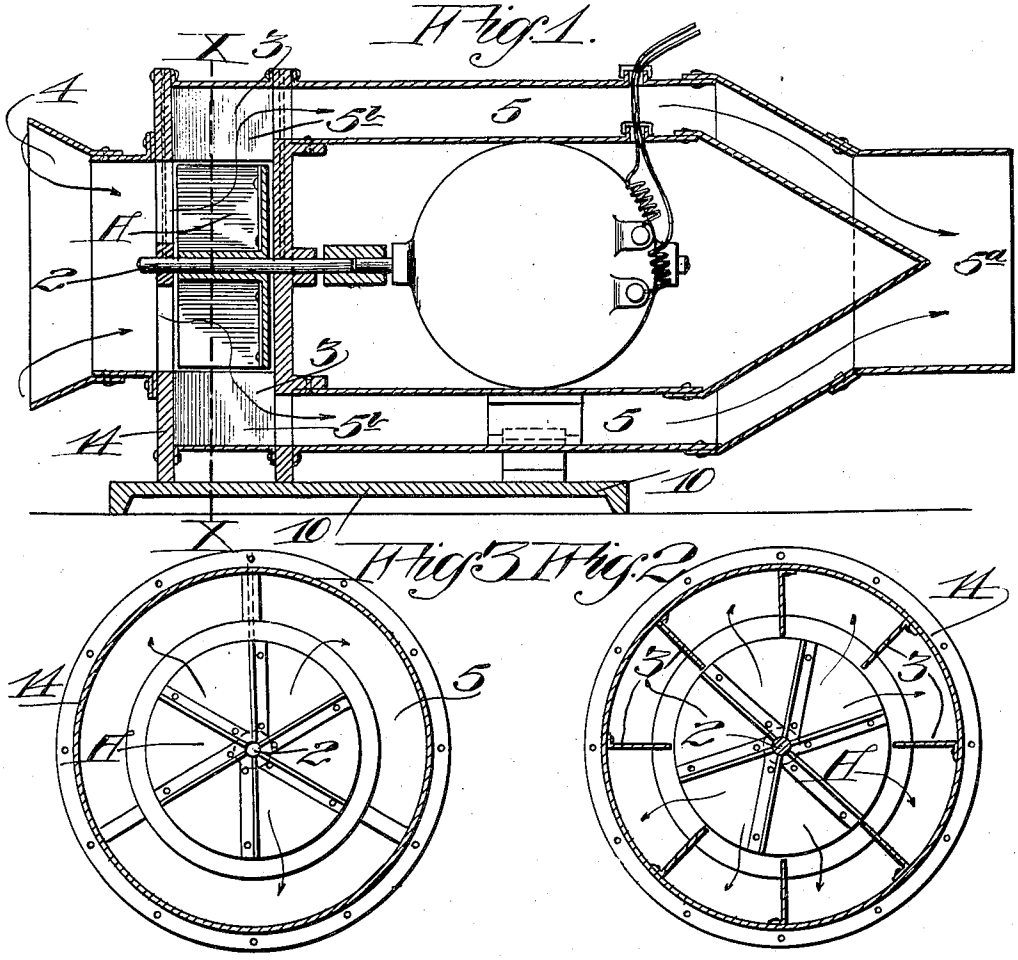
M. P. SCHETZEL.

TRANSMITTING FAN.

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WITNESSES:

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UNITED STATES PATENT OFFICE.

MARX P. SCHETZEL, OF OAKLAND, CALIFORNIA.

TRANSMITTING FAN.

Application filed October 21, 1920. Serial No. 418,366.

To all whom it may concern:

Be it known that I, MARX P. SCHETZEL, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Transmitting Fans, of which the following is a specification.

My invention relates to a fan for the transmission and propulsion of fluids and other substances.

It consists of a casing, a fan composed of substantially radial vanes revoluble therein, and inlet and draft passages, so disposed that the movement of the substance to and from the fan takes place in opposite directions or in substantially parallel and concentric currents.

My invention comprises details of construction and combination of parts which will be more fully explained by reference to the accompanying drawings, in which—

Fig. 1 is a longitudinal section showing one form of the fan.

