

Sept. 7, 1943.

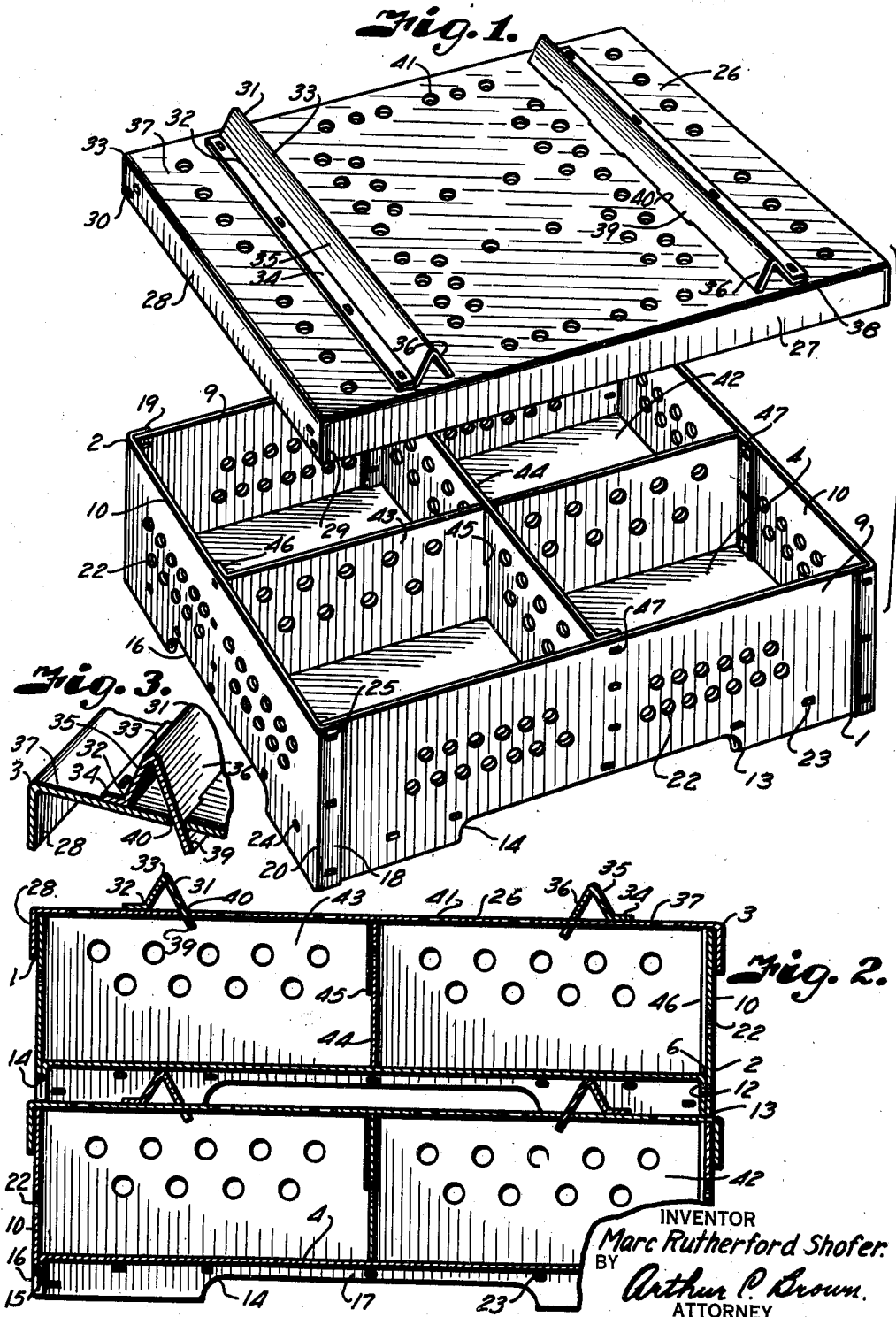
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BOX FOR TRANSPORTING BABY CHICKS AND THE LIKE

