

No. 729,125.

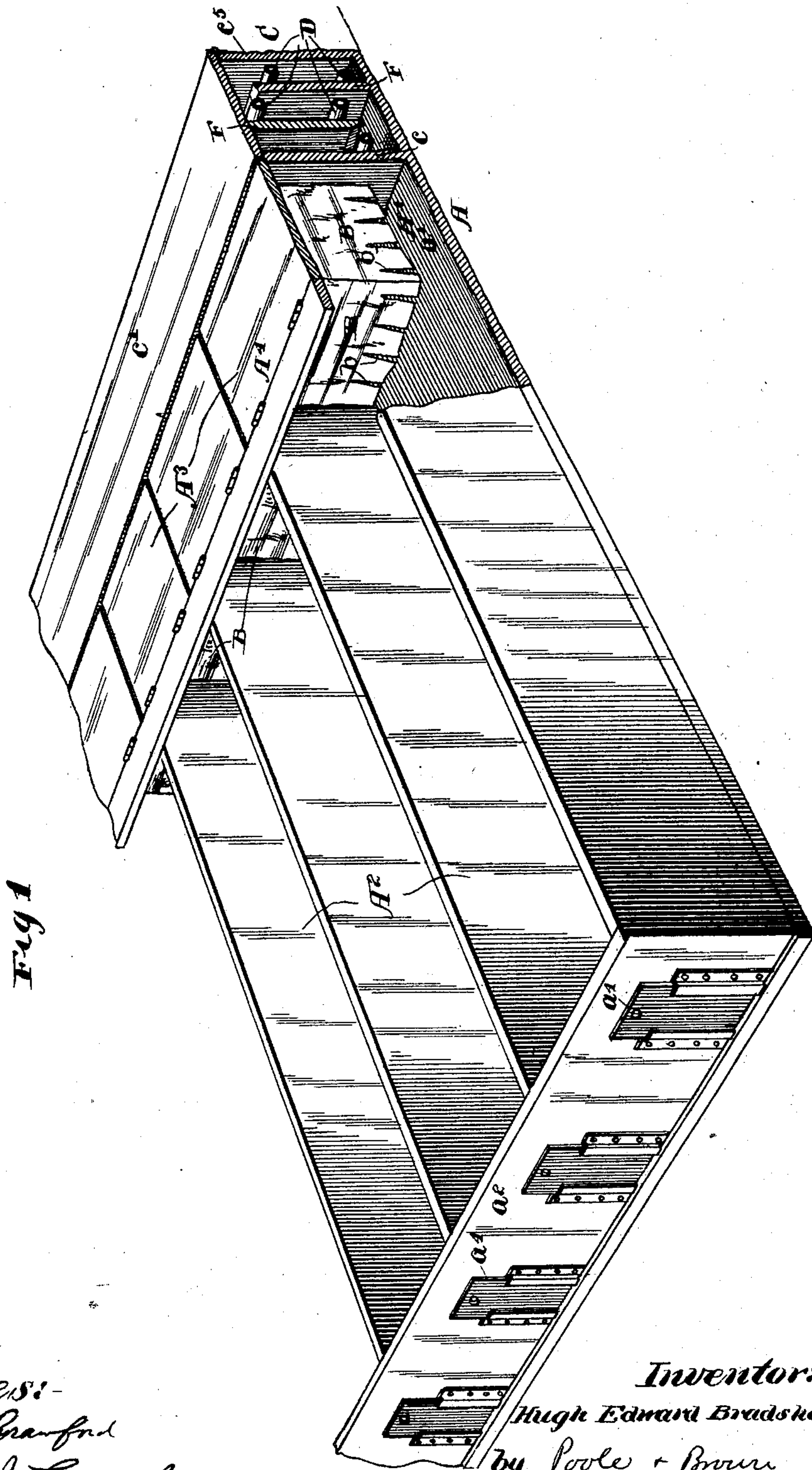
PATENTED MAY 26, 1903.

**H. E. BRADSHAW.
CHICKEN BROODER.**

APPLICATION FILED FEB. 19, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:-

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UNITED STATES PATENT OFFICE.

HUGH EDWARD BRADSHAW, OF HOLLAND, MICHIGAN.

