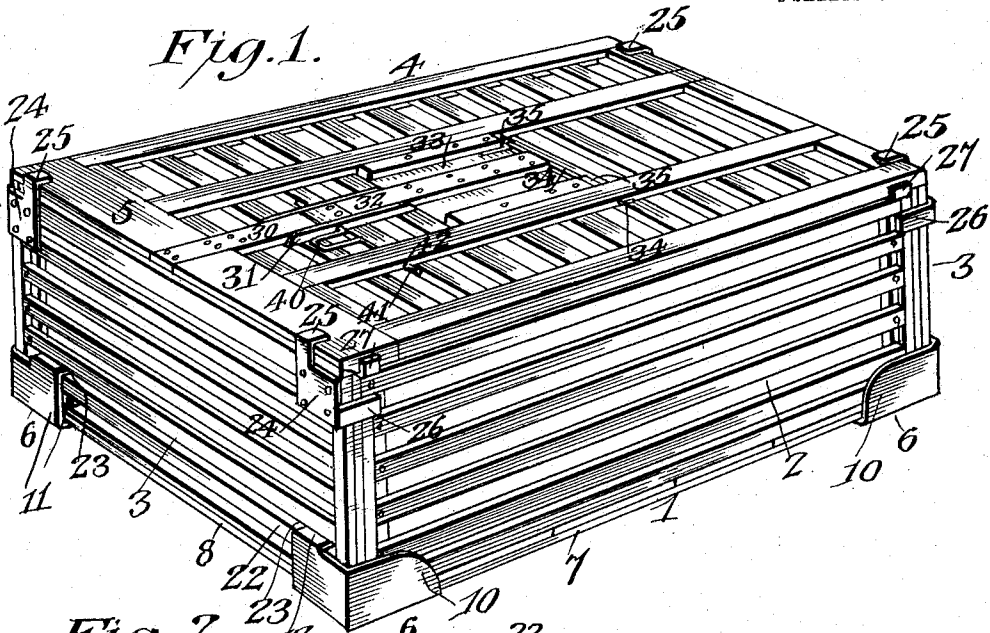


R. E. L. CROSBY.  
KNOCKDOWN BOX.  
APPLICATION FILED DEC. 13, 1910.

1,015,425.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 1.



Witnesses  
Jas. W. McArthur  
J. H. & Co.