Filed Nov. 17, 1941

2 Sheets-Sheet 1



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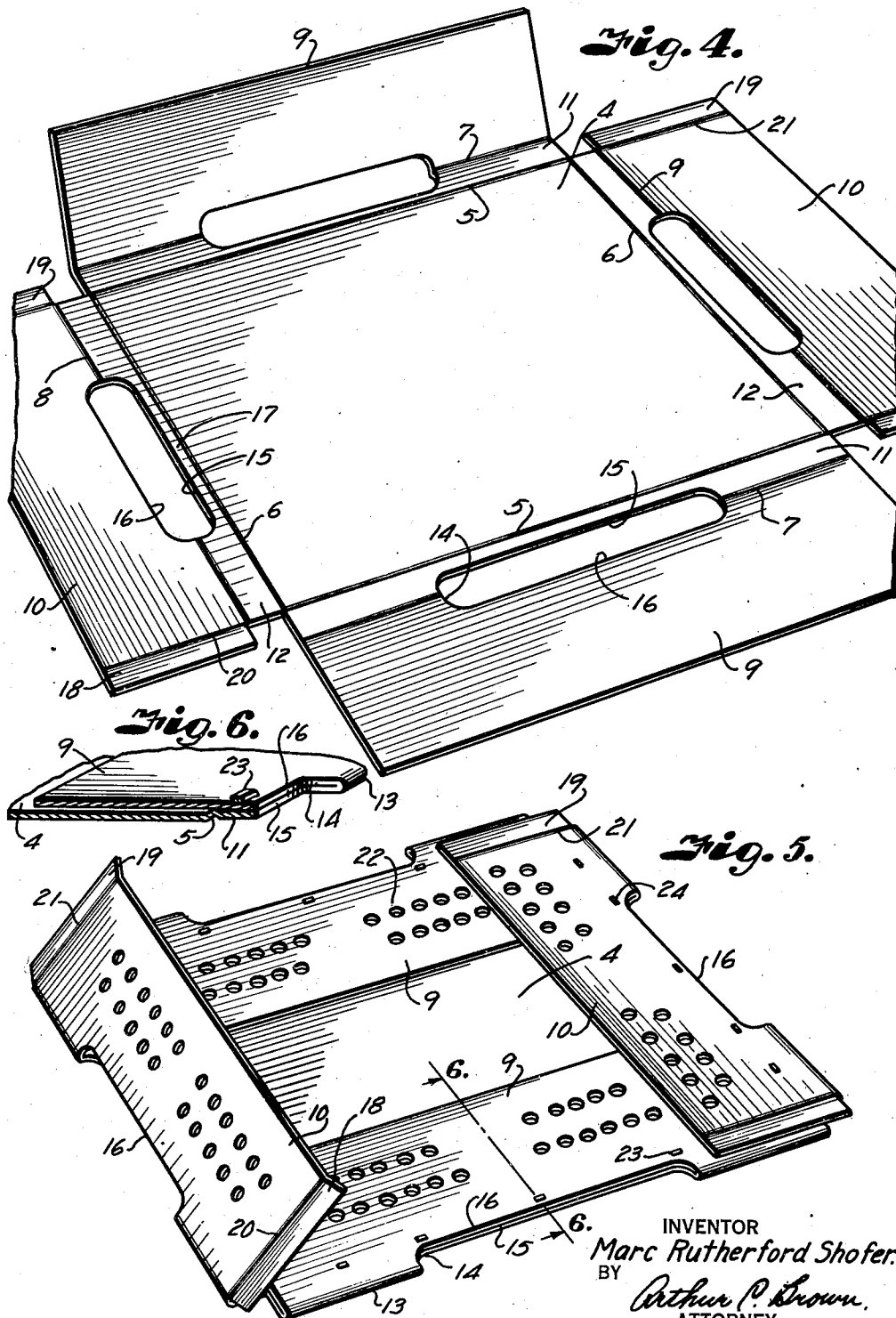
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2 Sheets-Sheet 2



INVENTOR
Marc Rutherford Shofer.
BY
Arthur P. Brown.
ATTORNEY

UNITED STATES PATENT OFFICE

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BOX FOR TRANSPORTING BABY CHICKS
AND THE LIKE

Marc Rutherford Shofer, Keokuk, Iowa, as-
signor to Iowa Fiber Box Company, Keokuk,
Iowa, a corporation of Delaware

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8 Claims. (Cl. 229-16)

This invention relates to boxes, particularly those for transporting baby chicks and the like which require ventilation and protection, regardless of weather conditions and the manner in which the boxes may be handled during transport from the hatchery.

