

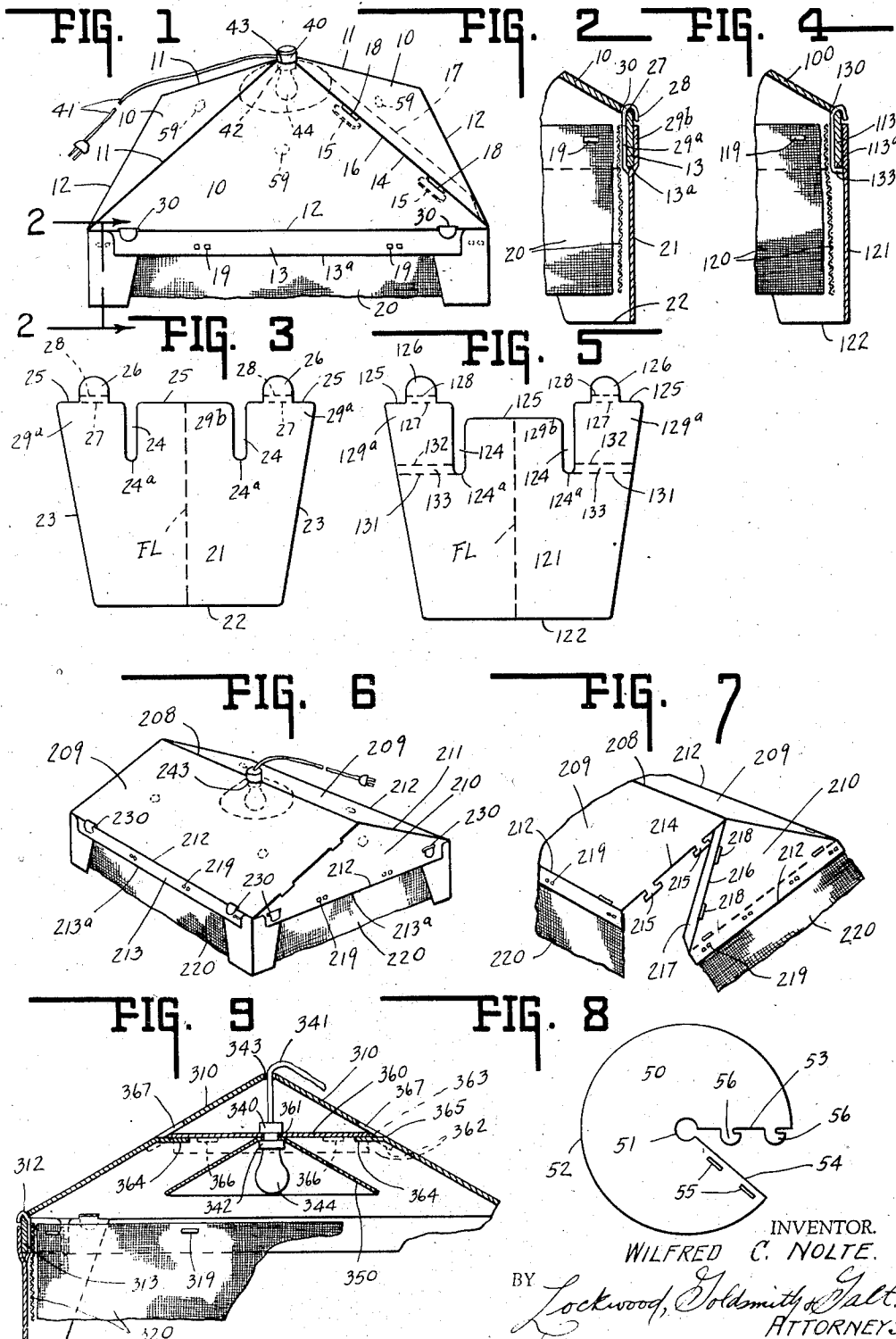
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BROODER CONSTRUCTION

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BROODER CONSTRUCTION

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This invention relates to an electrical brooder. The chief object of this invention is to provide a comparatively inexpensive brooder which may be electrically heated as by means of a lamp bulb or other suitable electrical heater.

