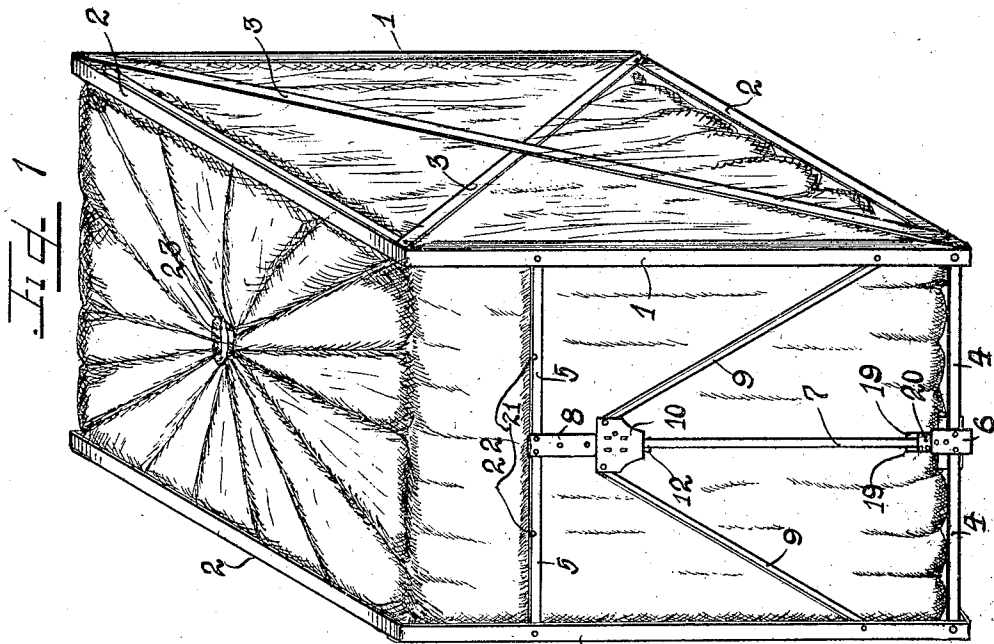
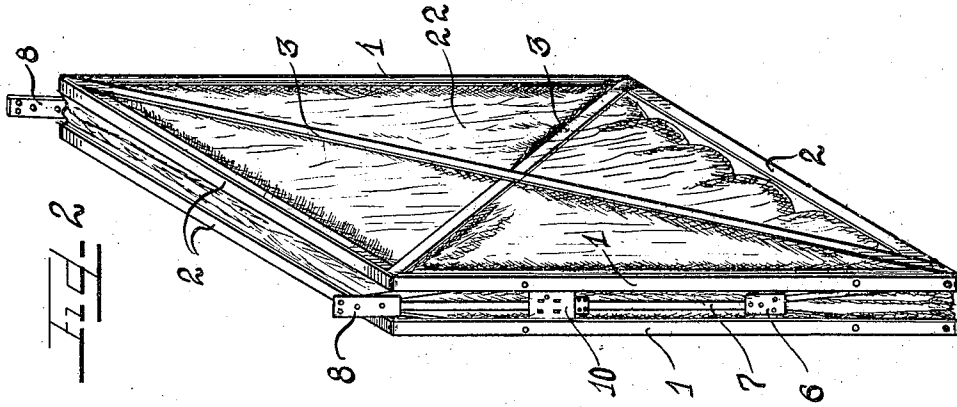


B. E. TAYLOR.
 COLLAPSIBLE SHIPPING CRATE;
 APPLICATION FILED OCT. 26, 1916.

1,263,294.

Patented Apr. 16, 1918.
 3 SHEETS—SHEET 1.



