T. GILL.

INCUBATOR.

APPLICATION FILED MAR. 10, 1911.

1,001,751.

Patented Aug. 29, 1911.

2 SHEETS—SHEET 1.

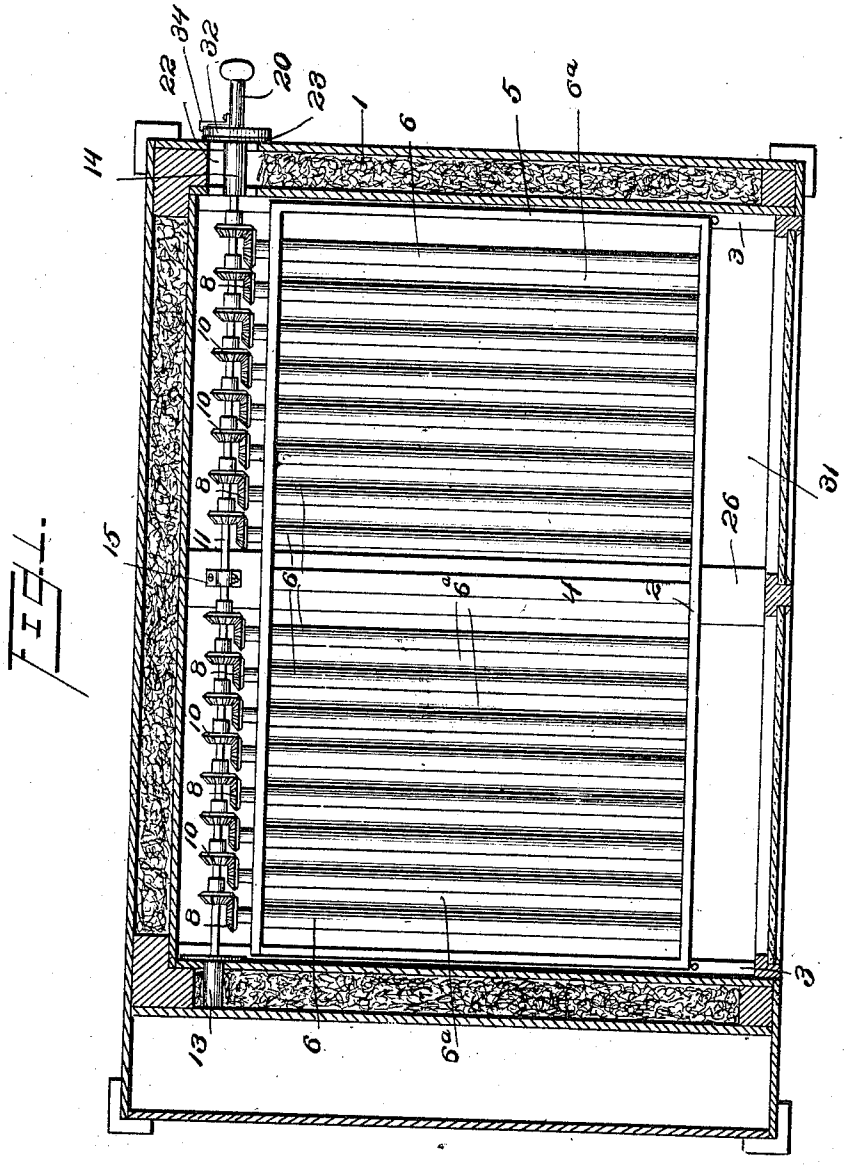


FIG. 1.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

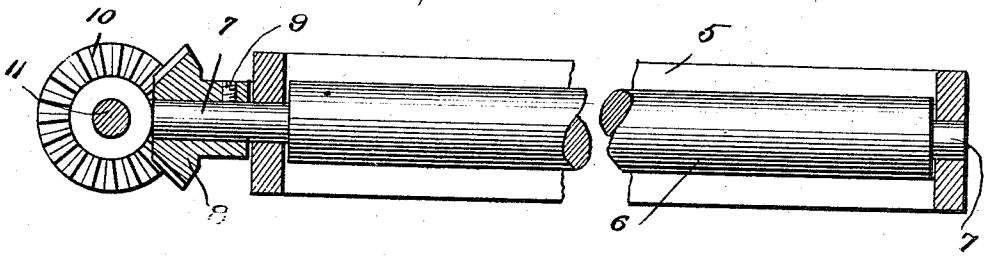



Fig. 3.

