April 14, 1925. 1,533,186

H. H. HALL

BROODER

Filed Jan. 13, 1922 2 Sheets-Sheet 1

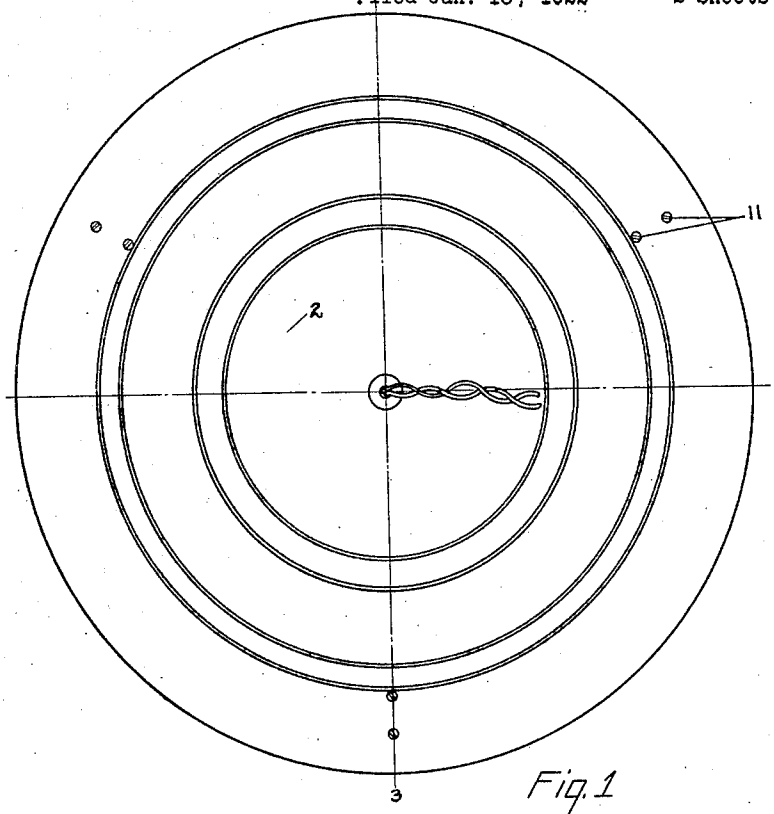


Fig. 1

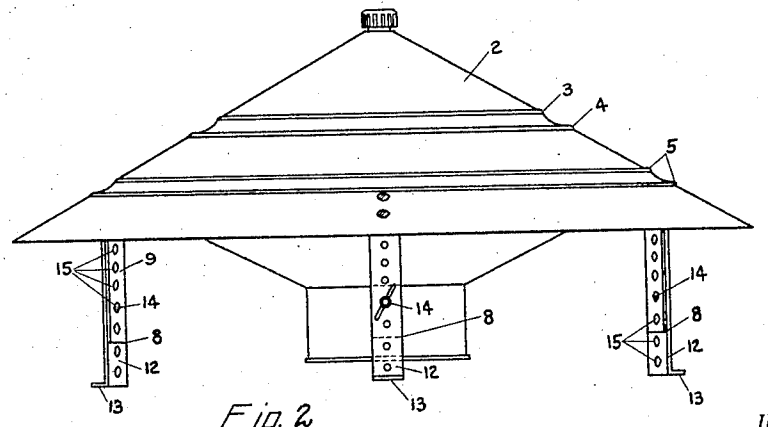


Fig. 2

INVENTOR.
HARVEY H. HALL.
BY Ridley Slough & Tiles
His ATTORNEYS.

