J. RITCHIE.

COLLAPSIBLE SHIPPING CRATE.

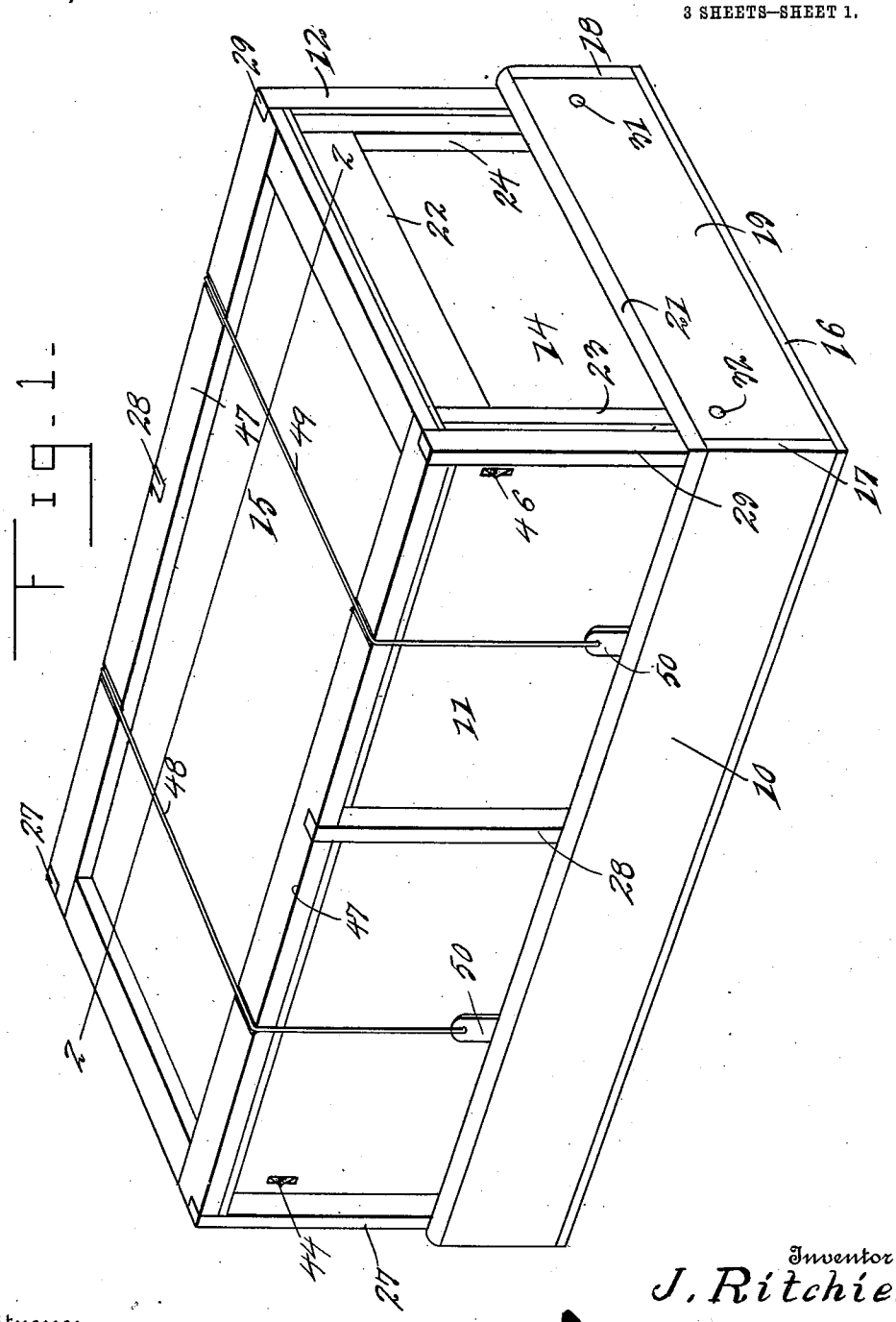
APPLICATION FILED JUNE 9, 1913.

1,095,597.

Patented May 5, 1914.

3 SHEETS—SHEET 1.

FIG. 1.



Witnesses

C. R. Beall.

L. S. Ellis.

Inventor

J. Ritchie.

By A. Randolph Jr.

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

Fig. 2.

