

No. 745,507.

PATENTED DEC. 1, 1903.

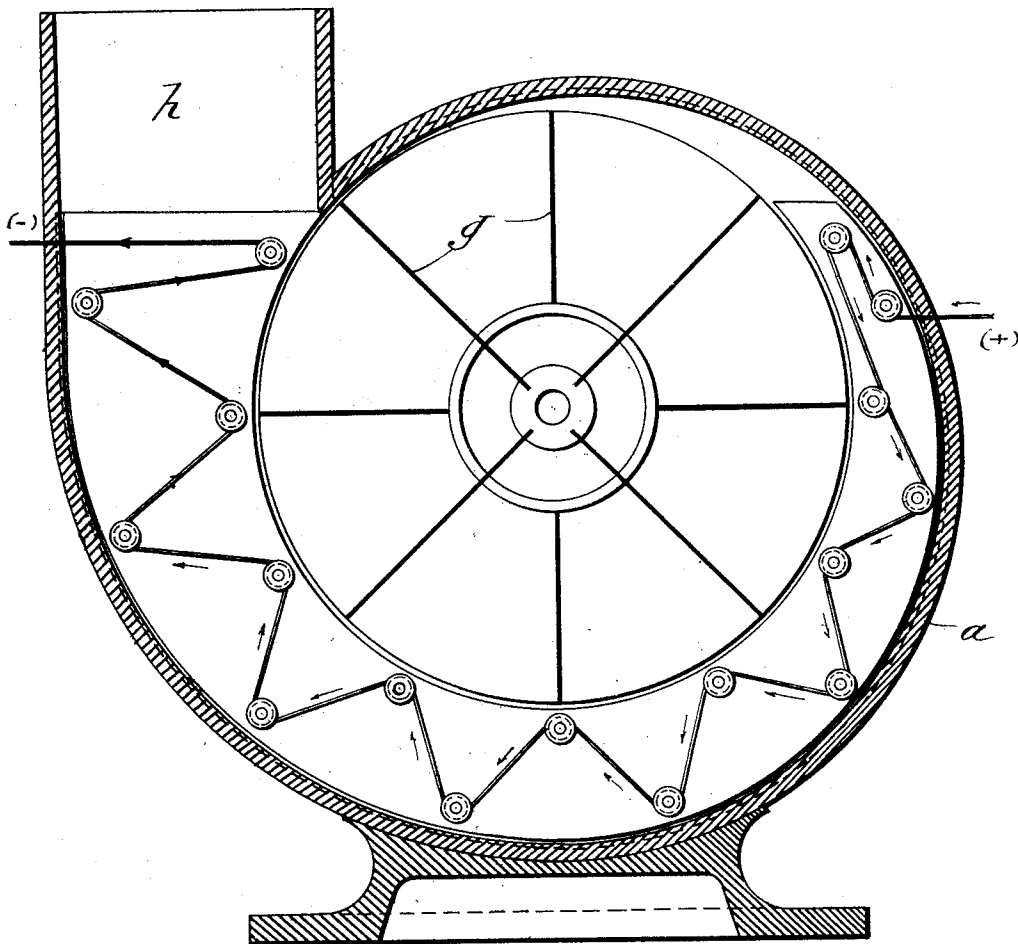
F. DE MARE.
ELECTROTHERMIC VENTILATOR.

APPLICATION FILED JUNE 16, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses:
S. Haldman
E. Harnisch

Inventor
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per *J. Singer*
Attorney