April 14, 1925. 1,533,186

H. H. HALL

BROODER

Filed Jan. 13, 1922 2 Sheets-Sheet 2

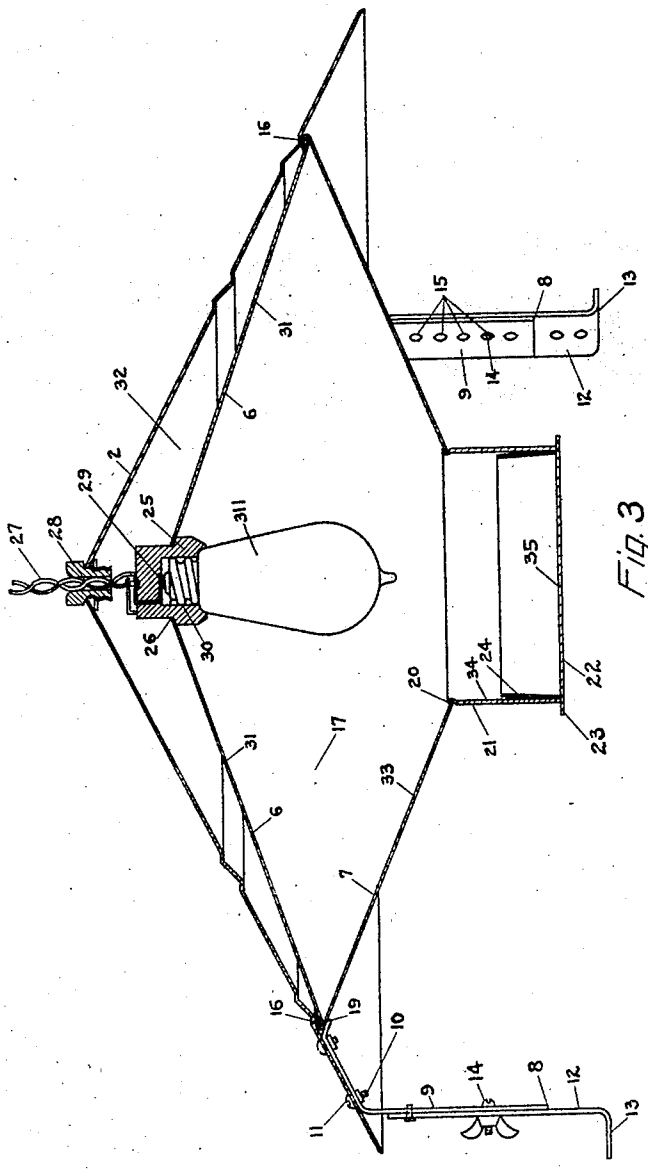


Fig. 3

INVENTOR.

HARVEY H. HALL

BY Richey Sleugh & Tales

ATTORNEYS.

Patented Apr. 14, 1925. 1,533,186

UNITED STATES PATENT OFFICE.

HARVEY H. HALL, OF ELYRIA, OHIO.

BROODER.

Application filed January 13, 1922. Serial No. 528,901.

To all whom it may concern:

Be it known that I, HARVEY H. HALL, a citizen of the United States, residing at Elyria, in the county of Lorain and State of Ohio, have invented new and useful Improvements in Brooders, of which the following is a full, clear, and concise description, such as will enable those skilled in the art to which my invention appertains to make and use the same.

This invention relates particularly to new and useful improvements in that class of brooders designed to be heated by the heat from an electric lamp.

An object of my invention is to provide a brooder which is simple in construction and inexpensive to manufacture, the different component parts entering into the brooder being simple to assemble together and when assembled being capable of withstanding hard usage without becoming deranged.

Another object of my invention is to provide a brooder of the above type, in which the electric lamp may be easily removed or replaced by lamps or other electric heating elements having the same Edison plug connection to be inserted into the Edison socket, which is secured rigidly in the interior of the brooder.

Another object of my invention is to provide a brooder of the above type made entirely of metal and which have the various parts arranged to produce a distribution of heated air which will be more efficient for the purpose desired as will be hereinafter more fully explained.

Another object of my invention is to provide adjustable means whereby the brooder dome and heating parts secured therewith may be adjustably lifted above the supporting floor to different heights as may be desired and thereby providing a means for increasing the area over which the heating effect will be described.

Other objects of my invention and the invention itself will be better understood from the following description of a special embodiment of my invention, and in which description reference will be made to the accompanying drawings.

Referring to the drawings:

Fig. 1 shows a top plan view of an embodiment of my invention.

Fig. 2 shows a side elevational view thereof.

Fig. 3 shows a vertical section taken on the line 3—3 of Fig. 1.

Referring now to the different figures of the drawings, in all of which parts are designated by like reference characters: at 2 is shown a dome which is corrugated at 3, 4, and 5, for the purpose of strengthening the same, the dome being substantially conical in shape and being capable of being supported on supporting posts 8, of which a plurality, preferably three in number, are provided, the said posts comprising an upper portion 9 bolted at 10 and 11 to the dome 2, and a lower portion 12 having a horizontal flanged foot 13, the two portions 9 and 12 are bolted together by a bolt and nut combination 14, the bolt of which is adapted to pass through any desired one of a plurality of openings as 15 of the lower portion 12 and a small opening of the upper portion 9.

