

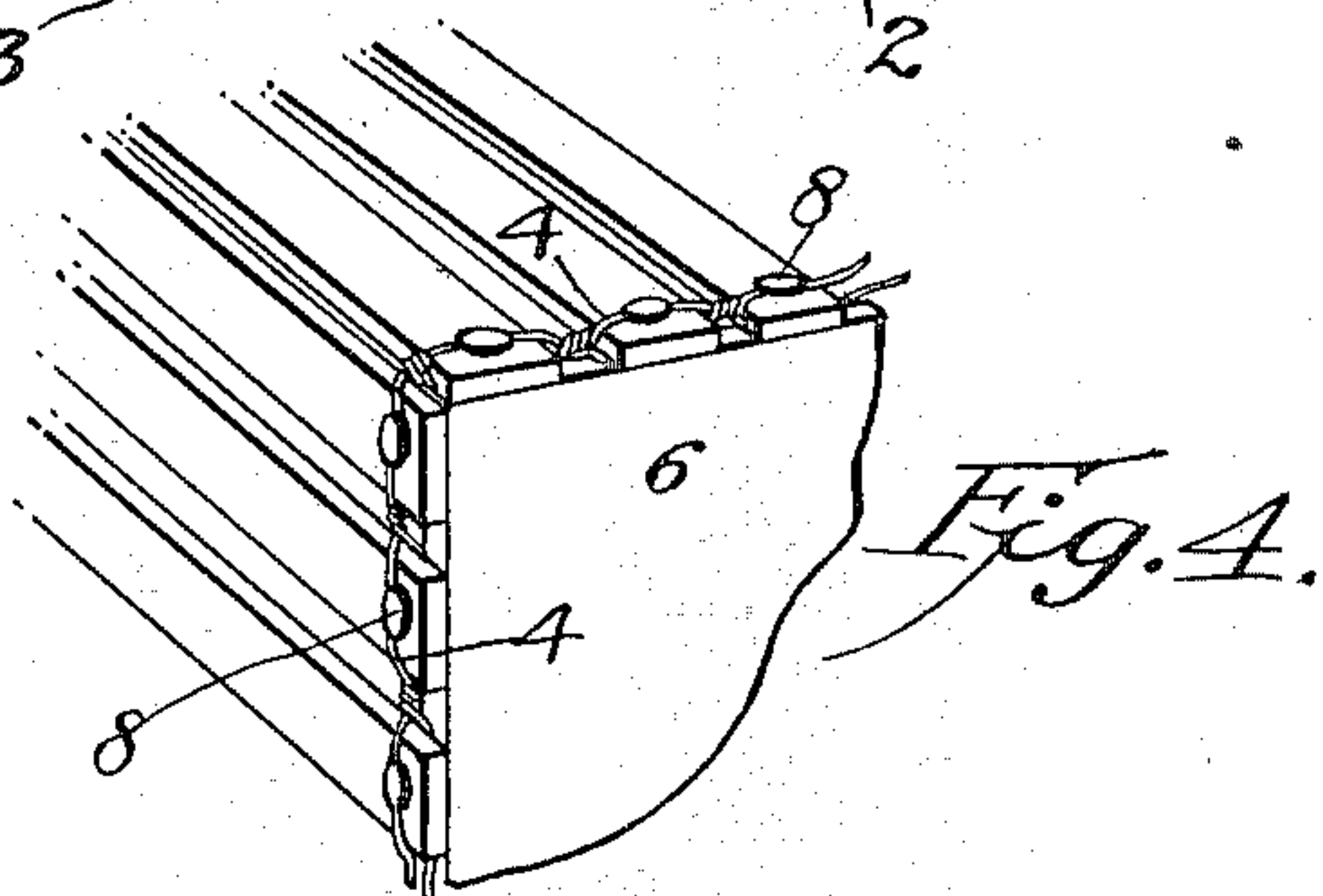