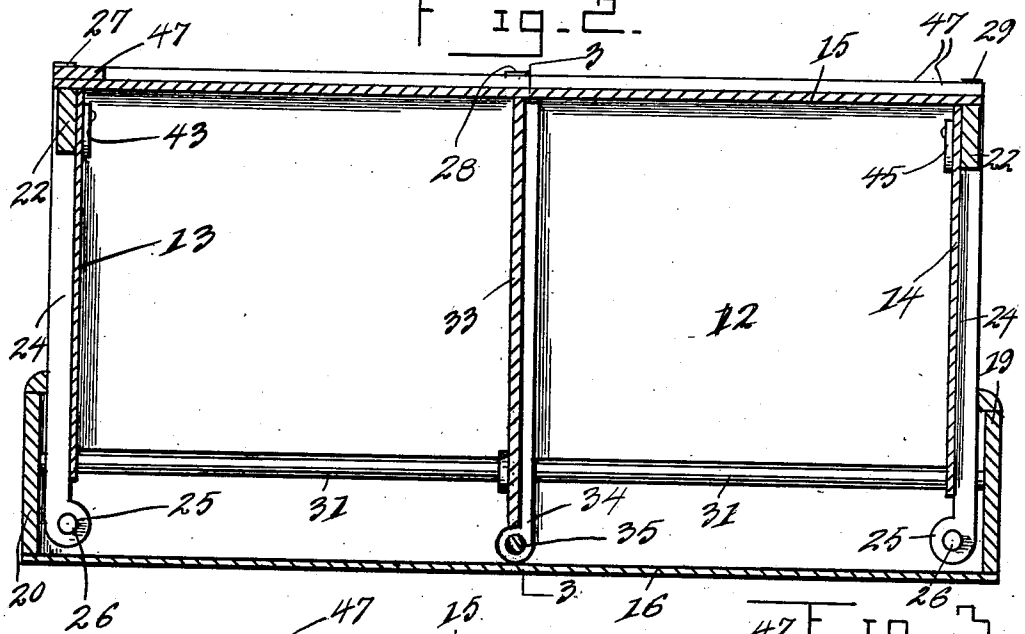
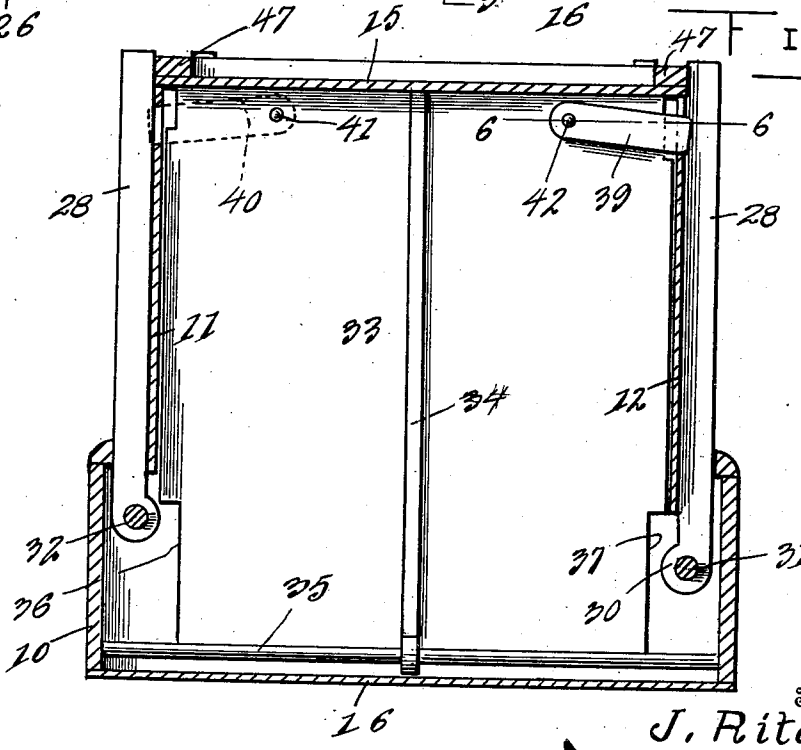


Fig. 3.



Witnesses

C. R. Bealle.

L. G. Eccis.

Inventor

J. Ritchie.

By A. Randolph Jr.

