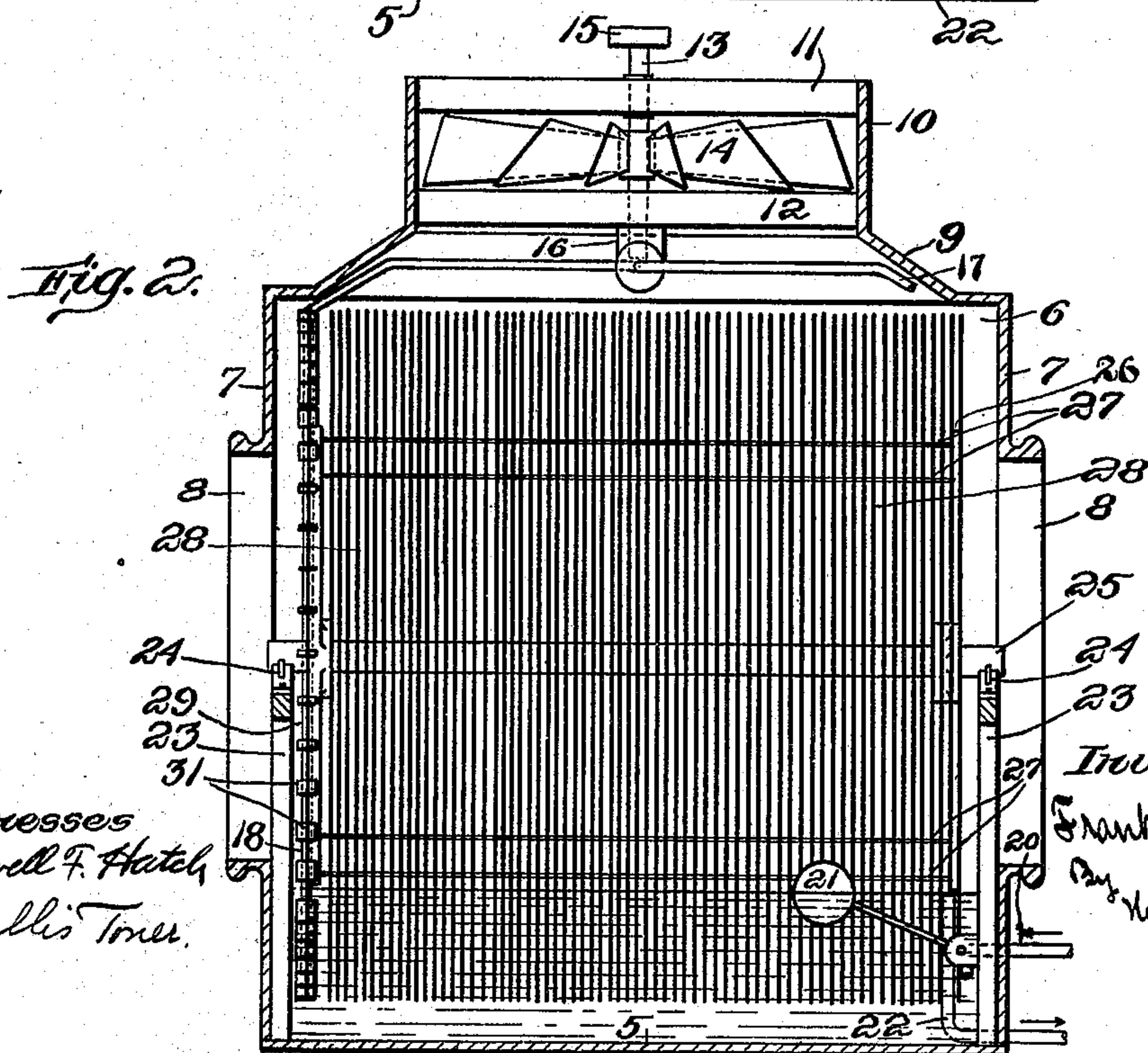