The chief object of this invention is to provide a brooder of the character indicated and of the desired capacity and which can be shipped knockdown and readily assembled by the purchaser, such brooder being maintained at the desired temperature by utilizing lamp bulbs of different sizes, as hereinafter pointed out.

Another object of this invention is to provide a brooder of the character indicated which can be fabricated from a single sheet of corrugated board and which when properly folded and with its parts suitably interlocked together, provides a brooder structure to which may be secured feet at the corners for supporting the corrugated board portion in spaced relation to the floor or other brooder supporting surface.

The chief feature of the invention consists in the provision of independent flaps on the several sides of the brooder structure proper and in interlockingly associating therewith and with the adjacent portions of the brooder at the corners, a foot or leg structure which is adapted to secure the adjacent ends of the adjacent flaps together in proper angular relation as well as in depending relation with respect to the main body portion of the brooder and which leg will also support the main body portion of the brooder with the flaps in elevated relation as is required for brooder operation.

A supplementary object of the invention is to provide a false ceiling and detachably associate the same with the main brooder body portion, said false ceiling suitably supporting a separable bulb socket for positioning the lamp bulb initially closer to the bottom of the brooder when the chicks to be brooded are very young. As the chicks grow and require more head room, the false ceiling may be removed and the separable bulb socket and bulb then may be associated with the central uppermost portion of the main brooder structure. The brooder parts of the ceiling interlocking arrangement therefore utilized for anchoring purposes may be repositioned for ceiling purposes. In this connection it is to be noted that the angular leg structure at the corners serve to maintain the brooder portions providing the locking elements in locking position so that accidental escape or detachment of the false ceiling cannot occur.

Another feature of the invention consists in

providing a somewhat conical type, metallized, heat resisting and reflecting reflector and suitably associating the same with the separable socket so that the heat from the lamp bulb will be directed downwardly from said bulb and the false ceiling or the upper portion of the main brooder structure will be protected from excessive heating.

Other objects and features of the invention will be set forth more fully hereinafter.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing,

Fig. 1 is a perspective view of a polygonal brooder structure embodying the invention.

Fig. 2 is an enlarged transverse sectional view taken on line 2—2 of Fig. 1 and in the direction of the arrows.

Fig. 3 is an enlarged plan view of one of the corner leg structures.

Fig. 4 is a view similar to Fig. 2 and of a slightly modified form of the invention.

Fig. 5 is a view similar to Fig. 3 and of the modified form of the invention shown in Fig. 4.

Fig. 6 is a perspective view of a differently shaped polygonal brooder structure with the leg structure applied thereto.

Fig. 7 is a diagrammatic view of a portion of the brooder structure shown in Fig. 6 previous to final assembly.

Fig. 8 is a plan view of a metallized surface blank utilized for heat reflecting and heat deflecting surfaces.

Fig. 9 is a sectional view of a modified form of the invention showing a false ceiling application thereto.

In Fig. 1 of the drawing, 10 indicates a plurality of sequentially connected triangular shaped body members, the connections being made by creases 11, the triangular body portions having the base edges 12. Integral with each base edge 12 and connected thereto by a crease connection is a flap 13 substantially coextensive with said edge. These flaps 13 are independent of each other. The numeral 14 indicates one free diagonal edge from which extends the crease connected locking tongues 15. Herein two of these are illustrated being positioned near the top and bottom of said diagonal edge and a larger number may be employed whenever desired.

The adjacent edge 16 is crease formed and integral therewith is the longitudinally coextensive flap 17. The flap 17 in registration with the crease 16 is provided with spaced slots 18

that lockingly receive and retain the locking projections 15. When the projections are lockingly associated with the slots 18, the several triangular portions 10 are arranged in roof or brooder form. Suitably secured as by staples 19 to each of the flaps 13 are the cheese cloth strips 20.

