Dec. 24, 1935. N. F. SCHAEFER 2,025,310

KNOCKDOWN BROODER AND PACKAGE THEREFOR

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FIG. 1

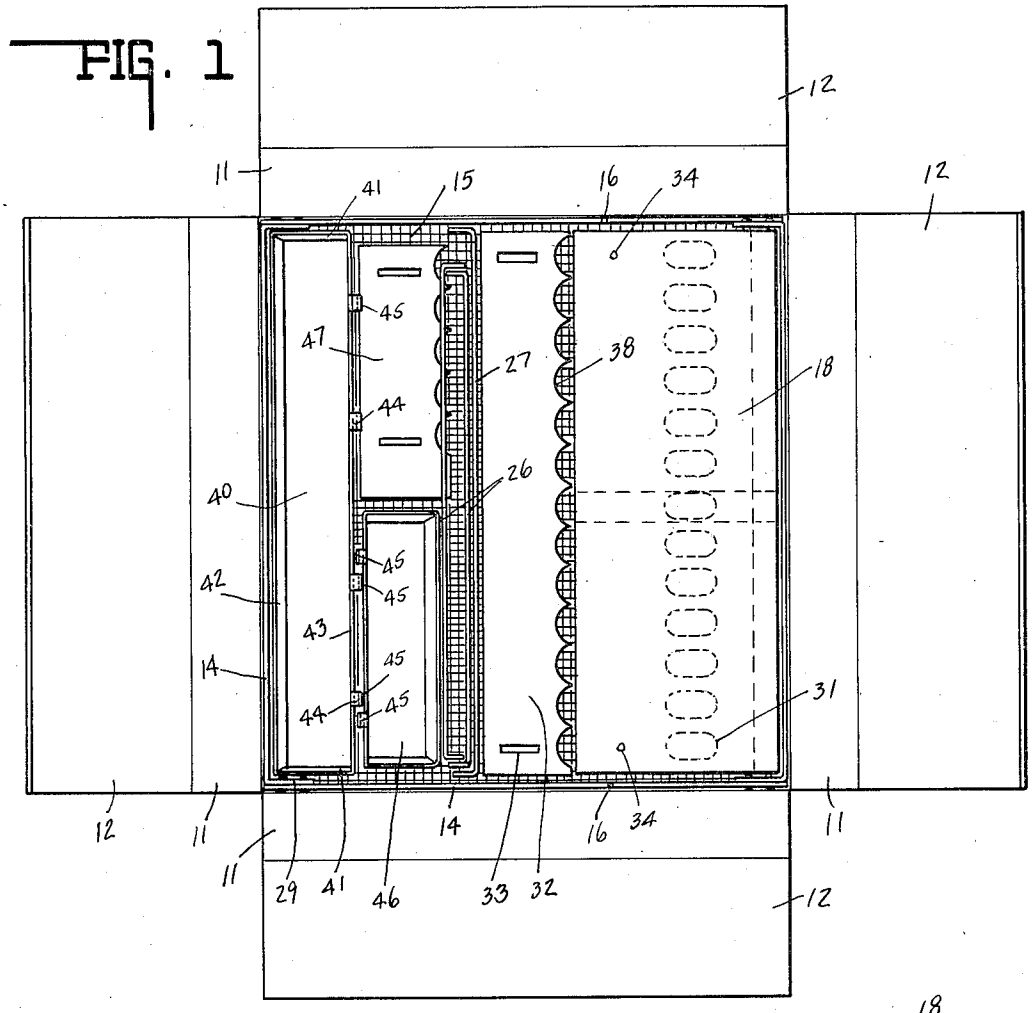


FIG. 2

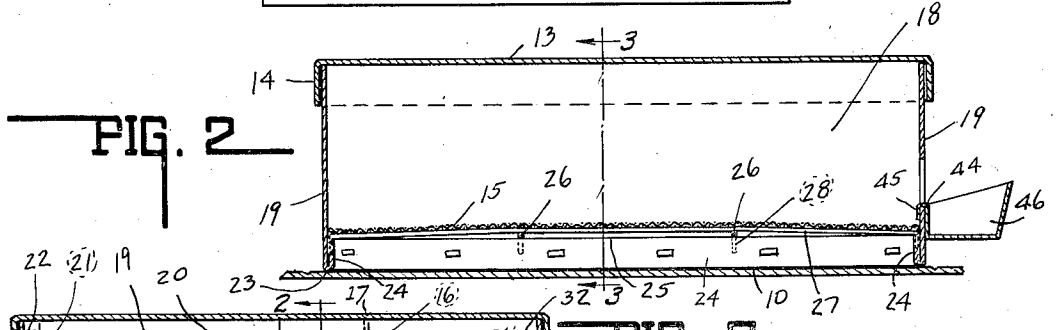
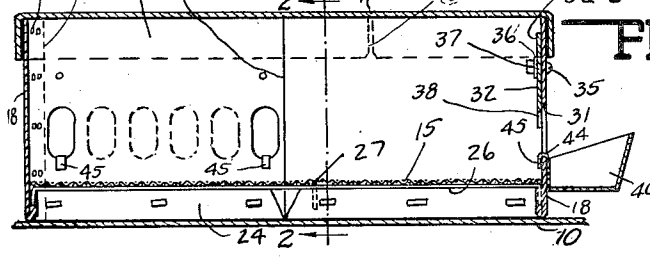


