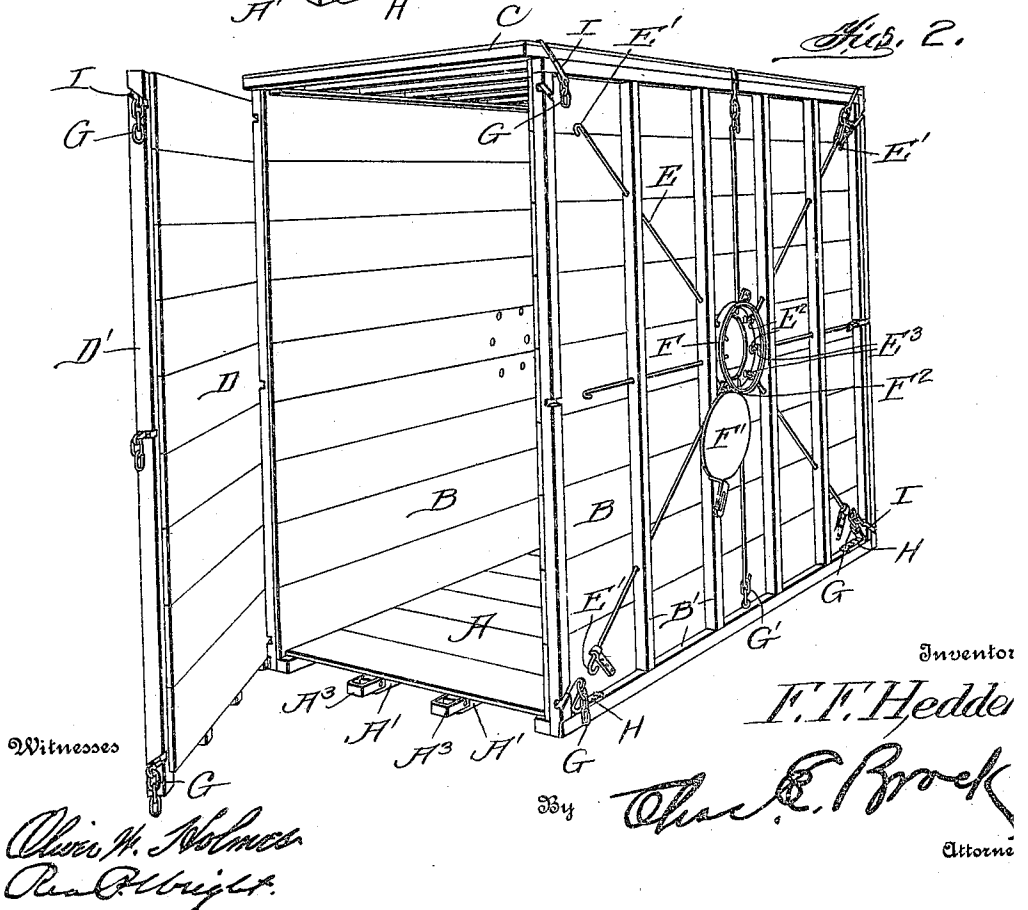
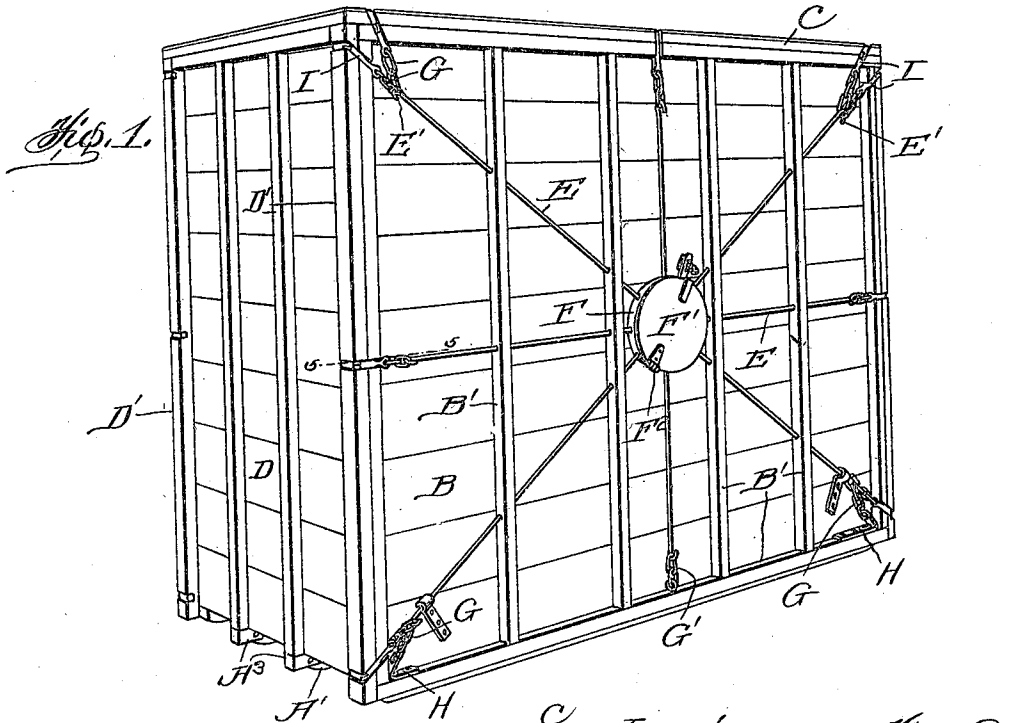