It is well known that shipping of baby chicks is a vexatious problem to hatcherymen and many attempts have been made to provide boxes with features for assuring safe delivery of chicks such as equipping boxes with inset bottoms for elevating the chicks and providing insulation space over hot, cold, or wet surfaces on which the box might be placed in transit; equipping the boxes with ventilation safe-guards so as to avoid shutting off ventilating openings in any side of the box; equipping the boxes with means to prevent sliding of one box from the other when the boxes are tiered; and forming the boxes of special fibre stocks. While these improvements have aided in solving some of the problems, they result in greatly increased cost of construction and necessitate erection at the factory. Consequently they are bulky and the cost of transporting the empty boxes from the factory to the hatchery is increased and the storage thereof is a problem.

It is, therefore, the principal object of the present invention to provide a strong, light weight box construction which provides the desired features necessary for amply protecting the chicks and which may be inexpensively manufactured and shipped from the manufacturer to the hatcheries in knocked down form.

Other objects of the invention are to provide a chick box structure wherein the body section, including the side, ends, and bottom, are formed of a single sheet of material, folded in such manner as to inset the bottom above the lower edges on which the box is normally supported; to provide notch-like portions in the lower edges of the box for the admission of air to the top openings of a lower box when the boxes are stacked one upon another; to provide the top of the box with attached cleats of simple, inexpensive construction which may be shipped in flat condition and readily erected to cooperate with the space formed by the inset bottom of an upper box to prevent sliding thereof when the boxes are tiered; and to provide a box construction which permits passing of a cord around a tier of boxes to draw them tightly one against the other and still provide for admission of air between the boxes.

A further object of the invention is to pro-

vide a chick box with an inset bottom having smoothly rounded edge faces on the base thereof to avoid catching of the supporting edges on irregular surfaces.

In accomplishing these and other objects of the invention, as hereinafter pointed out, I have provided improved structure, the preferred form of which is illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of a chick box constructed in accordance with the present invention, the lid being shown in spaced relation with the body of the box.

Fig. 2 is a vertical section through a stack of boxes showing the ease with which they may be tiered and tied together one against the other and yet provide for passage of air therebetween.

Fig. 3 is a fragmentary perspective section of the lid, particularly illustrating the construction of one of the cleats.

Fig. 4 is a perspective view of the blank used in forming the body of the box.

Fig. 5 is a perspective view of the blank folded and with the portions forming the side and end walls stapled to the body of the blank to provide the inset bottom when the sides and ends are unfolded, one of the end walls being shown prior to stapling thereof.

Fig. 6 is a perspective section on the line 6-6 of Fig. 5.

Referring more in detail to the drawings:

1 designates a chick box constructed in accordance with the present invention and which includes a body section 2 and a removable lid 3. The body section 2 of the box illustrated is formed of a single sheet of material such as corrugated board or equivalent relatively inexpensive light weight stock having sufficient strength to be self-supporting when folded to form the box structure.

The blank includes a substantially rectangular central portion 4 defined by inner longitudinal and transverse fold lines or scores 5 and 6 and spaced outwardly therefrom are parallel fold lines or scores 7 and 8 extending across wings having sufficient depth to form the sides 9 and ends 10 of the box having base flanges 11-12 which are defined by the portions of the blank between the score lines 5-7 and 6-8. The score lines 7 and 8, when folded, form smoothly rounded edges 13 on which the body of the box is supported.

In order to provide for admission of air under the box, the portions of the blank forming the sides and ends 9 and 10 and flanges 11 and 12

are provided with substantially elongated slots 14 having their longitudinal median lines substantially coinciding with the outer score lines so that the longitudinal edges 15 and 16 of the respective slots are equally disposed on their respective sides of the score line with the inner edges 15 spaced outwardly from the inner score lines 5 and 6 to leave a stapling portion 17 therebetween. The slots may be of any suitable length but terminate short of the corners to provide ample footing for the box. The portions forming the end walls of the box are provided with lateral extensions 18 and 19 defined by score lines 20 and 21 in alignment with the score lines 5 adapted to overlap the outer faces of the side walls including the base flanges and be secured thereto as later described. The portions of the blank forming the ends and sides are provided with apertures 22 for providing ventilation through the respective sides of the completed box, later described.