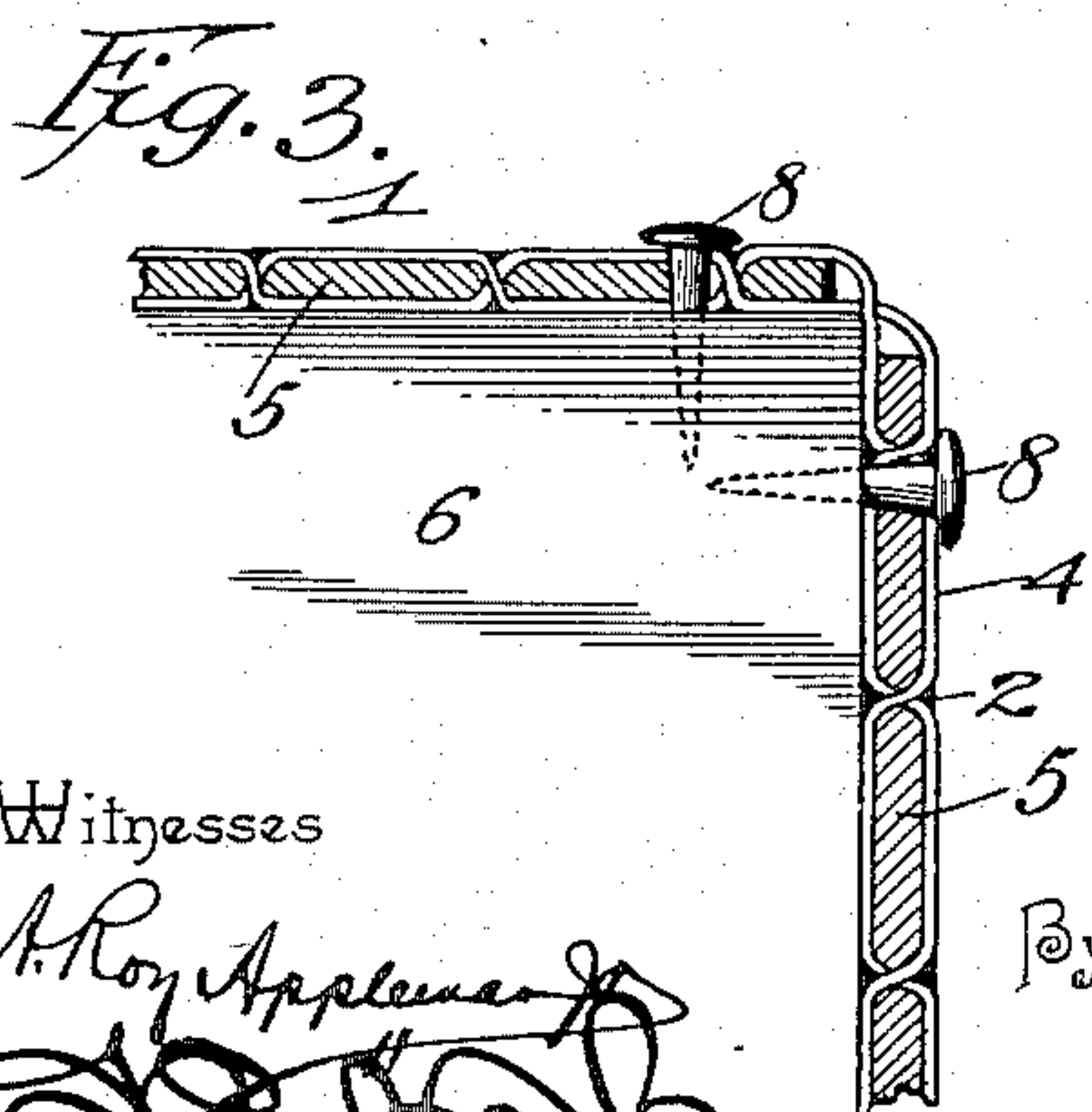
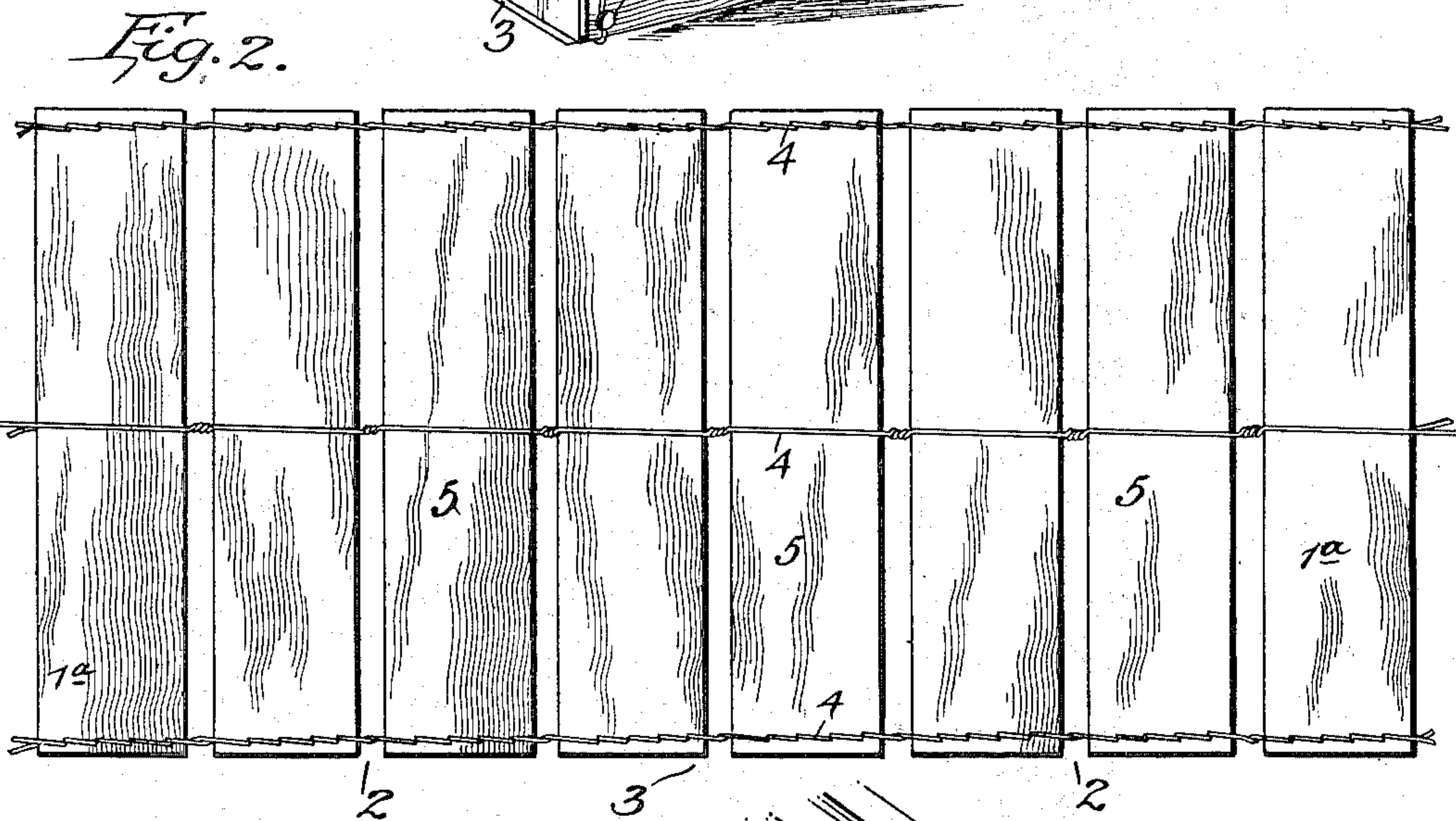
