(No Model.)

T. F. McGRAW.

KNOCKDOWN BOX.

No. 563,506. Patented July 7, 1896.

Fig. 1.

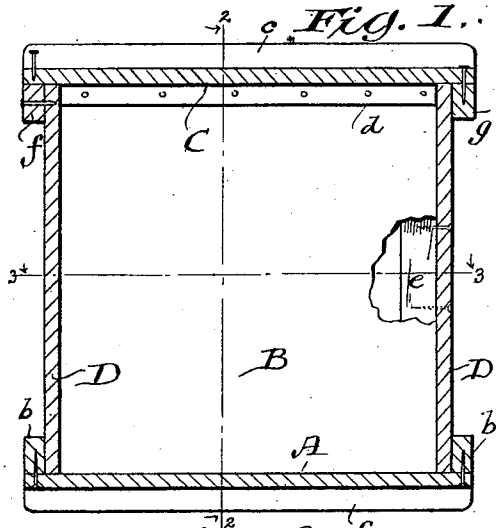

Fig. 2.

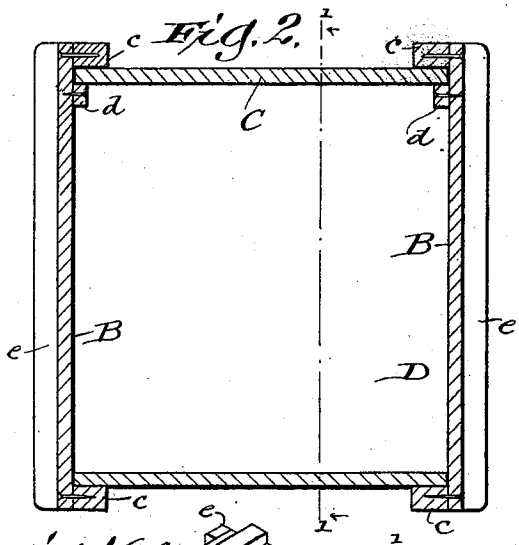

Fig. 3.

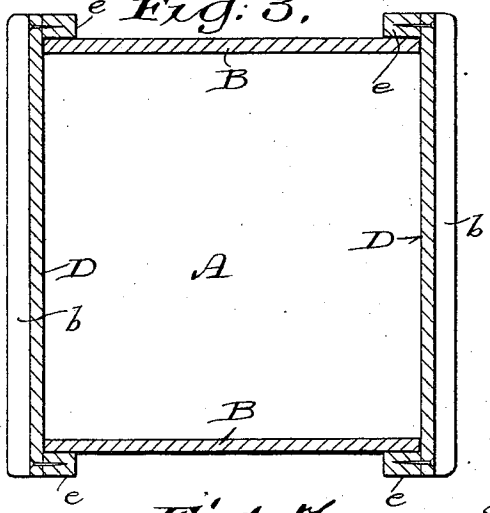

Fig. 4.

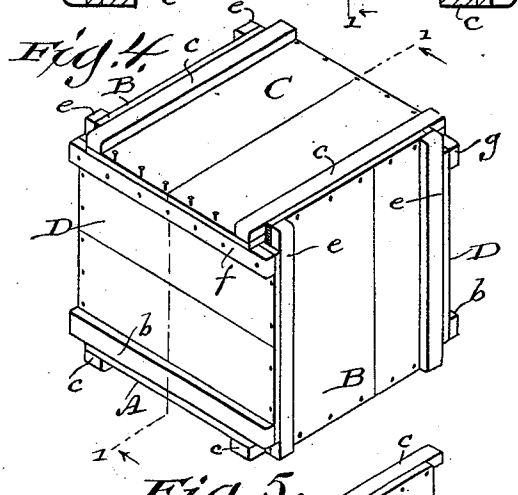

Fig. 5.

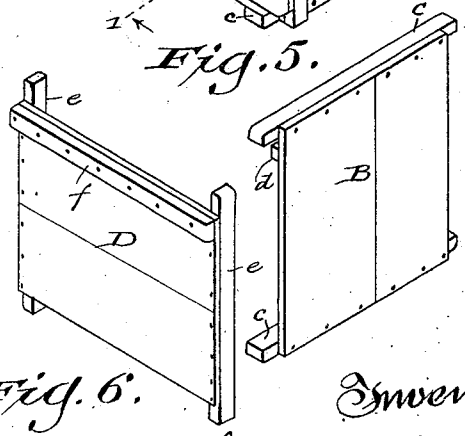

Fig. 7.

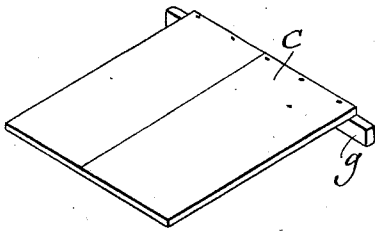

Fig. 6.

Witnesses:
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N. E. Dlephant

Inventor
Thomas F. McGraw
By H. G. Underwood,
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

THOMAS F. McGRAW, OF RACINE, WISCONSIN, ASSIGNOR OF ONE-HALF TO CLANCY BROTHERS, OF SAME PLACE.

KNOCKDOWN BOX.

SPECIFICATION forming part of Letters Patent No. 563,506, dated July 7, 1896.

