No. 708,651. Patented Sept. 9, 1902.

J. F. LAY.

KNOCKDOWN SHIPPING CRATE.

(Application filed Nov. 25, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

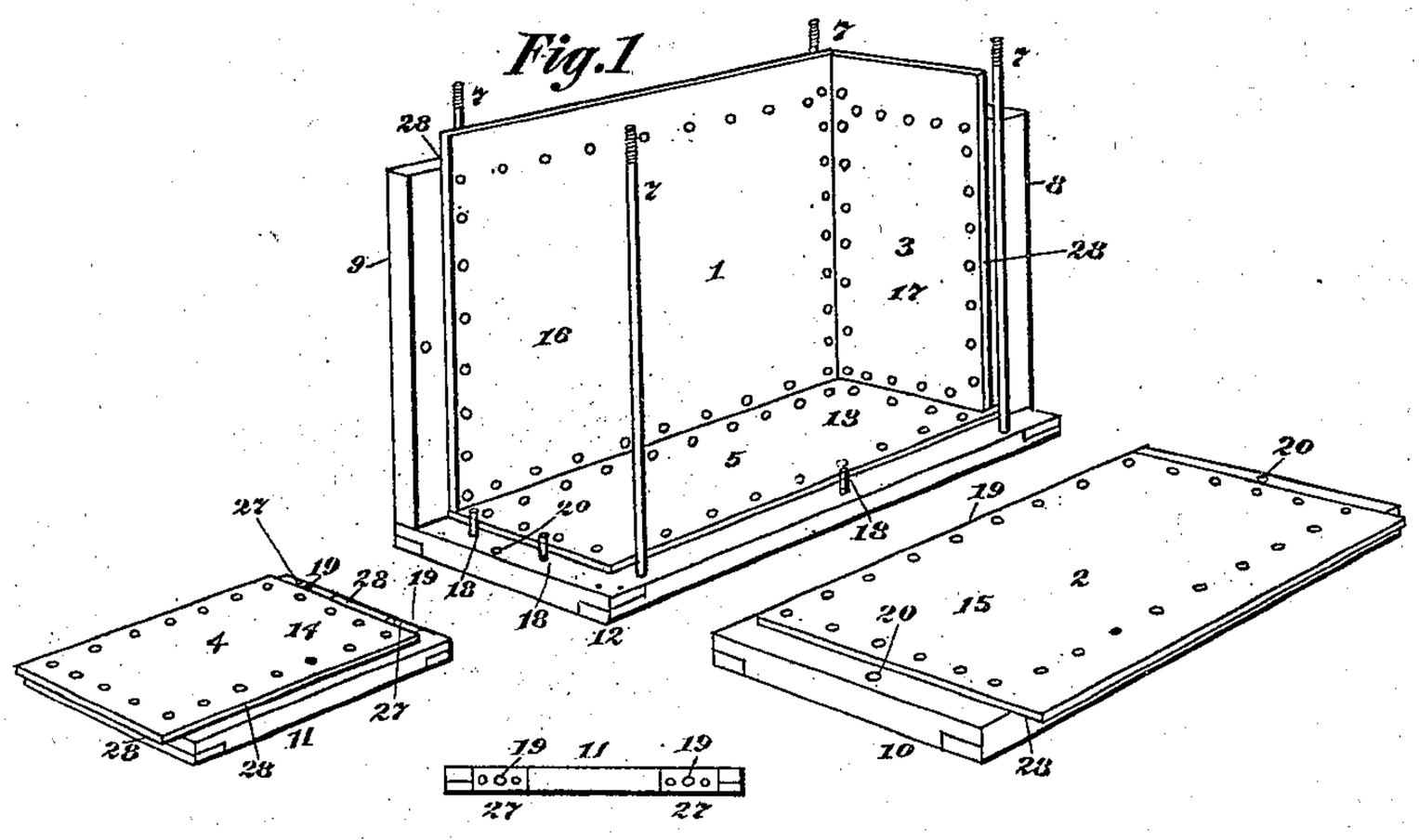

Fig. 2.