F. F. HEDDEN.
 COLLAPSIBLE SHELL OR LIFT VAN.
 APPLICATION FILED MAR. 16, 1909.

Patented June 28, 1910.
 2 SHEETS—SHEET 1.

962,429.

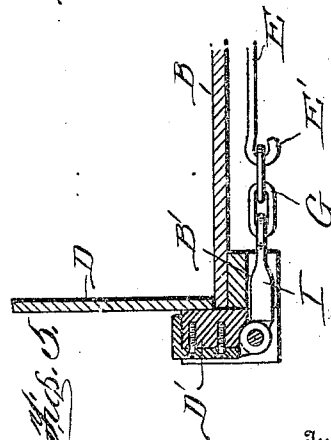
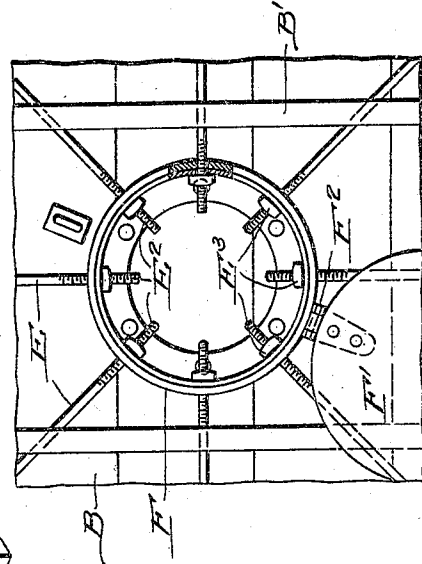
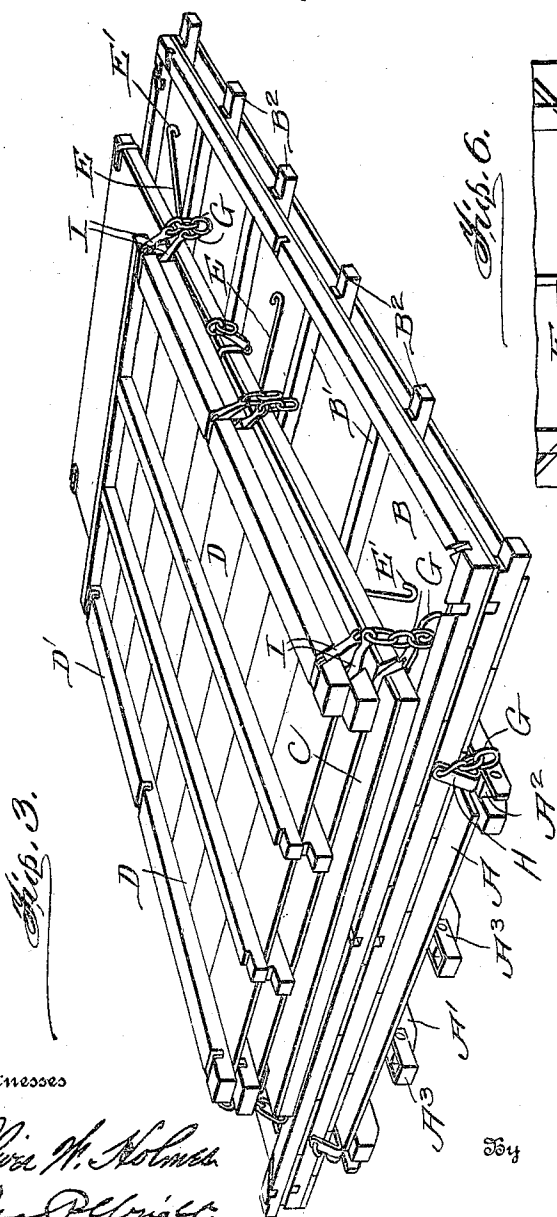
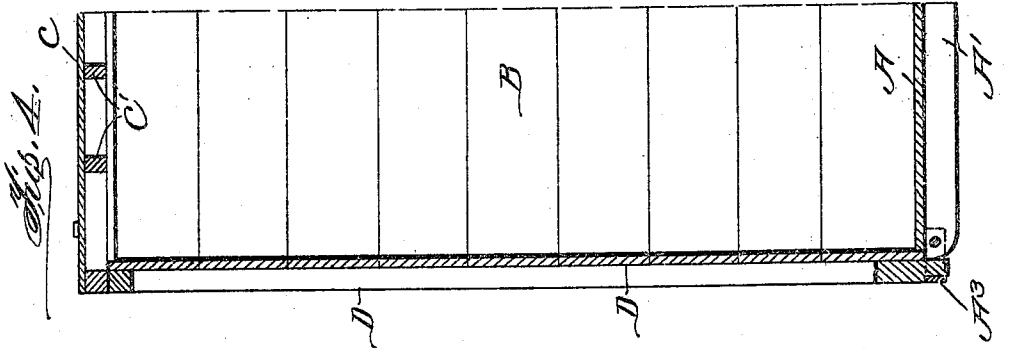


