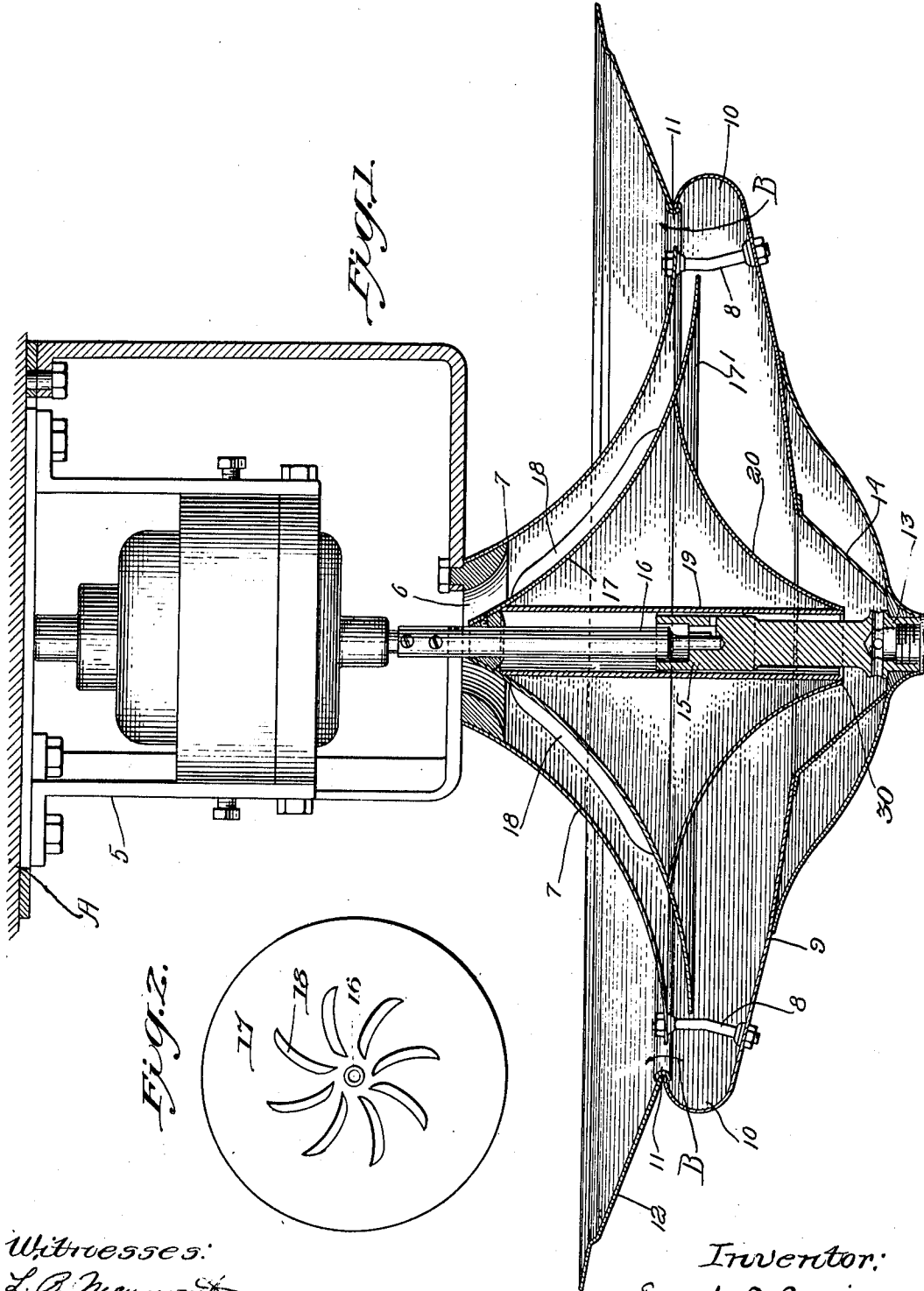


F. B. COMINS.
HUMIDIFIER.
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1,026,946.

Patented May 21, 1912.



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UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS.

HUMIDIFIER.

1,026,946.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANK B. COMINS, of Sharon, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Humidifiers, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

This invention has reference to improvements in humidifiers and particularly to improvements in rotary humidifiers.

One object of the invention is to so construct a humidifier that air and moisture may be drawn together by a single mechanical means to be intimately mixed and distributed from said means.

Another object of the invention is to so construct a humidifier that a single rotary element may act to draw air and water from different directions and to subject said air to the humidity of the water.

