

P. A. BIDDINGER.
 COLLAPSIBLE RECEPTACLE.
 APPLICATION FILED APR. 15, 1912.

1,056,491.

Patented Mar. 18, 1913.

2 SHEETS-SHEET 1.

Fig. 1.

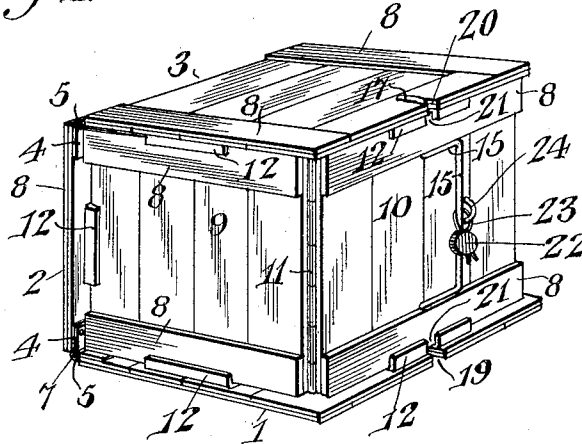


Fig. 6.

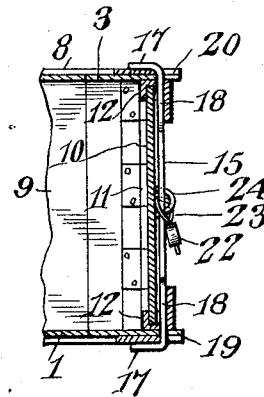
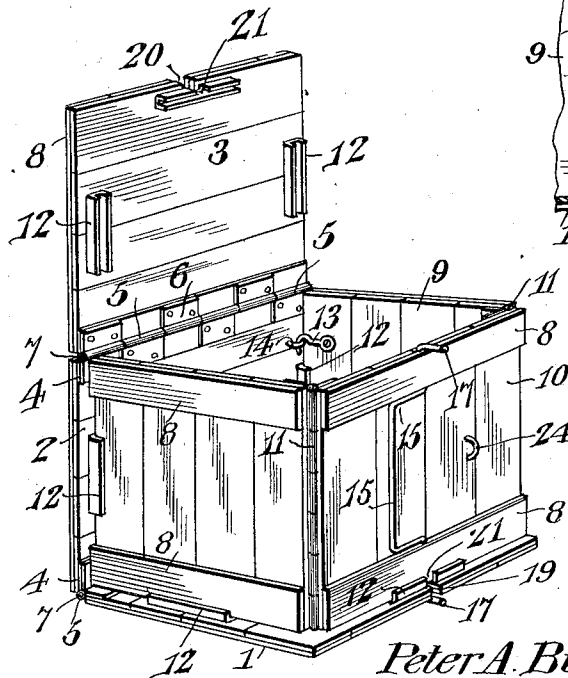


Fig. 2.



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WITNESSES

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Fig. 3.

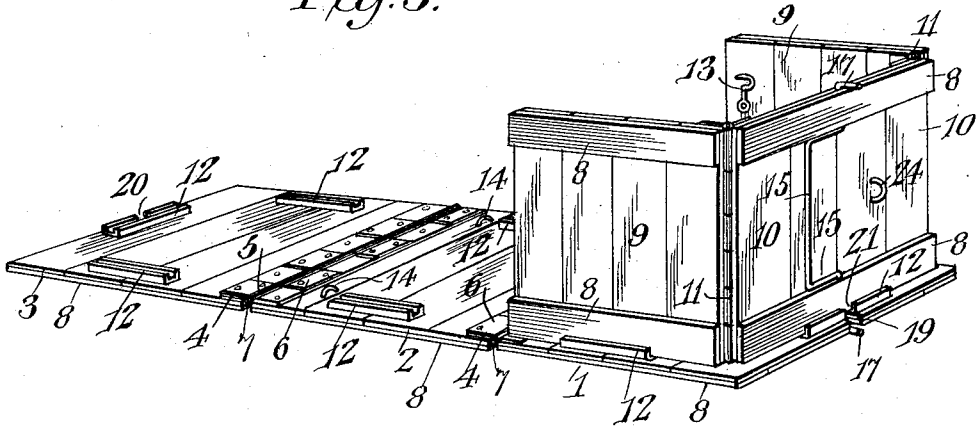


Fig. 4.

