

No. 640,600.

Patented Jan. 2, 1900.

R. I. STEWART.  
SHIPPING CRATE.

(Application filed Nov. 4, 1898.)

(No Model.)

Fig. 1.

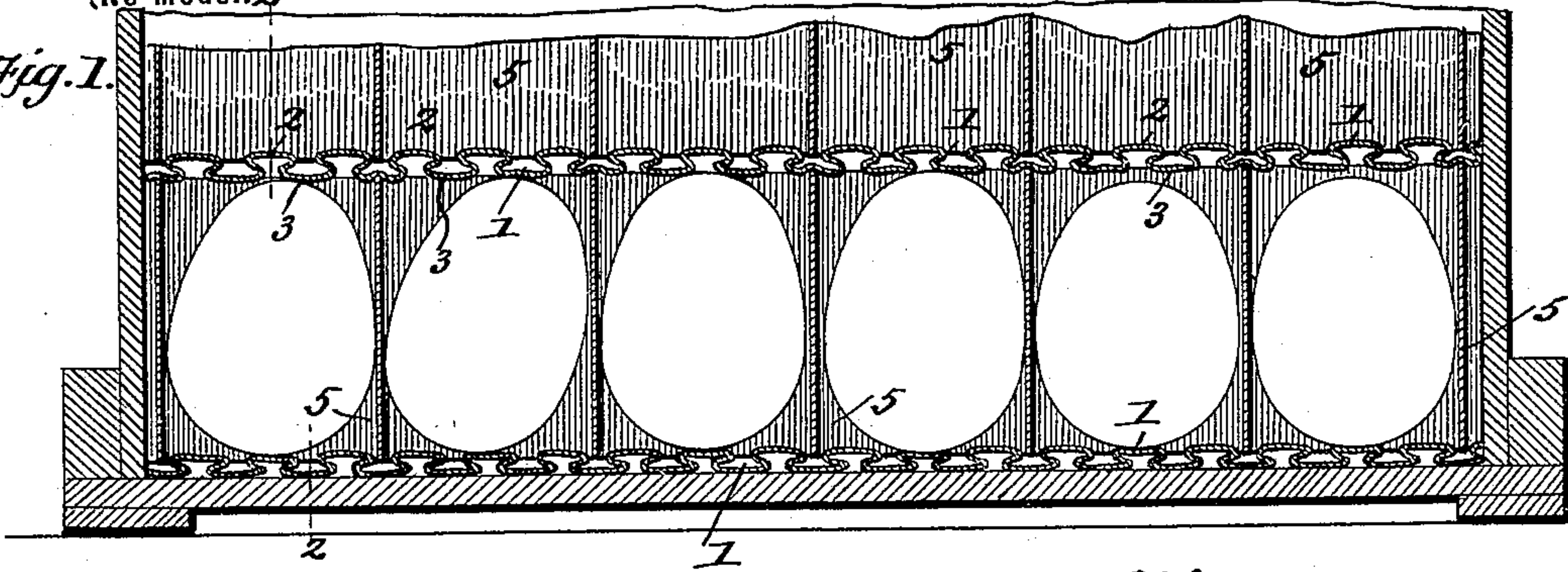


Fig. 2.