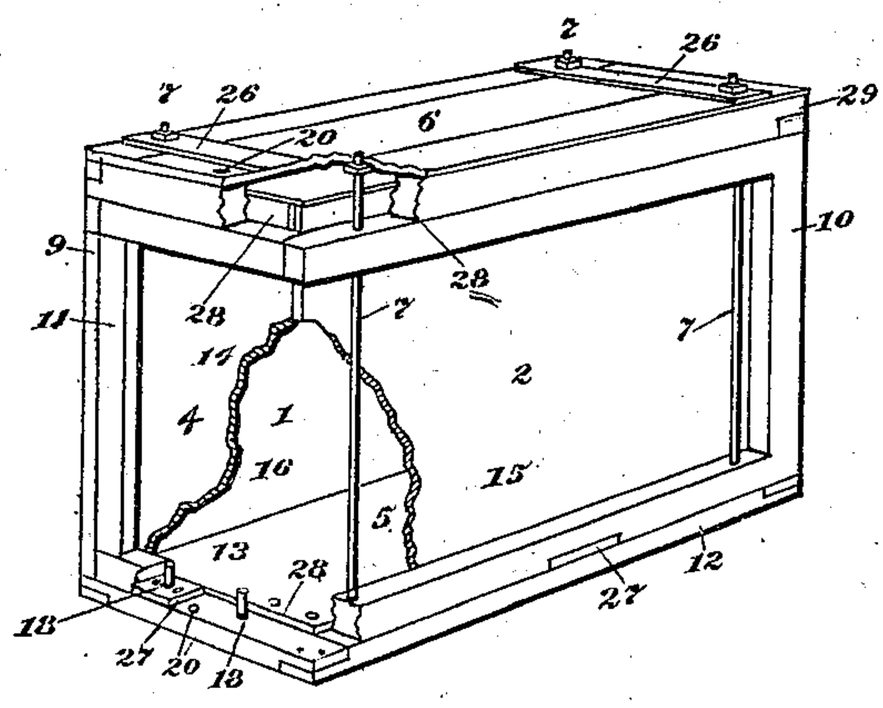

Fig. 3.

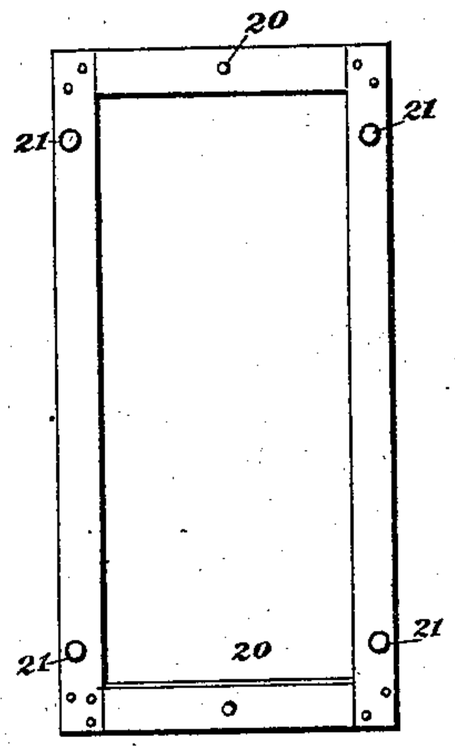

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Fig. 4.

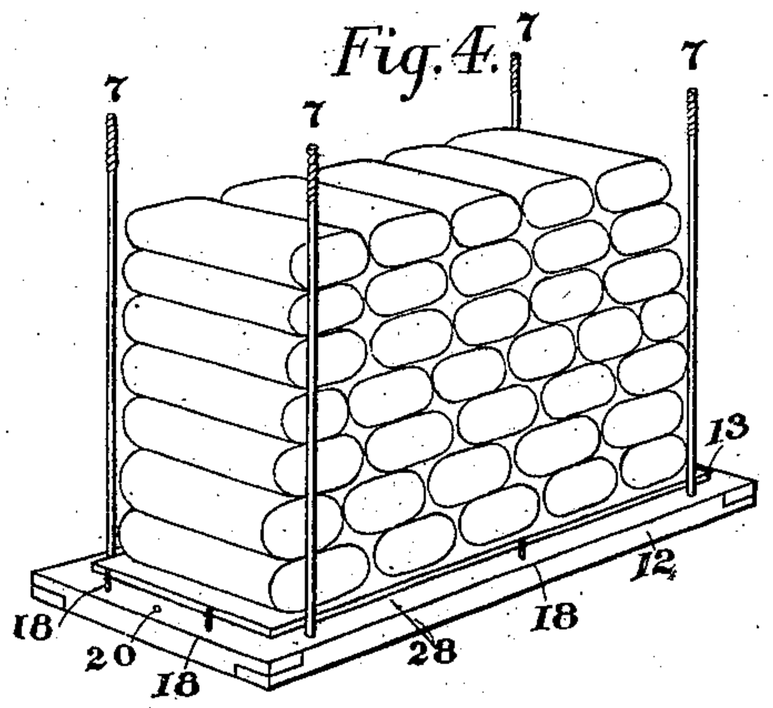


Fig. 5.

