

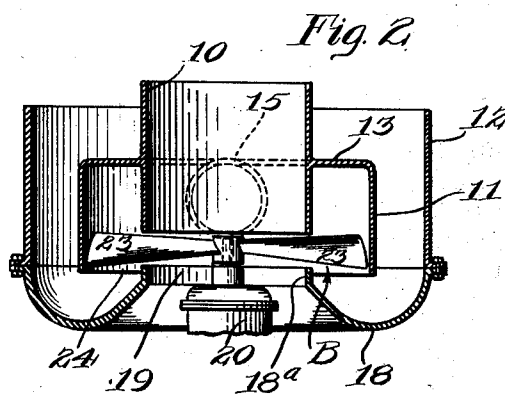
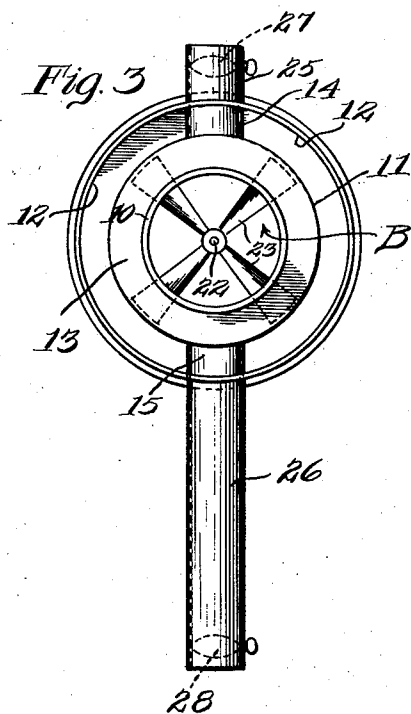
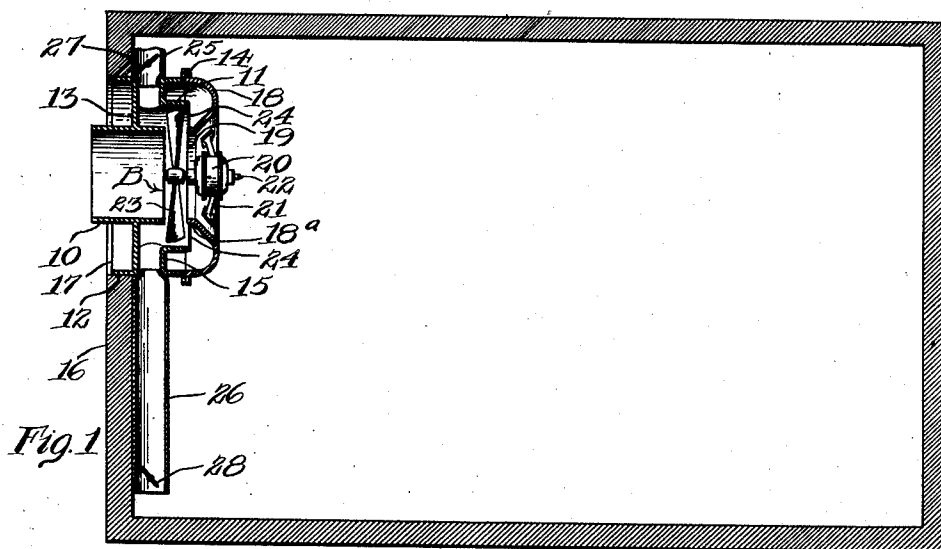
March 2, 1926.

1,575,447

C. A. MOORE

VENTILATING APPARATUS

Filed March 18, 1924



Inventor
Charles H. Moore

By Bradbury & Caswell
Attorneys

UNITED STATES PATENT OFFICE.

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

VENTILATING APPARATUS.

Application filed March 18, 1924. Serial No. 700,061.

To all whom it may concern:

Be it known that I, CHARLES A. MOORE, a citizen of the United States, residing in St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Ventilating Apparatus, of which the following is a specification.

My invention relates to improvements in ventilating apparatus.

10 Its object is to provide a simple, durable and inexpensive apparatus of the present nature, the same being adapted to be readily installed in a building and to operate effectively not only in expelling foul air
15 therefrom, but also in supplying fresh air thereto.

Another object is to provide for such results in an apparatus employing a single fan of conventional design.

20 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 herein-
25 after described and claimed.

In the drawings, Fig. 1 is a vertical, central sectional view of a device embodying my invention, the same being shown in connection with a room structure; Fig. 2
30 is a horizontal, central sectional view of the device shown in Fig. 1 and Fig. 3 is a rear elevational view of the same.