The blank thus described is folded on score lines 7 by bringing the sides into face contact with the central portion 4 of the blank forming the bottom of the box, as shown in Fig. 5. Staples or other fastening devices 23 are then passed through the side extensions securing them to the flange portions 11 of the blank. The ends 10 are then folded on the score 8 so that they overlie the ends of the folded sides 9 as shown in Fig. 5. The ends are then stapled to the portions 12 of the blank close to the score 6 but missing the end edges of the folded-over sides 9, the staples being indicated at 24. Blanks thus folded and stapled are shipped to the hatchery, thereby reducing the cost of transportation. When the folded and stapled blanks are received, it is only necessary to lift the folded-over sides and ends from the central portion 4 and due to the fact that the staples 23 and 24 secure the ends and sides to the flange forming portions 11 and 12, bends are effected along the score lines 5 and 6 which effect insetting of the bottom and formation of the supporting or base flanges of the box. The lateral extensions 18 and 19 are then folded over the ends of the side walls and secured by staples or similar fastening devices 25, as shown in Fig. 1.

The lid 3 of the box is of substantially conventional construction in that it comprises a top 26 having side and end flanges 27 and 28 adapted to engage over the ends and sides of the body of the box with the top resting upon the upper edges thereof as shown in Fig. 2. The end flanges are secured to laterally extending ears 29 on the ends of the side flanges 27 by staples or similar fastening means 30. The lid of the box is provided with cleat members 31 that are formed of sheet material similar to that from which the body of the box is constructed, and are of substantially strip-like form longitudinally scored as at 32 and 33 to provide an attaching flange 34 and rib forming portions 35 and 36 which form ribs 37 having height substantially conforming to the depth of the base flanges 11-12. The attaching flanges 34 of the cleats are applied on the top face of the lid in spaced relation with the ends thereof, as shown at 27, and the ends of the cleats terminate so that they form supporting portions 38 at the ends thereof.

In order to support the cleats, the unattached rib forming portions 36 are provided with tongues 39 adapted to project through slots 40 that are formed in the top of the lid, as best shown in Fig. 3. With this construction the box lids may

be shipped with the cleats in flat condition and prior to use of the box the cleats may be readily folded on the score lines 32 and the tongues 39 thereof moved into engagement with the slots 40 to form substantially rigid cleats with a minimum of material and weight.

The top is also provided with perforations 41 for ventilating the interior of the box. The interior of the box is preferably divided into compartments 42 by partitions 43 and 44, the partitions being provided in the centers thereof with interengaging slots 45 and the ends of the partitions are provided with flanges 46 whereby they may be secured to the sides and ends of the box by fastening devices such as staples 47.

A chick box constructed and assembled as described is of exceptionally strong construction for the weight thereof incidental to the strengthening effect produced by formation of the base flanges 11 and 12 which produce the inset bottom when the box is erected. The inset bottom also provides for spacing of the chicks therein from hot, cold, or wet surfaces on which the box may be inadvertently placed so that the air space thereunder protects the chicks from ill effects. The base flanges 11 and 12, being folded as described, have ample strength for supporting substantial weight so that filled boxes may be stacked in tiers, as shown in Fig. 2, without danger of crushing the lowermost boxes. When the boxes are thus tiered the rounded edges 13 of the base flanges 11 and 12 are supported on the marginal edges of the lid 3 of the next lower box as shown in Fig. 2, and due to the fact that the ends of the cleats 31 closely engage the base flanges 12 at the sides of the box, one box cannot slip laterally relative to the other box. One box may slide longitudinally of the next lower box, but the foot portions formed at the ends of the base flanges are of sufficient length to prevent the inner edges thereof from sliding off the end of the next lower box when the base flanges at the opposite end engage the cleat at that end of the box.