Fig. 2 is a section through X—X of Fig. 1.

Fig. 3 is a section through X—X of Fig. 1, in which the radial guide vanes are removed.

The apparatus consists of a fan casing 14 which may be mounted upon the bed-plate or base, as at 10. Within this casing is journaled a shaft 2, which may be provided with a pulley, as at 7, through which power is transmitted to drive it. The fan A is secured to this shaft to rotate within the casing and consists of substantially radially disposed blades revolving within the casing.

The ingress passage 4 is shown as opening into one end of the casing, and is of large diameter so that the air can pass freely into the space occupied by the fan. The egress passage 5 is concentric with the inlet passage 4. Thus, as shown in Fig. 1, the moving fluid is drawn in through the inner passage 4 by the rotation of the fan and is forced outwardly by centrifugal action into the surrounding portion of the chamber which is in the form of a drum 5^b, having stationary, radially disposed partitions, so that the air drawn in by the fan is expelled first into the series of surrounding concentric chambers formed by the partitions 3, and thence is caused to flow out through the passage 5 which surrounds and is concentric with the passage 4. Thus the air is returned upon itself and may be carried to any desired point of discharge.

The tubular, concentric passage 5 may be converged at any desired point, and the discharge concentrated into the single passage, as 5^a. That portion of the casing which is opposite to the inlet end is closed to be substantially tight about the shaft 2, as shown in Fig. 1. If it be desired to bring the air from the opposite direction, that end of the casing will be open and the other end closed; the shaft in this case extending through the closed end.

The ingress passage 4 may be provided with convergent wings, through which the air is drawn, thence through the parallel portion of the passage into the casing occupied by the fan, and is thence thrown outward into the surrounding chambers 3. The air is prevented from partaking of the rotation of the fan by reason of the radial partitions which divide this portion of the chamber into as many independent sections as may be found desirable. The egress passage being concentric with the axis of the inlet passage as before, the air is delivered from the chambers exterior to the fan along this passage and to any desired point of delivery. In ordinary centrifugally operating fans, the air is drawn into a casing upon each side and delivered centrifugally in a direction at right angles with the line of the shaft; the centrifugal action not being in any way checked and the rate of discharge depending upon this action.

In the present case the discharge is concentric to, and parallel with, the line of the shaft, and its axis and receiving chambers are formed exterior to the fan or rotary drum chamber; these chambers acting to change the direction to prevent the rotation of the air in conjunction with that of the fan and to change the direction of motion, as previously described.

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

1. A device of the character described comprising a cylindrical shaped casing, an inner cylindrical casing concentric therewith and interspaced to form an annular discharge passage, a head member forming a closure for the forward end of said inner casing, a cone-shaped cover forming a cover for the opposite end, a converging casing forming an extension of the first named casing and surrounding the cone to produce a contracted annular discharge passage, a shaft

journalled in the front head of the inner casing, a fan secured on said shaft and rotated thereby, a drum surrounding the fan, said drum having a diameter substantially the same as the first named exterior casing and being secured thereto and forming an extension thereof, an inlet opening in said drum in alignment with the fan, and a series of stationary radially disposed air directing blades secured within the drum to prevent whirling of the air discharging from the fan.

2. A device of the character described comprising a cylindrical shaped casing, an inner cylindrical casing concentric therewith and interspaced to form an annular discharge passage, a head member forming a closure for the forward end of said inner casing, a cone shaped cover forming a cover for the opposite end, a converging casing forming an extension of the first named casing and surrounding the cone to produce a contracted annular discharge passage, a shaft journalled in the front head of the inner casing, a fan secured on said shaft and rotated thereby, a drum surrounding the fan, said drum having a diameter substantially the same as the first named exterior casing and being secured thereto and forming an extension thereof, an inlet opening in said drum in alignment with the fan, a series of stationary radially disposed air directing blades secured within the drum to prevent whirling of the air discharging from the fan, and an electric motor disposed within the inner drum and connected with the fan shaft.

MARX P. SCHETZEL.