Referring to the drawings, it will be observed that the illustrated embodiment of
35 my invention constitutes a unitary structure arranged against the inner wall of a room and adapted to set up a ventilating circulation of air therein.

The improvement includes a unitary casting consisting of a central conduit 10, a
40 ring 11 encircling said conduit and a rim 12 encircling said ring, the conduit 10 and ring 11 being united by an annular web 13, and the rim 12, in turn, united with the
45 ring 11 through the medium of ducts 14, 15. This casting, just described, is placed in a wall 16 of a room as shown in Fig. 1, the outer margin of the rim 12 being fitted in a circular opening 17 in the wall 16. Capping the
50 rim 12 and ring 11 is a cover plate 18, said plate being formed with a central aperture 19 therein, which registers with the inner opening of the central conduit 10. A motor 20, secured centrally of the aperture 19 by

means of braces 21 reaching radially there- 55 from and attached at their outer ends to said plate 18, carries a fan B on the shaft 22 thereof, said fan being of conventional design and consisting of radial blades 23 similarly pitched. The fan blades 23
60 turn in the limited space between the inner end of the conduit 10 and the cover plate 18, the ends of said blades 23 projecting beyond the diametrical limits of said conduit. It will now be observed that the
65 inner opening of the central conduit 10 embraces a circular, central area of the fan B at one side thereof and that an annular area of said fan at its opposite side is embraced by an opening 24 that amounts to a
70 second conduit in the combination of the rim 12, ring 11 and cover plate 18. Said opening 24 is formed between the ring 11 and the inner flange 18^a of the cover plate 18. 75

From the foregoing, it will be understood that the fan B, turning in one direction, will draw air from without through the conduit 10 and the center of the fan and force said air into the room; also that said
80 fan will draw air from the room through the ducts 14, 15 and the margin of the fan and force said air to the outside through the conduit formed by the rim 12, ring 11 and cover plate 18. Turning in the opposite
85 direction, said fan B withdraws air from the room and expels it to the outer air through the center of the fan, while air is drawn from the outside into the conduit formed by the rim 12, ring 11 and cover plate 18 and
90 thence forced into the room through the ducts 14, 15.

Communicating with the ducts 14, 15 are pipes 25, 26, said pipes being fitted with dampers 27, 28 and providing for the with-
95 drawal or introduction of air from and to the room at the ceiling or floor thereof, as may be desired.

Among the several advantages making for effective ventilation, and compactness, 100 simplicity and low cost of construction, the single conventional fan serving the dual purposes hereinbefore described is an important feature.

Changes in the specific form of my inven- 105 tion, 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:

1. The combination with a room and ventilating fan therefor having radial blades, a conduit opening at its outer end into the outer atmosphere and at its inner end in close proximity to the fan, said inner end of said conduit being proportioned to embrace a portion of the area of said fan, a second conduit opening at its outer end into the outer atmosphere and at its inner end adjacent to the fan, said inner opening of said second conduit being arranged in opposition to the inner opening of said first conduit and proportioned to embrace a different portion of the area of the fan, and a duct leading from a part of the room removed from said fan to the side of the fan opposite said inner opening of said second conduit.

2. The combination with a room and a fan therein having radial blades similarly pitched, a conduit opening at its outer end into the outer atmosphere and at its inner end in close proximity to the fan, said inner end of said conduit being proportioned to embrace a central area of said fan, and a second conduit opening at its outer end into the outer atmosphere and at its inner end adjacent to the fan, said inner opening of said second conduit being arranged in opposition to the inner opening of said first conduit and proportioned to embrace the outer area of the fan bounding said central area, and a duct leading from a part of the

room removed from said fan to the side of the fan opposite said inner opening of said second conduit.

3. The combination with a room and a fan therein having radial blades similarly pitched, of a conduit opening at its outer end into the outer atmosphere and at its inner end in close proximity to the fan, said inner end of said conduit being proportioned to embrace a central area of said fan, and a second conduit opening at its outer end into the outer atmosphere and at its inner end adjacent to the fan, said inner opening of said second conduit being arranged in opposition to the inner opening of said first conduit and proportioned to embrace the outer area of the fan bounding said central area and valved ducts leading from parts of the room removed from said fan to the side of the fan opposite said inner opening of said second conduit.

4. The combination with a room and a fan therein having radial blades, each uniformly pitched from end to end thereof, of an air ingress conduit opening adjacent to one side of said fan and embracing a portion only of the area thereof, and an air egress conduit opening adjacent to the other side of said fan and embracing a portion of the area thereof offset from that portion of the area of the opposite side of the fan embraced by the opening of said ingress conduit.

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

CHARLES A. MOORE.