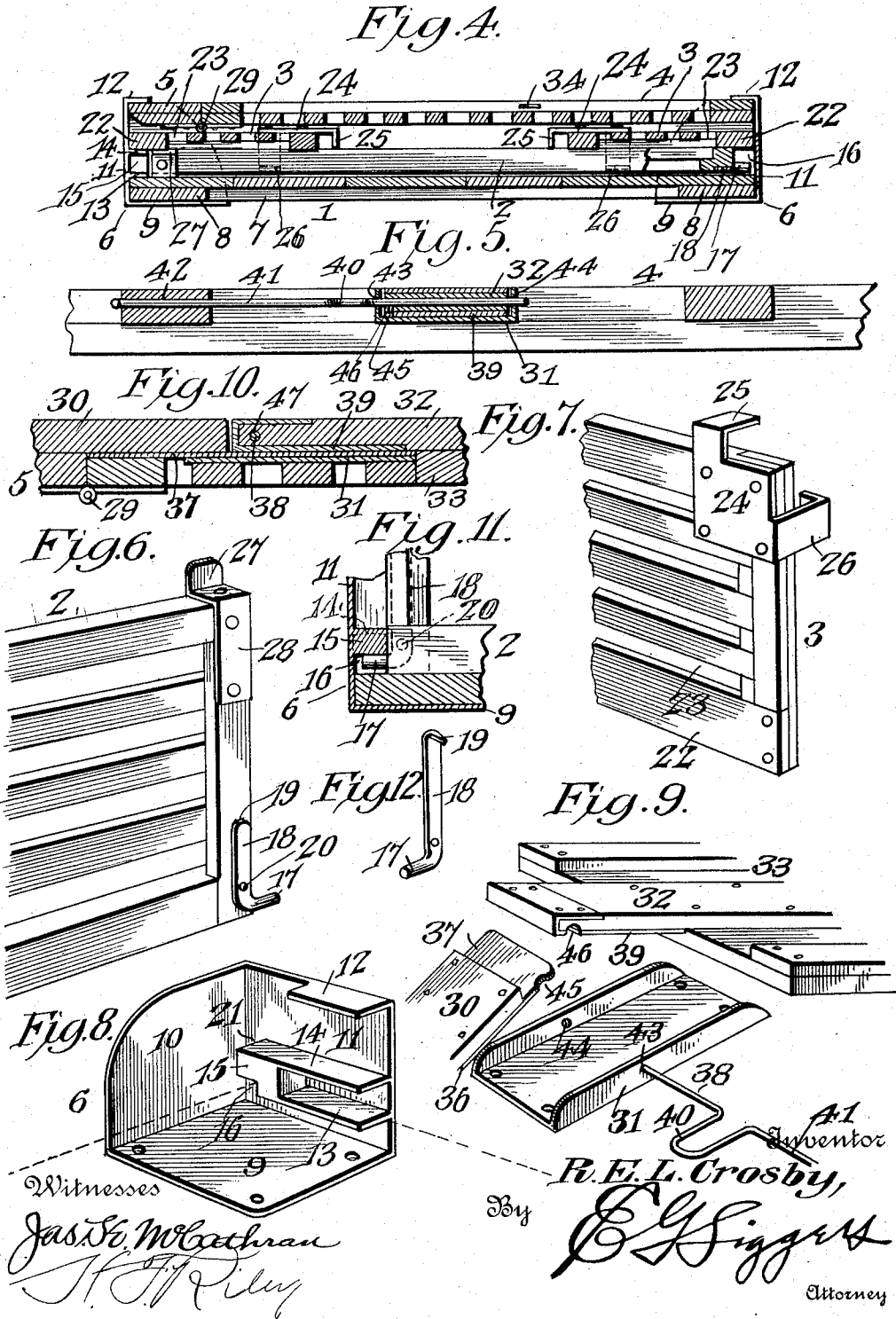
Inventor  
R. E. L. Crosby,  
By *E. J. Singer*  
Attorney

R. E. L. CROSBY.  
 KNOCKDOWN BOX.  
 APPLICATION FILED DEC. 13, 1910.

1,015,425.

Patented Jan. 23, 1912.

2 SHEETS—SHEET 2.



# UNITED STATES PATENT OFFICE.

ROBERT E. L. CROSBY, OF JONESBORO, ARKANSAS, ASSIGNOR OF ONE-HALF TO A. E. LOCKHART, OF JONESBORO, ARKANSAS.

## KNOCKDOWN BOX.

1,015,425.

Specification of Letters Patent.

Patented Jan. 23, 1912.

Application filed December 13, 1910. Serial No. 597,089.

*To all whom it may concern:*

Be it known that I, ROBERT E. L. CROSBY, a citizen of the United States, residing at Jonesboro, in the county of Craighead and State of Arkansas, have invented a new and useful Knockdown Box, of which the following is a specification.

The invention relates to improvements in knock-down boxes and analogous receptacles.

10 The object of the present invention is to improve the construction of knock-down boxes and analogous receptacles, such as chicken coops, crates and the like, and to provide a simple and comparatively inexpensive knock-down receptacle of great strength and durability, adapted to fold down into a neat, strong and compact package for return shipment.

20 A further object of the invention is to provide a knock-down receptacle of this character in which the foldable side and end members may be instantly detached without removing bolts, or other fastening devices, when it is desired to replace a worn or broken part with a new member.

30 Another object of the invention is to provide a knock-down receptacle, equipped with a removable top having a door, and provided with locking means adapted to secure the door in its closed position and the top in interlocked relation with the foldable sides and ends and also in the knock-down or folded position of the same.

40 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.

50 In the drawings:—Figure 1 is a perspective view of a knock-down receptacle, constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view. Fig. 4 is a longitudinal sectional view, the receptacle being folded. Fig. 5 is an enlarged transverse sectional view on the line 5—5 of Fig. 2. Fig. 6 is a detail perspective view of one end of one of the foldable side

members. Fig. 7 is a similar view of one end of one of the foldable end members. Fig. 8 is a detail perspective view of one of the corner irons. Fig. 9 is a detail perspective view, illustrating the construction of the locking mechanism for securing the top and the door thereof. Fig. 10 is an enlarged detail sectional view, taken longitudinally of the locking mechanism. Fig. 11 is an enlarged detail sectional view, illustrating the construction for hinging the side members to the corner irons. Fig. 12 is a detail view of one of the pintles of the foldable side members.

