June 5, 1928. 1,672,272

C. A. MOORE

VENTILATING DEVICE

Filed March 18, 1924 2 Sheets-Sheet 1

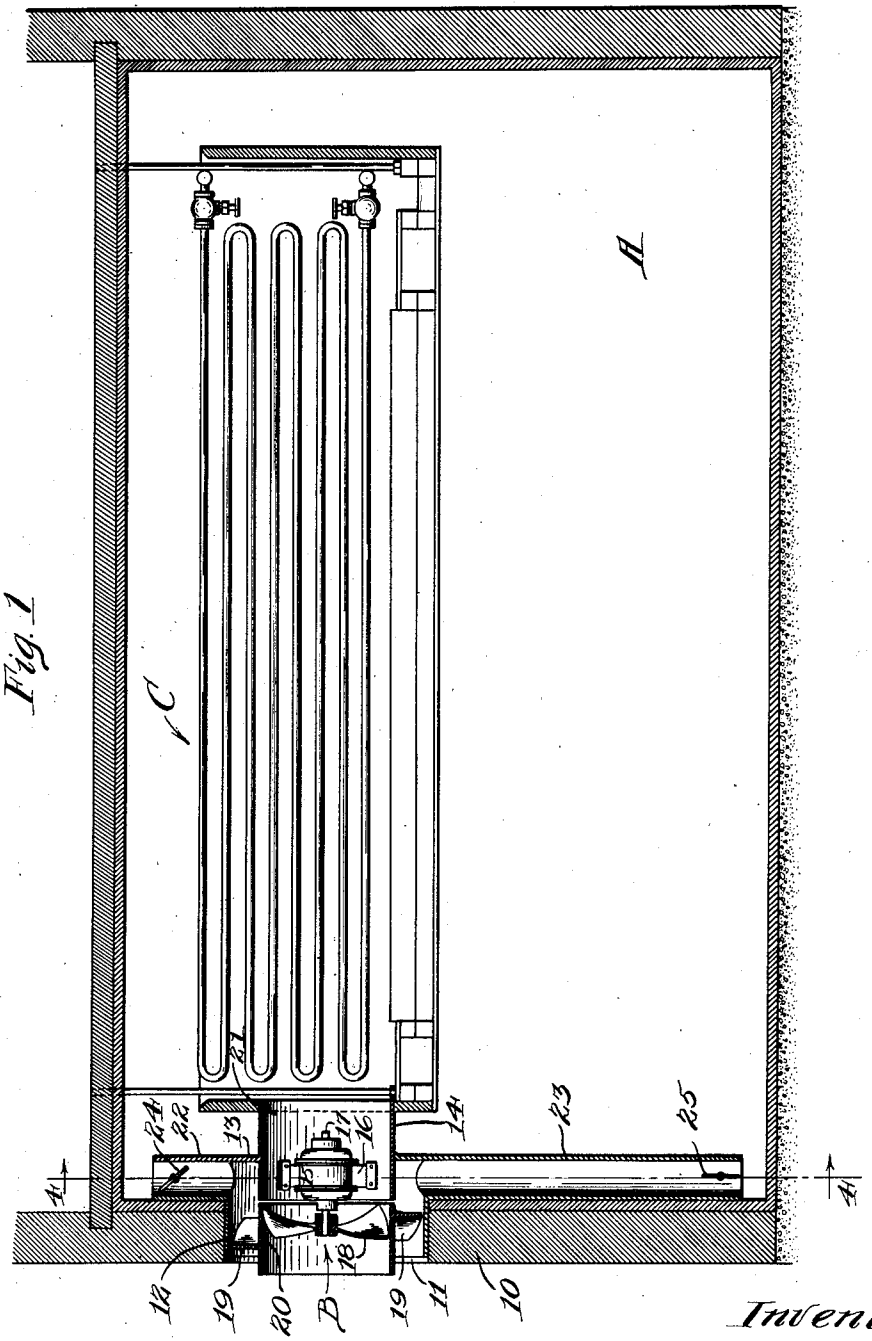


Fig. 1

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Filed March 18, 1924 2 Sheets-Sheet 2

