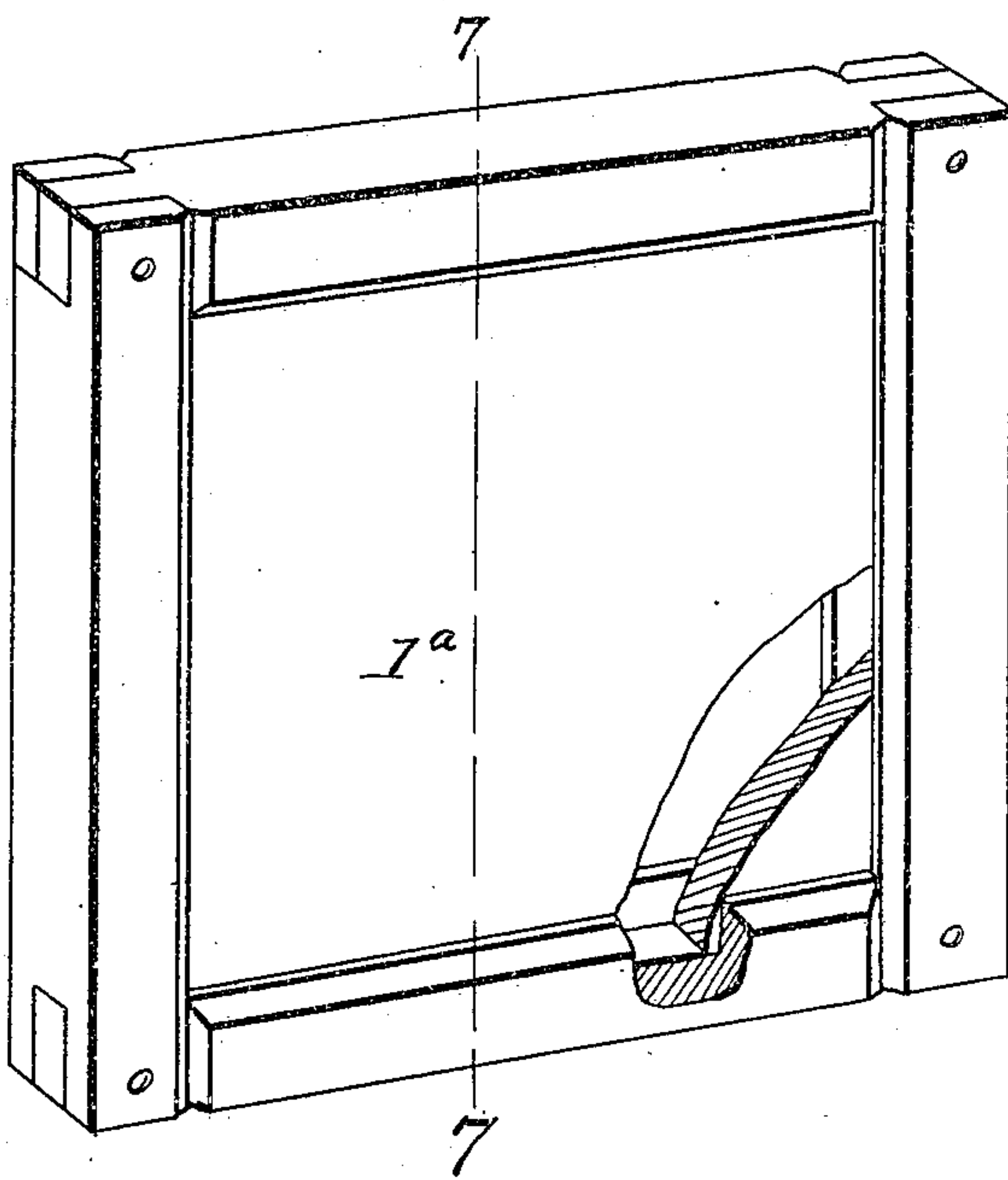
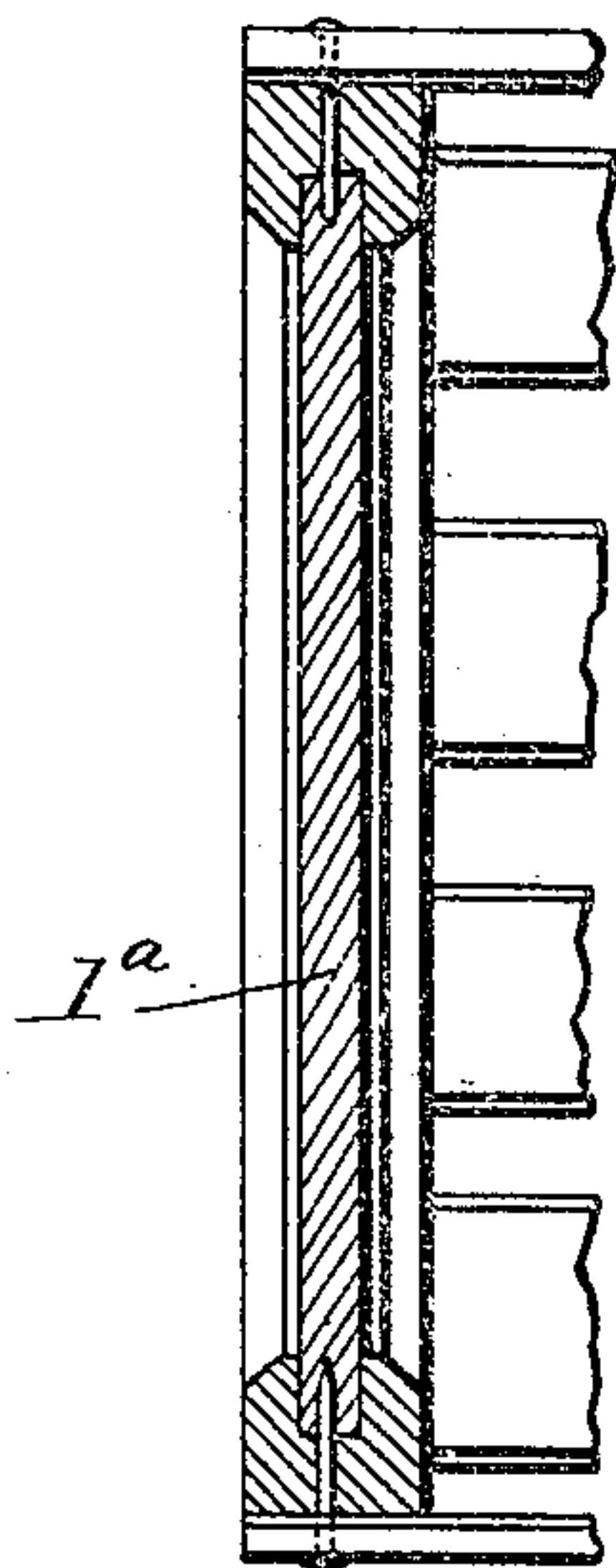