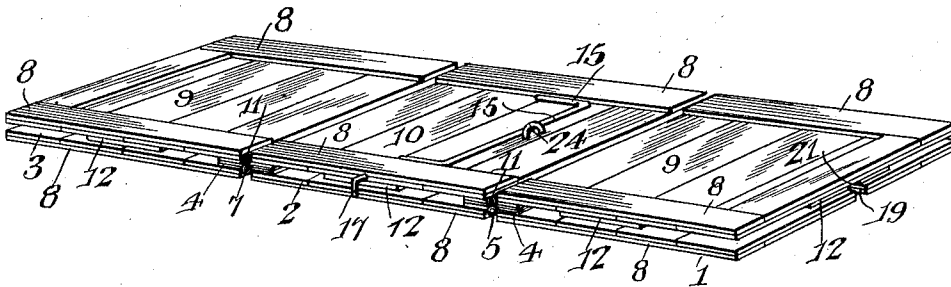
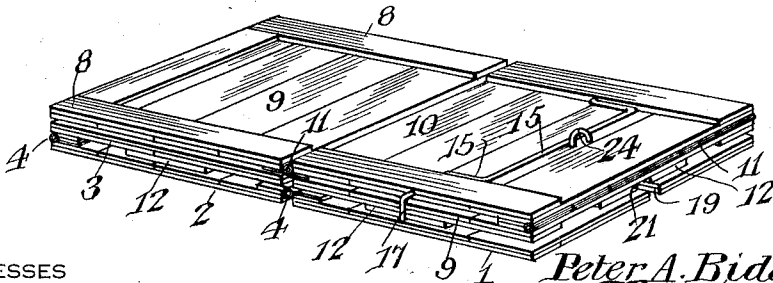


Fig. 5.



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE RECEPTACLE.

1,056,491.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed April 15, 1912. Serial No. 690,912.

To all whom it may concern:

Be it known that I, PETER A. BIDDINGER, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Collapsible Receptacle, of which the following is a specification.

The invention relates to improvements in collapsible receptacles.

The object of the present invention is to improve the construction of collapsible receptacles, and to provide a simple, efficient and inexpensive collapsible receptacle of great strength and durability, and capable of being constructed of any rectangular shape and of being easily and quickly set up for use, and adapted to be compactly folded in a flat condition so as to enable it to be returned to the shipper at minimum freight rates.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a perspective view of a collapsible box, constructed in accordance with this invention and shown closed. Fig. 2 is a similar view, the cover being raised. Fig. 3 is a perspective view, one of the members of the box being collapsed. Fig. 4 is a perspective view, illustrating one manner of folding the box. Fig. 5 is a similar view, illustrating another manner of folding the box. Fig. 6 is a vertical sectional view of the front portion of the box.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings in which is illustrated the preferred embodiment of the invention, the collapsible receptacle, which may be in the form of a box, crate, case, trunk, or the like, comprises in its construction two separable independently foldable sets of sections. One of the fold-

able sets consists of a bottom section 1, a rear wall or section 2 and a cover 3, connected at their adjacent edges by hinges 4, extending the entire length of the hinged edges and adapted to stiffen and reinforce the sections, whereby the same may be constructed of the thinnest material employed in the making of receptacles of this character. The hinges are secured to the inner faces of the sections, but they may be arranged on the exterior of the same, as will be readily understood. The eyes of the leaves of each hinge are formed by bending the metal back on the leaves to form reinforcing attaching portions 6, and the pintle rod 7, which may be constructed of wire, or other suitable material, extends the entire length of the hinge. This construction provides a strong and durable hinge and adds materially to the strength of the box. The sections 1, 2 and 3 may consist of thin boards or pieces connected by cleats 8, arranged at the ends of the boards and extending in a direction longitudinally of the set or series of sections when the same is laid out flat, as clearly illustrated in Fig. 4 of the drawings. The other foldable set or series is composed of side walls or sections 9, and a front wall or section 10, connected with the adjacent edges of the side walls by hinges 11, which are similar in construction to the hinges 4 heretofore described.

The foldable set or series comprising the bottom section 1, the rear wall or section 2 and the cover 3 is equipped with metallic channeled pieces 12, constructed of suitable metal and composed of parallel side flanges and a connecting portion and suitably secured to the inner faces of the said sections. The bottom section 1 is equipped at its side edges and at the front with the channeled pieces 12, and in assembling the box, the set, which carries the channeled pieces, is laid out flat, as illustrated in Fig. 3 of the drawings, and the other set of sections is placed upon the bottom section 1 with the side walls 9 at right angles to the front wall 10, and the lower edges of the side and front walls are fitted in the channeled pieces 12, which are arranged at the side and front edges of the said bottom section 1. The rear wall or intermediate section 2 is provided at its side edges with the said channeled pieces 12, and it is swung upward to

a vertical position to engage its channeled pieces with the rear edges of the side walls or sections 9, as illustrated in Fig. 2 of the drawings. The rear wall is secured in such upright position by means of interiorly arranged hooks 13, pivotally secured to the inner faces of the side walls or sections 9 and engaging horizontal eyes 14, projecting from the inner face of the rear wall or section. When the parts are assembled in this manner, they will remain in such condition with the cover in an upright position, as illustrated in Fig. 2 of the drawings, until the box has received its contents, after which the cover is swung downwardly to close the box and engage its channeled pieces with the side and front walls or sections 9 and 10. The channeled pieces 12 of the cover are arranged at the side and front edges thereof. The box is locked in its closed position by means of a fastening device mounted in an upright position on the front wall or section 10, and it consists of a single piece of rod metal, or other suitable material, angularly bent at opposite sides of the center to form a central approximately U-shaped bend or handle portion 15, and its terminals are bent at points spaced from the intermediate loop 15 to form engaging arms 17 and to provide connecting vertically alined pivot portions 18, which are journaled in the top and bottom portions of the front wall or section 10 beneath or at the inner faces of the cleats thereof. The bottom section 1 and the cover 3 are provided at their front edges with notches 19 and 20, and the channeled pieces of the bottom and the cover have corresponding notches 21, and the pivot portions of the fastening device project sufficiently to extend through the said notches to arrange to engaging arms beyond the top and bottom sections to permit the said arms to swing inwardly and outwardly into and out of engagement with the bottom and the cover to lock and release the same. The approximately U-shaped loop forms a handle for operating the fastening device, and the latter is retained in its engaging position by means of a seal 22 having its wire 23 extending through an eye 24 of the front wall or section and extending around and embracing the handle loop 15 of the fastening device. When the terminal arms of the fastening device are in engagement with the top and bottom of the box, the handle loop, which is preferably of a length to extend across the space between the cleats of the front wall or section 10, fits flat against the outer face of the front wall and occupies a position with its vertical portion contiguous to the projecting eye 24, and the wire of the seal, which is passed through the eye and around the vertical portion of the handle loop, securely retains the fastening device in its engaging position until the seal is