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

In the embodiment of the invention illustrated in the accompanying drawings, the foldable receptacle is in the form of a chicken coop, but it may be in the form of a crate, box or analogous receptacle, as will be readily understood. It comprises in its construction a bottom 1, foldable side members 2, foldable end members 3 and a top 4, having a hinged section 5 adapted to permit the top to break at an intermediate point between its ends to enable it to be engaged with or removed from the foldable side and end members and also with corner irons 6. When the receptacle is in the form of a crate, the bottom is preferably reinforced at its lower face by marginal boards or pieces 7 and 8, arranged at the sides and ends of the bottom and forming practically a bottom of two thicknesses of material, but any other construction of bottom may be employed.

The bottom is equipped at each of its corners with one of the corner irons 6, preferably constructed of a one-piece casting of malleable metal or other suitable material and comprising a horizontal bottom plate or portion 9, and vertical side and end walls or wings 10 and 11. The bottom plate or portion of the corner iron 6 is pierced by suitable fastening devices for securing the corner iron to the bottom of the receptacle. The end wall or wing 11 is provided with integral top, bottom and intermediate inwardly extending horizontal flanges 12, 13 and 14. The bottom flange 13 is arranged upon the upper face of the bottom of the receptacle, and the intermediate flange is spaced from the bottom flange a distance equal to the thickness of the foldable side

member, so that the side member when folded down upon the bottom of the receptacle will be in flush relation with the upper face of the intermediate horizontal flange 14. This will permit the end member 3, which is supported upon the intermediate flange 14, to fold flat against the side member 2. The intermediate horizontal flange 14 is supported by a solid integral bearing portion 15 suitably connecting the flanges 13 and 14 and provided at the lower edge with an outer recess 16 for the reception of a pintle 17 of the foldable side member. The pintle 17, which is horizontal, extends longitudinally from the inner face of the side member 2, and it is provided with an integral attaching plate or portion 18, having a terminal shank or prong 19, which is embedded in the foldable side, thereby enabling a single fastening device 20 to be employed for securing the hinge element to the foldable side member. The bearing portion 15 and the flange 14 terminate short of the side wall or wing 10 to provide an entrance space 21, which permits the pintle 17 to be introduced into the bearing recess 16 when the foldable side member 2 is in a horizontal position, and when the latter is swung upward to a vertical position, the pintle 17 is carried into the recess 16 and is engaged with the bearing portion 15, whereby the foldable side member is securely interlocked with the corner iron. This construction will also permit the foldable side member to be instantly detached when it is desired to replace the same with a new part. The foldable end member is retained on the intermediate horizontal flange 14 by the upper flange 12, extending inward from the upper edge of the wall or wing 11 and engaging over the bottom bar 22, preferably in a recess 23 thereof. The foldable side members terminate short of the end walls or wings 11 and hold the end members against the same when the said end members are in a vertical position. The end member is released when the side members are folded upon the bottom of the receptacle, and it may then be either folded or removed. The corner irons connect the foldable side and end members with the bottom of the receptacle when the said members are arranged either vertically or horizontally, and they obviate the necessity of employing marginal strips for reinforcing the receptacle at the lower portion thereof. The said corner irons also obviate the necessity of employing ordinary hinges and the intermediate flanges 14, which support the foldable end members above the bottom of the receptacle, provide entrance openings for enabling the same to be cleaned, when employed for shipping poultry or the like.

The end members are provided at their

upper corners with keepers 24, consisting of a vertical plate and vertical and horizontally disposed L-shaped arms 25 and 26. The vertical portion of the L-shaped arm 25 extends upward from the keeper and from the upper edge of the end member, and its upper horizontal flange or portion projects inwardly over the same in order to engage with the top 4 of the receptacle. The horizontally disposed arm extends from the side edge of the end member and engages the adjacent end of the foldable side member, embracing a portion thereof and interlocking the side and end members. The side members are provided at their upper edges with vertical flanges or lugs 27, preferably formed integral with approximately L-shaped attaching portions 28, and located in flush relation with the outer faces of the foldable side members so as to engage the side edges of the top of the receptacle.