Other objects of the invention will appear from the following description.

The invention consists in the peculiar construction of the rotary member.

The invention also consists in such other novel features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

In the drawings Figure 1 shows a vertical sectional view of the improved humidifier shown in connection with an electric motor, and Fig. 2 is a plan view of the rotatable member showing the arrangement of blades thereon.

As shown herein 5 indicates a suitable supporting frame adapted to be secured to the ceiling A or to any other suitable sustaining structure. To this frame 5 is secured the collar 6 on which is mounted the conical shield member 7 preferably of sheet metal and sufficiently strong to support the humidifier. The lower portion of this conical member 7 is furnished at intervals, with the bolts 8, 8 to which is secured the pan 9 having the annular curved wall 10 which forms a mixing chamber of which the annular edge 11 is spaced from the edge of the shield member 7, to provide an outlet for the humidified air as indicated by the arrows B, B. In order to catch the moisture precipitated from the air soon after passing the edge 11, said edge is furnished with the flaring rim 12 which also prevents the moistened air from passing downward immedi-

ately after passing the edge 11. At its center the pan 9 has an inlet furnished with the channeled plug 13 which may be connected with any suitable water supply or through which water may be supplied to the contracted chamber or reservoir 14, of said pan 9, immediately embracing said plug 13, and, preferably, conical in shape. The plug 13 is extended upward to form the step bearing 15, in which the lower end of shaft 16 is journaled, at a point above the level of the water in said chamber 14. This shaft is adapted to be rotated by any well known driving means and carries the conical air drawing member 17 located within the shield member 7 and preferably extending to a point below the edge 11 of the pan 9. At the outer surface of this conical air drawing member 17 are fan blades 18, 18 which, when the shaft 16 is suitably driven in the right direction, act to draw air inward, through the open collar 6, and force said air toward the mixing chamber 10.

Mounted at the inner portion of the conical air drawing member 17 is the tube 19 which extends downward embracing the shaft 16 and the upper portion of the plug 13 and to the lower end of said tube is secured the truncated end of the inverted conical water drawing member 20 which extends within the reservoir 14 while its base meets the under surface of the conical air drawing flange 30 of the member 17 preferably at a distance from the edge of said member 17. If water is supplied to the reservoir 14 and the shaft 16 is suitably driven, air will be drawn inward by the fan blades 18, 18 between the shield member 7 and the air drawing member 17 and will be forced toward the chamber 10. At the same time water, in the reservoir 14, in contact with the surface of the water drawing member 20, will be drawn by centrifugal action upward over the conical surface of said member 20 and then over the downward inclined under or water distributing surface 17', of the member 17, to the edge of said member 17, from which said moisture will be discharged as very fine spray which will be mixed with the air simultaneously discharged at said edge of the member 17 and, after filling the chamber 10, will pass out through the space B to supply moisture to the atmosphere.

While the use of this machine is not limited to any particular purpose it is par-

particularly adapted for use in hospitals as all the moving parts are covered and any noise therefrom is deadened.

5 It is to be understood that my invention is not restricted to the particular shape or to the specific construction of the parts herein shown as I am aware that the same may be considerably modified.

10 The members 17 and 20 comprise two parabolocally conic surfaces which are placed base to base forming a rotating member the surfaces of which are shaped to facilitate the passage thereover of air and water.

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

20 1. A humidifier comprising a conical shield having an opening at the apex thereof, a pan supported from the outer periphery of said shield, said pan having a central contracted water compartment and an inner annular chamber opening at its top circumferentially of the periphery of the shield,
25 a member consisting of two conical paraboloids placed base to base and rotatably mounted between said pan and said shield with its greatest circumferential dimension positioned upon a level with said chamber
30 opening and shield periphery and having its

lower portion extending into said water compartment, and fan blades mounted upon the upper outer surface of the said rotatable member.

2. A humidifier comprising a conical shield 35 having an opening at the apex thereof, a pan supported from the outer periphery of said shield, said pan having a central contracted water compartment and an inner annular chamber opening at its top circumferentially of the periphery of the shield, 40 two conical paraboloids secured together forming a rotatable member mounted between said pan and said shield with its greatest circumferential dimension positioned upon a level with said chamber opening and shield periphery and having its 45 lower portion extending into said water compartment, fan blades mounted upon the upper outer surface of the said rotatable member, an outwardly-extending flange 50 upon said rotatable member and the upper surface of said rotatable member with the said flange having surfaces substantially parallel to and co-extensive with the said 55 shield.

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Witnesses:

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