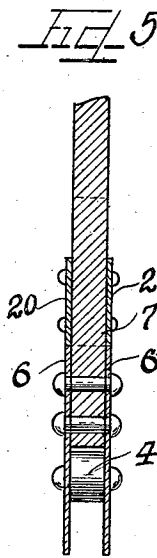
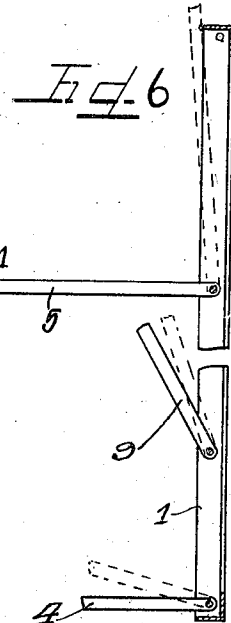
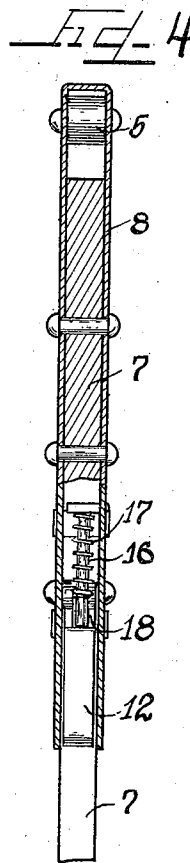
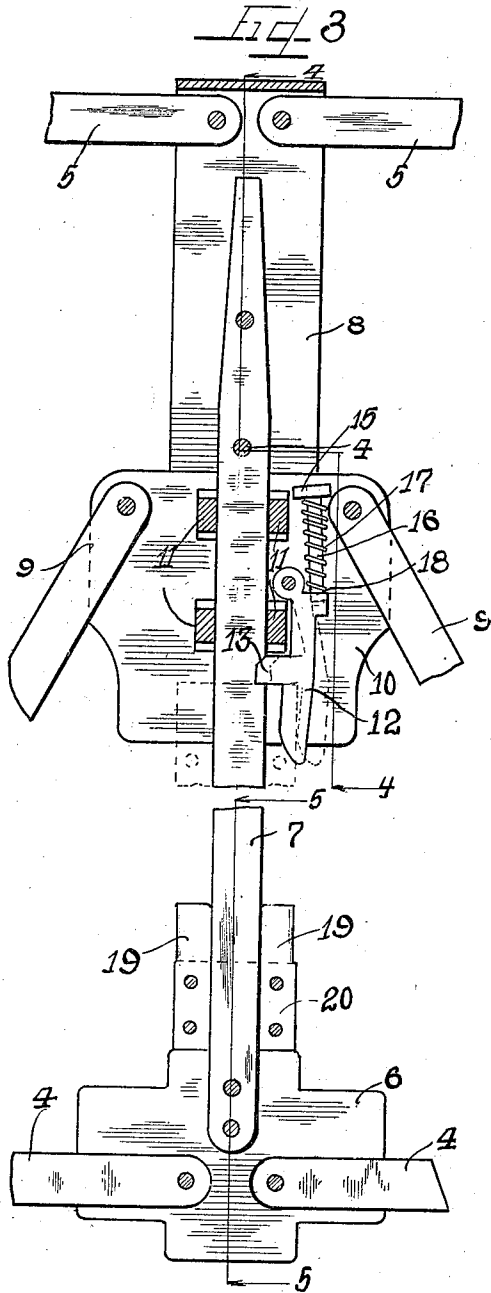
Witnesses
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 3 SHEETS—SHEET 2.



