A. SOMMERFELD.

COLLAPSIBLE SHIPPING BOX.

APPLICATION FILED JULY 7, 1910.

980,570.

Patented Jan. 3, 1911.

3 SHEETS—SHEET 1.

FIG. 1.

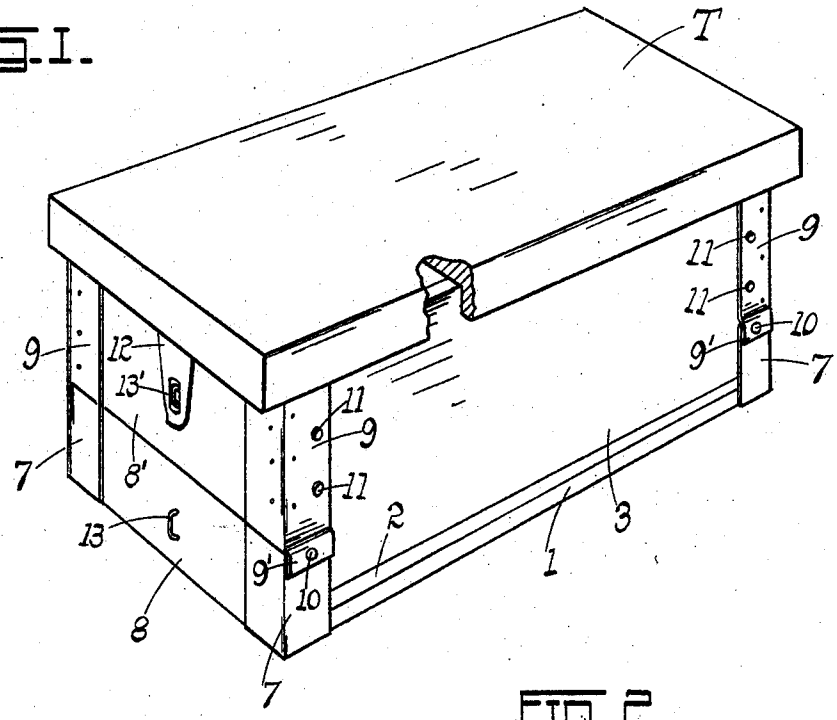

FIG. 2.

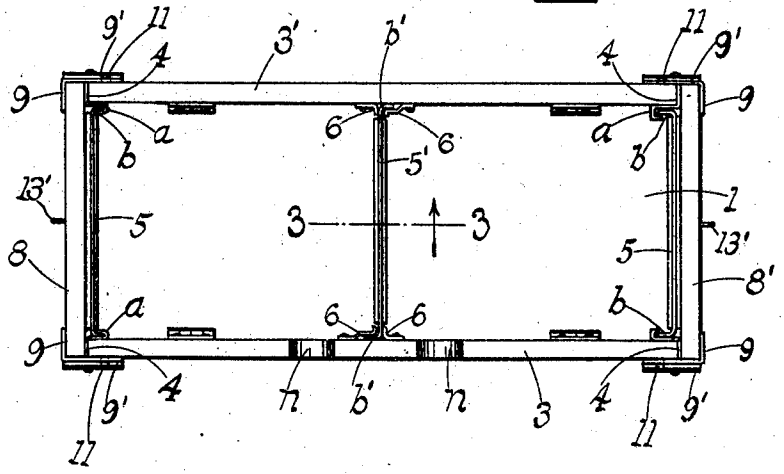

FIG. 3.

WITNESSES:

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Joa Michel

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3 SHEETS—SHEET 2.