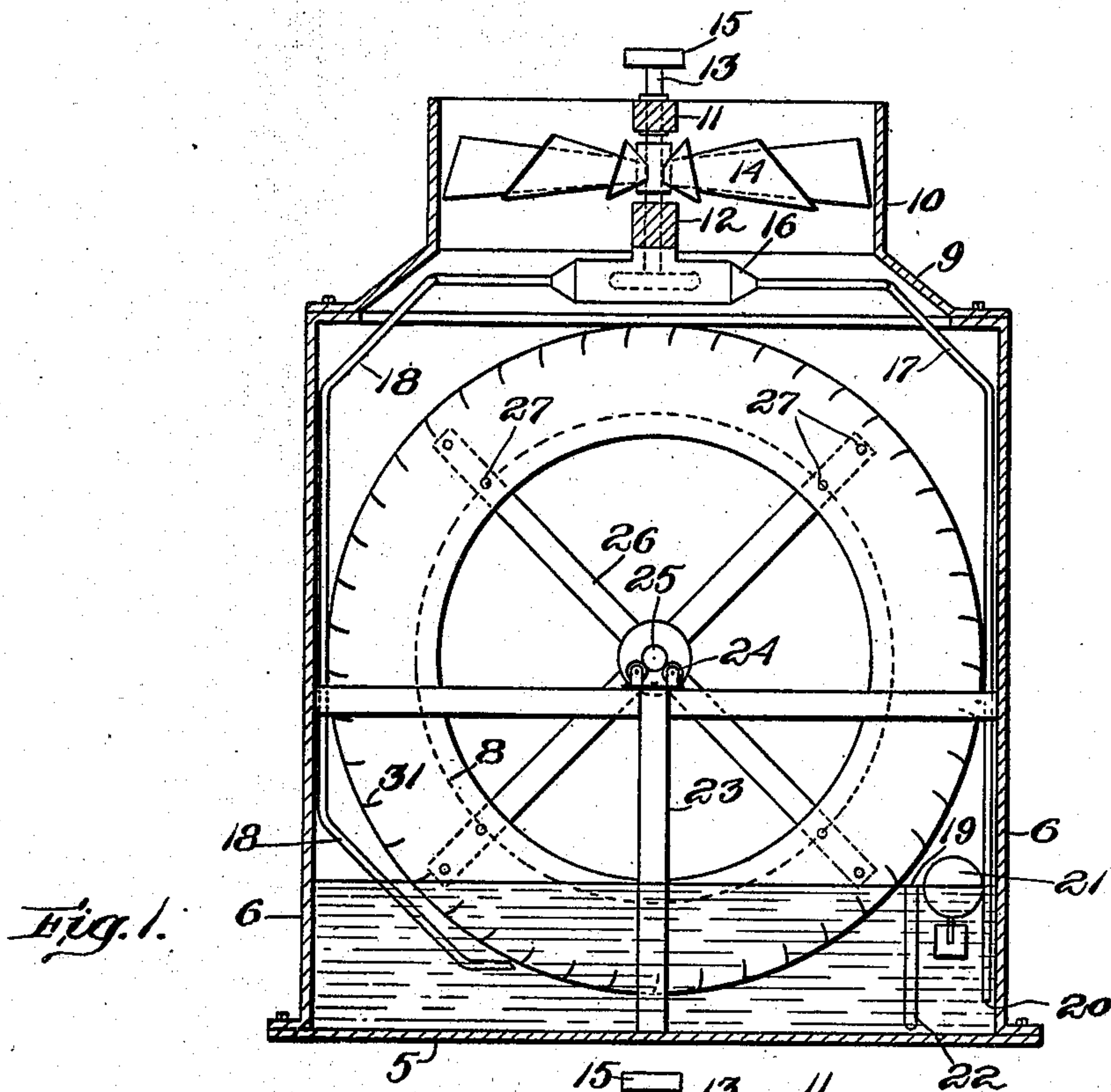