FIG. 3



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FIG. 4

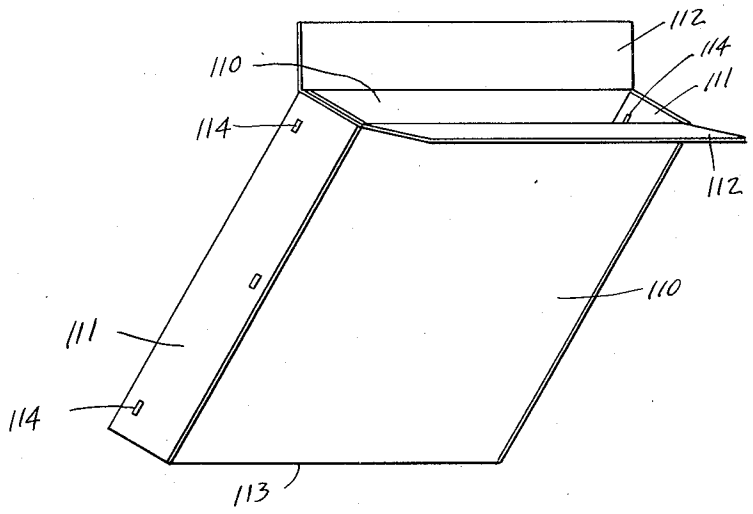
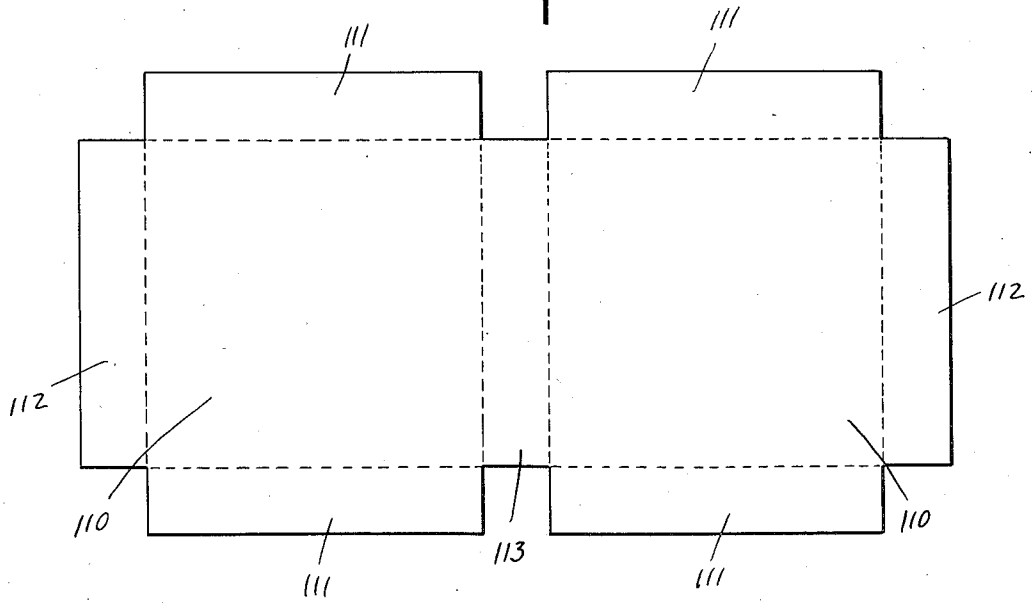


FIG. 5



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Patented Dec. 24, 1935 2,025,310

UNITED STATES PATENT OFFICE

2,025,310

KNOCKDOWN BROODER AND PACKAGE THEREFOR

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Application June 17, 1932, Serial No. 617,722

1 Claim. (Cl. 119—19)

This invention relates to a shipping package adapted to contain a knock-down or collapsible brooder.

For shipping purposes, weight is important; consequently the parts, unless otherwise noted hereinafter, are of paper board stock and preferably of a corrugated paper board stock.

One object of the invention is to ship in an economical manner, single brooders in the knock-down so that they may readily be assembled and the shipping container is of such character that it may be subsequently utilized as a dropping pan therebeneath.

One feature of the invention consists in the formation of the brooder of knock-down character and of a minimum number of parts and these readily associated together.