Each portion of the said supports 8 is provided with a longitudinal row of such openings 15, so that by reciprocating the portion 12 along portion 9 and inserting the bolt of the bolt and nut combination through a suitable pair of holes of the two portions of the supports 8, the dome 2 can be elevated when standing on the feet 13 to different desired distances from the floor upon which the feet 13 of the supports 8 rest.

Within and below the dome 2 and rigidly secured thereto at their peripheral portions, are mounted a pair of oppositely dished concavo-convex sheet metal heat deflecting discs 6 and 7, the disc 6 being inverted like a dome and the disc 7 being upright like a saucer, the two discs being secured together at their peripheries by the lower disc being folded over the edge 16 of the upper disc, so as to make a heating chamber 17 between the discs and in which chamber an incandescent lamp 31 or other heating element is adapted to be mounted, an end 19 of the support member 9 is adapted to over-lap the flanged peripheries of the disc members 6 and 7 and to clamp them tightly against the under side of the dome 2. The upper end of the members 9, together with the bolts 11 constitutes a heating chamber or clamping means whereby the heating chamber is supported from the dome by its peripheral portions adjacent the bolts 11. The lower disc member 7 has an annular opening 20 in

which opening a metallic cylinder 21 is supported. This cylinder is adapted to receive at its end a flanged sheet metal plug or cap 22, the flange therefor being indicated at 23 and there being a tapered upper portion 24 adaptable for frictional engagement with the inner walls of the cylinder 21.

An Edison electric lamp socket receiving member 25 is tightly secured within a centrally disposed opening 26 of the said upper disc member 6 and an electric connection consisting of a pair of wires 27 passing through a bushed opening 28 in the dome member 2 is attached to the electric contact elements at 29 and 30 of the said socket; in this way electric current may be conveyed through the center of the dome and the top disc to an incandescent lamp 31, which is mounted in the said socket, with the electrodes in contact with the said contact members.

In order to properly distribute the heat from the heating chamber to the space below the dome 2 and to a certain extension outwardly therefrom where the chicks served by the brooder will congregate, I reflect the radiant heat from the lamp 311 from the lower inner surface 31 of the dome disc 6 and which inner surface is bright in color, being either white or having a bright metallic luster for the purpose of reflecting said radiant heat downwardly in order to prevent the absorption of heat through the disc 6. I provide a dead air space between the disc 6 and the lower surface of the dome 2 which is an insulator of heat.

The radiating heat directed by the lamp or other source of radiant heat 31, impinging directly upon the inner walls 33 of the lower disc member 7 and the inner walls 34 and 35 of the cylinder 21 and cap 22 is absorbed and conveyed by the said walls to the outer surface thereof. This effect is incurred by my painting the walls 33 of the disc 7 and the walls 34 and 35 of the metallic cylinder 21 and cap 22 a dull black color such as flat black. I also find that this thermal transference is augmented by painting the outer surface of these walls a dull or flat black. This effect is, I believe, secured because of the better heat absorption properties of a black surface and the greater heat distributing effect of such a painted surface.

I find that a brooder constructed as above described will produce a more uniform amount of heat over the entire area to be served by the brooder and that the efficiency of the heating element is increased, as little of the heat is conveyed away, due to the heating chamber being supported only at its peripheral edges from the outside dome 2 and due to the presence of the air insulating wall 32.

Having thus described my invention as embodied in a specific structure, I am aware that numerous and extensive departures may be made from the embodiment herein illustrated and described, but without departing from the spirit of my invention.

I claim:

1. In a brooder, in combination with an upper dome, a pair of superposed oppositely disposed dished discs mounted under the said dome, the upper of said discs being an upright dome, a heating chamber being thereby provided between the discs, and means for supporting the said dome and discs on a floor, but out of contact thereof, the upper dome being more sharply arched than the said upper disc, said upper disc being secured at its periphery to the said upper dome to provide a dead air heat insulating space between the said upper dome and upper disc.

2. In a brooder, in combination with an upper dome, a pair of superposed oppositely disposed dished discs mounted under the said dome, the upper of said discs being an upright dome, a heating chamber being thereby provided between the discs, and means for supporting the said dome and discs on a floor, but out of contact thereof, the upper dome being more sharply arched than the said upper disc, said upper disc being secured at its periphery to the said upper dome to provide a dead air heat insulating space between the said upper dome and upper disc, the under surface of the said upper disc and the upper surface of the said lower disc being so colored as to make the said first surface a radiant heat reflecting surface and to make the said second surface a radiant heat absorptive surface.

In witness whereof, I have hereunto signed my name this 24th day of December, 1921.

HARVEY H. HALL.