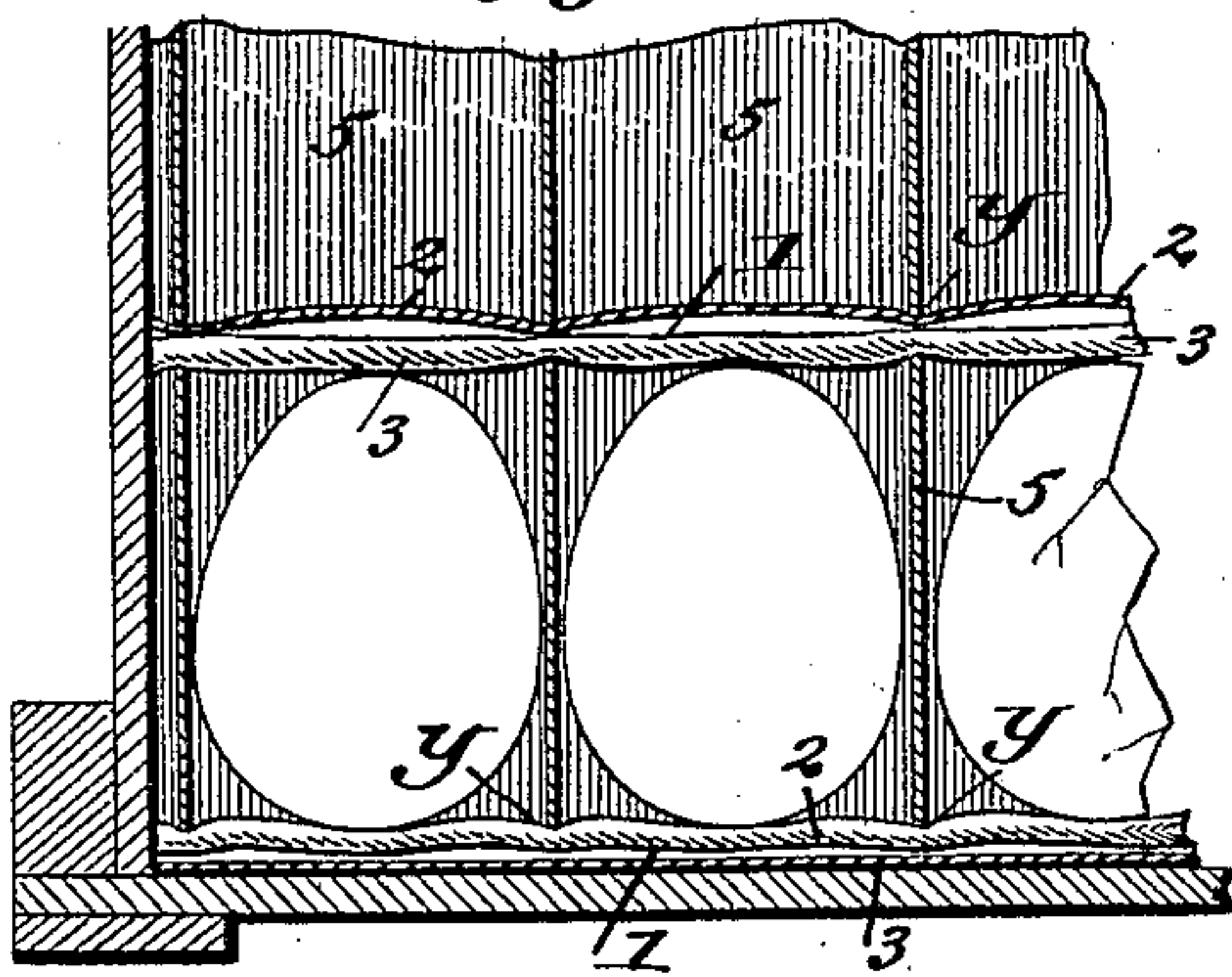


Fig. 3.

