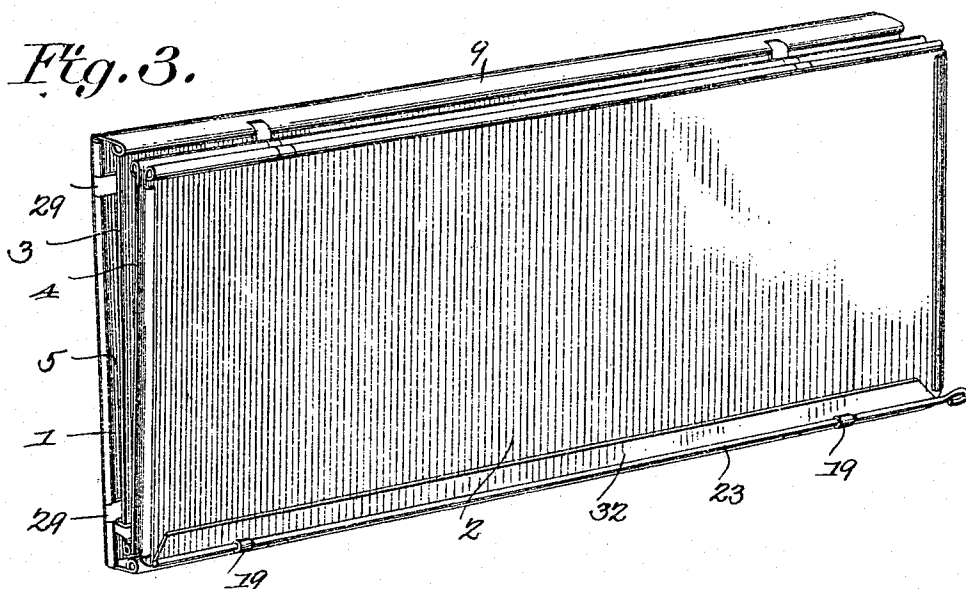
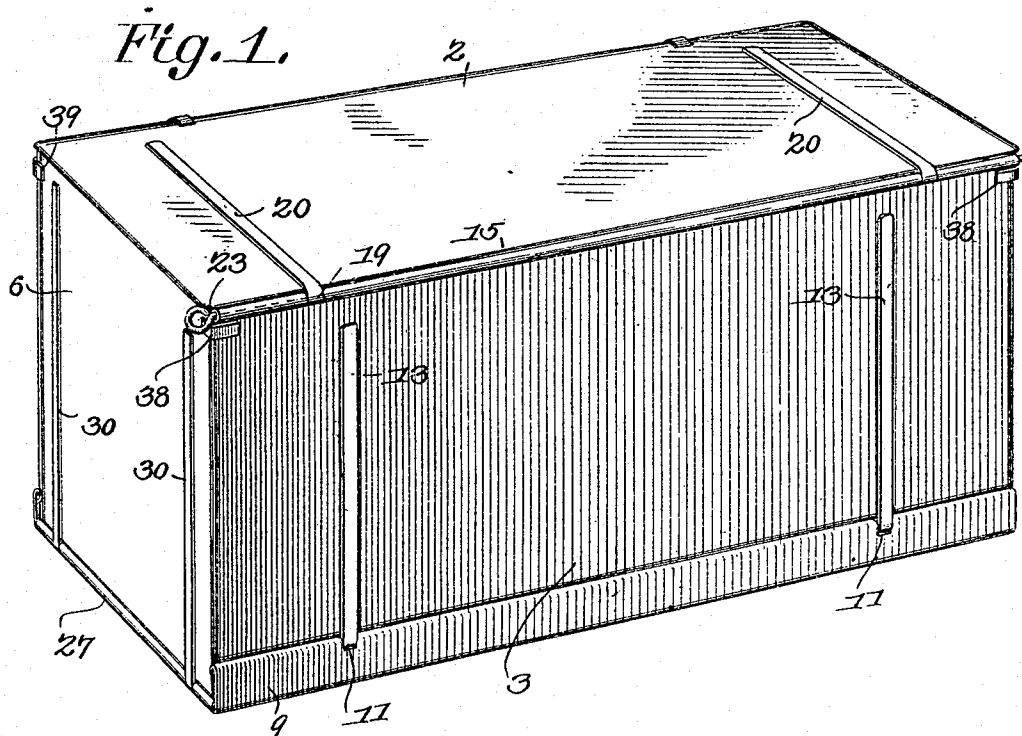


No. 830,227.

PATENTED SEPT. 4, 1906.