Another object of the invention is to arrange the brooder so that it may be initially used for very small chicks and then continue to be used until the chicks are several weeks old. In other words, the effective area of the feeding and watering openings is adjustable.

Another feature of the invention consists in the self sustaining character of the knock-down brooder when assembled in brooder formation.

The full nature of the invention will be understood from the accompanying drawings and the following description and claim:—

In the drawings, Fig. 1 is a top plan view of the package with the parts in nested relation therein, portions of the cover being turned back to expose said parts.

Fig. 2 is a longitudinal and vertical sectional view taken through the short side of the brooder and in the plane defined by line 2—2 of Fig. 3 and in the direction of the arrows.

Fig. 3 is a similar view taken through the long side of the brooder and is at right angles to Fig. 2 and in the plane defined by line 3—3 of Fig. 2 and in the direction of the arrows.

Fig. 4 is a perspective view on a small scale, of a form of carton adapted to provide two bottom covers to permit reception of two brooders in the knock-down.

Fig. 5 is a plan view of the blank suitable for the same.

In the drawings 10 indicates a cover bottom of the desired outline and dimensions, herein the same being shown rectangular. Integral with the bottom 10 are the sides 11 and integral therewith are the flaps 12. These are connected to the bottom by scored arrangements. It will be apparent that when the sides are turned upwardly and the flaps are turned inwardly in spaced and overlapped relation to the bottom, there is provided a shipping container.

The width of the sides 11 is slightly greater than the thickness of the brooder top 13 plus the depth of the flange, or rim 14 thereof.

As shown in Fig. 1, the top is inverted and nested within the same is a metallic screen 15 of open mesh character and having considerable rigidity, particularly with reference to its peripheral outline. The top 13 has its flange 14 at opposite sides slit or partially slit as at 16 and the top includes a scoring 17 extending completely across the same and uniting said slit or scored portions 16 of the flange 14. The purpose of this is to form a hinged top arrangement.

A tubular collapsible side wall structure includes the two long sides 18 and the short sides 19 connecting the same. The short sides 19 include an intermediate scoring 20 so that the two half-sides 19 may be folded inwardly towards each other and lie adjacent and within the side walls 18, thus forming a structure which has the overall length equivalent to the length of the side 18; the width equal to the depth of the side 18 and the thickness equal to the thickness of the four collapsed side walls plus such additional thickness as is required by the shoulder formation when utilized and hereinafter to be specified. It is to be understood that the combined thickness of the collapsed side wall structure is less than the depth of the rim or flange 14, so that the same may be nested within said cover proper including top 13 and flange 14, as shown in Fig. 1.

As shown clearly in the several figures, one short and folded side wall and one long side wall preferably are formed integral and are connected at the corner by a scored connection. The two wall portions overlapping as at 21—see Fig. 2—are united together by stapling 22, or the like. Herein each bottom edge 23 of each side wall includes an upward extension 24 terminating in a shoulder 25 that lies along the inside of each side wall.

The screen which is metal and of relatively rigid character, is initially of slightly greater area than the interior of the side wall structure when extended into side wall formation and the excess is turned back so as to form a protected edge. The screen when completed is of substantially the same area as the side wall interior. The screen may, if desired, be placed in the side wall structure when expanded and pressed downwardly until it bears upon said shoulder structure. This prevents inward collapse of the side wall structure. The top when mounted on the top

edge of the extended side wall structure prevents outward expansion of the side wall and thereby forms a complete container with top, bottom and side walls.

The flaps 12 and the sides 11 may, if desired, be removed from the bottom 10 and the bottom 10 may be utilized as a dropping pan by being positioned beneath the brooder and if desired, newspapers, or the like, may be placed upon the bottom so that the droppings will collect thereon and may be readily removed by the removal of the newspapers.

The top may be provided with ventilating openings of the usual character, that is semi-die punched, and these are readily removed by pressing out the same. The number of holes punched out determines the amount of ventilation.

If the shoulder construction before mentioned be not sufficient to sustain the screen and prevent its bowing downwardly and ultimate dropping, reenforcing rods may be utilized and herein three rods are shown, two extending across the width of the brooder and one extending across the length thereof. Herein the short rods are indicated by the numeral 26 and the long one is indicated by the numeral 27. Each of the wires or rods at each end includes an angular extension 28. Any suitable detachable anchorage may be provided in the side wall receiving these angular ends or their equivalents.

Inasmuch as the preferred material is corrugated paper board and inasmuch as the corrugations extend vertically in the side wall structure, there will be a pluraltiy of vertical recesses in the upstanding reenforcing flange 24 exposed at the shoulder forming portion 25 thereof and the ends 28 are seatable in said recesses. When the upturned portions 24 are not employed, other forms of anchorage for the rods 26 and 27 may be provided, and in this event, the peripheral shoulder supporting the screen may or may not be associated therewith.