Application filed April 27, 1896. Serial No. 589,161. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. McGRAW, a citizen of the United States, and a resident of Racine, in the county of Racine and State of Wisconsin, have invented certain new and useful Improvements in Knockdown Boxes and Crates; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical knockdown box or crate, and especially one that may be held together by fastening the lid in place. Hence it consists in certain structural features hereinafter set forth, with reference to the accompanying drawings, and subsequently claimed.

In the drawings, Figure 1 represents a vertical transverse sectional view of the improved knockdown box, taken on the plane indicated by line 1 1 in Figs. 2 and 4; Fig. 2, a similar view on the plane indicated by line 2 2 of Fig. 1; Fig. 3, a horizontal section taken on the plane indicated by line 3 3 in Fig. 1; Fig. 4, a perspective view of the box; Figs. 5 and 6, similar views of panels embodied in the box, and Fig. 7 a like view of the top panel or box-lid.

Referring by letter to the drawings, A represents the bottom panel of my improved box provided adjacent to two edges thereof with upwardly-extending cleats *b*, each of which may project a limited distance from the other edges of said panel.

Each of the end panels B of the box is provided with inwardly-extending cleats *c* adjacent to its horizontal edges, and these cleats may also project a limited distance beyond the vertical edges of said panel. An additional cleat *d* may be secured to the inner face of each panel B parallel to the uppermost of cleats *c* below the latter a distance sufficient to permit entrance of the top panel or box-lid C, hereinafter more particularly set forth. The cleats *d* on the end panels do not project beyond the same and have no function other than to support and guide the top panel or box-lid. Hence their use is optional rather than obligatory, except when said top panel or box-lid is intended as a sliding cover.

Each of the two side panels D is provided with inwardly-extending cleats *e* adjacent to its vertical edges, and these cleats are also shown projecting a limited distance beyond the horizontal edges of said panels. Another cleat *f* is shown made fast to the outer face of one of the panels D at the top of the same, but this latter cleat does not project beyond the vertical edges of said panel and is only employed to receive screws or nails that are driven through the top panel or box-lid. This top panel or box-lid C is provided with a single depending cleat *g* adjacent to one edge thereof, and said cleat extends a limited distance from two other edges of said panel, as best shown in Fig. 7.

Every panel, excepting the one C, has two inwardly-extending cleats projecting beyond the edges thereof, this construction of panel being clearly shown in Figs. 5 and 6, wherein is also shown additional cleats above specified.

In setting up the box the bottom panel A is set in on the lower cleats *c* of end panel B and the side panels D set on said bottom panel against the cleats *b* thereof. The cleats *e* of the side panels overlap the end panels, cleats *c* of latter panels underlap the bottom panel, and the cleats *b* of this bottom panel overlap said side panels, the extremities of all the cleats being preferably flush with edges of panels upon which they are lapped.

The top panel or box-lid is positioned so as to come under the upper cleat *c* of the end panels and rest on the upper edges of the side panels, the cleat *g* of said top panel coming snug against one of said side panels. However, it may be found practical to omit either or both of the cleats *f g* at times, notwithstanding the fact that their use adds to the strength of the box. The top panel being nailed or otherwise fastened in place, the entire box is held together, and hence the other panels do not have to be made fast to each other.

From the foregoing it will be understood that the bottom panel is supported by cleats on the end panels, that other cleats on said end panels prevent the top panel or box-lid from being wrenched off, and that said bottom and top panels keep the aforesaid end panels snug against the side-panel cleats. It is also to be observed that rough usage to

which the box may be subjected comes upon the various outermost cleats, the latter being at corners of said box.

I have shown a box made from wood, and employed the term "cleats" for what are virtually flanges of the panels; but it is to be understood that the box-panels may be sheet metal. It is also possible to make the panels of straw or pulp board, and instead of solid panels the bottom, sides, ends, and top of the structure may be of skeleton construction, in order to form a crate, or the latter may have both solid and skeleton members. When knocked down, the packing box or crate herein set forth occupies about one-fifth the space it does when set up. Therefore it can be shipped in lots at comparatively small cost and conveniently stored.

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

1. A knockdown box or crate having its bottom, sides and ends severally provided with a pair of inwardly-extending flanges, those on the ends being arranged to lap under the bottom and over the top of the structure, those on the bottom against the sides and those on said sides against said ends.

2. A knockdown box or crate having its bottom, sides and ends severally provided with a pair of inwardly-extending flanges, those on the ends being arranged to lap under the bottom and over the top of the structure, those on the bottom against the sides and those on said sides against said ends, together with top-supporting flanges on the aforesaid ends.

3. A knockdown box or crate having its bottom, sides and ends severally provided with a pair of inwardly-extending flanges, those on the ends being arranged to lap under the bottom and over the top of the structure, those on the bottom against the sides and those on said sides against said ends; a supplemental flange on one of the aforesaid sides at the upper extremity thereof, and a depending flange on the top at the extremity of the latter farthest from said supplemental side flange.

4. A knockdown box or crate having its bottom, sides and ends severally provided with a pair of inwardly-extending flanges, those on the ends being arranged to lap under the bottom and over the top of the structure, those on the bottom against the sides and those on said sides against said ends; top-supporting flanges on the aforesaid ends, a supplemental flange on one of the aforesaid sides at the upper extremity thereof, and a depending flange on the box-top at that extremity of the same farthest from said supplemental side flange.

In testimony that I claim the foregoing I have hereunto set my hand, at Racine, in the county of Racine and State of Wisconsin, in the presence of two witnesses.

THOMAS F. McGRAW.

Witnesses:

WM. HENRY MILLER,

GRACE M. BRYCE.