No. 771,301. PATENTED OCT. 4, 1904.

F. C. EDDELMAN.

KNOCKDOWN BOX.

APPLICATION FILED NOV. 18, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.

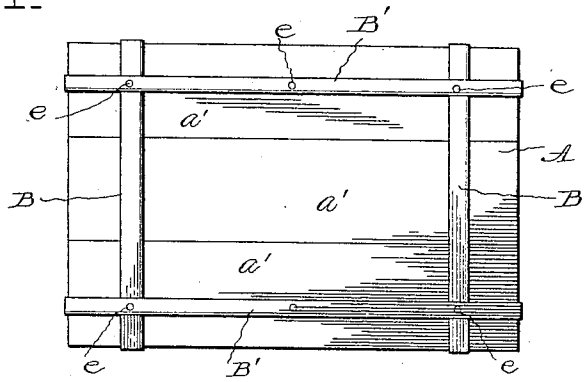


FIG. 2.

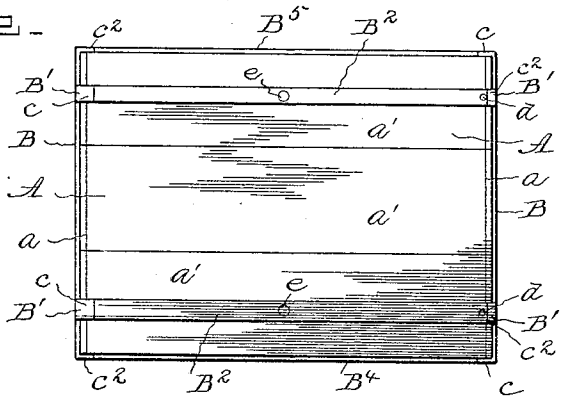
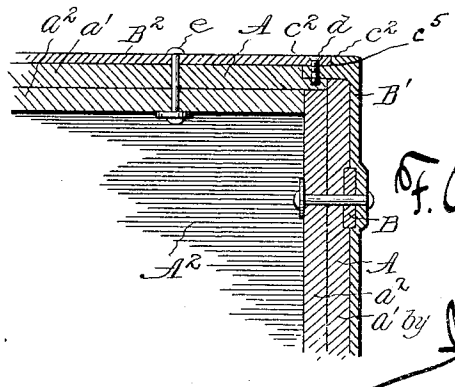


FIG. 7.



Witnesses:—
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NO MODEL. 2 SHEETS—SHEET 2.

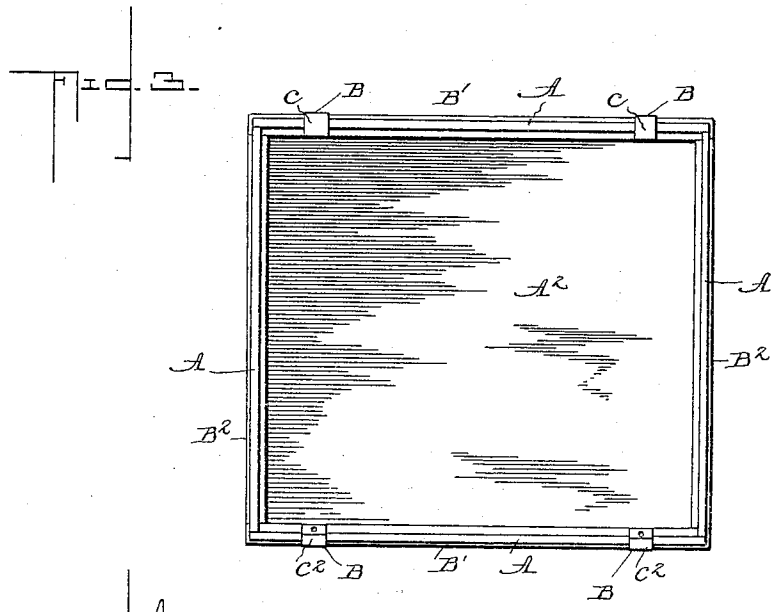


Fig. 4.