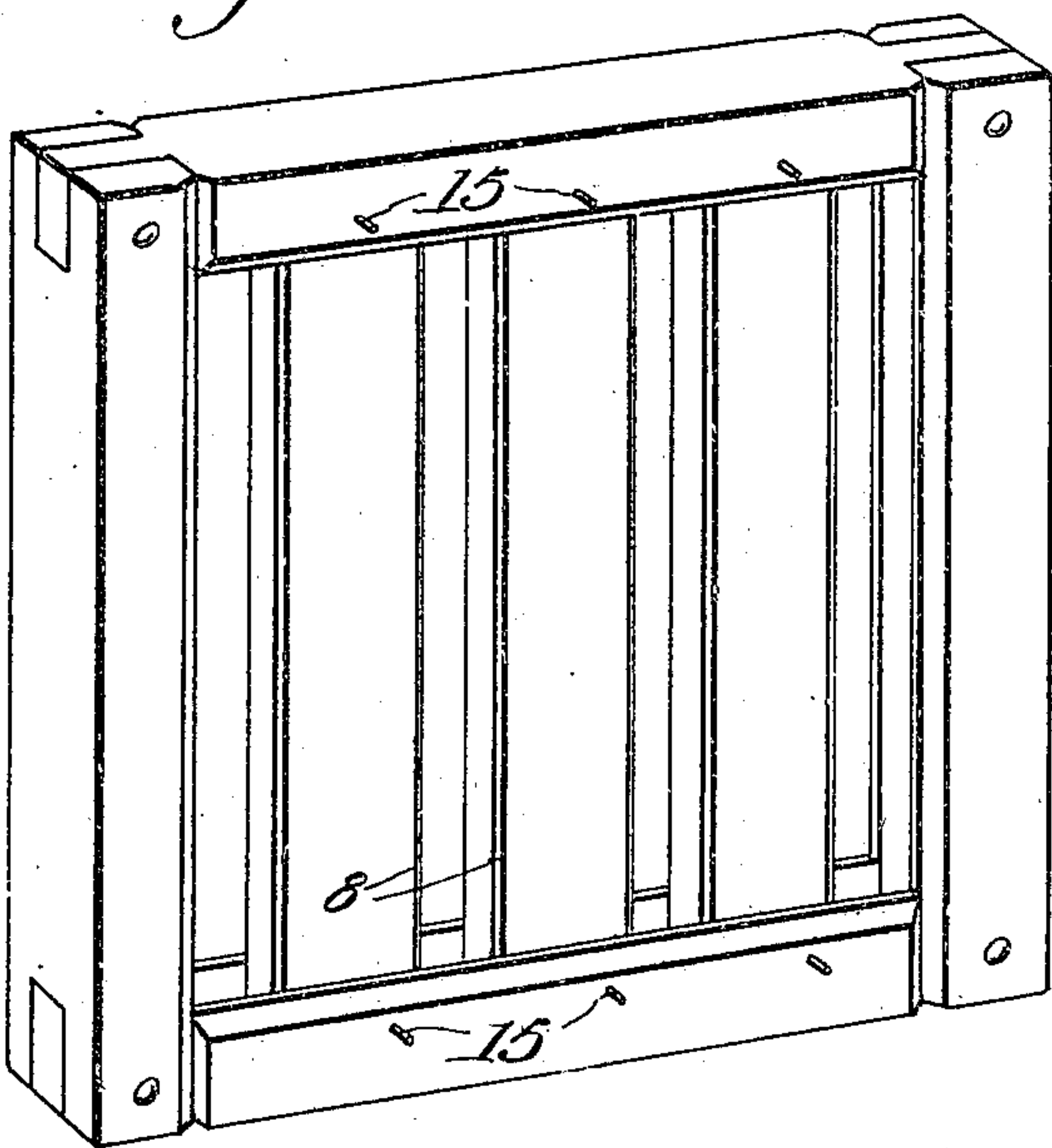