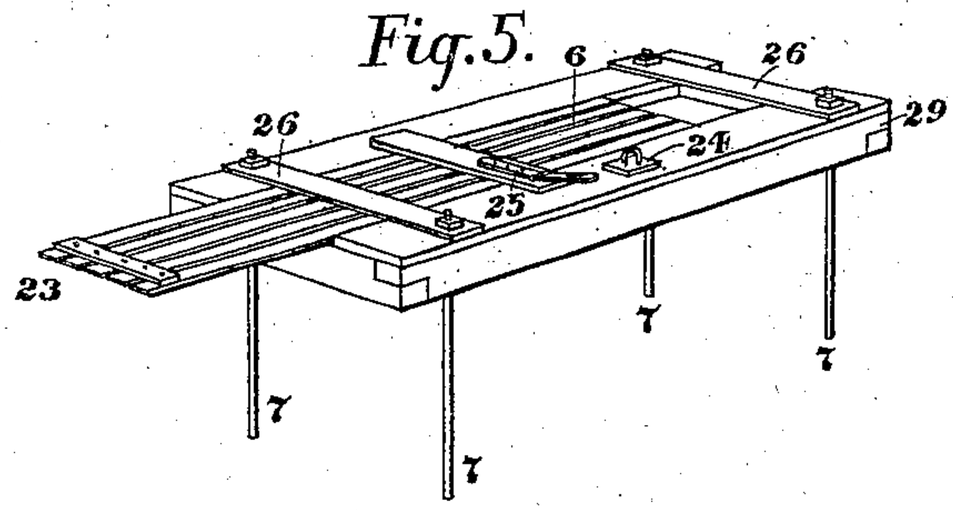
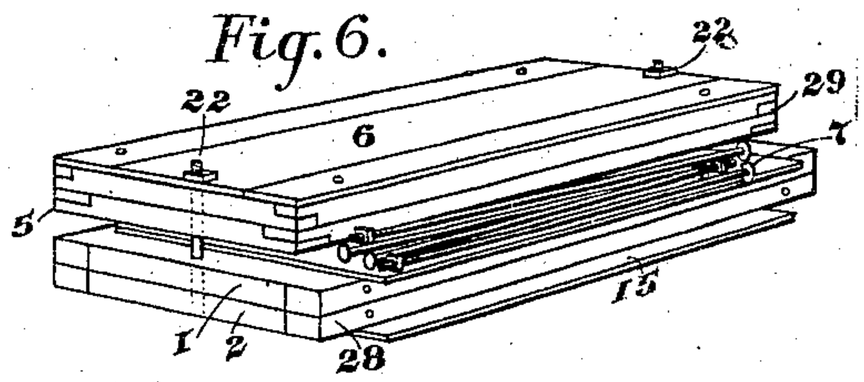


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN FIRGASON LAY, OF LOUISVILLE, KENTUCKY.

KNOCKDOWN SHIPPING-CRATE.

SPECIFICATION forming part of Letters Patent No. 708,651, dated September 9, 1902.

Application filed November 25, 1901. Serial No. 83,598. (No model.)

To all whom it may concern:

Be it known that I, JOHN FIRGASON LAY, a citizen of the United States, residing at Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Knockdown Shipping-Crate, of which the following is a specification.

My invention relates to shipping-crates which are adapted to be knocked down and the parts firmly fastened together in small compass for storing or returning to shipper; and the objects of my improvement are, first, firmness; second, durability; third, safety; fourth, facility of use, and, fifth, to provide a form of crate which may be made in shape and size suitable for all shipping purposes and one which may be used to make a good knockdown wagon-bed. I attain these objects by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the crate embodying my invention with the top removed and one side and one end removed and lying flat and a bottom edge view of the end. Fig. 2 is a perspective view showing the crate assembled, with portions broken away to show the construction. Fig. 3 is a plan view of the bottom frame. Fig. 4 is a perspective view showing the contents of crate when sides and top are removed. Fig. 5 is a perspective view of the top, showing construction for poultry-coops; and Fig. 6 is a perspective view of the crate knocked down and parts bolted together in compact form for shipping.