F. B. COMINS.  
HUMIDIFIER.

APPLICATION FILED APR. 16, 1906.

900,355.

Patented Oct. 6, 1908.



Witnesses  
Rowell F. Hatch  
Phyllis Toner.

Inventor:  
Frank B. Comins  
By Henry J. Miller  
att'y



# UNITED STATES PATENT OFFICE

FRANK B. COMINS, OF SHARON, MASSACHUSETTS.

## HUMIDIFIER.

No. 900,355.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed April 16, 1906. Serial No. 311,847.

*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; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in air moistening machines or humidifiers.

One object of the invention is to so construct a machine of this nature that a large quantity of air may be drawn over a great area of surface to which moisture is constantly supplied.

Another object of the invention is to so construct a machine of this nature that the air after passing over the moistened areas may issue from the machine in a large undivided volume.

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

The invention consists in the peculiar construction of the casing.

The invention also consists in the novel construction of the moisture carrying devices.

The invention also consists in the casing having ends furnished with outlet openings, and moisture carrying devices having openings registering with said outlet openings, and means for drawing air into said casing at an angle to said outlets.

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.

Figure 1, represents the machine in end elevation, the casing being shown in section. Fig. 2, represents a vertical sectional view of the casing taken at right angles to Fig. 1.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings the casing has the bottom 5, the sides 6—6, the ends 7—7 having the large outlet openings 8—8, and the top 9 having the inlet compartment 10 forming an open inlet channel for the supply of air to the casing. This channel 10 is furnished with the cross members 11 and 12 having bearings in which the vertical shaft 13, having the fan 14 and the drive pulley 15, is journaled.

Mounted on the member 12 is the casing

16 of any ordinary and well known form of centrifugal pump which is designed to be driven by the shaft 13; to this casing is connected the supply pipe 17 and one or more delivery pipes as 18, both of which extend into the tank 19 located at the lower portion of the casing, water being drawn upward from said tank through the pipe 17 by the action of the pump and delivered to the tank under pressure from said pump through the pipe 18. Water is supplied to said tank 19 by means of the pipe 20 the flow of water being controlled by the float valve 21; said tank is also provided with the overflow pipe 22.

Within the casing are mounted the end frames 23—23 each having a roller, or other anti friction, bearing 24 and on these bearings is rotatably mounted the shaft 25 having the spiders 26—26 the arms of the respective spiders being connected by the rods 27—27 on which a great number of their annular disks 28—28 and 29 are mounted and suitably spaced, the central openings 30 in these disks corresponding approximately in dimensions to the dimensions of the outlet openings 8—8 of the case. One, or more, of these disks, as 29, is furnished with a series of blades, or buckets, 31—31 adjacent to the path of which is located the nozzle of the pipe or pipes 18 whereby water issuing from said nozzle, or nozzles, may impinge against said blades and effect the rotation of the combined series of annular disks 28—28 and 29 at a comparatively slow speed.

The water supplied to the tank 19 may, if desired, be at a temperature higher than that of the atmosphere, to effect the more rapid evaporation of the water, and is preferably of such a height in the tank that the lower portions of the disks 28—28 and 29 pass through the water as said disks are rotated. When the fan 14 is driven, usually at a high speed, the centrifugal fan in the casing 16 draws water from the tank 19 through the pipe 17 and discharges this water under pressure through the pipe 18 against the blades or buckets 31 of the disk 29, thus effecting the comparatively slow rotation of said disk 29, its shaft 25 and the other disks 28—28 carried by the spiders on said shaft. As these disks rotate their wetted surfaces are carried upward the moisture being carried in an opposite direction to the air entering through the fan chamber 10 and the air passing down between the constantly



received wetted surfaces of the disks which form numerous flat channels both walls of which supply moisture to the air passing therebetween, the air after reaching the central openings of the disks being free to flow laterally out through the openings 8—8.

It is of course evident that any well known means may be utilized to effect the rotation of the humidifier disks without departing from the spirit of this invention as, however, it is preferable that said disks should be driven at a slower speed than the fan some simple method, such as that shown, should be used in order to avoid the use of complicated and expensive drive gear.

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

A humidifier comprising a casing having air outlets in their ends, a tank in said casing, a humidifier element rotatably mounted in said casing and comprising a series of disks one of which is furnished with blades, a pump, pipes communicating with the pump casing and with the tank one of said pipes being adapted to direct water passing from the pump under pressure against the blades of said disk to drive the humidifier element, as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK B. COMINS.

Witnesses:

CHARLES B. CUMMINGS,  
HENRY J. MILLER.