

No. 862,541.

PATENTED AUG. 6, 1907.

F. B. COMINS.  
HUMIDIFIER.

APPLICATION FILED NOV. 29, 1905.

2 SHEETS—SHEET 1.

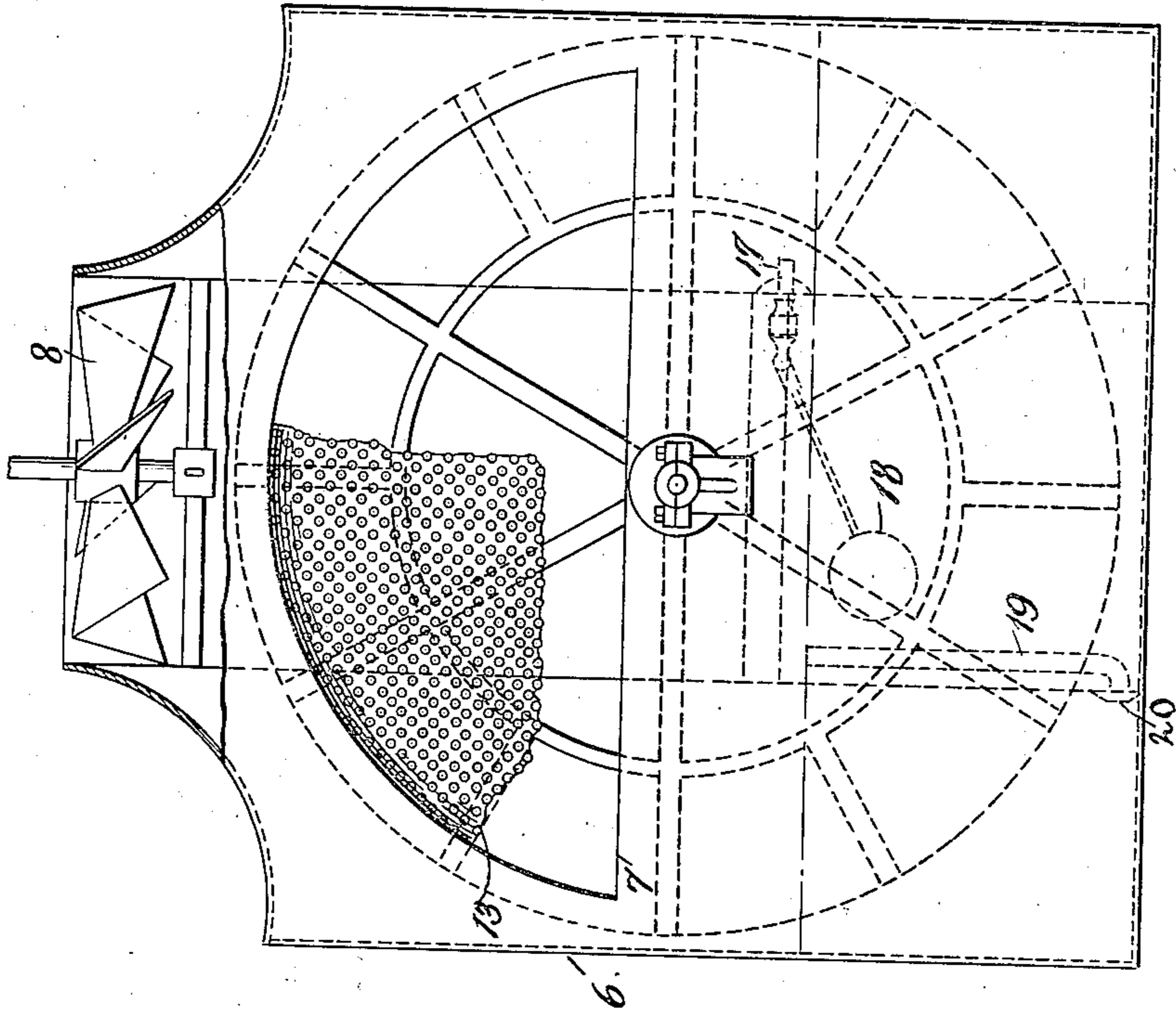


FIG. 2.