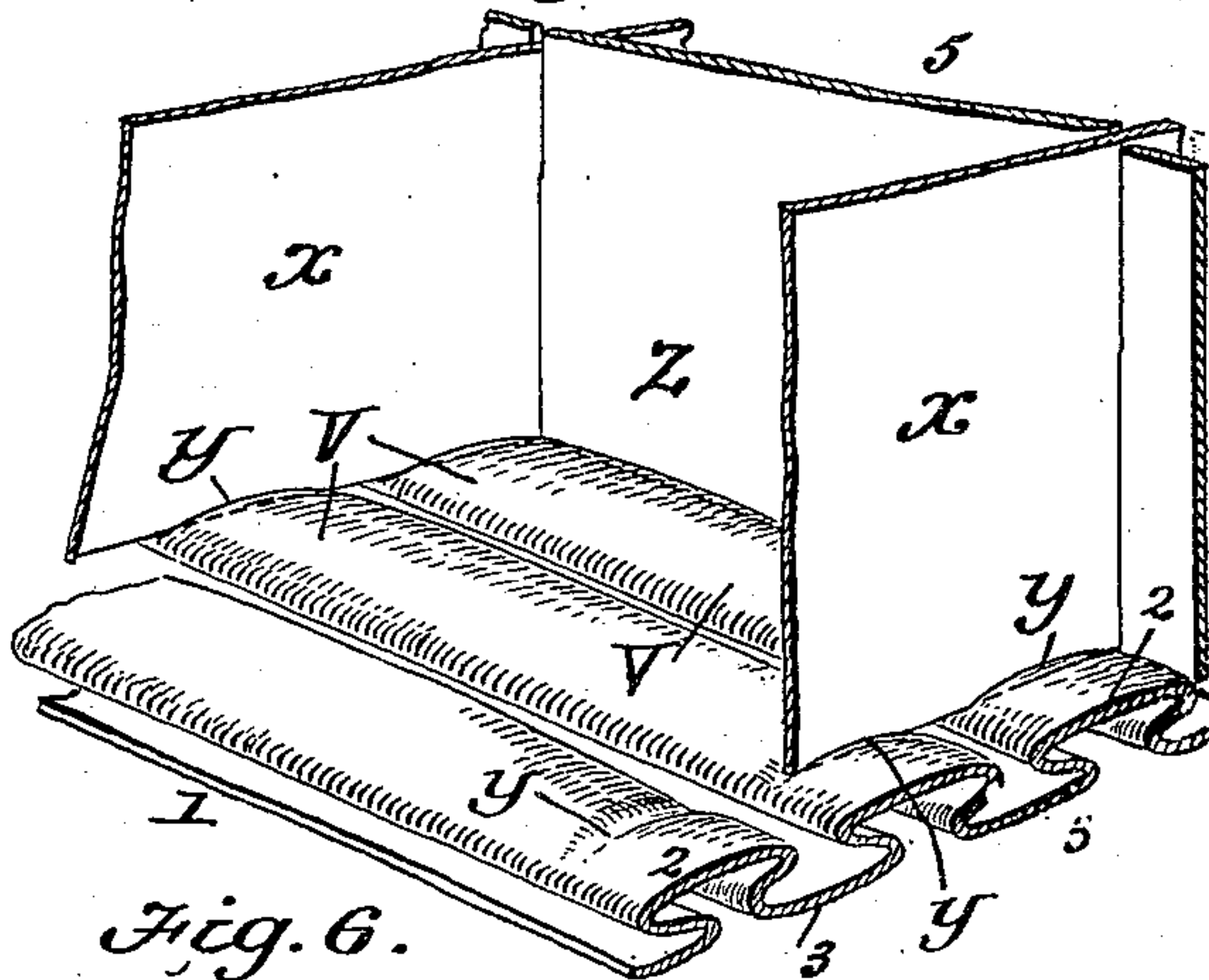


Fig. 5.