Similar numerals refer to similar parts throughout the several views.

1, 2, 3, and 4 are the sides of the crate.

5 is the bottom and 6 the top.

7 represents the bolts.

8 is one of the end frames.

9 and 10 are side frames.

11 is an end frame.

12 is the bottom frame; 13, the bottom boarding; 14, the end boarding; 15 and 16, side boarding; 17, end boarding.

18 represents the dowels; 20, the holes for the knockdown bolts; 21, the counterbored holes in the bottom frame 12, in which the heads of 7 are sunk; 22, the knockdown bolts; 23, the sliding door in 6 when crate is made for poultry-coop; 24, the staple for fastening 23; 25, the hasp on 23 for fastening over 24; 26, the iron cleats across 6, through which 7 pass and on which nuts are screwed down; 27, the iron plates let into the bottom edge of the sides pierced with holes for 18; 28, the rabbet formed by the boarding when nailed onto the frames 8, 9, 10, 11, and 12, and 29 is the top frame.

The four sides and the bottom are similarly constructed, being made of similar rectangular frames of timbers halved together at their ends and these then boarded over by nailing comparatively thin boards across them. The top is made of timbers halved together edgewise to form the frame, and this then covered with boards, either solid or leaving a solid door extending longitudinally over the top, as shown at 6 in Fig. 2, or a sliding slatted door, as shown in Fig. 5. The timbers of the top frame are placed edgewise in order that they may fit into the rabbet formed by the top extension of the boards of the sides above their frames and yet have the requisite strength to hold the sides together. The boarding which covers the bottom frame does not cover the frame by the thickness of the side frames on all four sides. In this way a rabbet is formed, against which the sides abut. The same plan is carried out with the sides, except on their tops, where the boards extend beyond the side frame, forming a rabbet on the outside and allowing the siding to extend up into the top frame 29. It will be seen that the crate is thus thoroughly braced in every direction. The ends are prevented from bursting out at the bottom by the dowels 18, which are secured in the bottom frame 12 and extend upward into holes in the bottoms of frames 8 and 11, or the plan may be reversed, securing the dowels in the side frames. To give additional firmness and prevent wearing out of holes 19, the iron plates 27 are laid in and secured in the lower edge of the end and side frames wherever dowels are used. The bolts 7, together with the dowels, prevent the sides bursting out. The heads of bolts 7 are sunk in the bottom frame in counterbored holes 21. When the crate is assembled, the iron strips 26, suitably pierced at their ends, are placed across the top 6 and over the bolts 7 and nuts firmly screwed down, and it is very firm and ready to withstand rough handling. When knocked down, the sides are laid to-

gether as shown in Fig. 6, where the ends are in the recesses between the side frames, and the whole may be bolted together by passing the knockdown bolts 22 through the holes 20, provided for the purpose, and screwing the nuts down firmly.

This crate may readily be made in sizes and shapes for many shipping purposes—such as dry goods, groceries, boots and shoes, nursery stock—and it will make a most excellent wagon-bed. The siding may be slatted for vegetables or poultry. When used for dry goods or other goods of a similar nature, it is not necessary to dive laboriously into the box and lift the goods out; but the sides may be removed, as shown in Fig. 4, and the goods are readily accessible. It can be stored in small compass, easily shipped, and easily assembled for use. In assembling the crate the bolts are put into the bottom, the sides let down over the bolts, the ends placed in, and the top put on over all. When the sliding door is used, it may be locked by means of the staple and hasp 24 and 25.

Having now described my invention so that any one skilled in the art pertaining thereto may make and use it, what I claim, and desire to secure by Letters Patent, is—

In a knockdown crate or other box, the combination of a rabbeted bottom, rabbeted sides, a framed recessed cover, rods or bolts passing vertically through the bottom frame, side frames and cover-frame, and dowel-pins between the bottom frame and the bottom edges of the side and end frames, all substantially as and for the purposes specified.

JOHN FIRGASON LAY.

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