broken, and it will be impossible to open the box and obtain access to its contents without first destroying the seal.

The box is adapted to be readily collapsed by folding or laying out flat the set including the top or cover, the rear wall and the bottom of the box, as shown in Fig. 3. The other foldable set comprising the front wall and the side walls is then lifted out of engagement with the channeled pieces and is laid out flat upon the other foldable set, as illustrated in Fig. 4 of the drawings. The two sets are designed to be tied together in such position, and the box may be returned to the shipper at minimum freight rates. Also if desired the box may be compactly folded, as illustrated in Fig. 5, in which the box is folded to a two section length instead of a three section length, illustrated in Fig. 4. To accomplish this result, the cover 3 is folded inwardly upon the rear wall or section 2. One of the side walls or sections 9 of the other set of sections is then placed upon the extended bottom section 1 and the front wall is folded back over such side wall with the other side wall arranged upon the previously folded cover section, thus forming a package of a length of two sections and of a thickness of three sections. When the box is folded in either of the aforesaid ways, the sides or sections are compactly arranged and do not consume any unnecessary space.

By constructing the collapsible box in separable independently foldable sets, the latter are not only adapted to be compactly folded, but the box may be made either cubical, or of a rectangular shape of any dimensions.

The foldable sections are shown as constructed of boards, but it is obvious that they may be made of slats or of wire, or a combination of wire and slats to suit the merchandise being transported.

What is claimed is:—

1. A collapsible receptacle comprising two separable sets of foldable sections adapted to be spread out flat upon each other or to be folded independently and arranged upon each other, each set consisting of intermediate and end sections hinged together, one of the sets including the bottom, the rear wall and the top or cover of the receptacle, and the other set consisting of the front and side walls, which are detachably arranged in a vertical position upon the upper face of the bottom section of the other set, channeled pieces carried by the latter set of sections and arranged at the marginal edges thereof in position to receive the contiguous edges of the said front and side walls, whereby the two sets of sections are detachably interlocked, and means for securing the two sets of sections in their interlocked relation.

2. A collapsible receptacle comprising two separable sets of foldable sections, each set consisting of intermediate and end sections

hinged together, one of the sets including the bottom, the rear wall and the top or cover of the receptacle, and the other set consisting of the front and side walls, which are detachably arranged in a vertical position upon the bottom section of the other set, channeled pieces carried by the latter set of sections and arranged at the marginal edges thereof in position to receive the contiguous edges of the said front and side walls, and a fastening device mounted on the front wall and having engaging portions arranged at the top and bottom of the receptacle and movable into and out of engagement with the bottom and the top or cover.

3. A collapsible receptacle comprising two separable sets of independently foldable hinged sections, one set including the bottom, the rear wall and the top or cover and the other set consisting of the front and side walls arranged in a vertical position upon the bottom section, means for detachably interlocking the two sets of sections in their assembled relation, and a fastening device extending from the top to the bottom of the receptacle and composed of an intermediate handle loop, upper and lower pivot portions mounted on the front wall, and terminal engaging arms arranged to swing into and out of engagement with the outer faces of the bottom section and the top or cover of the receptacle.

4. A collapsible receptacle comprising two separable sets of independently foldable sec-

tions adapted when separated to be arranged flat upon each other, each set consisting of an intermediate section and end sections hinged to the intermediate section, means for detachably interlocking the sets of sections to form the receptacle, and a fastening device mounted on one of the sections of one set and extending to opposite edges thereof and having means for engaging the end sections of the other set.

5. A collapsible receptacle comprising two separable sets of independently foldable hinged sections, one of the sets of sections including the front and side walls of the receptacle and the other set consisting of the bottom, the rear wall and the cover of the receptacle and embracing the front and side walls and provided with channeled pieces detachably receiving the said front and side walls, the bottom and the cover and two of the channeled pieces being provided with front aligned notches, and a fastening device mounted on the front wall and extending through the said notches and provided with terminal arms movable into and out of engagement with the said bottom and cover.

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

PETER ADAM BIDDINGER.

Witnesses:

OLIVER L. CUNNINGHAM,
GEORGE V. DILL.