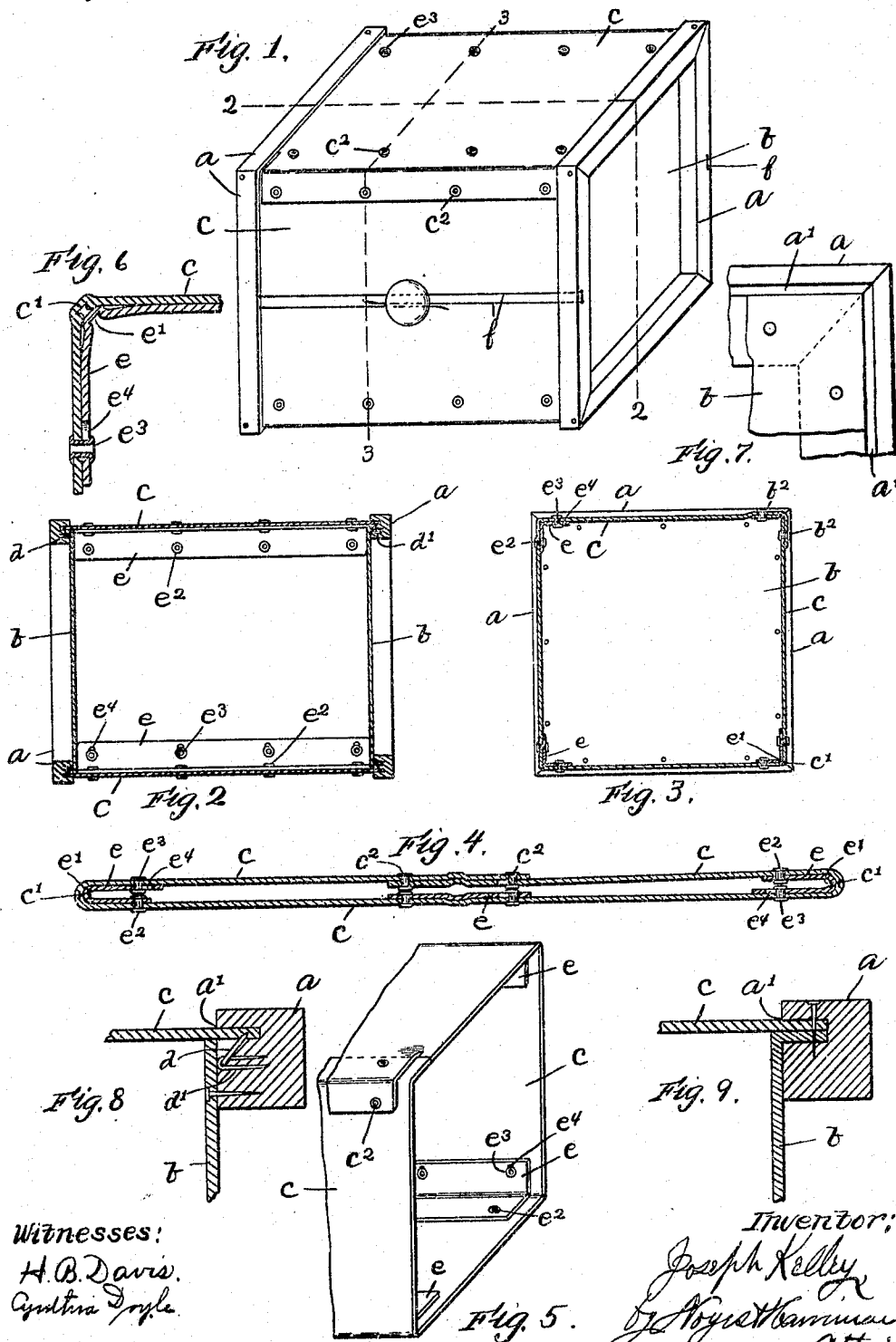


937,443.

Patented Oct. 19, 1909.



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UNITED STATES PATENT OFFICE.