In the present form of the invention, the arrangement is such that the intermediate portions of the screen are supported by the transversely arranged rods 26 and 27 and the peripheral portion of the screen is supported by the shoulder 25, forming a platform for the chicks, capable of sustaining considerable weight theeron.

As shown clearly in Fig. 1, the cover proper includes not only the top 13 but the independent flange portions 14, the same being secured together in overlapping relation at the corners, as at 29—see Fig. 1—to form the rim or flange 14.

The side wall structure, as shown clearly in Figs. 1 and 3, includes a plurality of perforated elongated openings 31. These are arranged in longitudinally spaced relation so that when the side wall is assembled in side wall formation, these are arranged in horizontal and spaced relation and the elongations extend vertically. The elongation is sufficient to accommodate relatively large chicks four or five weeks old. Chicks which are two or three days old are of such size that they can readily pass through openings provided to accommodate passage of the heads of four or five weeks old chicks. Accordingly, means are provided for adjusting the size of these openings.

Herein each side wall is provided with elongated removable portions which when removed, form openings 31 and adjacent thereto there is provided an adjusting or guard plate 32 which at each end is semi-perforated as at 33 to indicate elongated slots. Removal of these portions forms elongated slots. The side walls are also provided with openings 34. Bolts 35 mounted in the openings 34 extend through the same and through the slots 33 and a washer 36 and a nut 37 on said bolt serve to clampingly secure the guard 32 to the interior side wall of the brooder so that the guard notched edge 38 is adapted to register with the openings 31. Of course, when the chicks are but one or two days old, the guard plate will be secured in its lowermost position. The use of the slot prevents complete dropping of the guard plate and thus prevents the accidental complete closure of the feeding and watering openings. When the bolts are positioned in the bottom of the slot 33, the openings 31 are exposed for maximum effective opening.

As shown clearly in Figs. 2 and 3, one side wall, and herein one wall 18, is provided with the series of openings 31. These constitute the feed openings. Half of one of the sides 19 is similarly provided as shown in Fig. 3 and these constitute the watering openings.

Since the feed and water troughs or pans are substantially similar and their method of mounting is identical, a description of one will suffice for both.

As shown clearly in Fig. 1, the feed trough 40 includes upwardly and outwardly diverging ends 41, the upwardly and outwardly directed front wall 42 and a back wall 43. Extending from the back wall are a plurality of spaced projecting arms 44 which terminate in downwardly extending ends 45. The overall length of the feed trough 40 is slightly less than the overall length of the top and, therefore, trough 40 is nestable therein as shown in Fig. 1. Thus the feed trough by reason of this dimension is substantially equal to the full length dimension of the side wall structure.

The hooks 44—45 are passed laterally through the openings 31 and then the pan is lowered until the hooks seat in the lower portion of certain of the openings 31 and in this manner, the back wall 43 serves as a brace against the side wall structure and the feed trough or pan is supported by the adjacent side wall.

The water trough, which is shown approximately half the length of the feed trough and indicated by the numeral 46 in Fig. 1, is similarly mounted as shown in Fig. 3. The preferred nesting arrangement of the feeding guard 32 and the watering opening guard 47 and the respective rods 26 and 27, the pans and the side wall in collapsed arrangement, is shown in Fig. 1.

The screen, it will be noted, is positioned below the parts shown and above the inverted top which is nested in the cover which serves as the body of the shipping container.

In Figs. 4 and 5 of the drawings, there is illustrated a carton which is arranged to provide two bottoms of sufficient area to permit the use of either or both for dropping pan purposes for one or a pair, respectively, of brooders. In said figures, 110 indicates the two larger sides that are adapted to serve as the dropping pan. 111 indicates overlapping ends secured together by clips or staples 114 in the usual manner. 112 indicates two overlapping ends that are subsequently sealed in overlapping relation when a plurality of brooders are positioned in the carton, it being understood that the brooder in the knock-down is associated with its cover and then the cover is slid into the carton compartment. 113 indicates a connection between the sides 110 of the carton and the same forms the bottom of the

carton and is positioned oppositely to the portions 112.

The invention claimed is:—

A collapsible rectangular brooder and the like, comprising a top having a flanged rim, a metallic relatively rigid outlined screen of less area than the top, a tubular, collapsible side wall construction of corrugated paper board and having no side of greater length than the greatest length of the top and nestable when collapsed in said top, said screen being of slightly less area than the side wall construction when extended, said screen and top engaging the side wall construction interiorly and exteriorly respectively for brooder formation maintenance, and a plurality of elongated members of dissimilar length and substantially that of the length and breadth of the side wall construction and having angular ends and detachably associated therewith for supporting said screen, said side wall construction near its bottom edge and upon the inside including integral and upwardly directed portions providing apertured shoulder means for supporting the periphery of said screen and nesting said angular ends.

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