D. T. HARBISON.
SHIPPING CRATE.
APPLICATION FILED MAR. 23, 1905.

2 SHEETS—SHEET 1.



Witnesses:
E. J. Stewart
R. M. Elliott

Dickson T. Harbison, Inventor,
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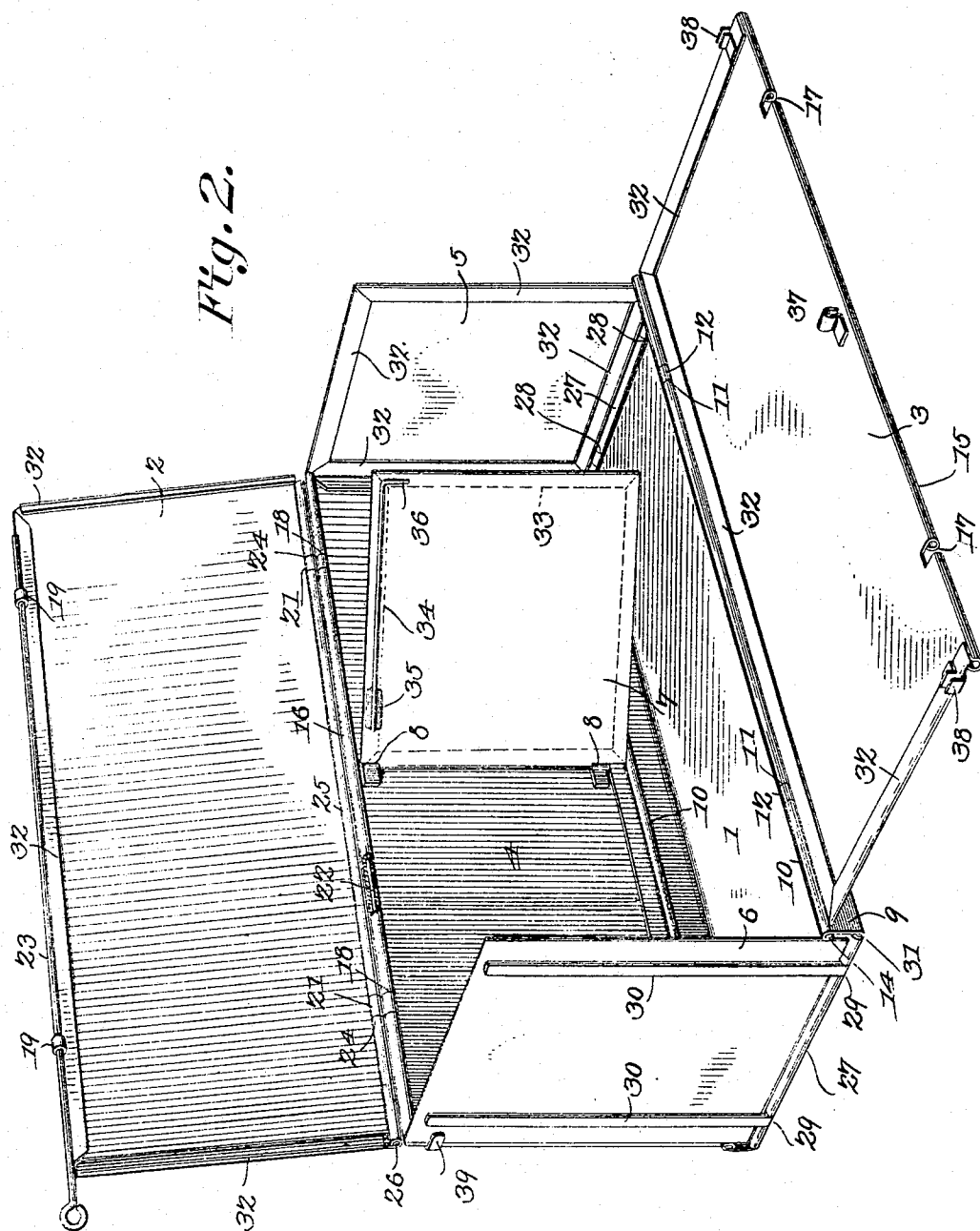
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

DICKSON T. HARBISON, OF ROBINSON, ILLINOIS.

SHIPPING-CRATE.

No. 830,227.

Specification of Letters Patent.

Patented Sept. 4, 1906.

Application filed March 23, 1905. Serial No. 251,645.

To all whom it may concern:

Be it known that I, DICKSON T. HARBISON, a citizen of the United States, residing at Robinson, in the county of Crawford and State of Illinois, have invented a new and useful Shipping-Crate, of which the following is a specification.

This invention relates generally to shipping-crates, and more particularly to one of the collapsible or knockdown type.

The object of the invention is to provide a crate which shall be simple of construction, strong and durable, not liable to get out of repair from long-continued use, and which may readily be set up for shipping or knocked down for reshipping.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a shipping-crate, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like characters of reference indicate corresponding parts, Figure 1 is a view in perspective of a crate, exhibiting the same as it appears when set up for shipment. Fig. 2 is a view in perspective, exhibiting the crate partly set up to display the manner in which the different parts thereof are constructed and combined. Fig. 3 is a perspective view of the crate collapsed or knocked down.

The crate comprises a bottom 1, top 2, sides 3 and 4, ends 5 and 6, and a partition 7, permanently hinged at 8 to one of the sides. All these parts are by preference made of metal, preferably of galvanized iron on account of its strength and non-corrosive properties; but it is to be understood that the improvements herein shown may be carried into effect in connection with other materials than metal, and as this will be readily understood detailed illustration of such adaptation is deemed unnecessary.