In Fig. 3 there is illustrated a trapezoidal metal blank having the body portion 21 with the bottom edge 22 and upwardly and outwardly directed side edges 23. There is provided a pair of slots 24 which are suitably spaced apart and each of which is of suitable depth and of suitable width. These slots 24 extend downwardly from the top edge 25. Extending upwardly from the top edge 25 and between each slot and the end of the top edge 25 is a tongue member 26, the latter being adapted to be folded upon the lines 27 and 28, such fold lines being diagrammatically indicated by the dotted lines in Fig. 3. The trapezoidal leg is adapted to be folded on its median line designated by dotted lines in Fig. 3 and designated by letters FL.

Reference now will be had to Figs. 1 and 2. When the brooder top structure is assembled together, as shown in Fig. 1, there is utilized at each of the corners at the adjacent ends of the adjacent flaps 13, a leg structure. This leg structure is folded along the line FL and if the polygonal outline of the brooder is rectangular, the two wing portions at opposite sides of the fold FL are positioned at 90° to each other.

As shown clearly in these figures, along the base edge 12 and at the crease connection with the flaps 13, there are provided, near the opposite ends, the slots 30. It is to be understood the slots 18 and the slots 30 are die cut and the stock is readily removable by slight finger pressure. The previously angular bent leg structure is then applied, one to each corner, in the following manner:

The flaps 13 are positioned outside of the two free portions of the leg structure mounting the tongues 26, and this free portion in Fig. 3, is indicated by the numeral 29a. The intermediate portion between the slots 24, indicated by 29b, is positioned outside of the two adjacent ends of the two adjacent flaps 13 and thus serves to seal the corner between these two flaps and serves to hold the flaps in a downwardly directed direction as required. The flap 13, as shown in Fig. 1, passes through the slot 24. The portion 29a together with the tongue 26, is positioned between the fabric 20 and the flap 13, it being understood the fabric 20 is secured to the inside of the flap 13. The tongue 26 passes upwardly through the slot 30 and then is bent along the line 27 so as to lie parallel to the slope of the portion 10 and then is bent at 28 so that the free end of this tongue will lie outside of and be parallel to and may bear against the flap 13.

With this arrangement it will be understood that the lower edge 13a of the flap 13 rides the lower edge 24a of the slot 24 and this distance is such that the top edge 25 adjacent the tongue 26 rides the underside of the portion 10 at the crease line 12. In this manner the leg structure at each corner of the polygonal brooder is rigidly anchored to the corner arrangement. This leg serves to maintain the flaps in their depending relation and serves to seal the corner between the adjacent side edges of said flaps when in depending relation. This leg serves to rigidly connect the flaps together and serves further to maintain the exact polygonal form of the brooder structure. In addition to all of the foregoing,

these leg structures serve to support in elevated relation the main brooder body portion as is necessary and well understood in the brooder art.

In Fig. 1 the numeral 40 indicates one portion of a separable socket arrangement, current being supplied thereto by the lines 41. The other portion 42 of the separable socket arrangement is operatively associated with the portion 40 from the opposite side of the brooder structure. For this purpose the peak of the brooder structure is apertured as at 43. The light bulb 44 then is mounted in the bulb socket portion 42 and is thus held in overhead relation so that it cannot drop down and burn the chicks.

In Figs. 4 and 5 there is illustrated a modified form of the invention and numerals of the 100 series indicate like or similar parts. This form of the invention differs only in that the leg body portion 121 where it is joined to the portion 129a is arranged for offsetting by creasing parallel to the base 122 as indicated by the numeral 131 and 132 defining therebetween a ledge portion 133. In all other respects this corner structure and the brooder structure proper is identical to the corner leg structure and brooder structure shown in Figs. 1 to 3, inclusive.