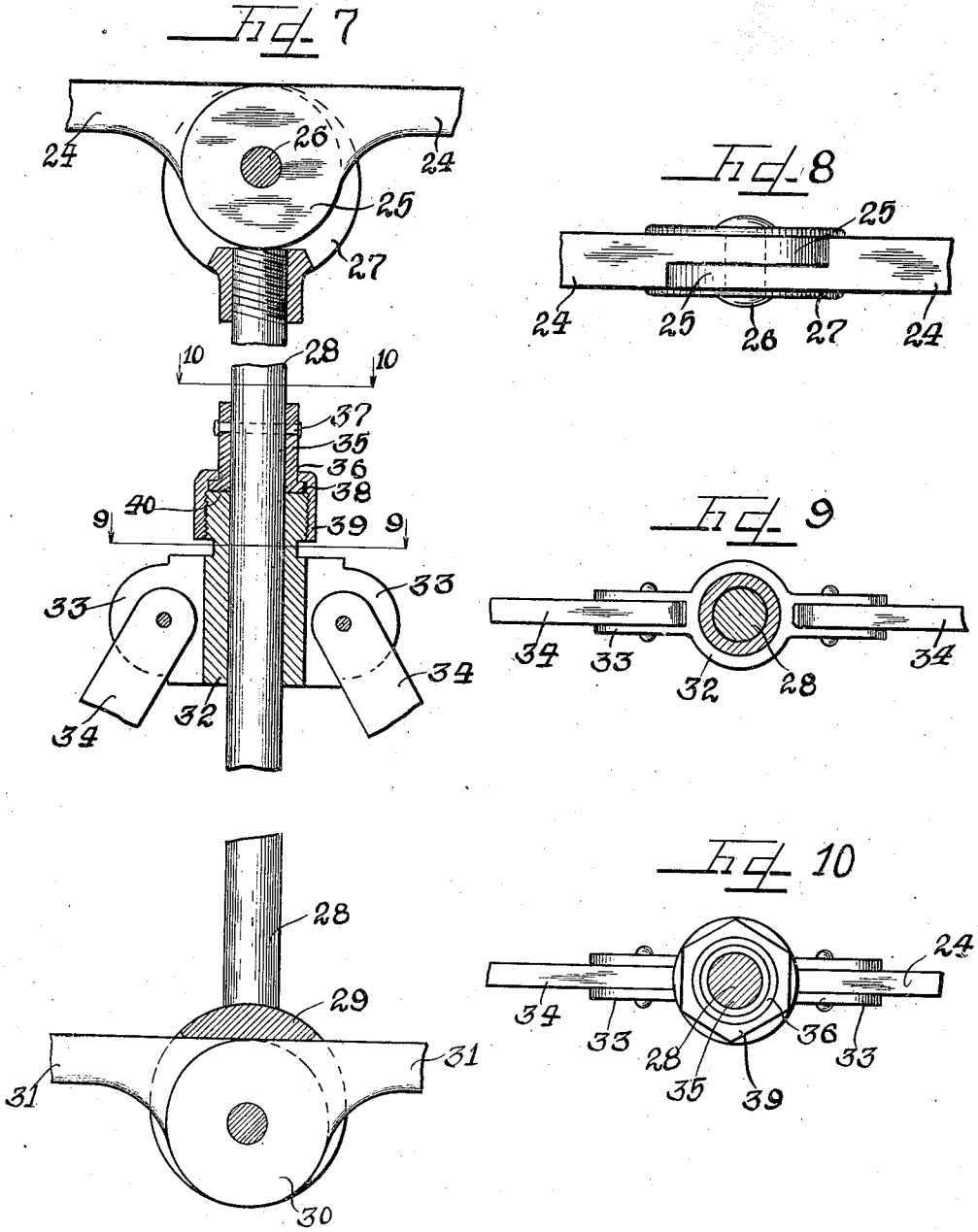
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1,263,294.

Patented Apr. 16, 1918.
 3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

BAYARD E. TAYLOR, OF OAK PARK, ILLINOIS.

COLLAPSIBLE SHIPPING-CRATE.

1,263,294.

Specification of Letters Patent. Patented Apr. 16, 1918.

Application filed October 26, 1916. Serial No. 127,913.

To all whom it may concern:

Be it known that I, BAYARD E. TAYLOR, a citizen of the United States, and a resident of the town of Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Collapsible Shipping-Crates; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form a part of this specification.

