

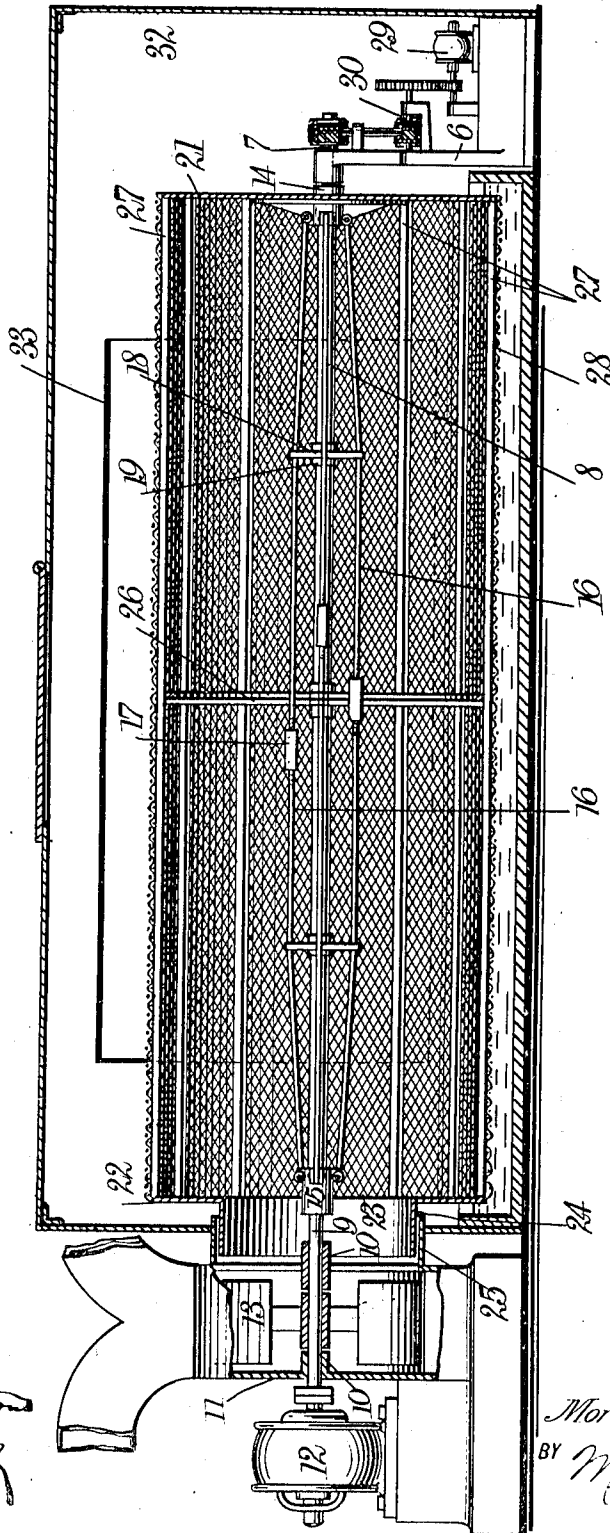
M. S. KING.
AIR WASHER.
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1,035,603.

Patented Aug. 13, 1912.

2 SHEETS-SHEET 1.

Fig. 1



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2 SHEETS-SHEET 2.