It will be noted this area 133 spaces the top edge 125 of the portion 129a above the top edge 125 of the portion 129b an amount equal to the distance or width of the portion 133. The width of the portion 133 is substantially equal to the thickness of the material of the flap 113 and the lower edge 113a thereof bears on this ledge. This is a positive support arrangement.

The simple form of the invention, therefore, contemplates the utilization of the corner leg structure shown in Fig. 3. Whenever a more complicated form is desired to be utilized, the form shown in Fig. 5 may be used.

In order to prevent overheating of the brooder body portion proper and at the top thereof, there may be provided a heat resisting and heat reflecting combination deflector. The same is illustrated in Fig. 8 in plan. It comprises a blank 50 which has an arcuate inner edge 51, an outer concentric edge 52 and two radial edges 53 and 54. Parallel to the radial edge 54 are the slots 55. Projecting from the radial edge 53 are the locking tongues 56.

This flat sheet is arranged in conical formation and the edge 54 laps the edge 53 as indicated by the dotted line 58. When thus lapped, the tongues 56 may be inserted in the slots 55 and lock this blank in conical formation, leaving the opening 51 as a complete circular opening.

Previous to the connection of the socket portion 42 with the socket portion 40, the combination protector and reflector may be positioned in the upper portion of the brooder and the detachable portion 42 of the lamp socket passed therethrough and simultaneously anchor the reflector in overhead relation to the top of the brooder structure when the two socket portions are associated together. When the lamp 44 is then mounted in the socket, the heat therefrom will be reflected downwardly by the reflector and the upper portions of the brooder will be protected against excessive heat. This combination protector and reflector may be employed or omitted, as desired. Furthermore, there may be provided in each portion 10 semi-die cut openings 59 that may be readily removed by finger pressure whenever it is desired to provide for additional ventilation within the brooder other than that provided below the flaps and through

the fabric and between the openings defined and formed by the legs.

Reference now will be had to Figs. 6 and 7 wherein numerals of the 200 series indicate like or similar parts. It is to be observed that there is herein illustrated a polygonal form of brooder structure but instead of being of the type wherein the roof or overhead portion is comprised entirely of triangular elements, the roof is comprised of two rectangular portions and two triangular ends. The polygonal outline of this brooder is rectangular but may be square just as the outline of the brooder shown in Fig. 1 may be rectangular or square, the latter being square when all of the triangular portions 10 have equal base lengths 12.

In Fig. 6 the numeral 209 indicates two rectangular roof or top portions having a hinge crease connection 208 therebetween and provided centrally with the opening 243. Each of the edges 212 thereof constitutes a hinge for the flap 213 having the lower free edge 213a. The triangular portions 210 have the base edges 212. These two triangular portions have a hinge connection 211 with the portions 209. Each triangular portion has a hinge connection 216 with a flap 217 and substantially coincident with the crease is a plurality of spaced slots 218.

Each side edge 214 of the portion 209 which is not connected as at 211 to the portion 210 includes similarly spaced projecting tongues 215. Fig. 7 shows how the single blank preferably is broken or bent at its several crease arrangements preliminary to erection in proper form. When the two flaps 217 are turned at right angles to the portions 210 and inwardly and the two portions 210 are positioned so that the edge 216 registers with the edge 214 and the flaps 217 lie beneath the portion 209 to which the tongues 215 are secured and said tongues 215 are seated in the slots 218, then the roof-like arrangement is secured as shown in Fig. 6. Fig. 7 merely illustrates the preliminary step of erection.

Each of the flaps 213 has stapled to it as at 219 the fabric strip 220. Each of the crease edges 212 in the portions 209 and 210 is provided with slots 230 adjacent the ends of said creases. The leg structures, and for simplicity the forms shown in Figs. 2 and 3, then are applied to the unitary erected blank as shown in Fig. 6 and in view of the detailed illustration and description which has been provided with respect to the form of the invention shown in Fig. 1, no further description or detailed illustration is believed necessary with respect to the form of the invention shown in Fig. 6.