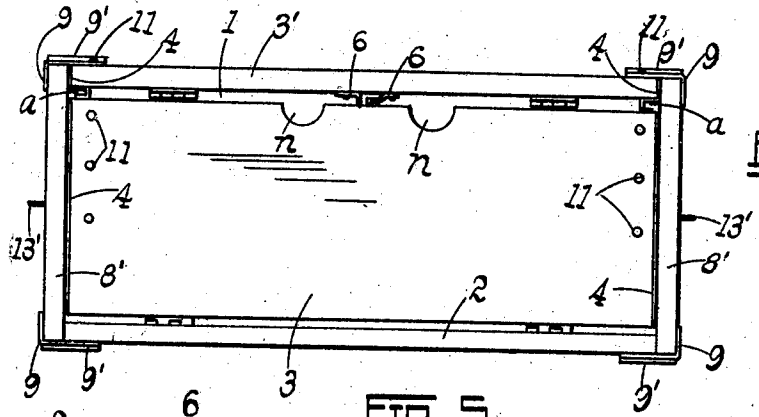

FIG. 4.

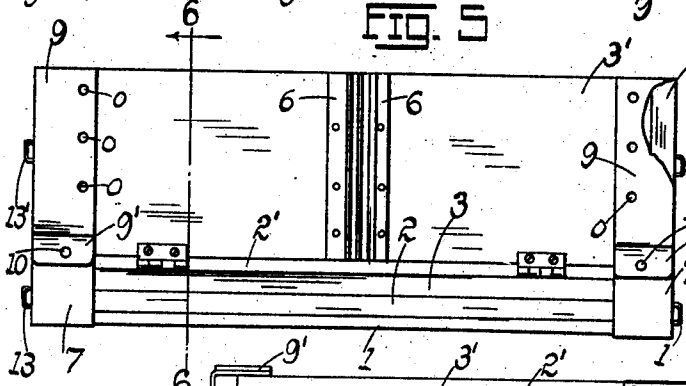

FIG. 5.

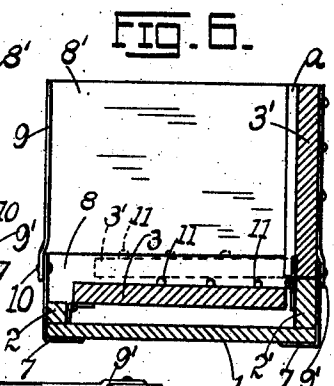

FIG. 6.

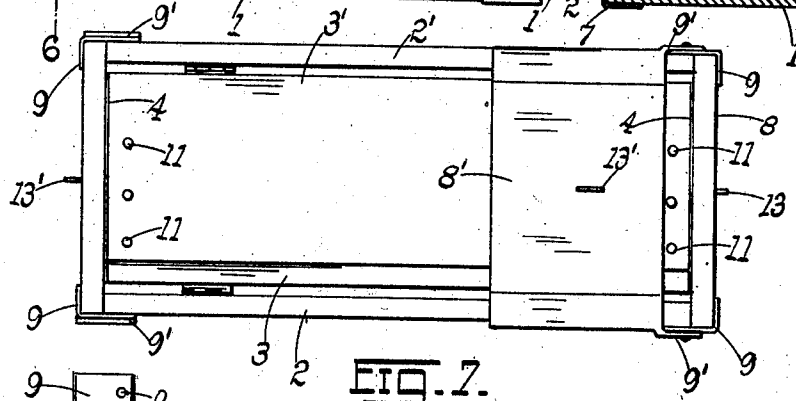

FIG. 7.

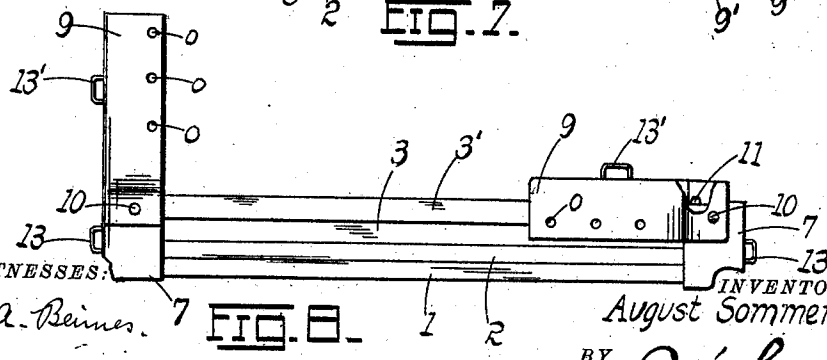

FIG. 8.