The section 6 is connected with the top of the receptacle by hinges 29, located at the lower faces of the adjacent parts and adapted to permit the top to break upwardly to enable it to be engaged with the projecting means of the side and end members. The vertical flanges of the side members hold the top against movement laterally of the receptacle and the upwardly extending L-shaped arms of the end members retain the top on the side and end members and also hold the top against movement longitudinally of the receptacle. The top when in position prevents the side and end members from folding and forms a rigid structure.

The hinged section 5 of the top is provided with an inwardly extending arm 30, overlapping the main portion of the top and fitting within one end of a lock casing 31, secured to the top 4 and also receiving an arm 32 of a door 33. The arm 32 extends from one edge of the door 33, which is hinged at its other edge by means of a suitable pintle rod 34, mounted on the top of the crate and passing through suitable eyes 35 of the door. The casing 31 consists of a horizontal bottom and vertical side flanges, and the arm 30, which is preferably constructed of wood, is reinforced at the bottom by a metallic plate 36, which is extended to form an engaging flange 37. The flange 37 extends beneath the arm 32, when the parts are arranged horizontally in position to be engaged by a slidable locking rod 38. The arm 32, which is also preferably constructed of wood, is reinforced at its outer portion by a metallic face plate 39. The slidable locking rod 38, which is bent at an intermediate point to form a loop 40, has its outer portion 41 arranged in a perforation 42, or other suitable guide of the top, and its inner engaging portion pierces the side flanges of the casing 31, being adapted to extend across the casing from a

perforation 43 at one side thereof to a perforation 44 at the opposite side of the same. The inner end of the slidable locking rod is supported in the perforation 43 at all times, and the engaging flange 37 and the arm 32 are provided with recesses 45 and 46 to enable them to clear the engaging end of the rod 38, when the latter is withdrawn to the limit of its outward movement. When the arms 30 and 32 are arranged within the casing, the arm 32 engages the flange 37 and is engaged by the slidable locking rod, which passes through a perforation 47 of the arm 32. The flange 37 is located beneath the locking rod when the parts are locked, and a single locking device secures the door in its closed position and retains the top in engagement with the foldable side and end members. In handling chickens or other fowls, the slidable locking rod may be engaged only with the flange 37 to permit the door to be opened and closed without operating the locking rod. The loop 40 enables the locking rod to be sealed with an ordinary shipper's seal, the wire of which is adapted to be passed through a perforation of one of the bars or battens of the receptacle.

When it is desired to fold the crate, the slidable locking rod is withdrawn and the top is withdrawn from engagement with the arms and the flanges of the end and side members. The side members are then folded inward upon the bottom of the receptacle and the end members are folded flat against the side members. The top is then engaged with the upper flanges 12 of the corner irons and is locked as before. The receptacle when folded forms a neat, strong and compact package for return shipment.

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

1. A knock-down receptacle including a bottom, exterior corner irons having upwardly extending side and end wings and provided with interior bearing recesses, foldable side members having pintles detachably engaged with the recesses, and separable end members detachably interlocked with the corner irons and engaging with the side members when the latter are in a vertical position.

2. A knock-down receptacle including a bottom, exterior corner irons having upwardly extending side and end wings and provided with open bearing recesses and having supports, foldable side members having pintles detachably engaged with the recesses, and separable end members detachably interlocked with the corner irons and engaging with the side members when the latter are in a vertical position, said end members being arranged upon the supports of the corner irons above the pintles of the

side members to enable them to fold flat upon the latter when the said side members are folded upon the bottom of the receptacle.

3. A knock-down receptacle including a bottom, exterior corner irons each composed of a bottom plate and vertical side wings, and a support carried by one of the wings and arranged in spaced relation with the bottom plate and having a bearing recess, foldable side members having pintles fitted in the said recesses, separable end members seated upon the supports of the corner irons, and means carried by the corner irons for detachably holding the end members upon the supports.