The purpose of showing the form of the invention illustrated in Fig. 6 is to illustrate the application of the invention to a polygonal structure of different formation insofar as general appearance and shape is concerned. It, of course, is to be understood, as shown in Fig. 6, that the heat protector and deflector illustrated in Fig. 8 may be employed or omitted, as desired. The light socket and bulb structure is utilized and is associated with the opening 243. The enclosed portions of said reflector and the bulb and socket are shown dotted in Fig. 6.

Reference now will be had to Fig. 9 wherein numerals of the 300 series indicate like or similar parts. The purpose of this illustration is to show the utilization of a false ceiling in a structure of the character illustrated in either of the two before mentioned forms of the invention or any other embodiment of the primary invention.

In this embodiment of the invention, 310 indicates a pair of what may be termed "opposite" top portions suitably connected together and having the central aperture 343 and the lower edges 312 of which are provided with the depending flaps 313 to which are secured the fabric strips 320 as at 319.

Since the leg structures utilized in this embodiment of the invention are identical with that previously set forth with reference to Figs. 1 to 3 and Fig. 6, no additional illustration of their application or further description relative thereto is believed necessary.

Herein there is provided a false ceiling structure 360 which is centrally apertured as at 361. This false ceiling structure on its several side edges is provided with flaps 362, the latter being connected therewith by the hinge crease 363. The peripheral outline of the portion 360 is such that it completely closes and conforms to the adjacent portions 310 and forms a complete partition or separation element in the brooder top structure.

A suitable number of tongues 364 may be cut from the body portion 310 and preferably that portion which lies above the ceiling 360 when mounted therein. Said tongues are anchored as at 365 to said portion 310 and are bent inwardly as shown and project through the slots 366 in the false ceiling adjacent the flap and false ceiling connection. These tongues 364 serve to prevent dropping of the false ceiling and retain and support the same in place. The resulting opening 367 formed by the turning inwardly of the tongue 364, therefore, is located above the false ceiling.

A simpler form of this support connection is to provide a false ceiling blank of the required outline and then merely have a suitable and sufficient number of tongues 364 lie therebeneath and support the false ceiling. In this simplest embodiment, which Fig. 9 also illustrates, the predetermined polygonal form maintenance is naturally absolutely necessary.

The current supply wires 341 are passed through the opening 343 at the top of the structure and the upper portion 340 of the separable socket structure is positioned above and bears upon the false ceiling 360 and the lower portion 342 of said socket structure is positioned therebeneath in registration with the opening 361 in said false ceiling and thus the socket is clamped to the false ceiling. If and when desired, the combination heat protector and deflector 350 may be provided. The numeral 344 indicates the light bulb.

The leg structures, shown in Fig. 9, it will be apparent serve to maintain the portions 310 in proper relation to each other so that the false ceiling cannot escape from the tongues and accidentally drop, thereby preventing dropping of the light bulb, et cetera, upon the chicks therebeneath.

When the chicks have grown sufficiently that more head room is required, either physically or thermally, the false ceiling is removed and the lamp socket is associated with the opening 343 and the bulb and reflector also associated therewith. When the false ceiling is removed, the tongues 364 then may be pressed back into the original position and substantially seal the openings 367 formed thereby. This prevents excessive ventilation or cooling of the air in the brooder.

It will be quite apparent that the form of

the leg structure shown in Figs. 4 and 5 may be utilized with equal facility as the form of the invention shown in Figs. 2 and 3 in the forms of the invention shown in Figs. 6 and 9 so that no further illustration of the application of the leg structure shown in Fig. 5 to either of the structures shown in Figs. 6 or 9 is believed required or necessary.

The conical reflector shown in Fig. 8 may be of metal or may be of solid fibre board having a metallized surface as by being coated with reflecting paint, such as aluminum, or the like.

The foregoing invention, therefore, is one that is comprised of but a few parts and these of very economical cost and simple in construction and these parts may be very easily associated together forming the resulting brooder structure.