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3 SHEETS—SHEET 3.

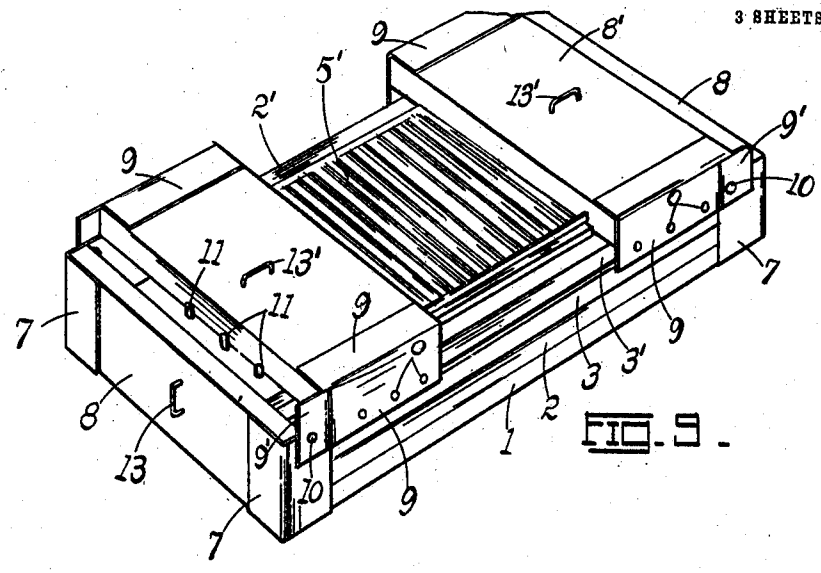

FIG. 9.

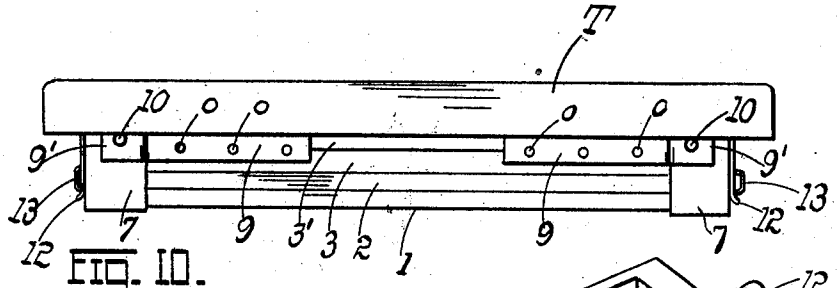

FIG. 10.

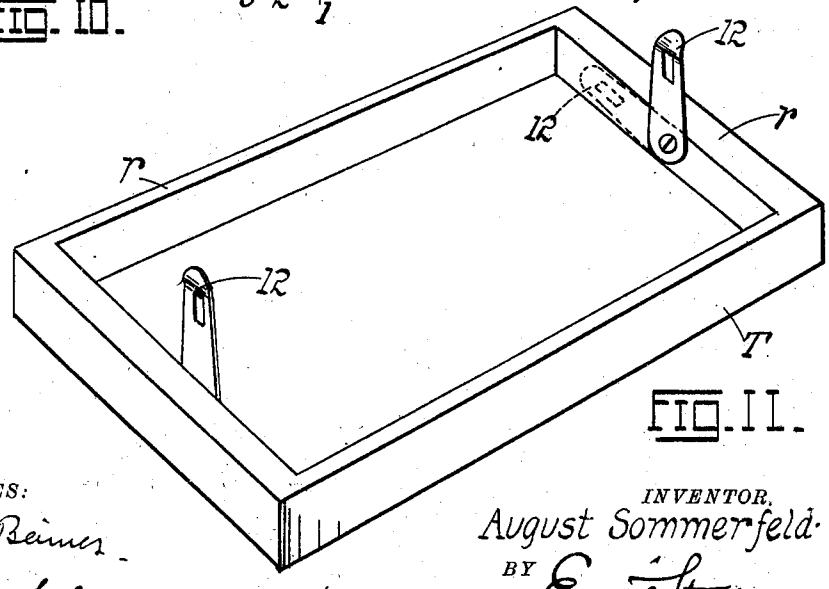

FIG. 11.