When the boxes are to be shipped in stacked relation, a cord (not shown) or other securing means, may be passed therearound so that the base flange of one box is drawn into close clamping contact with the lid of the adjacent box and the ridge portions of the cleats into contact with the bottom of the next upper box thereby preventing relative movement between the boxes without danger of crushing one box against the other or closing the air spaces therebetween.

It is obvious that I have provided a chick box structure which is of substantially inexpensive but strong construction, and which may be shipped to the hatchery in knocked down condition but is readily erected at the hatchery. It is also obvious that the box has all the features necessary to protect the chicks adequately regardless of weather conditions during shipment.

What I claim and desire to secure by Letters Patent is:

1. A box of the character described including, a sheet of foldable material having inner and outer parallel folds spaced apart forming a bottom within said inner folds, marginal base flanges between the inner and outer folds and upstanding wall members, and means securing adjacent wall members together to close the corners of the box, at least two of said base flanges and wall members having openings arranged therein with edges thereof in substantial registry when the sheet is folded to provide ventilation through

the base flanges for space under said bottom.

2. A box of the character described including, a single sheet of foldable material having inner and outer parallel, longitudinal and transverse folds spaced apart forming a substantially rectangular bottom within said inner folds, marginal base flanges between the inner and outer folds and upstanding side and end members, and means securing adjacent end and side members together to close the corners of the box, said sheet having elongated openings with their longitudinal median points substantially registering with the outer of said folds to form notches in the base flanges for ventilating space under said bottom.

3. A box of the character described including, a single sheet of foldable material having inner and outer parallel, longitudinal and transverse folds spaced apart forming a substantially rectangular bottom within said inner folds, marginal base flanges between the inner and outer folds and upstanding side and end members, means securing adjacent end and side members together to close the corners of the box, said sheet having elongated openings with their longitudinal median points substantially registering with the outer of said folds and forming notches in the base flanges for ventilating space under said bottom, and fastening means securing side and end members to the base flanges.

4. A knocked down box including, a single sheet of board having inner and outer parallel, longitudinal and transverse scores, with the inner scores defining a bottom and the outer scores the sides and ends of the box, said side and end members being folded on said outer scores to lie substantially against said bottom, selected members having end flanges projecting from the plane thereof and adapted to be folded when the box is erected to close the corners of said box, and fasteners extending through the side and end members and the portions between the inner and outer scores, said flanges being of a length to lap said portions between the inner and outer scores when the box is erected.

5. A box of the character described including, a sheet of foldable material having inner and outer parallel folds spaced apart and forming a bottom within said inner folds, marginal base flanges between the inner and outer folds and side walls, and means securing adjacent side

walls together to close the corners of the box, said sheet having elongated openings with their longitudinal median points substantially registering with the outer of said folds to form notches in the base flanges for ventilating space under said bottom.

6. A box of the character described including, a sheet of foldable material having inner and outer parallel folds spaced apart and forming a bottom within said inner folds, marginal base flanges between the inner and outer folds and side walls, means securing adjacent side walls together to close the corners of the box, said sheet having elongated openings with their longitudinal median points substantially registering with the outer of said folds to form notches in the base flanges for ventilating space under said bottom, and fastening means securing the side walls to the base flanges.

7. A box of the character described including, a sheet of foldable material having inner and outer parallel folds spaced apart and arranged to form a bottom within said inner folds, marginal base flanges between the inner and outer folds and side walls, means securing adjacent side walls together to close the corners of the box, said means including extensions on the ends of selected walls of a height to lap the end of an adjacent wall including the base flange complementary to said wall, fastening means securing side and end members to the base flanges, and partitions connecting opposite side and end members above the base flanges.

8. A box including, interconnected side and end walls, an inset bottom having integral connection with the lower edges of the side and end walls to form double thickness base flanges connected together at corners of the box and cooperating with the bottom in forming an insulating space under said bottom, said base flanges on opposite sides of the box having notches intermediate ends thereof, a lid for said box, and cleats spaced on said lid a distance greater than the lengths of said notches whereby the cleats on a similar box engage in said space with the ends of said cleats engaging the base flanges at points intermediate the connected corners and the ends of the notches to prevent one of the boxes from sliding off one another when the boxes are tiered.

MARC R. SHOFER.