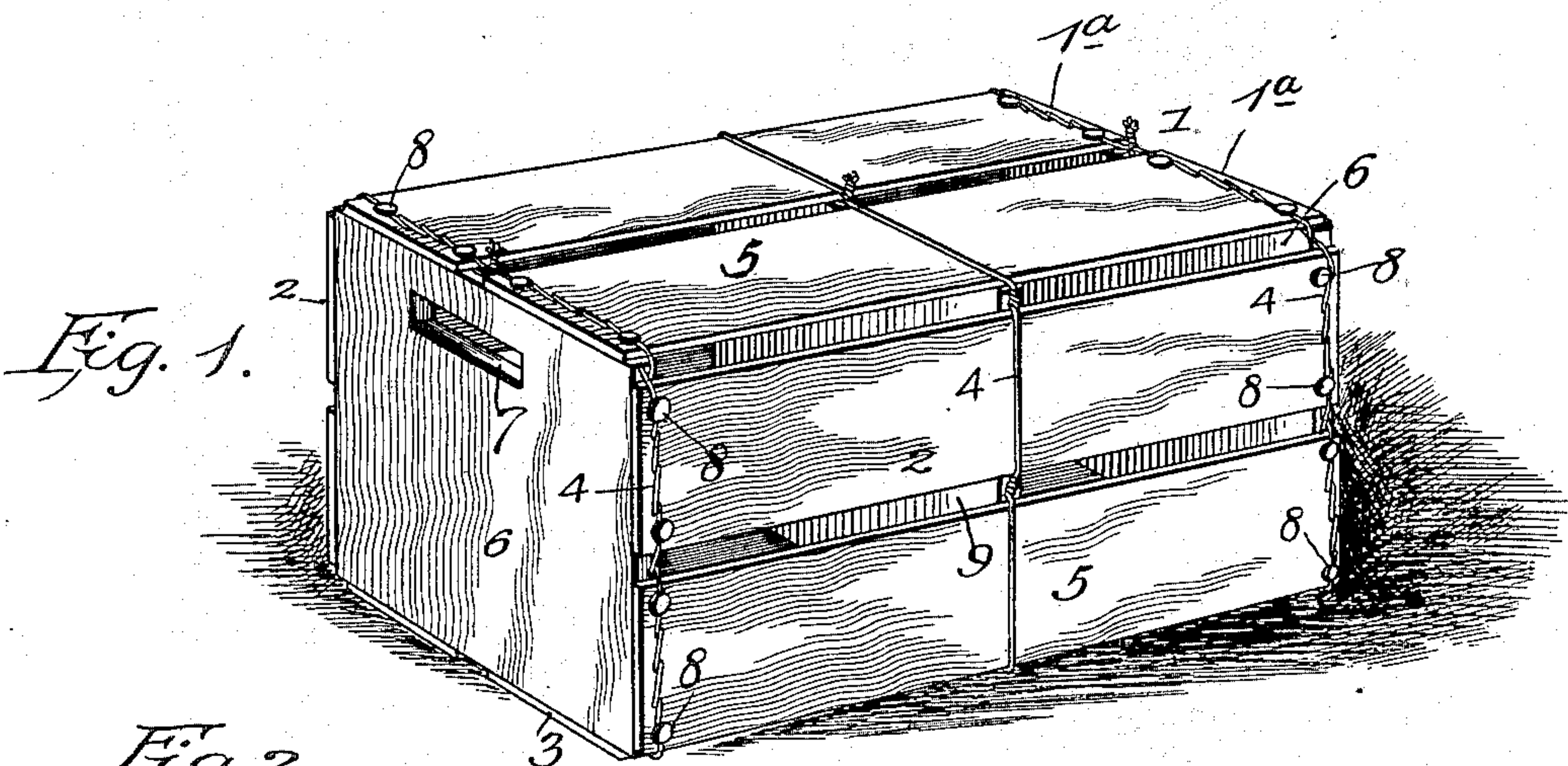
No. 661,481.