This invention relates to a protective crate and container for articles to be shipped from place to place, which can be collapsed into small space for easy and convenient return thereof when empty. Although many different types of shipping containers have been designed for the purpose, they have proved objectionable for one reason or another.

This invention has for an object therefore, the construction of a collapsible shipping crate or container which when collapsed forms a compact and self-contained structure easily and conveniently handled, and when expanded for use with its fabric bag or other means which may be provided for the purpose for use therewith, is locked in such expanded position. The locking means, however, is easily releasable to permit collapsing of the device, and yet is so constructed so as to be unnoticeable by a person unacquainted with the method of operation of the device.

It is also an object of this invention to construct a collapsible container adapted to be collapsed into small compass when not in use, and readily adapted to form a rigid structure with the parts, when collapsed, substantially contained within the main frame members of the structure so that no inconvenience is caused to a person handling the device.

It is also an object of this invention to construct a metallic collapsible shipping container comprising rigid side frame members extendible away from one another by mechanisms which when extended, serve to form the end walls of the container and with a fabric connected within the members of the structure to be expanded therewith into position to receive articles placed therein.

It is furthermore an important object of this invention to construct a collapsible

shipping container embracing rigid side wall frames adapted to be moved away from one another in substantially parallel relation, with connecting members at the ends of said side walls adapted to be extended as said side walls are moved apart to form end walls of the expanded device whereby a fabric container connected within the frame members of the structure is expanded therewith into position to receive articles placed therewithin and protected by the rigid end and side walls of the extended device.

It is finally an object of this invention to construct an improved type of collapsible shipping container adapted to collapse into small compass and when extended, forming a rigid construction locked in extended position by mechanisms manually actuatable to release the same for collapsing the structure.

The invention (in a preferred form) is illustrated in the drawings and hereinafter more fully described.

In the drawings:

Figure 1 is an elevational view of a device embodying the principles of my invention showing the same in extended position.

Fig. 2 is a similar view thereof illustrating the same collapsed.

Fig. 3 is a fragmentary central sectional detail taken through an upright at one side of the device illustrating the extending mechanisms associated therewith.

Fig. 4 is a fragmentary detail view taken on line 4-4 of Fig. 3.

Fig. 5 is a fragmentary detail section taken on line 5-5 of Fig. 3.

Fig. 6 is a fragmentary detail view illustrating the connection of certain of the extending mechanisms to the rigid side frame members of the structure.

Fig. 7, is a view similar to Fig. 3, of a modified form of construction.

Fig. 8 is a top plan view of the mechanisms at the upper end thereof.

Fig. 9 is a detail section taken on line 9-9 of Fig. 7.

Fig. 10 is a detail section taken on line 10-10 of Fig. 7.

As shown in the drawings:

The device embraces two similarly constructed side wall frame members of rectangular shape, consisting of upright angle bars 1, joined to top and bottom angle bars 2, and with diagonal brace bars 3, secured to one another and to the corners of the rec-

tangular frame structure. Pivotally connected to each of the upright members 1, of said side wall frames of the structure at the upper ends thereof, are pivoted bars 5 and at the lower ends thereof are pivoted bars 4. The inner ends of the pivotally mounted bars 4, at the lower end of an upright 1, are each connected pivotally between plates 6, of a pivot member, which plates are spaced from one another and rigidly secured upon the lower end of an upright rod 7. Also rigidly secured upon said rod 7, on the upper end thereof is a yoked or U-shaped plate member 8, and said bars 5, are pivotally connected between the members of said U-shaped plate at their inner ends in a manner similar to that described for the bars 4. Another pair of pivotally mounted bars 9, are provided connected near the lower ends of the uprights 1, and each at its inner end is pivotally connected between rigidly connected plates 10, which are spaced apart for the purpose and are slidable as a unit upon the upright rod 7. Transverse members 11, are provided rigidly secured between said plates 10, fitting on each side of the guide rods 7, as clearly shown in Fig. 3, for the purpose of holding said plates rigidly secured together and slidably upon said rod 7.