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UNITED STATES PATENT OFFICE.

AUGUST SOMMERFELD, OF ST. LOUIS, MISSOURI.

COLLAPSIBLE SHIPPING-BOX.

980,570. Specification of Letters Patent. **Patented Jan. 3, 1911.**

Application filed July 7, 1910. Serial No. 570,788.

To all whom it may concern:

Be it known that I, AUGUST SOMMERFELD, citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Collapsible Shipping-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in collapsible shipping-boxes; and it consists in the novel details of construction more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is a perspective of an egg-shipping box shown unfolded with portion of lid broken; Fig. 2 is a top plan with lid removed; Fig. 3 is a cross-sectional detail on the line 3—3 of Fig. 2, illustrating the corrugated stiffener; Fig. 4 is a top plan with one of the longitudinal or side walls folded; Fig. 5 is an inside elevation of Fig. 4; Fig. 6 is a vertical cross-section on the line 6—6 of Fig. 5; Fig. 7 is a top plan with both side walls and one end wall folded; Fig. 8 is a side elevation of Fig. 7, with parts broken; Fig. 9 is a perspective of all the walls folded, the lid removed, and the stiffener members deposited between the adjacent ends of the folded end walls; Fig. 10 is a side view of the folded box with lid on; and Fig. 11 is a perspective of the lid inverted showing the manner of folding the latches out of the way, or behind the rim-member to which they are pivotally secured.

The object of my invention is to construct a shipping-box which may be folded into a compact form when empty, the principle of its construction applying to boxes having either imperforate or perforate or slatted walls. When the walls are imperforate, the box may be used for shipping commodities which require no air, such as eggs, and the like, and where the walls are perforated or open, it may be used for shipping live poultry, such as chickens, geese, ducks, and the like.

A further object is to provide a box which shall be light, stiff, durable and cheaply constructed, and one possessing further and other advantages better apparent from a detailed description of the invention which in the present illustration shows imperforate walls, and which description is as follows:—

Referring to the drawings, 1 represents the bottom of the box, the same being provided at one longitudinal side edge with a ledge or strip 2 to which is hinged a side wall 3, the opposite side edge being provided with a higher ledge or strip 2′. The relative heights of the strips 2, 2′, are such as to permit the wall 3′ which is hinged to the strip 2′ to fold over the wall 3 when the latter is down (Fig. 6). The free edge of the wall 3 (which is the first to fold down) is provided with notches *n* serving as finger-holds by which the wall is raised after being once folded down. The side edges of the walls 3, 3′, are provided with metal strips 4 which prevent the walls from warping, the said strips being bent first inward and then outward so as to form ways or grooves *a* for the reception of the terminal tongues or flanges *b* of the terminal transversely corrugated stiffener plates 5, the medial portions of the inner faces of the said side walls 3, 3′, being provided with split metal strips 6 forming ways for the insertion of the tongues or flanges *b*′ of the intermediate and similar transversely corrugated stiffener plate or wall 5′ (Fig. 2). At the corners of the bottom 1 are disposed metal corner pieces 7, said corner pieces protecting not only the ledges 2, 2′, but extending sufficiently high to protect the lower stationary sections 8, 8, of the end walls of the box, said sections 8, 8, having hinged relatively thereto the upper sections 8′, 8′, which serve to complete said end walls. At the opposite side edges of the hinged sections 8′ are secured reinforcing angle-pieces 9, one leg of said angle being secured to the outer face of the section 8′, the other leg bearing against and lapping beyond the edge of said section (Fig. 5). The side lapping legs of the angle-pieces 9 terminate in extensions 9′ which through the medium of pins 10 are hinged to the corresponding sides of the corner-pieces 7, said sides being extended sufficiently beyond the ledges 2 and 2′ to permit of the connection. The portions 9′ are exterior to the corresponding portions of the corner pieces 7 to which they are hinged. It follows therefore that the hinged sections 8′ of the end walls oscillate about the common axis of the pins 10, 10, as fully illustrated in the drawings. The box is so proportioned that when the end wall sections 8′, 8′, are folded against the wall 3′, (Fig. 9), the removable stiffeners 5, 5′, may be deposited on said wall 3′ between the folded