CHICKEN-BROODER.

SPECIFICATION forming part of Letters Patent No. 729,125, dated May 26, 1903.

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To all whom it may concern:

Be it known that I, HUGH EDWARD BRADSHAW, of Holland, in the county of Ottawa and State of Michigan, have invented certain
5 new and useful Improvements in Chicken-Brooders; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of
10 reference marked thereon, which form a part of this specification.

This invention relates to improvements in chicken-brooders of that kind commonly employed in connection with incubators for rear-
15 ing the chickens after leaving the incubator and in which heating pipes or coils are used for supplying the necessary heat to the brooder.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a brooding apparatus made in accordance with my invention with parts broken
25 away. Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a vertical section taken on line 3 3 of Fig. 2. Fig. 4 is a similar section taken on line 4 4 of Fig. 2.

The chicken-brooder illustrated embraces,
30 in general terms, a box or inclosure which is provided with a top or cover at one end to form a brooding-chamber and is open at its other end to form a runway and also with a partial partition or curtain between the
35 brooding-chamber and runway, together with a heating trunk or compartment provided with heating pipes or coils which extend longitudinally therethrough, said trunk having in its bottom one or more air-inlet openings
40 and at its top openings affording communication between the trunk and the top of said brooding-chamber, whereby the heated air from the trunk is delivered to the top of the brooding-chamber, circulates through said
45 brooding-chamber from top to bottom thereof, and passes therefrom between the partial partition and the bottom of the chamber. A number of such brooding-chambers and runways will usually be arranged side by side
50 and supplied with heated air from a trunk extending along the ends of the brooding-

chambers, and a construction of this kind is shown in the accompanying drawings.

As shown in said drawings, A A designate as a whole a plurality of box-like inclosures
55 which are arranged side by side and each divided into a covered brooding space or chamber A' and an open runway-chamber A², which communicates with the brooding-chamber, said brooding-chamber being separated from
60 the runway-chamber by a curtain B, which depends from the top wall of the brooding-chamber. The said adjacent inclosures, containing the brooding and runway chambers, are separated by single partition-walls con-
65 stituting the side walls *a* of the inclosures.

C designates a transverse heating-trunk which is common to all of said brooding-chambers and which is located at the ends of
70 said boxes or inclosures A and extends from one end of the series to the other. Said trunk contains one or more heating-pipes D, extending longitudinally through the trunk, through which is adapted to be circulated a heating
75 medium, such as hot water, steam, or the like. The pipes D may be connected at their ends in a familiar manner to constitute a continuous pipe or coil for heating the air which passes through the trunk. The bottom wall
80 of said trunk is continuous with the bottom walls *a'* of the box A. The side walls *c* of the heating-trunk, adjacent to the brooding-chambers, constitute the end walls of said brooding-chambers, and the top walls of the trunk are
85 provided with one or more swinging doors *c'*, by which access may be had to the interior of the trunk. Said trunk is provided at its bottom with a plurality of air-inlet openings *c*² and at the top of its side wall *c* with other
90 openings *c*³, through which the trunk communicates with the brooding-chambers. The curtain B, dividing the brooding-chamber from the runway-space, reaches almost to the bottom wall *a'* of the box A. Said curtain is continued rearwardly on each side of the
95 chamber parallel with the side walls of the chamber to form side curtain-walls B' of the brooding-chamber proper. Said side curtain-walls are desirably located a little distance inwardly from the side walls *a* of the box A,
100 as shown in Fig. 3. The partition *c* between the trunk and the chambers constitute the

remaining ends of each chamber. The lower margin of the curtain-walls are provided with slits b , which render the same more flexible and permit the chickens to easily pass there-
 5 under to and from the brooding-chambers. The tops of the brooding-chambers are closed except for the heated-air-inlet openings c^3 , so that the air which enters the chambers passes downwardly therefrom and escapes beneath
 10 the curtain-walls to the runway-spaces.

As herein shown, the top wall of the brooding-chamber consists of a door A^3 , which is hinged at its forward margin to a horizontal strip A^4 , extending transversely across the top
 15 of the box A , and to said door A^3 is attached the hanging curtain-walls $B B'$ of the brooding-chamber. The top wall of the box, at the forward end thereof, is omitted, so that the runway-space A^2 is open at its top to the surrounding atmosphere. The front end wall a^2
 20 of the box is provided with an opening a^3 and a sliding door a^4 , through which when the door is opened the chickens may pass outside of the inclosure.