Said associated plates 10, also carry the locking mechanism of the structure by which the structure is held in extended or expanded position for use and said mechanism comprises a pivoted pawl 12, mounted between said plates 10, and concealed thereby, and provided with a tooth 13, adapted to lock into a notch, provided therefor in said guide rod or bar 7. Mounted rigidly between said plates 10, in the upper end thereof is a small cross piece 15, and secured rigidly therein and projecting downwardly between said plates is a pin 16, around which is coiled a compression spring 17, the lower end of which bears upon a tail extension 18, of the pawl 12, acting normally to impel the tooth 13, of said pawl, inwardly toward said rod 7. It is obvious that when the structure is adjusted into expanded position as shown in Fig. 1, that the tooth 13, of the pawl 12, will engage the notch 14, of the rod 7, thereby locking the parts so that the same rigidly brace the side wall frame members 1—2, in extended position.

A releasing mechanism for said latch or pawl 12, is provided, consisting of a pair of short bars 19, secured to one another slidably on each side of the rod 7, by plates 20, riveted thereto, and when this mechanism is moved upward on the rod 7, the upper end of one of said bars 19, engages beneath the lower end of the pawl 12 to swing the same outwardly so that the tooth 13, thereof, is disengaged from the notch 14, of the rod, permitting the mechanism to be adjusted and the device collapsed.

Notches 21, are provided in the upper edge of each of the pivotal extension bars 5, so that when the device is moved into collapsed position as shown in Fig. 2, the notches 21, will engage the inwardly directed flanges of the side frames 1—2, as shown in dotted lines in Fig. 6. The fabric bag, denoted as a whole by the reference numeral 22, is secured within the structure in any suitable manner, and is provided with an expandible opening 23, operating in any desired manner for the purpose of permitting introduction of articles into the expanded device and removal therefrom when desired.

In Figs. 7 to 10, inclusive, I have shown a modified form of extending mechanism adapted to replace the mechanisms illustrated in detail in Figs. 3 to 6, inclusive. In this latter construction, the bars 5, are replaced by bars 24, the inner ends of which are enlarged to form disk-shaped heads 25, of reduced thickness adapted to overlap and afford a knee-joint in the manner shown in Fig. 8. Said heads 25, are pivoted upon a pintle 26, secured rigidly in a yoke-shaped head 27, which is threaded on the upper end of a guide rod 28, which replaces the rod 7, of the prior construction described. A similar connection is provided at the lower end of the rod 28, a head 29, being secured thereon and having pivotally connected therein enlarged rounded heads of reduced thickness 30, affording a knee-joint, and formed on the inner ends of rods or bars 31, which replace the rods 4, of the prior structure described.

Slidably mounted upon said rod 28, is a sleeve 32, having yoke-shaped extensions 33, integral therewith on opposite sides thereof in which are pivoted the inner ends of brace bars 34, which replace the bars 9, of the prior construction. Secured rigidly near the upper end of the rod 28, is an outer sleeve 36, pinned together and to the rod 28, by a pin 37, the lower end of the outer cylinder 36, having an outwardly directed flange 38. An internally threaded sleeve nut 39, is loosely engaged or swiveled over said tubular element, and is limited in its downward movement thereon by the outwardly flaring flange 38. Said sleeve element 32, is provided with a threaded extension 40, on the upper end thereof on which said sleeve nut 39, is adapted to be threaded to thereby hold said sleeve element 32, in a rigid position near said rod 28, to hold the extending mechanisms of the structure in extended bracing position.