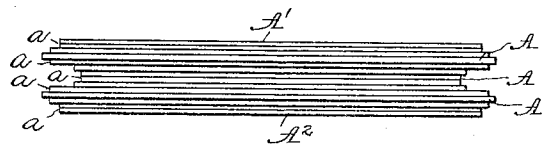


Fig. 5.

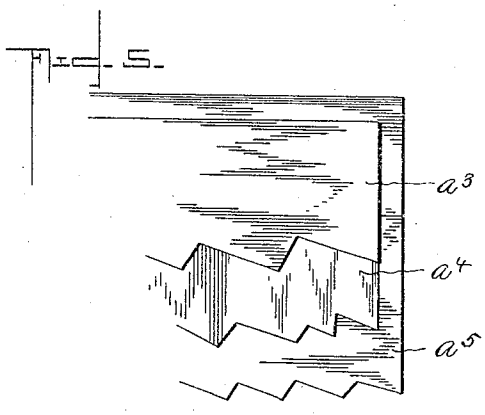
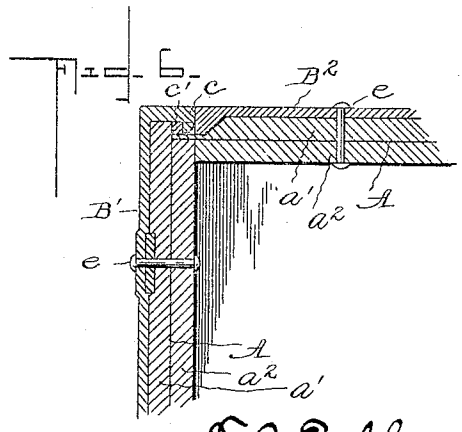


Fig. 6.



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No. 771,301. Patented October 4, 1904.

UNITED STATES PATENT OFFICE.

FIELDING C. EDDELMAN, OF GREENSBURG, INDIANA.

KNOCKDOWN BOX.

SPECIFICATION forming part of Letters Patent No. 771,301, dated October 4, 1904.

Application filed November 18, 1903. Serial No. 181,686. (No model.)

To all whom it may concern:

Be it known that I, FIELDING C. EDDELMAN, a citizen of the United States, residing at Greensburg, in the county of Decatur and State of Indiana, have invented a Knockdown Box, of which the following is a specification.

This invention relates to that class of shipping-boxes which are designed to be "knocked down" and the parts thereof closely arranged for the purpose of economizing space.

In shipping goods from one place to another—for instance, from the manufacturer to the dealer—and where strong well-constructed boxes are used it has been found economical to have such boxes returned when empty to the manufacturer, so that they may be used again for another consignment of goods, and as the cost of returning such boxes depends largely upon the size of the same or space they occupy it is now customary in such cases to use knockdown boxes. The adoption of this latter style of boxes, however, has been slow, owing to the fact that in the majority of instances the structures when arranged for use have not in simple form possessed the required stability and durability and when knocked down have not presented such compactness in form as to occupy the minimum amount of space.

It is the object of my invention, therefore, to provide a knockdown shipping-box which will possess the important advantages of providing a strong and durable structure and in which the parts or several sides may be closely stacked one upon the other and in such manner as not only to occupy a minimum space, but also protected from injury.

Other objects and advantages of the invention will appear from the following description, and the novel features of construction will be more particularly pointed out in the appended claim.

In the drawings, Figure 1 is a front elevation of a knockdown shipping-box constructed in accordance with my invention. Fig. 2 is an end elevation. Fig. 3 is a plan view with the cover removed. Fig. 4 is a view showing the parts of the box separated and stacked to economize space. Fig. 5 is a detail view illustrating the manner of constructing the top and bottom. Fig. 6 is a detail view of the interlocking means for the binding-straps. Fig. 7 is a similar view of the securing means for the binding-straps.

Like letters of reference indicate like parts in the several views of the drawings.

Referring to the drawings, A designates the sides of the box, A′ the top, and A^2 the bottom, and in carrying out my invention these parts are preferably of the same size and are rabbeted at their edges, as indicated at *a*, so that when said edges are fitted together in assembling the parts to form the box they will interlock for the purpose of providing a strong structure in connection with the fastening or binding means hereinafter described.