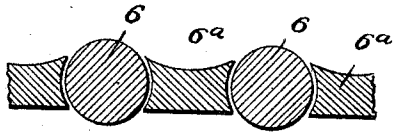



Fig. 4.

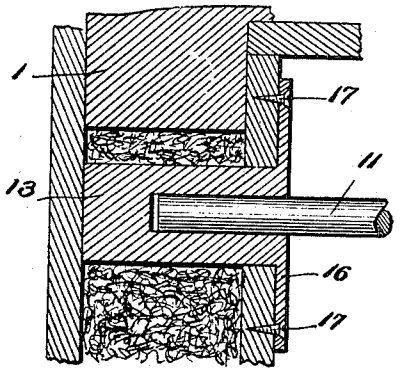



Fig. 5.

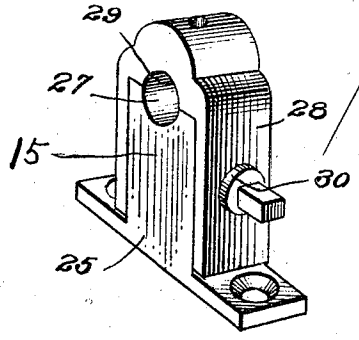
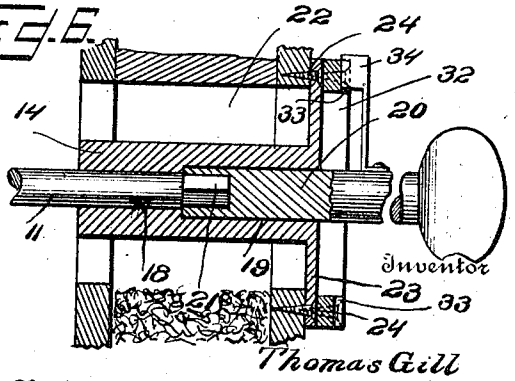



Fig. 6.




Witnesses

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# UNITED STATES PATENT OFFICE.

THOMAS GILL, OF PHILADELPHIA, PENNSYLVANIA.

## INCUBATOR.

1,001,751. Specification of Letters Patent. Patented Aug. 29, 1911.

Application filed March 10, 1911. Serial No. 613,550.

*To all whom it may concern:*

Be it known that I, THOMAS GILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Incubators, of which the following is a specification.

My invention relates to improvements in incubators, and more particularly to improved means for turning the eggs, the object of the invention being to provide improved mounting for a removable shaft, said shaft provided with means for turning the egg supporting rollers.

A further object is to provide improvements of this character which are extremely simple in construction, which may be readily operated to perform the functions desired, and which will add but little to the cost of incubators as now made, and which will greatly facilitate the operation of turning eggs.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described and pointed out in the claims.

In the accompanying drawings: Figure 1, is a view in horizontal section through an incubator illustrating my improvements in plan. Fig. 2, is a broken view in transverse section through the egg supporting tray. Fig. 3, is a fragmentary view in transverse section through rollers 6 and slats 6ª. Fig. 4, is a view in section on an enlarged scale illustrating the bearing 13 at one end of the shaft 11. Fig. 5, is a perspective view of the intermediate bearing 15, and Fig. 6, is a view similar to Fig. 4, but of the bearing 14 at the opposite end of the shaft 11.

In constructing my improvements, I utilize any approved form of incubator casing 1, in which a tray 2 is mounted to slide on guides 3. This tray comprises a rectangular frame in which a central fixed bar 4 is secured to the rectangular frame 5, and between the bar 4 and the ends of the frame, a longitudinal series of rollers 6 are mounted to revolve on trunnions 7. Between the rollers 6, slats 6ª are located, are fixed at their ends to the rectangular frame 5, and are curved on their upper and at their side faces, which enables the eggs to be solely supported on the rollers, yet permit a platform on which the chicks may walk without danger of catching their feet between the rollers.

The trunnions 7, at the inner end of the tray, are long enough to extend through the rectangular frame 5, and beveled gears 8 are secured by screws 9 onto said trunnions. These beveled gears 8 normally mesh with beveled gears 10 on a drive shaft 11. This drive shaft 11 extends throughout the length of the incubator hatching chamber 12, at its inner end is supported in a bearing 13, at its outer end is supported in a bearing 14, and between its ends is supported in a bearing 15, all of which will be hereinafter described in detail.

Bearing 13, which I term the inner bearing because shaft 11 is removable, and this bearing 13 receives the inner end of said shaft, comprises a cylindrical shaft receiving bearing closed at one end, and fitting within the wall of the incubator. A circular enlargement or disk 16 is made integral with the bearing and fits against the inner face of said wheel, and is secured thereto by screws 17.