sections 8′, 8′ before the lid T is placed in position (Fig. 10). Now, the side lapping legs of the angle-pieces 9 are provided with openings or holes *o* with which engage corresponding pegs or pins 11, disposed on the outer faces of the walls 3, 3′, such engagement locking the walls 3, 3′, to the sections 8′, 8′, for an unfolded position of the parts (Fig. 1), and in practice the row of pegs 11 is removed to such a distance from the adjacent terminal edge of the wall 3′ that when the said wall 3′ has been folded down, and the sections 8′, 8′, have been folded over it, the pegs 11 just clear the hinge edges of said sections 8′, 8′, so that the pegs do not embed themselves into the wood of which the said sections are composed (Figs. 7, 9). Of course, the pegs 11 on the first folded side wall 3 (Fig. 6) simply bear against the adjacent face of the wall 3′ when the latter has been brought down.

The lid or cover T is provided with usual marginal flanges or a rim *r* on the inside of which at opposite ends are pivotally secured latches 12, the same being made to engage staples 13 on the fixed sections 8 of the end walls when the box is folded (Fig. 10), or corresponding staples 13′ on the hinged sections 8′ when the box is unfolded (Fig. 1). Thus the box may be locked when unfolded to ship any desired commodity, and it may be locked when collapsed or knocked down when shipped empty. When unfolded the several walls are locked rigidly to one another and held against collapse by the stiffener members or plates 5, 5′. The pins 11, by engaging the holes *o* likewise make the proper locking engagement between the walls 3, 3′, and sections 8′, 8′.

When the lid T is not in use, the latches 12 may be folded out of the way behind the rim *r* as shown in dotted position in Fig. 11.

Having described my invention, what I claim is:—

1. A collapsible shipping box comprising a bottom, side ledges of unequal height secured to said bottom, side walls hinged to said ledges and successively foldable against the bottom, terminal fixed sections secured to the bottom, complementary hinged sections secured above the fixed sections and foldable against the top folded side wall, the latter being provided with stiffening strips secured to the terminal edges thereof to prevent warping, said strips being brought against the inner faces of the side walls and bent to form grooves, stiffener plates terminating in tongues for engaging said grooves for an unfolded position of the side walls, and means for preventing collapse of the side walls at an intermediate point on the box.

2. A collapsible shipping box comprising a bottom, side ledges of unequal height secured thereto, side walls hinged to said ledges and successively foldable against the bottom, terminal fixed end sections, complementary sections hinged relatively thereto and foldable against the exposed folded side wall, corner pieces secured to the bottom and to the ledges and fixed terminal sections aforesaid, angle pieces secured to the end foldable sections and having legs lapping beyond the edges of said foldable sections, said lapping legs being provided with basal extensions pivotally secured to the corresponding members of the corner pieces, said lapping legs of the angle pieces being provided with openings, pegs on the side walls for engaging said openings for an unfolded position of the box, the pegs being removed from the adjacent terminal edges of the side walls to clear the hinge edges of the terminal foldable sections when the latter are folded against the exposed folded side wall, substantially as set forth.

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

AUGUST SOMMERFELD.

Witnesses:

EMIL STAREK,

JOS. A. MICHEL.