The operation is as follows:

First referring to the construction illustrated in Figs. 1 to 6, inclusive, the device shown extended for use is illustrated clearly in Fig. 1, and in collapsed position in Fig. 2. In order to extend the structure from the collapsed condition shown in Fig. 2, it is

only necessary to draw the side wall frame members 1—2, outwardly away from one another. The pivot bars 4, and pivot bars 5, will then swing into the rigid aligned bracing relation shown in Fig. 1, and the slide plate 10, moving downwardly but not moving downwardly to the same extent as the rod 7, sliding therethrough, will interlock with said rod due to the pawl 12, of said slide plate engaging the notch 14, of the rod. As a consequence, the pivotal connections of the bars 4 and 5, cannot be broken to permit collapsing of the structure until the pawl 12, has been released to permit relative movement to take place between the rod 7, and slide plate element 10. This is achieved by sliding the pawl releasing member 19—20, upwardly on the rod 7, so that one of the members 19, thereof, engages beneath the lower end of the pawl to swing the tooth 13, thereof, out of engagement with the notch 14, of said rod.

A modified form of extending mechanisms is illustrated in Figs. 7 to 10, inclusive, wherein an interlocking knee-joint pivotal connection is provided between the respective bars 24, at the upper end of the extending mechanism, and bars 31, at the lower end of the extending mechanism, and a slightly different locking device is provided for holding the parts of the mechanism in extended position. This consists of a sleeve nut which is swiveled on means secured rigidly on the rod 28, so that when the slidable sleeve member 32, to which the brace bars 34, are pivotally connected, is moved into engaging relation therewith, the nut is threaded thereon thus holding said sleeve element securely positioned on the rod 28, preventing relative movement of the parts and thereby locking the extending mechanism in extended position.

I am aware that various details of construction may be varied through a wide range without departing from the principles of this invention, and I therefore do not purpose limiting the patent granted otherwise than necessitated by the prior art.

I claim as my invention:

1. A collapsible structure of the class described comprising side wall frame members, bars pivotally connected thereto near the upper and lower ends thereof, a common pivot member for the inner ends of said upper bars, a common pivot member for the inner ends of said lower bars, bars pivotally connected to said frame members intermediate said upper and lower bars, a rod rigidly connecting said pivot members provided with a notch therein, a sliding pivot member for the inner ends of said last mentioned bars slidably mounted upon said rod and a spring pressed member secured to the sliding

pivot adapted to engage in the notch in the rod to hold the structure extended.

2. In a device of the class described, rigid side frame members, collapsible extending mechanism connected therebetween adapted to permit extension of said members one from another, said mechanism comprising a plurality of bars pivotally connected to said frame members, a pivot member for each pair of said bars, a rod rigidly connecting certain of said pivot members one to another and one of said pivot members slidably mounted on said rod, a latch pivoted to the sliding pivot member adapted to interlock with the rod to hold said mechanism locked in extended position and a release member adapted to be adjusted longitudinally of the rod to release the latch.

3. In a device of the class described the combination with rigid side frame members, of a plurality of bars pivotally connected thereto, pivot members one for each pair of said bars, means rigidly connecting certain of said pivot members one to another, another pivot member for certain of said bars slidably mounted upon said rod, and a spring pressed locking bolt associated with said latter pivot member adapted to interlock with said rod to hold the device rigidly locked in extended relation.

4. In a device of the class described the combination with rigid frame members, of mechanisms connected thereto adapted to maintain said frame members rigidly spaced apart in extended position, said mechanisms comprising a plurality of bars pivotally connected to said frame members, certain of said bars pivotally connected in pairs at their inner ends, a rod affording a rigid connection between the pivotal connection of said bars, a locking member slidable relatively of the rod adapted to interlock therewith, a spring for forcing the locking member into position to interlock, and a release member slidable on the rod adapted to contact and release the latch.

5. A device of the class described comprising side wall frame members, mechanisms connecting the same together adapted to permit extension of said members apart in rigid relation, said mechanisms comprising bars pivotally connected to said members, locking mechanism associated with certain ones thereof, and a slidable releasing means acting when moved to release said locking mechanism.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

BAYARD E. TAYLOR.

Witnesses:

CHARLES W. HILLS, Jr.,
EARL M. HARDINE.