The bottom 1 is provided on each side with an upstanding flange 9, the free edge of each of which is formed into a tubular bead 10. At intervals in their length these beads are provided with a plurality of notches or recesses 11—in this instance two—to be engaged by the eyes 12 of pairs of strap-hinges 13, secured exteriorly of the sides, adjacent to each terminal thereof. As will be noted by reference to Fig. 1, the straps of the hinges extend practically across the entire width of the

sides, and thus operate effectively to brace them at those points. The eyes 12 are combined with the beads 10 by wires 14, which extend the entire length of the beads, and thus present a thoroughly effective form of hinge which will successfully withstand the strains to which it will be subjected in use. The object of providing the upstanding flanges 9 on the bottom is to permit practically all of the other parts of the crate being nested therein, as shown in Fig. 3, thus protecting the edges of such parts against injury when being reshipped.

The upper edge of each of the sides is provided with a tubular bead 15 and 16, similar to the beads 10, and each of these beads is provided with a plurality of notches or recesses 17 and 18. The notches 17 are engaged by the eyes 19 of a pair of hinge members 20, secured to the top and extending practically across the same, as shown in Fig. 1, and the notches 18 are engaged by pairs of approximately S-shaped hinge members 21, which are held in the notches 18 by a pin 22, that extends throughout the entire length of the bead 16. The bead 15 and eyes 19 are engaged by a detachable pin 23, which serves as a lock to hold the cover or lid and side 3 combined, as clearly shown in Fig. 1.

The top 2 is hingedly connected with the side 4 by the hinge members 21, which engage notches 24, formed by a tubular bead 25 on the top, a pin 26 engaging the bead and the hinge members completing the joint.

Each end of the bottom is provided with a tubular bead 27, each of which is provided with a pair of notches 28 to be engaged by the eyes 29 of a pair of strap-hinges 30, which, as shown in Fig. 2, extend across nearly the entire height of the ends, the hinges being held combined with the beads 27 by pins 31, extending entirely across each end.

As shown in Fig. 2, the metal at the edges of the sides, ends, and top is turned in upon itself to form reinforces 32, which will operate in a positive manner to prevent these parts from buckling or yielding to strain.

The partition 7 is by preference made of a single sheet of metal and has its edges inturned, as indicated at 33, for the purpose of reinforcement. Secured to one side of the partition and near its upper edge is a locking device made of a length of resilient wire 34, soldered or otherwise secured at one end at 35 to the partition and having its other end

provided with a downturned toe or hook 36, which is designed to interlock with an eye 37, secured to the inner surface of the side 3 near its upper edge, the coaction between the locking device and eye serving positively to hold the sides in parallel relation to each other and to prevent collapsing of the crate and also to hold the partition in its proper operative position. To prevent inward or outward movement of the ends when the box is set up, the side 3 is provided at each end and near its upper edge with a pair of spaced keepers 38, which are adapted to straddle the ends, as shown in Fig. 1, and the side 4 is provided at each end near its upper edge with a single keeper 39, which is adapted to bear against the outer sides of the ends near their upper edges, the said ends being held from inward movement by engagement with the terminals of the tubular bead 16, as clearly shown in Fig. 2, the bead being shortened for this purpose. When the ends are in engagement with the keepers as described and with the terminals of the beads 16, it will be seen that they will be positively braced against any tendency to yield inward or outward, so that without subjecting the crate to such pressure as would be destructive the ends will always be held in locked relation to the sides when the article is set up for shipment.

When the crate is to be knocked down for reshipment, the pin 23 is withdrawn, the locking device 34 moved out of engagement with the eye 37, and the ends 5 and 6 are folded in upon the bottom. The side 3 is then folded in over the ends. The side 4 is then folded over upon the side 3, and the top 2 is folded back upon the side 4, the pin 23 being

inserted through the eyes 19, as shown in Fig. 3. When the parts are thus positioned, the crate is a flat thin structure which will occupy but small space and which will not be liable to be damaged in being shipped.

From the foregoing description it will be seen that the crate of this invention, while exceedingly simple in construction, combines in a novel and practical manner all the essentials requisite to the production of a thoroughly-efficient article and, further, by reason of the manner in which the parts are constructed and combined liability of derangement in use or breakage in being handled and shipped are reduced to a minimum.

Having thus described the invention, what is claimed is—

A crate comprising a bottom, imperforate side and end walls movably connected thereto and adapted to fold thereupon, a cover hinged to one of the sides and adapted to close the crate when set up, a partition hinged upon the inner face of one of the sides, a spring-strip fixedly secured at one end to the partition and extending normally parallel with the upper edge thereof, said strip terminating adjacent one side of the partition in a hook, and an eye extending inward from the other side wall and adapted when the crate is set up to be engaged by the hook, said hook and eye being inaccessible and sealed when the crate is closed.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

DICKSON T. HARBISON.

Witnesses:

IRA I. WILKIN,
FRANK DENNIS.