While the invention has been illustrated and described in great detail in the drawing and foregoing description, the same is to be considered as illustrative and not restrictive in character.

The several modifications described herein as well as others which will readily suggest themselves to persons skilled in this art, all are considered to be within the broad scope of the invention, reference being had to the appended claims.

The invention claimed is:

1. A brooder structure including a polygonally outlined body portion, lower side edges being substantially coplanar when arranged in brooder top formation, an independent depending flap on each side edge, adjacent ends of adjacent flaps forming a vertical corner, and a corner leg at each corner including two portions positioned angularly of each other and at approximately the interior angle between the corner forming flaps, each leg portion including a slot extending downwardly from the top edge and of a depth at least equal to the depth of the adjacent flap, and a tongue extending upwardly from the top edge of each portion and extending through the body portion adjacent flap connection thereto and then extending angularly thereof for locking purposes, each corner leg securing adjacent flaps in angular relation and spacing the lower edges thereof from the leg supporting surface.

2. A brooder structure including a polygonally outlined body portion, lower side edges being substantially coplanar when arranged in brooder top formation, an independent depending flap on each side edge, adjacent ends of adjacent flaps forming a vertical corner, and a corner leg at each corner including two portions positioned angularly of each other and at approximately the interior angle between the corner forming flaps, each leg portion including a slot extending downwardly from the top edge and of a depth at least equal to the depth of the adjacent flap, and a tongue extending upwardly from the top edge of each portion between the slot and side edge of the portion and extending through the body portion adjacent flap connection thereto and then extending angularly for locking purposes, each corner leg securing adjacent flaps in angular relation and spacing the lower edges thereof from the leg supporting surface.

3. A brooder structure as defined by claim 2,

characterized by the polygonally outlined body portion being formed from a single blank arranged with adjacent edges in interlocked relation to form a roof-like arrangement.

4. A brooder structure as defined by claim 2, characterized by the polygonally outlined body portion being formed from a single blank arranged with adjacent edges in interlocked relation to form a roof-like arrangement, and false ceiling means in the roof-like arrangement, and tongue and slot connections between the ceiling means and body portion.

5. A brooder structure as defined by claim 2, characterized by the polygonally outlined body portion being formed from a single blank arranged with adjacent edges in interlocked relation to form a roof-like arrangement, and false ceiling means in the roof-like arrangement, and tongue and slot connections between the ceiling means and body portion, said leg structures maintaining said connections for preventing ceiling dropping, and a heat source selectively suspendable from the ceiling or the top of the brooder top when the ceiling is removed, each being apertured for heat source detachable mounting thereon.

6. A corner tie and leg structure including a main body portion including a pair of angularly disposed integrally connected wing portions forming an angular leg, the lower portion of which constitutes a load bearing arrangement, the body portion including a pair of slots, each slot extending downwardly from the top edge toward the load bearing arrangement, the intervening connected wing portions between the slots forming therebetween an angular upwardly directed tongue adapted for positioning upon one side of an angular load formation, the body portion between each slot and the free side edge forming an upwardly directed tongue adapted for positioning upon the other side of the angular load formation, the load formation seating in the slots.

7. A structure as defined by claim 6, characterized by the addition of a tab portion on each of the second mentioned tongues and at the upper end thereof adapted for extension through the angular load formation for bearing upon the side thereof opposite that to be engaged by said tab supporting tongue and upon that side of the load formation to be engaged by the angular tongue.

8. A structure as defined by claim 6, characterized by the addition of a tab portion on each of the second mentioned tongues and at the upper end thereof adapted for extension through the angular load formation for bearing upon the side thereof opposite that to be engaged by said tab supporting tongue and upon that side of the load formation to be engaged by the angular tongue, each of the second mentioned tongues including a laterally directed portion adapted for load formation lower edge engagement and support, said laterally directed portions being substantially coplanar with the roots of said slots, said laterally directed portions offsetting the included tongues from the respective wing portions.

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