JOSEPH KELLEY, OF WEYMOUTH, MASSACHUSETTS.

KNOCKDOWN BOX.

937,443.

Specification of Letters Patent.

Patented Oct. 19, 1909.

Application filed May 10, 1909. Serial No. 495,012.

To all whom it may concern:

Be it known that I, JOSEPH KELLEY, of Weymouth, county of Norfolk, State of Massachusetts, have invented an Improvement in Knockdown Boxes, of which the following is a specification.

This invention relates to knocked-down boxes, particularly shaped for shipping purposes.

It has for its object to construct a light, durable and water-tight box, which is quite inexpensive to manufacture.

Figure 1 is a perspective view of a knock-down box embodying this invention. Fig. 2 is a longitudinal vertical section of the same, taken on the dotted line 2—2 Fig. 1. Fig. 3 is a transverse section of the same, taken on the dotted line 3—3, Fig. 1. Fig. 4 is a sectional view of the body of the box, in knocked-down position. Fig. 5 is an end view of the body of the box. Fig. 6 is a sectional detail of one of the corners of the box. Fig. 7 is a detail of one of the corners of one of the end-pieces. Figs. 8 and 9 are sectional details of means for attaching the body of the box to the end-pieces.

The box consists essentially of two end-pieces, or side-pieces which, for convenience, are herein termed end-pieces, and a body arranged between them and attached to them.

a represents the frame of one of the end-pieces. It is made quadrangular, and is composed of four bars, mitered at their ends, and secured together by any suitable means. On one side of said frame a continuous kerf a' is formed, which extends entirely around it. The two end-pieces are arranged with the kerfs on their adjacent sides or faces, to receive the body between them, the opposite ends of which are adapted to enter said kerfs. A panel b of fiber-board or some equivalent tough, strong material, which is light and durable, and which is preferably waterproof, is attached to the inside of each end-frame, the edges of the panels terminating close to the kerfs, as shown in Fig. 7, so that the continuous kerfs are arranged in the end-frames around the edges of the panels, or the edge of the panels may extend into the kerfs, as shown in Fig. 9.

The body, with the exception of its reinforcements, is preferably composed of a single piece c of fiber-board or equivalent material. The blank of which the body is composed is provided with transversely ar-

ranged grooves or creases c' , four being herein shown, of a suitable width, permitting it to be bent at right angles or into parallel planes, without breaking, so that it may be bent into quadrangular form, see Fig. 6, or may be knocked down and laid substantially flat as shown in Fig. 4. The ends of the blank composing the body are overlapped and riveted or otherwise secured together, at c^2 , c^2 , and one of the overlapping end portions is cut away, at each end, see Fig. 5, so that a continuous edge of an even thickness, (being the thickness of the fiber-board) is provided at each end of the body. When assembling the parts the ends of the body are merely thrust into the kerfs in the end-pieces, and, as said kerfs are designed particularly to receive the ends of the body, they will be made of a width corresponding to the thickness of the blank composing the body, so that the body will fit snugly therein.

To secure the ends of the body in the kerfs of the end-pieces I herein arrange in said kerfs pointed fastenings d , at suitable points, which project inwardly in an oblique direction toward the bottom of the kerf, so that the ends of the body may be easily thrust into the kerfs over said obliquely arranged pointed fastenings, and will become engaged by said fastenings which prevent its withdrawal. Said fastenings may consist of staples, see Fig. 8, arranged in recesses provided for them, the pointed ends of which terminate in the kerfs, said staples being held in place by other staples d' , or other suitable means, in lieu thereof, may be employed. Or tacks may be driven into the end-pieces which pass through the ends of the body, see Fig. 9.