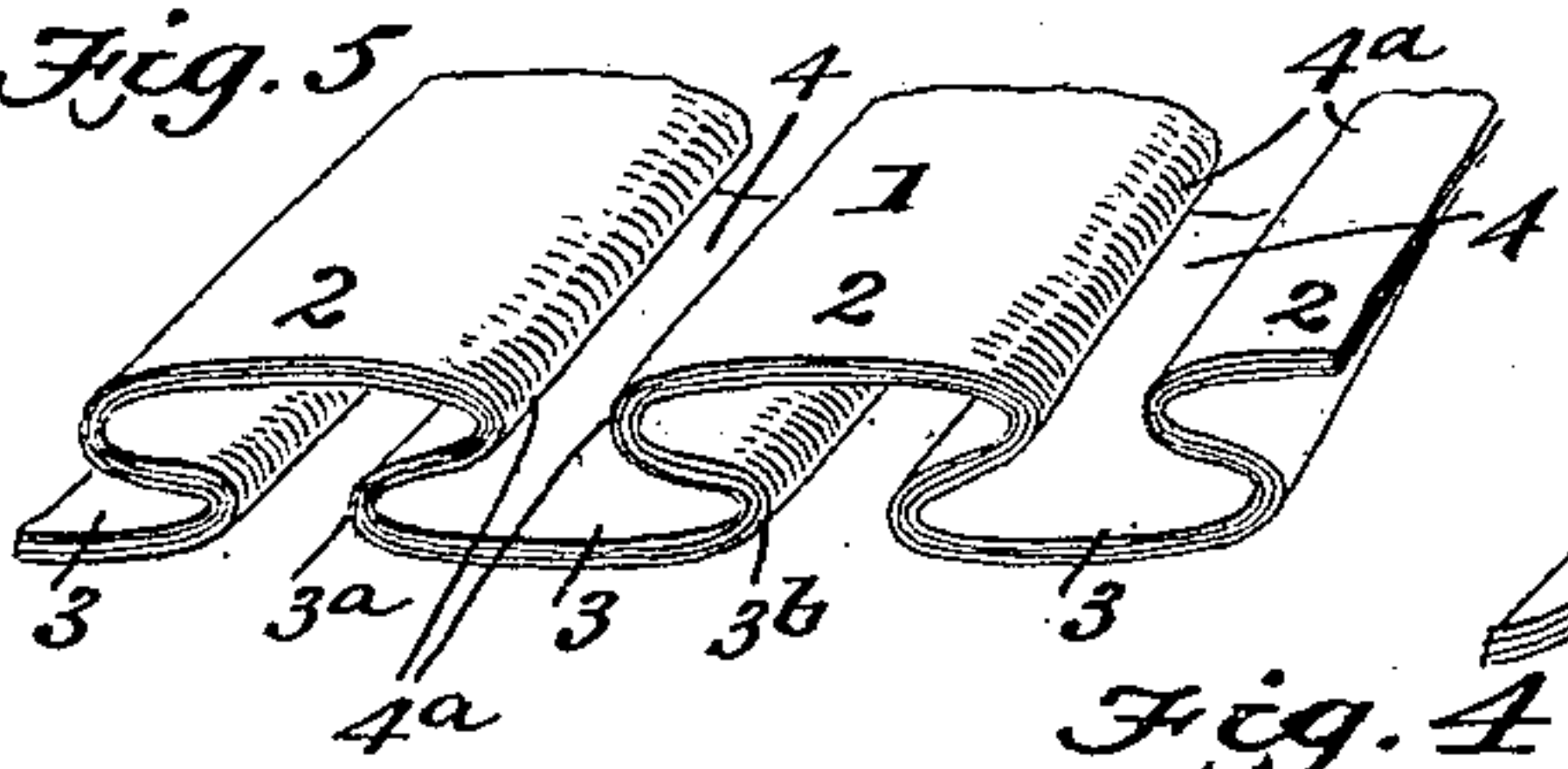


Fig. 6.