4. A knock-down receptacle including a bottom, exterior corner irons secured to the bottom and each having side and end wings being provided with spaced horizontal flanges, and a solid integral bearing portion located beneath the said flanges and having a bearing recess, foldable side members having pintles arranged in the bearing recesses of the corner irons, and separable end members having a portion fitted between the said flanges, whereby they are detachably interlocked with the corner irons.

5. A knock-down receptacle including a bottom, exterior corner irons secured to the bottom and each having side and end wings, the end wing being provided with top, bottom and intermediate flanges, the bottom horizontal flange being fitted against the upper face of the bottom of the receptacle, a bearing portion arranged between the intermediate and bottom flanges in spaced relation with the side wing and provided at the bottom with an outer bearing recess, foldable side members having pintles arranged in the bearing recesses and removable through the space between the bearing portion and the side wing, and separable end members seated upon the intermediate flanges and engaged by the top flanges of the corner irons.

6. A knock-down receptacle including a bottom, exterior corner irons secured to the bottom and each having side and end wings, the end wing being provided with inwardly extending flanges, side members pivoted to the corner irons, and separable end members having their lower bars received between the flanges above the pivots of the side members.

7. A knock-down receptacle including a bottom, exterior corner irons secured to the bottom and each having side and end wings, the end wing being provided with inwardly extending flanges, side members pivoted to the corner irons, and separable end members having their lower bars received between the flanges above the pivots of the side members, said flanges spacing the ends of the side members from the end wings and the end members extending into the spaces between the end wings and the ends of the side mem-

bers, whereby they are rigidly supported in an upright position.

8. A knock-down receptacle including a bottom, exterior corner irons secured to the bottom and each having side and end wings, the end wing being provided with spaced inwardly extending upper and lower flanges, side members hinged to the corner irons, end members having lower bars fitted between the said flanges and detachably interlocked with the corner irons, and a top, the space between the flanges of the end wings being sufficient to permit the top to be placed over the end members and extend beneath the upper flanges, whereby the top will be retained in place by the corner irons.

9. A knock-down receptacle including a bottom, foldable side and end members, and a keeper secured to the end member and provided with a horizontally disposed approximately L-shaped arm embracing a portion of the side member and interlocking the said side and end members, whereby both of the same will be held against outward movement.

10. In a knockdown receptacle, the combination of a bottom, corner irons secured to the bottom and having side and end wings, detachable side members hinged to the corner irons, detachable end members also hinged to the corner irons, both the side and end members folding flat upon the bottom and held at the corners by the said irons, a detachable top having a hinged section at one end and fitted upon the side and end members when folded, said corner irons being of sufficient height to embrace the top when folded and provided with a flange at their upper edges to engage the top and hold the parts in their folded position.

11. The combination of a bottom, corner irons secured to the bottom and having side and end wings, detachable side members hinged to the corner irons, detachable end members also hinged to the corner irons, both the side and end members folding flat upon the bottom and held at the corners by

said irons, a detachable top fitted upon the side and end members when folded and provided at one end with a hinged section having an arm, said corner irons being of sufficient height to embrace the top when folded and provided at their upper edges with a flange to engage the top and hold the parts in their folded position, a door for closing an opening in the top and provided with an arm, and a fastening device for locking the two arms together.

12. The combination with a knockdown receptacle including a bottom, foldable side members, foldable end members having inwardly extending flanges, a detachable top provided at one end with a hinged section and engaging beneath the flanges of the foldable ends, said hinged section being provided with an inwardly extending arm, a door for closing an opening in the top and having an arm, the arm of the hinged section and the arm of the door being arranged to overlap, and a fastening device arranged on the top and engaging the said arms to lock the parts in assembled relation.

13. In a knockdown receptacle, the combination of a bottom having corner irons, foldable side and end members, a detachable top provided at one end with a hinged section and adapted to detachably engage the corner irons to retain the parts in their folded position, an arm extending from the hinged section and having a flange, a hinged door for closing an opening in the top of the receptacle and provided with an arm arranged to fit over the said flange, an open casing mounted on the top of the receptacle and arranged to receive the said arms, and a slidable locking member arranged to engage either the arm of the door or the said flange.

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

ROBERT E. L. CROSBY.

Witnesses:

ROBT. F. BRADLEY,  
OLIVER C. POWELL, Jr.