The corner of the body having the overlapping ends is substantially reinforced by said overlapping ends, but the other corners are provided with reinforcements. As here shown, corner-pieces e of fiber-board or equivalent material are employed as reinforcements, they being made of suitable length to extend nearly from end to end of the body, and the blanks composing said reinforcements are creased longitudinally at or about the middle, as at e' , to provide for bending them. Said reinforcements are secured to the body by rivets e^2 or other means, arranged along one edge, which rigidly secure said edge to the body, and by rivets e^3 , or other means, extended through slots e^4 ,

arranged along the other edge, although both edges may be slotted, if desired. By providing the reinforcements with slots e^t , movement thereof with respect to the body, as the latter is bent is obtained. When shipping the parts knocked-down the end-pieces may be arranged in a pile, being laid flat one upon another, and the quadrangular bodies will be flattened down by bending two opposite corners inward and the other two corners outward, as shown in Fig. 4, and when thus bent the bodies may be arranged in a pile, being laid flat one upon the other, the slotted reinforcements providing for such flattening of the bodies.

When the parts of the box are assembled, a seal f , of any suitable description may be connected with the end-pieces, which connect said end-pieces together, and thereby effectively seal the box.

I do not desire to limit my invention to all of the features herein shown and described.

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

1. A box comprising a pair of end-pieces, each having a continuous kerf arranged on its side adjacent the other and extending entirely around it, a body composed of a blank adapted to be bent into quadrangular form and having its ends overlapping and secured together, one of the overlapping ends of the blank being cut away at each side permitting the ends of the blank to abut at such points and thereby providing a body with ends of an even thickness which enter the kerfs in said end pieces, substantially as described.

2. A box comprising a pair of end-pieces, each having a continuous kerf arranged on its side adjacent the other and extending entirely around it, a body composed of a blank adapted to be bent into quadrangular form and having its ends overlapping and secured together, one of the overlapping ends of the blank being cut away at each side permitting the ends of the blank to abut at such points and thereby providing a body with ends of an even thickness which enter the kerfs in said end pieces, and means to engage the ends of the body in said kerfs and prevent withdrawal therefrom, substantially as described.

3. A box comprising a pair of end-pieces, each having a continuous kerf arranged on its side adjacent the other and extending entirely around it, and pointed fastenings projecting obliquely into said kerfs, and a body having its ends adapted to enter said kerfs and to be secured therein against withdrawal by said pointed fastenings, substantially as described.

4. A box comprising a pair of end-pieces, each having a continuous kerf arranged on

its side adjacent the other and extending entirely around it, staples arranged with their pointed ends projecting into said kerf, and a body, having its ends adapted to enter said kerfs and to be secured therein against withdrawal by said staples, substantially as described.

5. A box having a body composed of a blank having wide transverse creases formed therein to provide for bending said blank into approximately parallel planes whereby said body may be bent into quadrangular form and also flattened, and reinforcing strips attached to said body which extend over the creased portions thereof which likewise have wide transverse creases formed therein, permitting them to be bent with the blank to which they are attached, substantially as described.

6. A box comprising a pair of end-pieces, each having a continuous kerf arranged on its side adjacent the other and extending entirely around it, a body composed of a blank, having wide transverse creases formed therein, and having its ends connected together and having reinforcing strips attached to it which extend over the creased portions thereof, which likewise have wide transverse creases formed therein and which terminate inside the ends of said body, the ends of said body being adapted to enter the kerfs in said end-pieces, and means for securing the body to the end-pieces, substantially as described.

7. A box comprising a pair of end-pieces, each having a continuous kerf arranged on its side adjacent the other and extending entirely around it, a body composed of a blank, creased transversely, and having its ends connected together, and creased reinforcing-strips attached to said body at the creased portions thereof, one edge of each strip being slotted to receive the fastening means for said strip, the ends of said body being adapted to enter the kerfs in said end-pieces, and means for attaching the body and end-pieces together, substantially as described.

8. A box composed of a pair of end-pieces, each consisting of a frame having a continuous kerf arranged on its side adjacent the other and extending entirely around it, and panels secured to said frames, the edges of which enter said kerfs, and a body arranged with its opposite ends also extended into said kerfs in said end-pieces, substantially as described.

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

JOSEPH KELLEY.

Witnesses:

B. J. NOYES,
L. H. HARRIMAN.