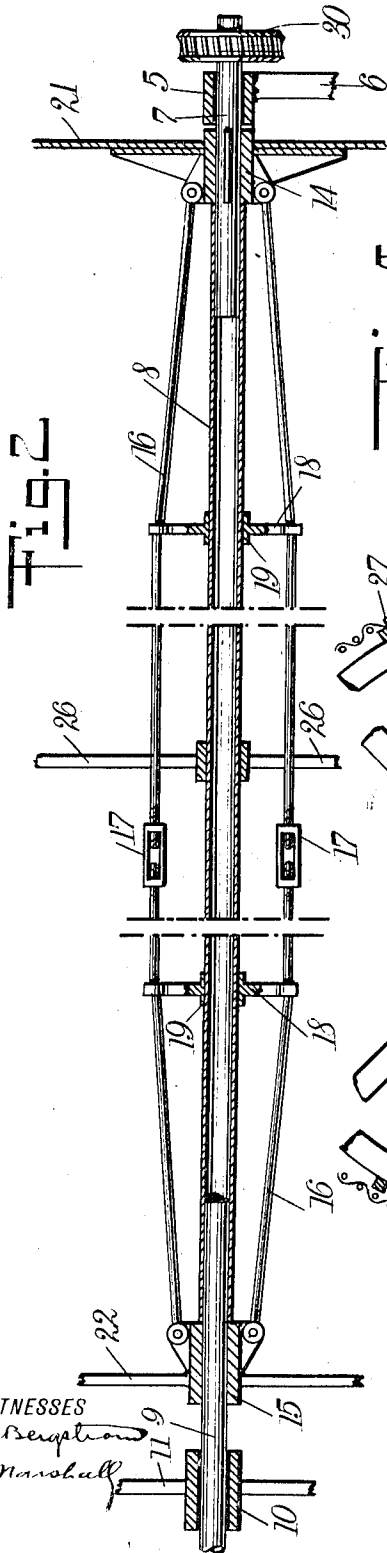


Fig. 2

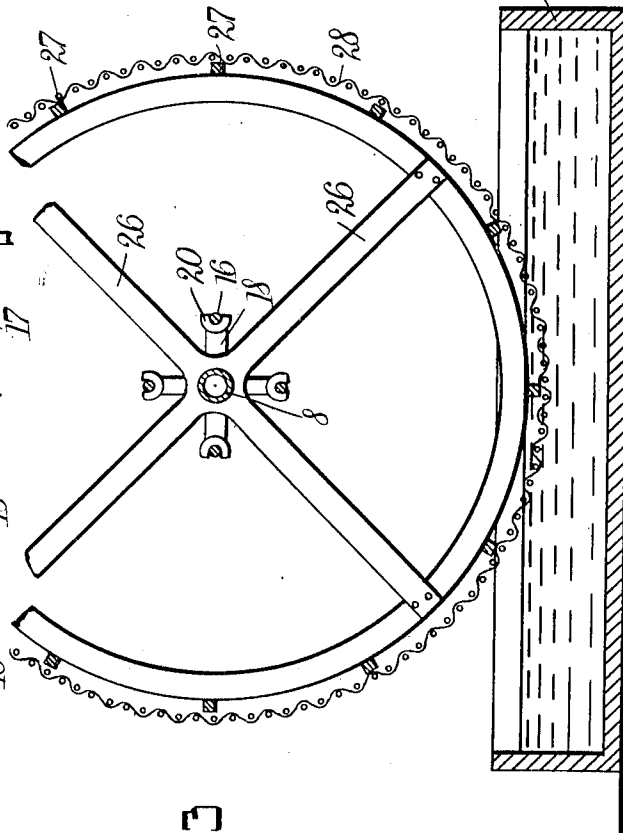
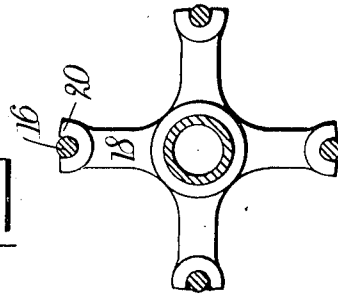


Fig. 3

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MORRIS S. KING, OF NEW YORK, N. Y.

AIR-WASHER.

1,035,603.

Specification of Letters Patent.

Patented Aug. 13, 1912.

Application filed August 1, 1911. Serial No. 641,726.

To all whom it may concern:

Be it known that I, MORRIS S. KING, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Air-Washer, of which the following is a full, clear, and exact description.

My invention relates to air washers, and it has for its object to provide one which will thoroughly cleanse and humidify the air used in heating and ventilating plants, the washer being constructed with a hollow shaft, supported at one end by the shaft in the blower, which is freely disposed in the hollow shaft, and at the other end by the driving shaft, which is disposed in and is keyed to the hollow shaft. Around the hollow shaft and supported thereby there is disposed a porous drum, through which the air is drawn by the blower, as the drum is rotated in a trough containing water. In this way the air is washed, and the amount of the moisture held in suspension is regulated by the speed of the drum through the water in the trough. The air may also be cooled or heated by cooling or warming the water in the trough through which the drum passes.

Additional objects of the invention will appear in the following complete specification, in which the preferred form of the invention is disclosed.

In the drawings similar characters of reference indicate corresponding parts in all the views, in which—

Figure 1 is a longitudinal sectional elevation of the invention; Fig. 2 is an enlarged sectional view showing the means for mounting the drum; Fig. 3 is a transverse sectional view through Fig. 2; and Fig. 4 is an enlarged transverse sectional view through Fig. 2 showing the struts for holding the tie members extended.

By referring to the drawings it will be seen that a bearing member 5 is supported by a standard 6, in which is journaled a shaft 7, a hollow shaft 8 being mounted at one end on the shaft 7. The other end of the hollow shaft 8 is mounted on a shaft 9, journaled in bearings 10, which are secured to the blower casing 11. The shaft 9 is driven by the motor 12, and secured to this shaft 9 and disposed in the casing 11, there is a fan 13.