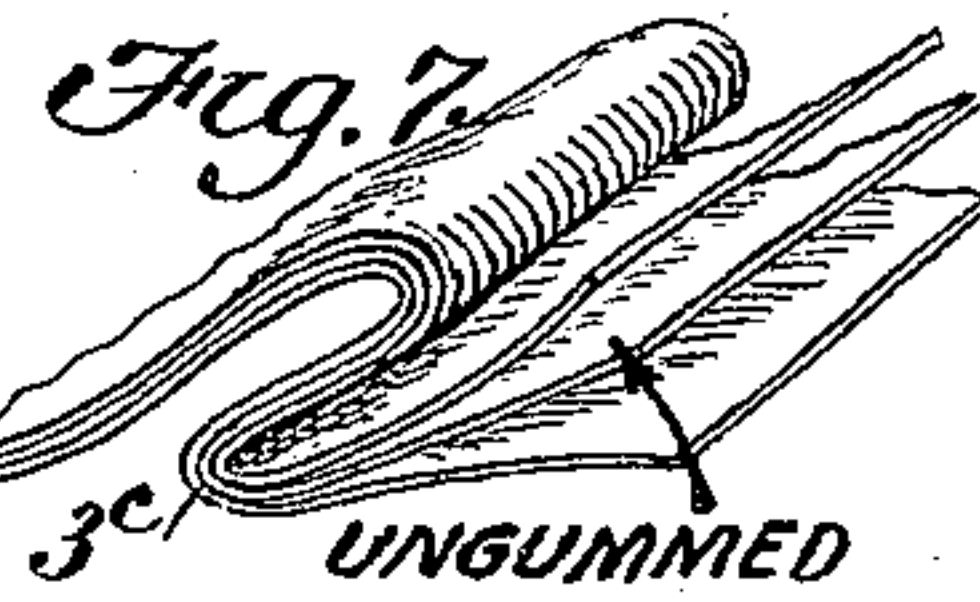
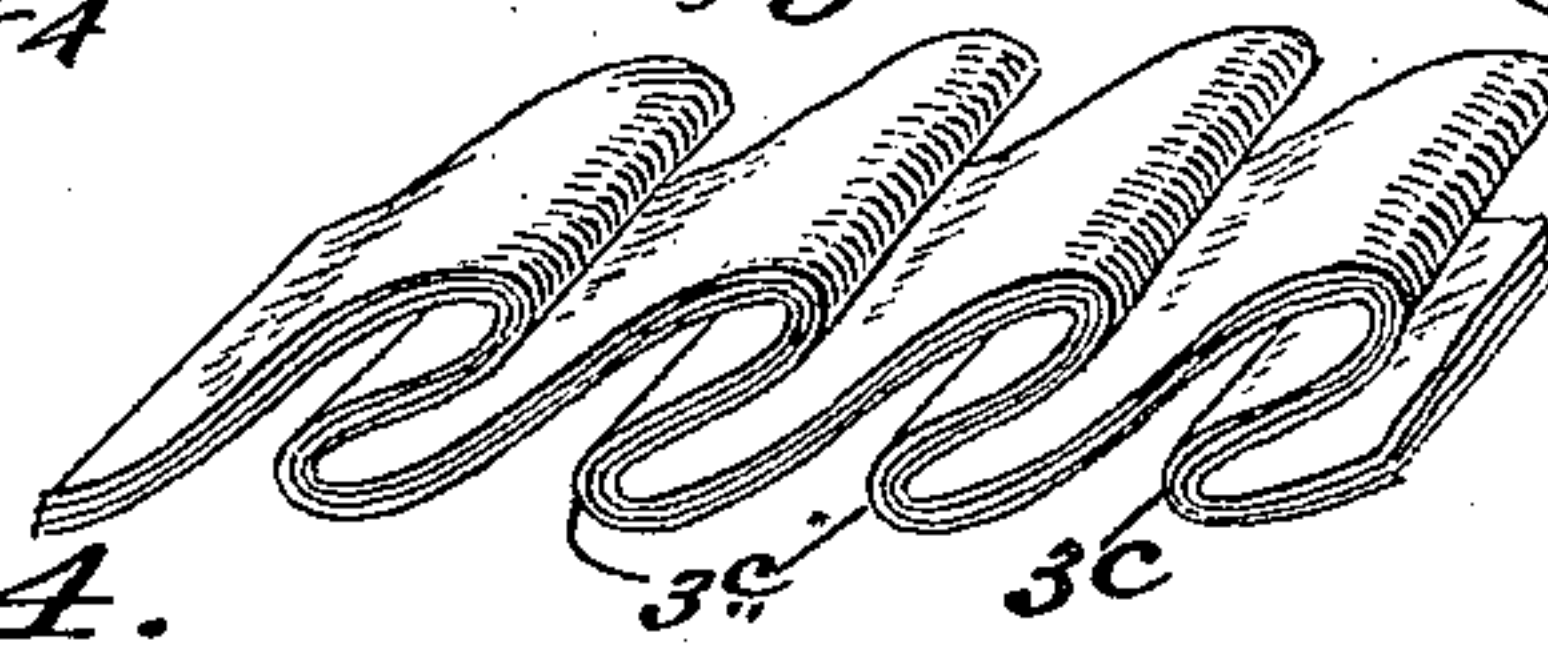