The air-inlet openings c^2 of the trunk are preferably arranged in groups, one group for each brooding-chamber, and each group is provided with a controlling sliding valve C^2 . Said valve consists of a flat plate having a
 25 number of openings equal to the inlet-openings and which are adapted to be brought into and out of register with said inlet-openings by moving the plate. Said plate slides in stationary guides or ways c^4 , affixed to the
 30 bottom wall of the trunk. Each of said valve-plates C^2 is provided with a handle C^3 , which extends through the rear wall c^5 of said trunk and by means of which the valve may be manipulated to vary the size or capacity of said
 35 inlet-openings.

The outlet or communicating passages c^3 , located between each brooding-chamber and the heating-trunk, are controlled by a similar valve-plate C^4 , which slides in horizontal
 40 guides or ways c^6 , affixed to the partition-wall c . The valve-plates C^4 are herein shown as provided with laterally-directed end portions c^7 , which serve as handles to effect movement of the valve-plate and stops to
 45 limit the movement thereof. Access to the valve C^4 is had through the upper side of the box when the flap-doors A^3 are opened.

Desirably the heating-trunk is provided with partial vertical partitions $F F$, one rising
 50 from its bottom wall and the other depending from its top wall or the door c' . The pipes D are located between said partitions, and the partitions are arranged to form an indirect passage by which the air as it passes
 55 through the trunk is confined in contact with the heating-pipes D .

In the use or operation of the apparatus described hot water, steam, or other heating agent is passed through the pipes D to heat
 60 the interior of the trunk C , and the valves $C^2 C^4$ are opened to permit the air to pass upwardly through the bottom wall of said trunk

around the pipes D and outwardly from said trunk through the opening c^3 into the top of the brooding-chamber. The warm air passes
 70 downwardly into and through said brooding-chamber and thence out of said brooding-chamber through the space between the curtain-walls $B B'$ and the bottom wall a' into the runway-spaces A^2 , from whence it escapes. 75
 The curtain-walls $B B'$ serve to confine the heated air within the brooding-chambers and to diffuse said air throughout the same, so as to maintain the air in said chambers in a uniformly-heated condition. Owing to the fact
 80 that the incoming air is supplied to the heating-trunk C at the bottom thereof and is released or discharged therefrom into the brooding chambers at or near the top of the same and the brooding-chambers and to the fur- 85
 ther fact that there are no exit-openings in the tops of the chambers for the escape of such heated air the entire volume of said air which passes into the brooding-chambers is forced downwardly therethrough and out- 90
 wardly therefrom beneath the curtain-walls $B B'$ and into the runway-space A^2 . In this manner a positive circulation of the heated air is maintained through the brooding-cham- 95
 bers, and liability of a reversal of the air-current, permitting cold air to pass from the runway-spaces A^2 into the brooding-cham- 100
 bers, is avoided. I am enabled, therefore, by the use of the construction described to maintain an efficient circulation of pure air through 105
 the brooding-chamber, so that the chickens, while being kept sufficiently warm, will be in no danger of suffocation through absence of a constant supply of pure air.

Said brooder as a whole will in most in- 105
 stances be located in a suitable building, so as to protect the chickens from the weather when occupying the runway-chamber A' and to enable the brooding-chambers to be suffi- 110
 ciently heated during cold weather with an economical use of heat. The brooder may in some instances, however, be located in the open air, and such location will not be ob- 115
 jectionable during reasonably warm weather or in warm climates. When the brooder is located in a building, the floor of the building may constitute the bottom walls or floors of the heating-trunk, the brooding-chambers, and the runway spaces or chambers. In such case the floor may and usually will be raised a 120
 distance from the ground, so that the outside air may reach the inlet-openings c^2 of the trunk from the space beneath the floor. Moreover, the side walls of the building in which the brooder is located may constitute 125
 the end walls a^2 of the runway chambers or spaces, so that the chickens may be allowed to pass through the openings or doors a^4 directly to the outside of the building. When the brooder is made a complete structure in 130
 itself and is placed in a building, the inlet-opening c^2 of the trunk will desirably communicate with an air-passage leading from outside the building, whereby a constant sup-

ply of pure air to the brooding-chambers is assured. The supply of air to said inlet-openings ^c when the brooder is located in the open air is provided by supporting the brooder
 5 with its bottom wall or floor a distance above the ground or other supporting-surface.