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

J. RITCHIE.

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3 SHEETS—SHEET 3.

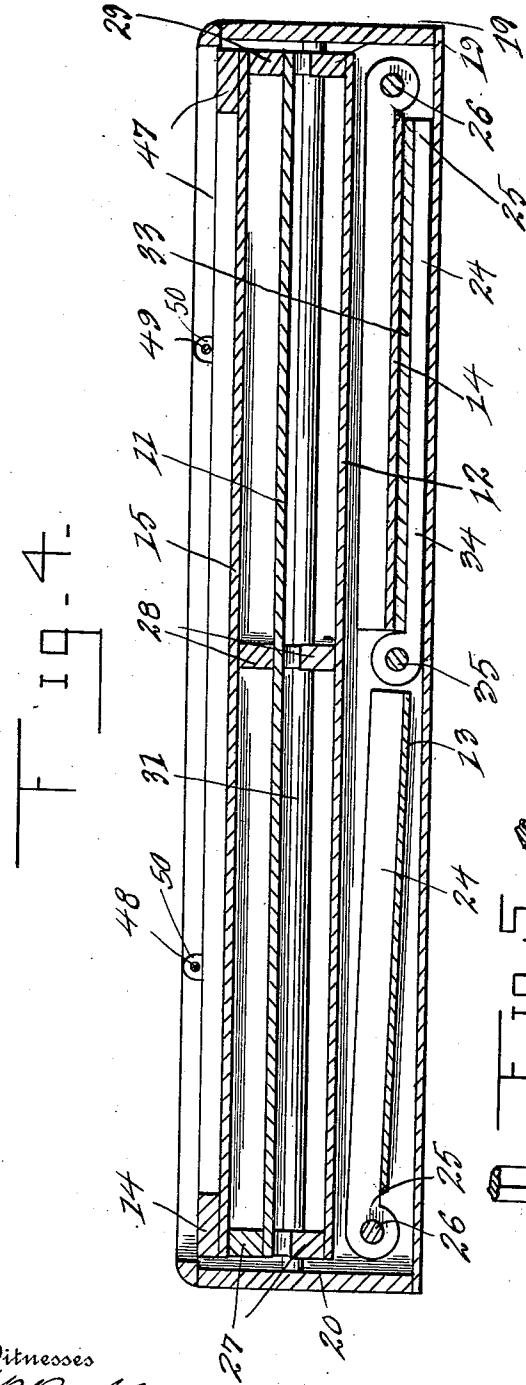


FIG. 4.

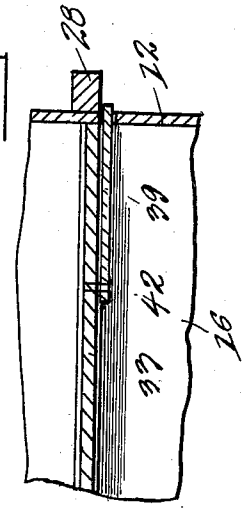


FIG. 6.

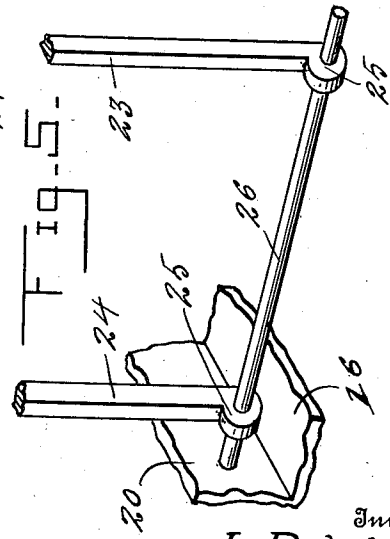


FIG. 5.

Witnesses

C. R. Beall.

L. D. S. Ellis.

Inventor

J. Ritchie.

By A. Randolph Jr.

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES RITCHIE, OF NEW YORK, N. Y.

COLLAPSIBLE SHIPPING-CRATE.

1,095,597. Specification of Letters Patent. Patented May 5, 1914.

Application filed June 9, 1913. Serial No. 772,718.

To all whom it may concern:

Be it known that I, JAMES RITCHIE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Collapsible Shipping-Crates; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to new and useful improvements in shipping crates, and as its principal object aims to provide a simple and comparatively inexpensive shipping crate which will be durable and efficient in use and so constructed that after the goods have been removed it may be readily folded into a smaller compass so that it may be returned to the shipper at a minimum cost.