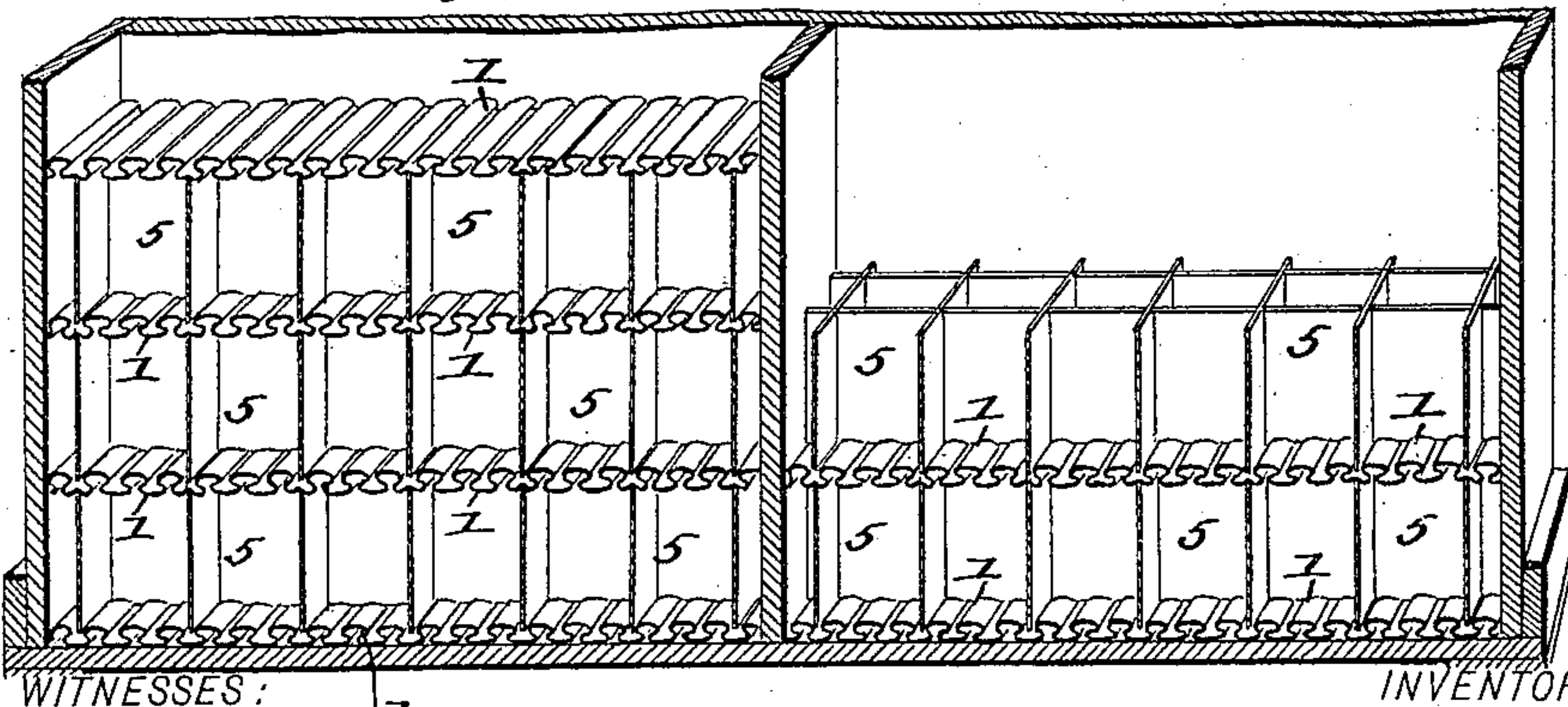