To the right of the hollow shaft 8, and

keyed to the shaft 7 there is a hub 14, and at the left of the hollow shaft 8 and mounted on the shaft 9 there is a hub 15. These hubs 14 and 15 are drawn in the direction of each other by tie members 16, which are provided with turn buckles 17, these tie members 16 being held extended by the radially disposed struts 18, these struts 18 having hubs 19 which are mounted on the hollow shaft 8. As will be seen by referring to Fig. 4 of the drawings, the struts 18 have seats 20, in which the tie members 16 are disposed.

Mounted on the hub 14 there is a head 21, and at the other end of the device there is a head 22, having an opening 23, around which there is a collar 24, this collar 24 being secured to the head 22. The collar 24 is disposed for traveling in the collar 25 which is secured to the casing 11. Arms 26 are secured to the hollow shaft 8, and extend radially therefrom, the arms 26 and the heads 21 and 22 being connected by longitudinal drum members 27, around which there is disposed the porous drum member 28. This drum member 28 is preferably constructed of a fabric of any desired mesh and weave, and it is secured to the heads 21 and 22. The shaft 7 is driven by a motor 29, through the gearing 30. It will therefore be seen that the fan 13 will draw the air through the moistened porous drum member 28, which will not only prevent the passage of impurities through the drum, but will also moisten the air as may be desired. The amount of moisture held in suspension in the air passing through the drum may be regulated by the rapidity with which the drum is rotated. It will also be understood that the water in the trough 31 may be heated or cooled to heat or cool the air. The drum is rotated by means of the motor 29, which is connected with the shaft 7, by means of the gearing 30. This gearing 30 is keyed to the hub 14, which carries with it the head 21, the hollow shaft 8 and the hub 15. The drum is preferably inclosed by a casing 32, having a feed opening 33.

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

1. In an air washer two shafts disposed in alinement and spaced from each other, a shaft having hollow ends in which the first-mentioned shafts are disposed, hubs mounted on the first-two-mentioned shafts, and

abutting against the ends of the third-mentioned shaft, tie members connecting the hubs, struts extending from the third-mentioned shaft, for holding the tie members extended, two arms extended from the third-mentioned shaft, and a porous drum mounted on the arms.

2. In an air washer two shafts disposed in alinement and spaced from each other, a shaft having hollow ends in which the first-mentioned shafts are disposed, hubs mounted on the first-two-mentioned shafts, and abutting against the ends of the third-mentioned shaft, tie members connecting the hubs, struts extending from the third-mentioned shaft for holding the tie members extended, arms extending from the third-mentioned shaft, a porous drum mounted on the arms, and a trough adapted to contain a fluid in which the porous drum is disposed.

3. In an air washer a shaft, a blower, combined means for driving the blower and for supporting one end of the shaft, means for supporting the other end of the shaft, means for rotating the shaft relatively to the blower, arms extending from the shaft, and a porous drum mounted on the arms, for cleansing the air passing through the blower.

4. In an air washer a shaft, a blower, combined means for driving the blower and for supporting an end of the shaft, means for supporting and driving the other end of the shaft, relatively to the blower, arms extending from the shaft, a porous drum mounted on the arms for cleansing the air passing through the blower, and a trough in which the porous drum is disposed.

5. In an air washer a shaft, hub members disposed one at each end of the shaft, tie members connecting the hub members,

struts for holding the tie members away from the shaft, a blower, means for driving the blower and for supporting one end of the shaft, means for supporting and driving the other end of the shaft relatively to the blower, arms extending from the shaft, a porous drum mounted on the arms for cleansing the air passing through the blower, and a trough in which the drum is disposed.

6. In an air washer, a blower having a shaft, a casing and a collar extending from the casing, a second shaft having a hollow end supported on the first mentioned shaft, a drum head having an opening with a collar therearound, the collar engaging and being supported by the first-mentioned collar, arms extending from the second-mentioned shaft, a porous drum supported by the drum head, and the arms, means for supporting the other end of the second-mentioned shaft, and a trough in which the porous drum is disposed.

7. In an air washer a shaft, a casing having a collar extending therefrom, a drum head having an opening with a collar therearound, the second-mentioned collar engaging the first-mentioned collar, a porous drum secured to the head, means for supporting the porous drum on the shaft, a blower in the casing, means for rotating the blower and extending through the collars for supporting one end of the shaft, and means for supporting the other end of the shaft.

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

MORRIS S. KING.

Witnesses:

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