Fig. 3

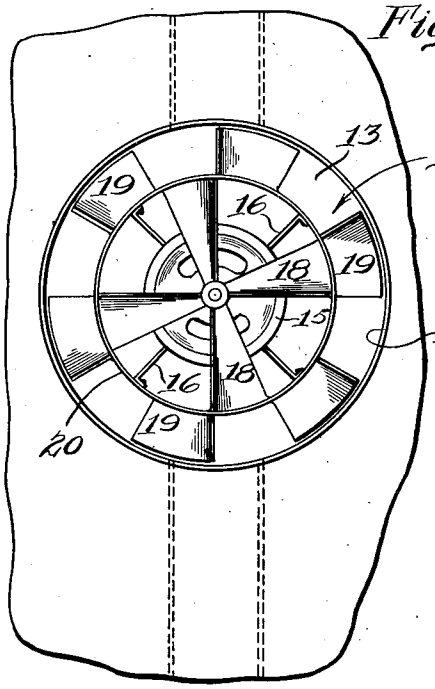


Fig. 4

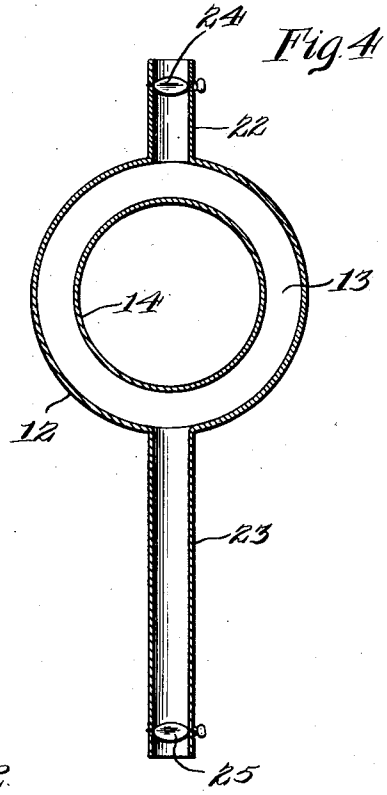
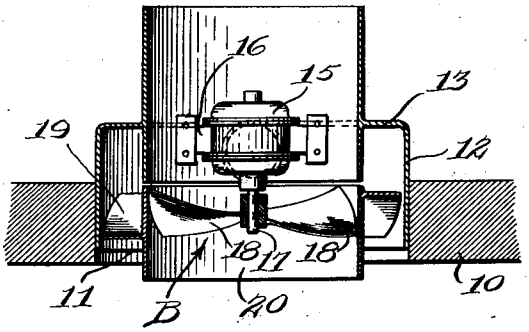


Fig. 2.



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UNITED STATES PATENT OFFICE.

CHARLES A. MOORE, OF ST. PAUL, MINNESOTA.

VENTILATING DEVICE.

Application filed March 18, 1924. Serial No. 700,062.

My invention relates to improvements in ventilating devices.

An object of the invention is to provide a simple, durable and inexpensive device, readily applicable to a room structure and adapted not only to expel air therefrom, but to replenish the room with fresh air from the outside.

Another object is to supply a ventilating device, as above, a single fan being employed in moving the air.

With the foregoing and other objects in view, which will appear in the following description, the invention resides in the novel combination and arrangement of parts and in the details of construction hereinafter described and claimed.

In the drawings, Fig. 1 is a vertical central sectional view of a device embodying my invention, the same being illustrated as applied to a room and shown in connection with a coil bunker therein; Fig. 2 is a horizontal, central sectional view of the device; Fig. 3 is an elevational view thereof and Fig. 4 is a sectional view in detail taken on the line 4—4 of Fig. 1.

Referring to the drawings, A represents a room, the wall 10 of which is formed with a circular opening 11 therein. A thimble 12 is fitted in this opening as shown in Fig. 1, said thimble having an annular back-plate 13 formed integrally with the body thereof. A central conduit 14 is arranged axially of the thimble 12 and is held in place by attachment to said back-plate 13 in any suitable manner, such, for example, as casting said conduit integral with said back-plate. This conduit 14 forms a mounting for the journal of a fan B, which journal in the present instance, embodies a motor 15 secured by means of brackets 16 axially of the conduit 14. The motor shaft 17 constitutes the fan shaft in the present disclosure and said fan consists of an inner series of radial blades 18 and an outer series of radial blades 19. A ring 20 encircling the tips of the blades 18 registers with the adjacent end of the conduit 14 and supplies a mounting for the outer series of blades 19. The inner blades 18 are similarly pitched. So also are the outer blades 19, but the inclination of said outer blades is reversed with respect to the inclination of the inner blades 18.

The central conduit 14 leads to any desired point in a room, such, for example, as the ingress port 21 to the coil bunker C illustrated in Fig. 1. The backed thimble 12 is supplied with pipes 22, 23, having valves 24, 25 at their ends, said pipes being led to parts of the room as desired.

With the fan B turning in one direction, air is drawn from without through the blades 18 and delivered into the room through the conduit 14. Air is also drawn from the room through the pipes 22, 23, thimble 12 and fan blades 19, said air being thence expelled into the outer atmosphere. Turning in the reverse direction, air is drawn from the room, through the conduit 14 and blades 18, thence is propelled into the outer air. Accompanying this expulsion of air from the room is the replenishing of air thereto, the same traveling into the room through the blades 19, thimble 12 and pipes 22, 23. Adjustment of the valves 24, 25 provides for several or joint use of the pipes 22, 23, as may be required.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

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

In a device of the class described, a fan having an inner set of radial blades, a ring joined at its inner periphery to the tips of said blades, an outer set of radial blades joined at their inner ends to the outer periphery of the ring, said blades being adapted to set up opposed concentric streams of air, said ring being wider from edge to edge than the zones occupied by said blades and providing inside thereof a duct for the stream of air set up by the inner blades, and a companion duct for said last stream of air, said duct being of the same inside diameter as said ring and disposed edge to edge with respect thereto in axial alignment therewith.

In testimony whereof, I have signed my name to this specification.

CHARLES A. MOORE.