Fig. 8.

Fig. 9.



Witnesses
E. H. Stewart
Geo. Parker

Austin S. Mann, Inventor.
by *C. A. Snow & Co.*
Attorneys

UNITED STATES PATENT OFFICE

AUSTIN S. MANN, OF JACKSONVILLE, FLORIDA.

BOX OR CRATE HEAD.

No. 807,837.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed July 20, 1903. Serial No. 166,378.

To all whom it may concern:

Be it known that I, AUSTIN S. MANN, a citizen of the United States, residing at Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Box or Crate Head, of which the following is a specification.

This invention relates to certain improvements in the construction of boxes or crates employed for the storage and transportation of fruit and other articles, and has for its principal object to provide a form of crate-head in which small pieces of practically worthless timber may be utilized, a further object being to so arrange the several strips or pieces of which the head is made as to avoid the necessity of securing devices other than those employed for fastening the sides and top and bottom of the crate in position.

A still further object of the invention is to provide a novel form of crate-head which while open for purposes of ventilation will present no sharp edges for contact with the fruit or other articles and prevent injury from this cause.

With these and other objects in view the invention consists in the novel construction and arrangement of parts hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a perspective view of a crate-head constructed in accordance with the invention. Fig. 2 is a similar view illustrating a slight modification. Fig. 3 is a detail view, partly in section, illustrating a portion of a crate-head with the strips slightly spaced to permit ventilation. Fig. 4 illustrates a still further modification of the invention, in which the cross-strips are fitted in mortises instead of a continuous groove, as in the structure shown in Figs. 1 and 3. Fig. 5 is a perspective view, partly in section, of a still further modification in which the end bars are provided with elongated tenons fitting mortises formed in the upper and lower bars of the head. Fig. 6 is a view similar to Fig. 5, illustrating the cross-strips slightly spaced to permit ventilation. Fig. 7 is a sectional view on the line 7 7 of Fig. 8, illustrating a still further modifica-

tion in which the intermediate strips are thinner than the marginal bars, and in this case a single strip may form the center of the head. Fig. 8 is a perspective view, partly in section, of a head of the character shown in Fig. 7. Fig. 9 is a perspective view illustrating a head of the type shown in Fig. 7 and formed of a plurality of slightly-spaced strips for purposes of ventilation.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

In the manufacture of crates of that class employed for the transportation of oranges and other fruits the heads or ends of the crates are usually formed of one or more boards, to which are secured marginal strips to strengthen and stiffen the ends and to form a base for the reception of the nails or similar securing devices by means of which the sides and top and bottom are fastened in place. This form of head is expensive and as a rule requires considerable time to manufacture. In carrying out the present invention I am enabled to use scrap lumber or strips so small as to be practically worthless.