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT ISAAC STEWART, OF XENIA, OHIO.

## SHIPPING-CRATE.

SPECIFICATION forming part of Letters Patent No. 640,600, dated January 2, 1900.

Application filed November 4, 1898. Serial No. 695,491. (No model.)

*To all whom it may concern:*

Be it known that I, ROBERT ISAAC STEWART, residing at Xenia, in the county of Greene and State of Ohio, have invented certain new and useful Improvements in Shipping-Crates, of which the following is a specification.

This invention, while relating generally to improvements in crates or packing-boxes for shipping eggs, bottles, and other breakable goods, in its more specific nature comprehends a peculiar construction of cushioning or elastic material capable of being produced in rolls, folded, or otherwise manipulated, and adapted to be quickly and conveniently placed within the apartment of the egg-crate, packing-box, or other holder.

The invention also has for its purpose the providing of a cushioning-body of stiff paper, pasteboard, or other similar material having its folds so bent or lapped as to give an unusually elastic or cushioning effect to protect the contents of the casing, package, or box, the said folds or laps being also so arranged that no special means are required to hold them down to their lapped or folded position and in which the laps have a clearly-defined abutment or seat-portion bearing to receive the edges of the fillers or division-seats which form the compartments of the complete crate, box, or package and by reason of which the whole structure, comprising the internal or goods-holding compartment, will be rendered of a more stable character and the danger of the contents thereof coming into solid contact with each other from an unusual impact or jar of the crate, box, or package in shipping or handling is reduced to a minimum.

This invention consists in the peculiar construction and novel arrangement of parts, as will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of a portion of an egg-crate constructed in accordance with my invention. Fig. 2 is a transverse section of the same on the line 2 2 of Fig. 1. Fig. 3 is a detail view illustrating the correlation of the filler and the cushioning-roll when in use. Fig. 4 is a view illustrating the man-

ner of building up an egg-crate in accordance with my invention, parts being in section. Fig. 5 is a detail view of a portion of one form of my improved cushioning-roll or top. Fig. 6 is a similar view of a modified form of the same, and Fig. 7 is a detail view showing the ungummed layers of the cushioning-partition spread apart.

In the practical application of my invention the cushioning member is made of a plurality of layers or thicknesses of paper, straw-board, felt, or other analogous material sufficiently stiff and heavy to properly cushion the articles to be shipped. In all cases the same is of such condition that it can be easily rolled in bulk and when formed into the shapes hereinafter mentioned will maintain their fluted or corrugated shape without the use of gum, stitching, or bands.

The cushion or body 1 is formed by suitable means with parallel transverse folds or corrugations or flutes to produce alternate lower and upper loops 2 3, the lower ones of which extend under the upper ones either at opposite sides, as indicated by 3<sup>a</sup> 3<sup>b</sup> in Fig. 5, or at one side, as indicated by 3<sup>c</sup> in Fig. 6, such loops forming transverse cushion or elastic portions, which portions in practice are so closely arranged as to make the entire surface of the said body an elastic one.

It will be noted by reference to the drawings, and particularly as relates to the form shown in Fig. 5, that the body 1 has a series of elastic ribs or flutes, between which parallel grooves or seats 4 are formed, the sides of which terminate in clearly-defined abutment edges 4<sup>a</sup>, the purpose of which will presently appear.

When used for shipping eggs, my improved crate in its complete form is constructed as follows: A box of the desired size is made, and on the bottom thereof is then placed a cushion member 1, having a shape substantially that of the internal space of the box, and on this cushion member is then placed a filler-frame 5, of pasteboard or other material such as is generally used in egg-shipping crates.