The sides A are made up of composite lumber—that is, each side is composed of two layers a' and a^2, (see Fig. 6,) glued or otherwise fastened together so that the grain of one layer will run at right angles to the grain of the other, the grain of the outer layer preferably running horizontally of the box, so that it will not be liable to break or chip off at the edge of the latter. It will be observed that the rabbet may be and preferably is formed by having the inner layer slightly smaller in size than the outer layer.

In making up the top A′ and bottom A^2 three layers a^3, a^4, and a^5 (see Fig. 5) are employed and in which the grain of the intermediate layer a^4 runs at right angles to the grain of the outer layers a^3 and a^5, and said layers are arranged to form a rabbet around the edges which engage the edges of the sides of the box, as shown.

In assembling the parts to form the box the opposite edges of the sides A are fitted together to form the four sides of the box, after which the bottom is placed in position with the rabbeted edges thereof fitting the rabbeted edges of said sides, and in order to securely fasten all these parts together binding-straps are employed, which I shall now proceed to describe.

Two sides of the box are provided with vertical and transverse metal straps B and B′, respectively, while the other two sides are provided with transverse straps B^2 only, and when the sides are set up or assembled the

transverse straps B′ and B^2 are connected, tightly binding these parts together. The bottom is connected to these sides by transverse straps B^4, which latter are attached to the vertical straps B, holding said bottom securely in place and bracing the sides. A box open at the top is thus provided, and after the same is filled it is closed by placing the top A′ in place and secured by means of transverse straps B^5, which are connected to the vertical straps B, as in the case of the bottom. In this way a strong and well-constructed box is provided, and the metal straps not only bind the detachable parts together, but also reinforce the edges and receive the wear in handling the box.

To knock down the box, the straps securing the top and bottom are disconnected, so that said top and bottom may be removed, and then the straps B′ and B^2 are disconnected, so that the four sides may be separated, after which the six parts which constitute the sides, top, and bottom of the box are stacked upon each other, as illustrated in Fig. 4, and tied together in any suitable manner. When thus knocked down and arranged, the box will occupy a minimum amount of space, and consequently can be returned at a very much less charge than for an ordinary empty box of the same size.

The manner of connecting the straps to bind the parts of the box together consists in enlarging the ends of said straps and shaping such ends so that they will interlock with a companion strap at one end and overlap a companion strap at the other end, in which former instance (see Fig. 6) the hooked end c of one strap engages a recess c' in the end of its companion strap, while in the latter instance (see Fig. 7) the overlapping ends c^2 are secured by a machine-screw d. The end c^2 of the strap B′ is provided with a laterally-projecting head having a recess c^5, which latter receives the adjoining end of the strap B^2. (See Fig. 7.) In carrying out this arrangement the vertical and horizontal straps on the front and rear sides of the box are provided at opposite ends with a hook and receiving-recess, respectively, while the straps on the other parts of the box are shaped at their ends to correspond. It will be noted that all the straps are attached in any suitable manner to the parts of the box, preferably by means of bolts e, and that to apply the top it is only necessary to spring one end in engagement with the hooks c and then secure the other ends by the screws d, the bottom being also applied in the same manner, and that the ends of the straps B and B′ will yield sufficiently to permit such application of the bottom and top.

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

A knockdown box, comprising the four sides having plain rabbets at their edges by which they are joined together, the top and bottom also rabbeted at their edges and fitting the rabbeted edges of the sides, horizontal and vertical straps secured to the front and rear sides and each having a hook c at one end and a receiving-recess c^5 at the other end, said latter end provided with a threaded aperture, and the straps secured to the other parts of the box and having at one end a recess c' adapted to receive the hook c of said other straps and at the other end an aperture adapted to register with the threaded aperture in the end c^2 of said other straps, and the screws d engaging said apertures to secure the parts of the box together, as herein shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FIELDING C. EDDELMAN.

Witnesses:

ALMON S. CREATH,

WILL J. CRISLER.