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2 SHEETS—SHEET 2.



Witnesses

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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE SHELL OR LIFT-VAN.

962,429.

Specification of Letters Patent. Patented June 28, 1910.

Application filed March 16, 1909. Serial No. 483,669.

To all whom it may concern:

Be it known that I, FRED FREMONT HEDDEN, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in a Collapsible Shell or Lift-Van, of which the following is a specification.

This invention is a collapsible shell or lift van to be used for shipping furniture and other articles; the object of the invention being to provide a strong and durable device which can be quickly and easily set up to receive the furniture or other articles; securely closed and locked after the articles have been packed in, and held secured during transportation, said shell or van being quickly and easily unlocked, knocked down, and folded up after it has reached its destination and been unloaded, thereby occupying a very small space and capable of being returned at a much lower freight rate.

Another object of the invention is to provide for the rapid and easy fastening and locking of the parts, after they have been set up; and a still further object is to provide a fastening means which will also serve to brace and strengthen the sides and ends of the shell.

With these objects in view, my invention consists essentially in constructing a collapsible shell, with a bottom, top, sides and ends, the sides or ends, carrying hooked rods which are adapted to engage chains or links connected with the top, bottom and ends, said rods being connected with a central tightening device; and the invention consists also in providing a lockable cover for the central tightening device, so that once the parts are tightened, and the cover locked, no one can disturb the tightening means, except the person capable of unlocking the cover of said tightening device.

The invention consists also in certain details of construction and novelties of combination, all of which will be fully described, hereinafter and fully pointed out in the claims.

In the drawings forming a part of this specification: Figure 1 is a perspective view of the shell set up, and locked. Fig. 2 is a view showing one end open, ready to receive the furniture, or other merchandise which it is intended to ship in the shell. Fig. 3 is a view showing the shell knocked down and folded up ready for return shipment, at a

low rate. Fig. 4 is a vertical sectional view through the end of the shell. Fig. 5 is a sectional view through one corner of the box taken on line 5—5 of Fig. 1, and Fig. 6 is a detail face view of the rod tightening device.

In constructing a collapsible shell or lift van in accordance with my invention, I employ a bottom A, sides B, top C, and end D, said parts being built of boards of any suitable dimensions upon timbers A', B', C' and D', respectively. The side timbers B' are reduced as shown at B², and enter mortise slots cut in the outer timbers A' of the bottom A. The ends of these outer bottom timbers A' are bifurcated as shown at A², and the ends of the intermediate bottom timbers are provided with stirrups or clips A³. The outer side timbers B' enter the bifurcation A² and the projecting ends D² of the intermediate end timbers engage the stirrups or clips A³. The top C fits upon the sides and ends and now in order to secure all of said parts together, I employ rods E which are shown arranged upon the sides of the shell, but they can also be arranged upon the ends if so desired. There are preferably eight rods E, on each side, one extending diagonally inward from each corner, and two vertical and two horizontal ones, between the diagonal ones. The outer ends of these rods E are hooked as shown at E', and their inner ends are threaded for a short distance as shown at E², said threaded ends E² passing through a circular ring or box F fastened to the center of the side B, and each threaded end E² has a nut E³, screwed thereon, and adapted to bear against the inner face of the ring or circular box F, for the purpose of tightening up the rod E, after the hooks E' have been brought into engagement with the links G connected with the corners of the top and bottom and ends, by means of plates H, and hinged plates I as most clearly shown in Fig. 1. The plates H are secured to the outer timbers B' upon their upper faces, adjacent their ends and are bent back upon themselves and have the links G connected to their free ends.