Patented Nov. 13, 1900.

E. M. AVERILL.
SHIPPING CRATE.

(Application filed Apr. 1, 1899.)

(No Model.)



Witnesses

A. Roy Appleman
[Signature]

By *his* Attorneys,

Elias M. Averill, Inventor.

Cashnow & Co.

UNITED STATES PATENT OFFICE.

ELIAS M. AVERILL, OF HARRISBURG, MICHIGAN.

SHIPPING-CRATE.

SPECIFICATION forming part of Letters Patent No. 661,481, dated November 13, 1900.

Application filed April 1, 1899. Serial No. 711,333. (No model.)

To all whom it may concern:

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

My invention relates to shipping-crates, and particularly to a container for fruit in which produce may be conveyed from the grower to the consumer; and one object in view is to provide a crate, package, or receptacle suitable for maintaining fruit in a properly-ventilated and salable condition, the same being sufficiently simple in construction and adapted for manufacture at a sufficiently small cost to justify its conveyance to the purchaser or consumer without additional expense, or, in other words, without charge for the receptacle.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claim.

In the drawings, Figure 1 is a perspective view of a fruit-crate constructed in accordance with my invention and embodying the essential features thereof. Fig. 2 is a plan view of the fabric which forms the four sides of the crate. Fig. 3 is an end view of a portion of a crate, partly in section, to show the relation between the warp-wires. Fig. 4 is a detail in perspective of a portion of a crate wherein the side walls are constructed of narrow woof members or strips.

Similar reference characters indicate corresponding parts in all the figures of the drawings.