The outer bearing 14 constitutes a sleeve open at both ends, and of two internal diameters illustrated at 18 and 19 in Fig. 6, the smaller diameter to receive the outer end of the shaft 11, and the larger diameter to receive an operating key 20, having an angular socket to engage an angular end 21 on shaft 18. The bearing 14 is located in an opening 22 in the end wall of the incubator, which is large enough to permit gears 10 to move therethrough, hence allowing the shaft 11 and its gears to be drawn out of the incubator, when bearing 14 is removed. This bearing 14 is made with an enlarged end or disk 23, which is secured to the wall of the incubator by means of screws 24. This disk 23 is of sufficient diameter to close the opening 22, and must be removed when the shaft is removed.

The intermediate bearing 15, shown in Fig. 5, comprises a base block 25 secured to a suitable support 26 in the incubator, and having a semi-cylindrical bearing 27 in its upper end.

28, represents an inverted U-shape member, which is adapted to slide down upon the base 25, and is provided with a semi-cylindrical bearing 29, which coöperates with the bearing 27 to form a cylindrical bearing for the shaft 11. This member 28 is

secured to the base by means of a set screw 30, which is made with an angular head of the same diameter as the angular head 21 of shaft 11, so that it may be manipulated by the key 20.

It will be noted that the tray 2, in normal position, provides a space at its forward edge over which the hatched chicks may step down upon a platform 31 below.

In order that the shaft 10 may be held against movement, and to guide the operator in properly turning the eggs, a ring 32 is fixed to the disk 23, and is provided in its face with two notches 33. These notches are at top and bottom, and are adapted to receive a spring tongue 34 on the key 20, so as to hold the shaft and to indicate when the eggs have been turned completely over.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In an incubator, the combination with a casing, and a tray mounted to slide in the casing, of egg supporting rollers mounted to turn in said tray, beveled gears fixed to the ends of the rollers, an operating shaft extending at right angles to the rollers, beveled gears on said operating shaft meshing with said first-mentioned gears, bearings secured in said casing, and supporting said shaft, one of said bearings secured in an opening in the casing large enough for the passage of the gears on said shaft, said bearings having enlarged disk-like ends, screws securing said ends to the casing walls, one of said bearings of two diameters, the smaller diameter to receive the shaft and the larger diameter to receive the angular end of the shaft, and a key constructed to fit the larger diameter of said bearing and having an angular socket to receive the angular end of the shaft, substantially as described.

2. In an incubator, the combination with a casing, and a tray mounted to slide in the casing, of egg supporting rollers mounted to turn in said tray, beveled gears fixed to the ends of the rollers, an operating shaft extending at right angles to the rollers, beveled gears on said operating shaft meshing with said first-mentioned gears, bearings secured in said casing, and supporting said shaft, one of said bearings secured in an opening in the casing large enough for the passage of the gears on said shaft, said bearings having enlarged disk-like ends, screws securing said ends to the casing walls, one of said bearings of two diameters, the smaller diameter to receive the shaft and the larger diameter to receive the angular end of the shaft, a key constructed to fit the larger diameter of said bearing and having an angular socket to receive the angular end of the shaft, an intermediate bearing for said shaft comprising two members each constituting a half bearing, and a screw securing said members together, and having an angular head of the same dimensions as the angular end on said shaft, whereby said screw may be operated by the said key, substantially as described.

3. In an incubator, the combination with a casing, and a tray mounted to slide in the casing, of egg supporting rollers mounted to turn in said tray, beveled gears fixed to the ends of the rollers, an operating shaft extending at right angles to the rollers, beveled gears on said operating shaft meshing with said first-mentioned gears, bearings secured in said casing, and supporting said shaft, one of said bearings secured in an opening in the casing large enough for the passage of the gears on said shaft, said bearings having enlarged disk-like ends, screws securing said ends to the casing walls, one of said bearings of two diameters, the smaller diameter to receive the shaft and the larger diameter to receive the angular end of the shaft, a key constructed to fit the larger diameter of said bearing and having an angular socket to receive the angular end of the shaft, and slats located between the rollers, extending throughout the length thereof, secured to the tray, and curved at their edges to closely fit between the rollers, and curved on their upper faces so that the eggs are supported wholly on the rollers, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

his
THOMAS × GILL.
mark

Witnesses:
MATTHEW MCCANN,
CHARLES E. POTTS.