It should be stated that the fluted portions of the cushion 1 are spaced substantially so that the transverse members of the filler will fit into or over the said seat portions 4, as best



shown in Fig. 3, so that the upper and lower edges of the said sides of the filler are projected and seat between the flutes or layers of the cushion members, such arrangement of parts producing, as it were, an interlocking of the filler and the cushion members of such character as to hold the fillers on the cushion members from a too-great lateral movement during the handling of the crate, and thereby greatly reducing the danger of jarring the contents, and in consequence effecting a saving of the goods by reason of the non-breakage thereof, this result being further provided for by also holding the flutes from laterally swaying in the direction of the length of the flute or rolls of the cushion members, which is effected by the pressure of the longitudinal side walls X of the fillers, caused by the weight of the upper layers compressing the flutes or rolls at the points Y and the consequent rise within the filler-spaces Z of the parts V of the cushion.

After the first cushion is put in the crate or box a filler-frame is placed thereon, which is then fitted with the articles to be shipped. A second cushion is then laid on the top of the filler-frame. A second filler-frame is then placed on the second cushion, said second filler-frame being then filled and the said operation being repeated until the top filler is in place, when a final cushion-piece is laid thereon and held securely by nailing a top board on the crate-frame.

By fluting the cushion in the manner stated it is manifest that the weight of the several filler-frames will cause the upper and lower edges of such frames to so thoroughly interlock with the cushion, both at the upper and lower edges, as to render the internal portions of the crate practically immovable laterally within the crate or box even when the said crate receives an unusual jar or shock.

While I have shown the cushion or fluted body and filler especially adapted for shipping eggs, it is obvious that the same may, with a slight modification of shape and size, be used in shipping other breakable articles.

I am aware that springy or cushion bodies formed of a substantial springy material have been provided and especially adapted for use as carpet-lining; but usually in such forms of lining means, such as stitching or pasting, have been used to keep the folds or laps of the material in proper shape before and after the cushion-body is put into use. My invention differentiates from such form of lining or cushion material in that the flutes or corrugations are permanently fixed as a part of the body and formed with clearly-defined parallel abutment edges at the top and bottom, whereby when combined in use with a vertical form of fillers the upper and lower edges of the same and the cushion material will become thor-

oughly interlocked, and the elastic or cushion effect of that part of the cushion member facing the spaces of the filler will have their elastic or cushion qualities correspondingly increased.

The purpose of my invention is especially to furnish a crate for eggs. My invention is of special importance for such purpose, as by employing the cushions formed of layers free of gum, glue, or the like I avoid any injurious effect upon the eggs shipped. It is well understood that eggs readily absorb surrounding odors and impurities, also that eggs are frequently stored in cold storage. In the use of crates employing cushions in which the layers are glued together it has been found that the glue would impart a bad flavor to the eggs and that when used in cold storage the glue will cause a mold to form which will very injuriously affect the eggs.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An improved shipping-crate for eggs, comprising an external box; a series of horizontally-disposed division members, each consisting of a cushioning body of stiff elastic material composed of independent fluted ungummed layers held together without the use of glue or the like, said body having flutes or corrugations alternately arranged on opposite faces, said flutes or corrugations having the opposite edges bent inward toward each other, whereby to provide a contracted space on one face of the division member and a widening cushioning bearing-surface on the opposite face of the said member, said division members being so arranged above the boxes that the bearing-surfaces of one division member will oppose the contracted space of the next division member; and filler-frames having division members relatively so disposed that one side of the divisional members will have their lower edges seat in the contracted portions of the cushioning members and their upper edges seated against the flat bearing-surfaces of the other cushioning member, whereby the cushioning body or member will not injuriously affect the eggs, all being arranged substantially as shown and described.

2. A compartment-crate for eggs comprising a case and a cushioning division or partition therein composed of a plurality of thicknesses or layers of paper plaited to form cushioning corrugations, the several layers being held together without the use of glue or the like whereby the crate will not injuriously affect the eggs shipped therein substantially as set forth.

ROBERT ISAAC STEWART.

Witnesses:

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GEORGE DOWNES.