The hinged plates I are made in two pieces, one part being fastened to the outer timber of the end or top, the other part being adapted to rest in a slot B², produced in the outer and top timbers of the sides, and each swinging member of the hinged plate I has links connected thereto which are adapted to be

engaged by the hooked ends E' of the rods E. The lower end of the lower vertical rod engages a link G' fastened to the timber A', and the lower diagonal rod works through guides K adjacent their lower ends.

The sides and ends are set up on the bottom and the links are placed upon the hooks E', and then by tightening up the nuts E³, each rod is drawn inwardly toward the center, and thereby tightly binds the top, bottom, sides and ends together, and then in order to prevent any one loosening the nuts and rods, I provide a cover F' connected to the ring F, by a hinge F² and provided with a hasp and lock for locking said cover closed after the rods have been properly tightened.

In packing furniture and other articles, into the shell, the entire device is set up except one end, (see Fig. 2) so that access can be had to the interior and then after the shell has been filled, this end is closed and all the parts given a final tightening and the cover placed on the ring and locked, (see Fig. 1).

The shell full of furniture or other article can then be transported and all danger of damage to the contents avoided, and when the destination is reached, the cover is unlocked and one or more of the rods released and the contents removed, and when empty, the entire device can be knocked down and folded into a compact form shown in Fig. 3 and in this condition it can be returned at a much lower rate of freight.

This shell can be made any size desired, and it can be made of such size and shape as to take the place of a shipping van and in that case it would be removed from the car or vessel and placed upon a wagon, truck or running gear, and hauled exactly the same as a van built upon the truck or gear.

If desired suitable bails or straps can be attached to the shell for the purpose of facilitating the lifting of the shell by means of a derrick.

It will thus be seen that I provide a strong, durable, simple and efficient device capable of carrying out all the objects hereinbefore referred to.

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

1. A collapsible shell or box comprising top, bottom, sides and ends, links carried by said top, bottom and ends, and rods carried by said sides to engage said links, and means fixed to the sides for adjusting and securing said rods.

2. A collapsible shell or box comprising top, bottom, sides and ends, links carried by said top, bottom and ends, hooked rods

arranged upon the sides and adapted to engage said links and rings carried by the sides and in which the inner ends of said rods are adjustably secured.

3. In a collapsible shell or box, the combination with top, bottom, sides and ends, of links carried by said top, bottom and ends, and means carried by the sides for engaging said links together with means also carried by the sides for applying tension to said engaging means.

4. In a collapsible shell or box, the combination with top, bottom, sides and ends, of links carried by said top, bottom and ends, hooked rods carried by said sides, a ring through which the inner ends of said rods are adjustable, and a lockable cover connected to said ring to close the same, as set forth.

5. A collapsible shell or box, comprising top, bottom, sides and ends, a ring carried by each side, rods carried by said sides, and having hooks at one end and threaded at the opposite ends, and adapted to pass through the ring, nuts arranged upon said threaded ends, a hinged cover for said ring, links adapted to engage the hooked ends, and plates connected to the bottom, and ends for carrying said links, substantially as described.

6. In a collapsible shell or box, the combination with top, bottom, sides and ends, of a ring and hinged cover, arranged upon said sides, rods extending into said ring and provided with means for adjusting said rods, the other ends of said rods being hooked, hinged plates carried by the top and ends, plates carried by said bottom, and links connected with said plates and adapted to engage said hooked ends of the rods, as set forth.

7. A collapsible shell comprising a plurality of members, links connected to the members of the shell at the corners, rods connected to said links, and means fixed to the side members of the shell for securing and adjusting said rods.

8. A collapsible shell comprising a plurality of members, links connected to the said members adjacent the corners of said members, rings fixed to the side members of the shell, and provided with openings, rods connected to said links, and extending through said openings, the inner end of said rods being threaded, and nuts working on said rods within the ring, as set forth.

FRED FREMONT HEDDEN.

Witnesses:

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E. H. POPE.