In the preferred construction (illustrated in Fig. 1) the head is formed of a plurality of strips 1, each of which is provided at both of its ends with tenons 2, fitted within grooves 3, that are formed in top and bottom bars 4. These bars and the central strips being all of practically the same construction and size may be formed by automatic machinery and then assembled by hand to form the head. In using heads of this construction three are generally employed in each crate, one at each end and a third forming a central partition. The strips which unite the partition and end pieces are secured by nails that extend down through the top and bottom bars into the central strips 1 and serve to firmly hold the latter in place, it being unnecessary to employ any auxiliary fastening devices for the head itself, although when the heads are made in quantities and shipped in bulk it is generally desirable to employ a temporary fastener, which may be in the form of a nail, as indicated at 5, for the purpose of holding the members of the head in proper position.

In order to provide an auxiliary holding device to secure the various strips together, I sometimes cut a dovetail groove across the several strips of each head and introduce thereinto a cross-bar 7 of suitable shape in cross-section.

In handling some classes of fruit, especially when it is to be shipped to distant points, it becomes advisable to make the crates as open as possible, and in place of a number of strips 1 having their edges in contact with each other I employ spaced strips, such as indicated at 1' in Figs. 3 and 4, and in the manufacture of the crate the securing-nails are driven into these strips after first passing through the top and bottom bars 4. In this construction the slot 3 may extend continuously from end to end of the bar, as indicated in Fig. 3, or it may be divided into a plurality of mortises 3', each adapted for the reception of the tenon of one of the strips.

In the ventilated heads there is danger of the sharp edges of the strips injuring the fruit, and to avoid this the edges of the strips are beveled, as indicated at 8 in Figs. 3 and 4. The edges of the top and bottom bars are also beveled, as indicated at 9, and where this beveled portion crosses the upper ends of the vertical side strips such strips are also beveled, as indicated at 10.

In Fig. 5 is illustrated a slight modification of the structure, the top and bottom bars being provided with grooves, as before described, and at the ends of said bars are notches 11, extending through the full width of the bars and serving to receive elongated tenons 12, that are extended beyond the tenons of the intermediate strips, and thus afford a more secure locking.

Fig. 6 illustrates a further modification in which the intermediate strips are spaced and beveled in practically the same manner as shown in Figs. 3 and 4.

In some cases it may be more convenient for the manufacturer to employ thin lumber, and in such cases the intermediate strips 1^a are of a thickness corresponding to the width of the grooves, and such grooves may be formed in all of the marginal bars, as shown in Figs. 7 and 8.

Where the central strip is formed of a single piece, it will not be necessary to employ as large a number of securing devices.

In the construction shown in Fig. 9 a plurality of thin strips are used, the opposite ends of the strips being secured within the grooves of the upper and lower bars and, if necessary, held in place by temporary fasteners 15 until the usual side, top, and bottom strips are secured to the heads to form a crate.

It is obvious that the crate may be employed for shipping of any form of fruit or other articles with minimum risk of damage,

inasmuch as there are no sharp edges for contact with the articles.

The heads may be manufactured in quantity at a factory and shipped in bulk to a fruit grower or packer, the crates being put together at the point of shipment of the fruit.

Having thus described the invention, what is claimed is—

1. As a new article of manufacture, a crate head or panel for use in the construction of crates and adapted to have the crate sides or slats nailed thereto, said head or panel comprising a pair of frame-strips and a plurality of connecting cross-strips temporarily secured thereto, the frame-strips each having an approximately central groove formed in its inner edge and the cross-strips having tongues extending into said grooves to such a depth as to be reached and engaged by the nails employed for securing the crate sides or slats to said head or panel, whereby permanent fastening of the frame-strips to the cross-strips of the head or panel is effected by the nails which attach the crate sides or slats to the head or panel.

2. As a new article of manufacture, a crate head or panel for use in the construction of crates and adapted to have the crate sides or slats nailed thereto, said head or panel comprising a plurality of strips of uniform thickness each of which is provided with a beveled edge extending from end to end thereof, two of the marginal strips being provided with grooves or recesses and the two remaining marginal strips being provided with tongues fitting into said grooves or recesses and temporarily secured thereto, the intermediate strips forming the body of the head being arranged in parallel relation with the tongued strips and being also provided with tongues fitting within the grooved or recessed marginal strips, the tongues of all of the strips provided therewith being extended into the grooves or recesses to a sufficient depth to be reached and engaged by the nails employed in securing the crate sides to the head or panel, whereby the terminal fastening of the strips comprising the head is effected by the nails which attach the crate sides or slats thereto.

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

AUSTIN S. MANN.

Witnesses:

J. H. JOCHUM, Jr.,
J. ROSS COLHOUN.