The above and additional objects are accomplished by such means as are illustrated in the accompanying drawings, described in the following specification and then more particularly pointed out in the claim which is appended hereto and forms a part of this application.

With reference to the drawings, wherein I have illustrated the preferred embodiment of my invention as it is reduced to practice, and throughout the several views of which similar reference numerals designate corresponding parts: Figure 1 is a perspective view illustrating the various elements of the box in assembled position; Fig. 2 is a section on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 2; Fig. 4 is a sectional view taken longitudinally of the crate when the various elements are in folded position; Fig. 5 is a detail view illustrating the manner in which the end and side walls are hingedly mounted within the body portion of the crate; and Fig. 6 is a section on the line 6—6 of Fig. 3, illustrating in detail the pivoted latch employed in holding the end, side and partition walls in assembled position.

Proceeding now to the description of the drawings, the collapsible crate of this invention includes a main body portion designated as an entirety in Fig. 1 by the numeral 10, a pair of side walls designated as entireties by the numerals 11 and 12, the end walls 13 and 14 and top 15, these latter members being also designated by the respective numerals as entireties in Fig. 1.

The body member 10 of this invention is in the nature of a bed box, and is preferably rectangular in shape. This bed box 10 is constructed with a bottom wall 16, side walls 17 and 18, and end walls 19 and 20. On the upper edges of the walls 17, 18, 19 and 20, are secured four strips of molding, as at 21. These molding strips are of sufficient width to form an abutment for the end and side walls, when these latter members are in assembled upright position, as will be hereinafter more fully disclosed.

The end and side walls of the crate are hingedly mounted interiorly of the bed box 10, as will be observed by reference to the drawings. As regards the manner in which the end walls 13 and 14 are mounted, reference is had particularly to Figs. 1 and 2. By reference to these figures it will be observed that the end walls 13 and 14 are nailed or otherwise secured to U-shaped hinged frames, one of which is illustrated in Fig. 1. In this figure the bight portion of the frame is designated by the numeral 22, while the sides of the frame are designated by the numerals 23 and 24. The lower terminals of the members 23 and 24 carry offset perforate ears, as indicated at 25. These ears 25 are mounted for swinging movement on the axles 26, which are fixed at their terminals to the side walls of the bed box 10 in any desired manner.

In mounting the side wall 12 for swinging movement in order to permit it to be disposed interiorly of the bed box 10 when in folded position, there has been provided three hinged standards 27, 28 and 29, which are secured to the side wall 12 by nails or other suitable fastening means and are equipped at their lower terminals with perforate ears, as at 30. The ears 30 are loosely mounted on an axle 31 secured at its terminal to the end walls 19 and 20 in any desired manner. The axle 31 is arranged in the bed box 10 in a plane a sufficient distance above the plane of the axle 26 to permit the end walls 13 and 14 to lie, when in folded position, between the side wall 12 and the bottom wall 16. In this connection it is to be observed that the axles 26 of the members 13 and 14 may be arranged in the same plane, inasmuch as the end walls 13 and 14 are each equal in their longitudinal dimensions to approximately half the length of the bottom wall 16 and will not, therefore, interfere with each other when disposed in

folded position. The side wall 11 is hingedly mounted within the bed box 10 in the same manner as is the member 12 and, therefore, it is deemed unnecessary to describe in detail the construction of the various elements of the hinged connections of the member 11. It is to be observed, however, that the axle 32 of the side wall 11 is arranged in a plane a sufficient distance above the plane of the axle 31 to permit the side wall 12 to lie between the end walls 13 and 14 and the side wall 11 when the elements of the box are in folded relation.

The crate formed by the bed box 10 and wall members 11, 12, 13 and 14, is divided into two compartments by a partition wall 33, which is equipped with a hinge standard 34 pivotally mounted on an axle 35. The axle 35 is mounted laterally in the bed box and is arranged in a plane a sufficient distance below the plane of the axle 26 to permit the partition wall to be disposed between the end wall 14 and the bottom wall 16 when in folded position. It will be observed by reference to Fig. 3 that the lower portion of the partition wall 33 is cut away, as at 36 and 37, to accommodate the pivotal ears 30 of the side walls 11 and 12.