The features of construction hereinbefore described are manifestly applicable to a single brooder or one consisting of a single com-
 10 partment or inclosure, it being of course understood that in such case the heating-trunk would need to be adapted for supplying warm air to the single brooder only, instead of several, as shown in the drawings. A sin-
 15 gle heating-trunk arranged for furnishing warm air to a plurality of brooders arranged side by side, as shown in the drawings, in itself, however, constitutes a novel feature in devices of this class and is herein claimed
 20 as part of my invention.

I claim as my invention—

1. A brooder comprising a box-like inclosure containing a covered brooding-chamber and an open runway which is separated from the
 25 brooding-chamber by a partial partition or curtain, a heating-trunk located adjacent to and at the side of the chamber remote from said runway, and a heating pipe or pipes in said trunk, said trunk being provided with
 30 one or more air-inlet openings and with one or more outlet-openings at its top communicating with the top of the brooding-chamber, the walls of the brooding-chamber adjacent to the top thereof being closed against the
 35 passage of air and the air entering the chamber at the top thereof and passing downwardly through the brooding-chamber and being discharged into and through the runway.

2. A brooder comprising a box-like inclosure
 40 containing a covered brooding-chamber and an open runway which is separated from the brooding-chamber by a partial partition or curtain, a heating-trunk located adjacent to and at the side of the chamber remote from
 45 said runway, a heating pipe or pipes in said trunk, said trunk being provided with one or more air-inlet openings and with one or more outlet-openings at its top communicating with the top of the brooding-chamber, the walls of
 50 the brooding-chamber adjacent to the top thereof being closed against the passage of air and the air entering the chamber at the top thereof and passing downwardly through the brooding-chamber and being discharged
 55 into and through the runway; and a valve for controlling the entrance of air to said heating-trunk.

3. A brooder comprising a box-like inclosure containing a covered brooding-chamber,

and an open runway which is separated from 60 the brooding-chamber by a partial partition or curtain, a heating-trunk located adjacent to and at the side of the chamber remote from said runway, a heating pipe or pipes in said trunk, said trunk being provided with one or 65 more air-inlet openings and with one or more outlet-openings at its top communicating with the top of the brooding-chamber, the walls of the brooding-chamber adjacent to the top thereof being closed against the 70 passage of air and the air entering the chamber at the top thereof and passing downwardly through the brooding-chamber and being discharged into and through the runway, and a valve for controlling the passage of air from 75 said heating-trunk to the brooding-chamber.

4. A brooding apparatus comprising a box-like inclosure embracing a covered brooding-chamber and an open runway which is separated from the brooding-chamber by a partial 80 partition or curtain, a heating-trunk located at the side of said chamber remote from said runway, one of the side walls of which constitutes the end wall of the brooding-chamber, and the top wall of which is at the same level 85 with the top of the brooding-chamber, and a heating pipe or pipes in said trunk, said trunk being provided with one or more air-inlet openings and the wall which separates it from the brooding-chamber having one or more 90 openings at its top.

5. A brooding apparatus comprising a plurality of box-like inclosures arranged side by side and each containing a covered brooding-chamber and an open runway which is separated 95 from the brooding-chamber by a partial partition or curtain, a heating-trunk common to all of said brooding-chambers and located at the side of said chambers remote from said runways extending along the ends of the said 100 inclosures adjacent to the brooding-chambers, and having its top wall at the same level with the top of the brooding-chambers, a heating pipe or pipes extending horizontally through said trunk from end to end thereof, said trunk 105 being provided at its bottom with one or more air-inlet openings, and at its top with outlet-openings communicating with the tops of said brooding-chambers, and valves for controlling said outlet-openings. 110

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 15th day of February, A. D. 1902.

HUGH EDWARD BRADSHAW.

Witnesses:

HENRY GEERLINGS,
 BENJ. NEERKEN.