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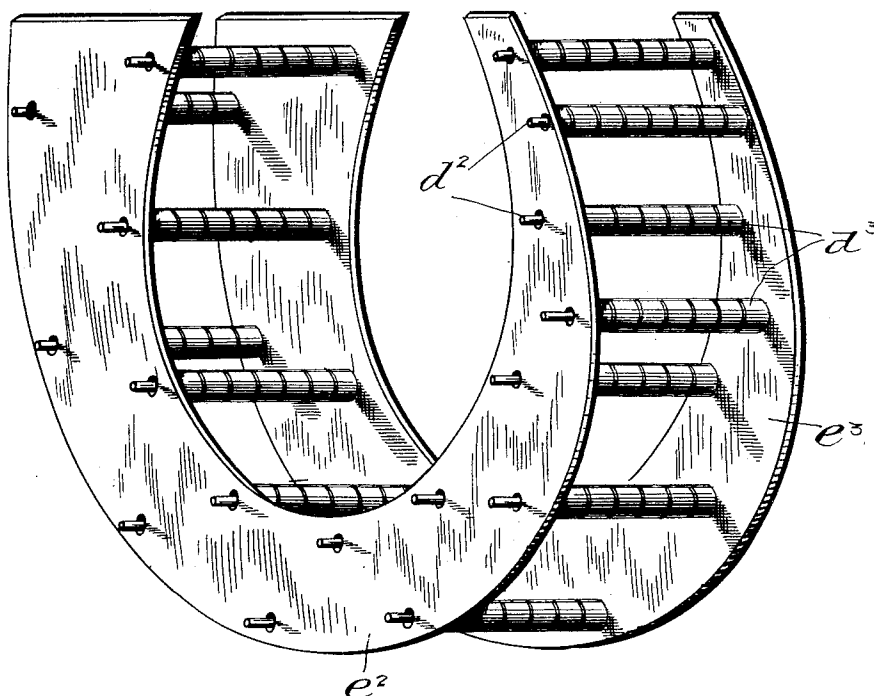
F. DE MARE.
ELECTROTHERMIC VENTILATOR.

APPLICATION FILED JUNE 16, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

FREDERIC DE MARE, OF BRUSSELS, BELGIUM.

ELECTROTHERMIC VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 745,507, dated December 1, 1903.

Application filed June 16, 1902. Serial No. 111,981. (No model.)

To all whom it may concern:

Be it known that I, FREDERIC DE MARE, a citizen of the French Republic, and a resident of Brussels, Belgium, have invented certain new and useful Improvements in ElectrotHERMIC Fans, of which the following is a specification.

To obtain in a thermic apparatus all the results to which it is susceptible if it is destined to heat the air in an inclosure, it is necessary by mechanical means to renew the air surrounding the apparatus. The changes of temperature between a gas and a solid take place too slowly if the difference in density of heated gas is alone in question, and as, in order to avoid the radiation, endeavors are made to restrain the movement of gases, so to increase this radiation their motion must be increased.

My invention has for its object an apparatus which while thoroughly warming the air will keep it in free circulation without producing a blast such as caused by the ventilating-blowers of the present day; and it consists in the employment of a casing inclosing heating-wires, into which casing the air is taken, stirred, circulated, and finally discharged at the temperature desired, all as hereinafter described with reference to the accompanying drawings, in which—

Figure 1 is a vertical section, transverse of the axis, of the preferred form of my apparatus; and Fig. 2 is a perspective view of the resistance-frame of said apparatus detached.

I prefer to use a wing-fan with the construction indicated in Figs. 1 and 2, wherein the perimeter of the fan-chamber is described upon the evolvent of a circle terminating in

the spout or nozzle, the evolute of which is the circle described by the fan-blades *g*. The space between said circle and the peripheral wall of the chamber receives a correspondingly-shaped resistance-frame composed of two horn-shaped side plates *e² e³*, connected by bolts *d²*, which also serve to hold the lateral caps of the casing in place, and having insulator-sleeves *d³*, over which the wire is carried first to one end, then back to the other and return until all the grooves in the insulators are taken up, and finally to the positive and negative terminals.

The operation of this device is as follows: The fan being driven in any convenient manner creates a current of air through the casing which passes in contact with the wires. A current of electricity is simultaneously sent through the wires, thereby heating the same, and consequently heating the air passing over them.

What I claim, and desire to secure by Letters Patent, is—

In an electric-heating apparatus, the combination of a fan-casing, a fan eccentrically mounted in said casing, thermic wires adapted to receive a current of electricity, supported on insulating-sleeves connecting between the walls of said fan, and adapted to heat the air driven through said casing, by said fan.

In testimony whereof I have set my hand in presence of two witnesses.

FREDERIC DE MARE.

Witnesses:

C. CHES,

GREGORY PHELAN.