My invention is capable of embodiment in numerous forms of crates adapted for different uses, such as the transportation of different kinds of fruit and other produce; but for the purposes of illustration I have deemed it necessary in the drawings to show only one form specifically, as in Figs. 1 to 3, inclusive, wherein the top or cover 1, the sides 2, and the bottom 3 are constructed of a single continuous web of fabric, comprising warp members 4, of wire or other flexible material, and woof members 5, consisting of slats of wood veneer or other light material. This

web of fabric is secured to and held in place by end walls 6, which are of a size and contour corresponding with the desired cross-sectional shape of the receptacle which is to be constructed. These end walls may be and preferably are of slightly-heavier material than the woof members of the fabric to give stiffness to the receptacle. In the construction illustrated in said Figs. 1 to 3, inclusive, the woof members of the fabric (while the adjacent edges thereof are separated to form intervening ventilating-spaces) are of considerable width, whereby only two, three, or more are required to form each side of the crate, and when said woof members are thus of considerable width I have found it desirable in practice to interlock the warp members therewith by carrying said warp members through the slats, the latter being suitably softened by steam or otherwise to facilitate the piercing thereof for this purpose. In the intervals between the adjacent edges of the woof members, the warp members, which are arranged in pairs, are crossed or intertwisted, and when, as illustrated in Figs. 1 and 3, the width of the woof members is such as to justify extending the warp members therethrough at intermediate points, said cooperating companion warp members are crossed in the thickness of the woof members, all of the relative turns of the warp members being made in the same direction, so that each warp member lies first outside and then inside of the other warp member. This prevents the independent displacement of one of the warp members. Furthermore, to prevent displacement of the warp members in a direction parallel with the lengths of the slats the former may be put under sufficient tension, while the material of the slats is soft to embed the wires therein. The above-described interlocking connection of the warp members with broad woof members applies particularly to those warp members which are located near the ends of the crate, as it is only at these points that any damaging displacement of the warp members may occur. The intermediate warp members may be engaged with the slats, as shown, without this interlocking or extension through the slats and may be held from displacement by frictional contact of the warp members or by the embedding

thereof in the surfaces of the slats by the tension applied to the warp members.

In assembling the members of the crate the fabric is arranged with the center of its length at the centers of the lower edges of the end walls, (the latter preferably being pierced, as shown at 7, to form handholds,) and said fabric is then extended toward the side edges of the end walls, thence upward to the plane of the upper edges thereof, and finally inward to form the top sections or members 1^a. The top or cover thus consists of the terminal portions of the fabric which forms the four sides of the receptacle, and at suitable points throughout its length the fabric is secured to the edges of the end walls by means of nails 8 or other fastening devices, which are passed through the perforations formed for the wires, and by utilizing these perforations the woof members are not weakened at other points by perforations for such fastening devices.

In the modified construction illustrated in Fig. 4 the woof members or slats are narrow, thus avoiding the necessity of interlocking the warp members therewith, as by extending said warp members through the slats; but in other respects the construction is identical with that described in connection with Figs. 1 to 3, inclusive. Also the terminal portions of the warp members, or those portions which project beyond the free edges of the terminal slats, may be intertwined to form a temporary connection between the sections of the top or cover; but when the crate has been filled preparatory to shipping I prefer to secure said top section by means of the nails or other fastening devices above described.

I have found in practice that a crate of the construction described may be manufactured at a sufficiently small cost to justify the grower in supplying them without involving additional expense to the consumer, said

crates passing into the possession of the consumer under the same conditions as do the bushel baskets and similar receptacles now in common use as fruit-containers. Also in Fig. 1 I have indicated an intermediate partition 9, parallel with the end walls, to divide the interior of the crate into two compartments; but it will be understood that this feature of construction may be used or not, as may be required, by the kind of fruit to be contained by the receptacle and that the widths of the intervals between the adjacent slats may also be varied to suit the size of the fruit which is to be shipped in a given crate.

It will be understood, furthermore, that while I have illustrated but two constructions of crate embodying my invention the same is susceptible of numerous modifications embodying the essential features above pointed out and that various changes in the form, proportion, size, and the minor details of construction within the scope of the appended claim may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having described my invention, what I claim is—

A crate comprising parallel walls, and a web of fabric consisting of a plurality of rigid woof members, and warp-wires passed through the woof members in opposite directions at regular intervals between their side edges and crossed within and between the same and embracing the said woof members, said web being secured to the edges of the walls by fastening devices passed through the perforations for the wires, substantially as described.

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:

E. D. PRESCOTT,
HENRY H. WALKER.