As a means for holding the various end, side and partition walls in assembled position, this invention employs pivoted latches, a pair of which applied to the partition wall 33 are illustrated in detail in Fig. 3. The latches for the partition wall 33 are arranged on opposite faces of the partition, as indicated at 39 and in dotted lines at 40. These latches are pivoted to the partition wall, as at 41 and 42, and are arranged to swing upwardly into slots formed in the side walls 11 and 12. The end walls 13 and 14 are equipped with similar latches, the latches of the end wall 13 being designated by the numerals 43 and 44, and the latches of the end wall 14 being indicated by the numerals 45 and 46.

The cover or top of the crate, designated as an entirety in Fig. 1 by the numeral 15, is reinforced by a frame 47, which is nailed or otherwise secured to one face of the top. In this connection it is to be observed that the top may be placed on the edges of the end and side walls with the reinforcing frame 47 either uppermost or lowermost, as the packer may find most desirable. A notch is formed in each corner of the cover 15 and frame thereof, and approximately midway the length of the longitudinal edges of the cover and frame are formed additional notches, these corner and side notches being provided for the obvious purpose of accommodating the terminals of the hinged standards described above as employed in mounting the side walls of the crate.

Reference now being had to the manner in which the walls of the box are folded and unfolded, it will be noted, by observation of Fig. 4, that the partition wall 33, when in folded position, is disposed lowermost within the bed box, and that the end wall 14 is folded so that it lies upon the member 33. It will also be noted that in folded position the wall 12 is arranged next the members 13 and 14, and that the remaining side wall 11 is disposed on top of the member 12, resting on the hinged standards thereof. The cover of the box is placed on the side wall 11 and rests on the three hinged standards thereof. Tie wires 48 and 49 are then wound around the structure to hold the various elements in fixed position while in transit. When reassembling the various elements of the crate, the cover 15 is first removed and the side walls 11 and 12, end walls 13 and 14, and partition wall 33 are successively drawn upward into vertical position. The various latch members in the walls are then inserted through their receiving slots and the goods are then disposed in the two compartments formed by the partition wall, as above described.

It is desirable to emphasize the fact that, while this crate has been designed with particular reference to the needs of egg shippers, it may nevertheless be readily employed in shipping any other goods. When the crate is employed as an egg crate, the egg trays of the usual type may be placed in the two compartments and the eggs placed in the trays in the customary manner. The top or cover 15 is then placed on the crate, as above described, and the tie wires 48 and 49, which are secured to permanent tabs indicated at 50, are then tied to hold the elements of the structure in assembled relation. When the end and side walls are drawn upwardly into vertical position, they abut the molding strips 21 and are thus limited in their upward movement, so that when drawn up as far as possible they are in approximately vertical position and are disposed with the various latches in registering relation to their receiving slots above described.

In reduction to practice, I have found that the form of my invention illustrated in the drawings and referred to in the above description, as the preferred embodiment, is the most efficient and practical; yet, realizing that the conditions concurrent with the adoption of my device will necessarily vary, I desire to emphasize the fact that various minor changes in details of construction, proportion and arrangement of parts may be resorted to, when required, without sacrificing any of the advantages of my invention, as defined in the appended claim.

What I claim is:

A collapsible shipping crate comprising a substantially rectangular bed box, a pair of end walls and a pair of side walls hingedly

mounted within said box and adapted to be disposed interiorly thereof below the upper edges when in folded position, hinges for each of said walls, each of said hinges comprising a stationary rod and a plurality of hinged bars having perforated ears loosely mounted on said rod, said side wall hinged rod being secured in the end walls of the rectangular bed box and spaced from the side walls thereof, said end wall hinge rod being secured in the side walls of said bed box and spaced from the end walls thereof, a hinge partition wall centrally of the end walls, molding strips carried upon the upper edges of the walls of the bed box and extending inwardly with relation to the inner faces of the walls and adapted for engagement with the hinged side and end walls when the walls are in extended position, latches carried by said partition wall and adapted for coöperation with slots in the side wall, latches carried on the end walls and adapted to coöperate with slots in the side walls and said latches adapted to hold the crate in assembled position.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES RITCHIE.

Witnesses:
AUG. SCHEAVONE,
ROBT. A. JACKSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."