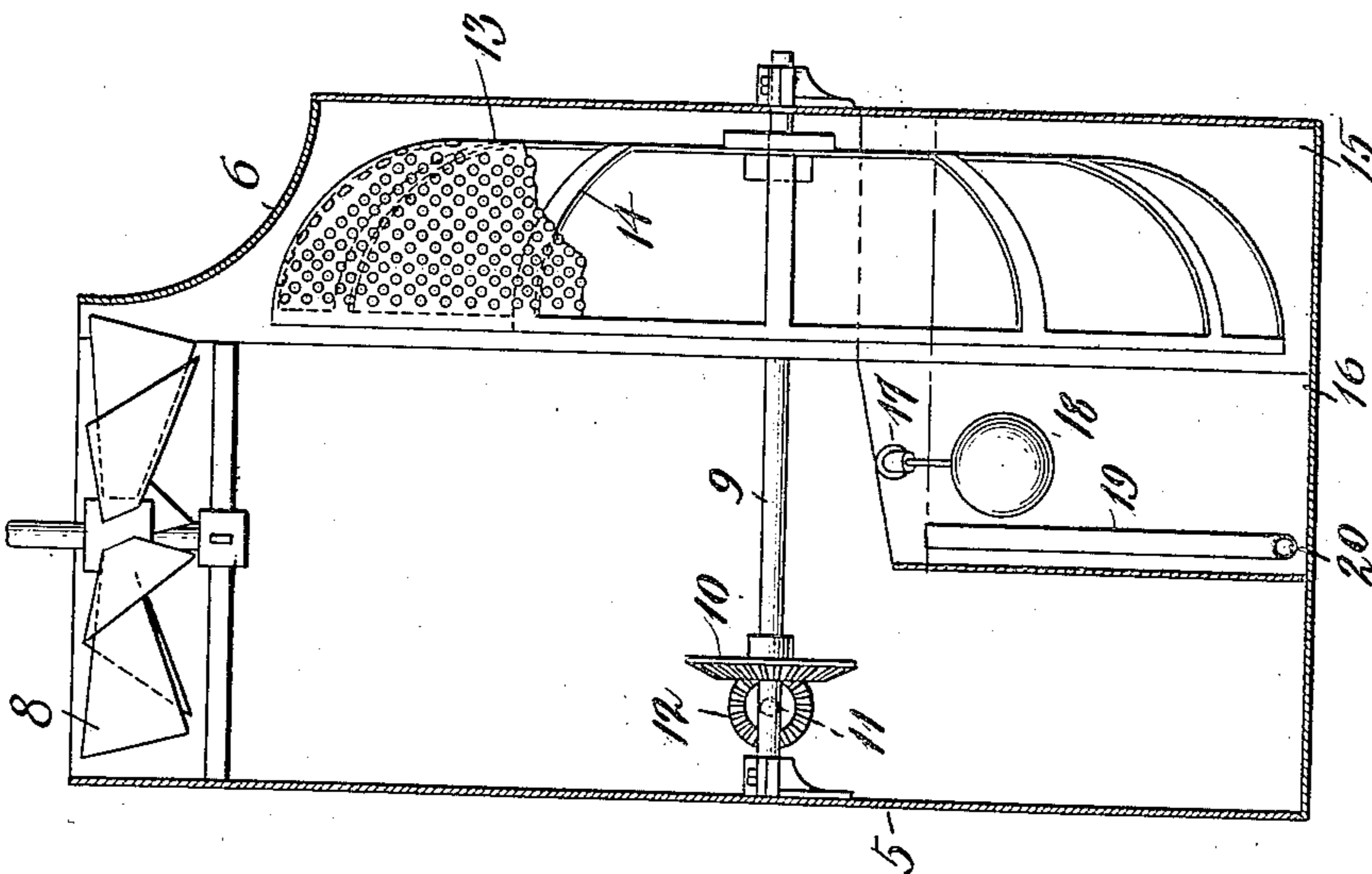


FIG. 1.

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2 SHEETS—SHEET 2.

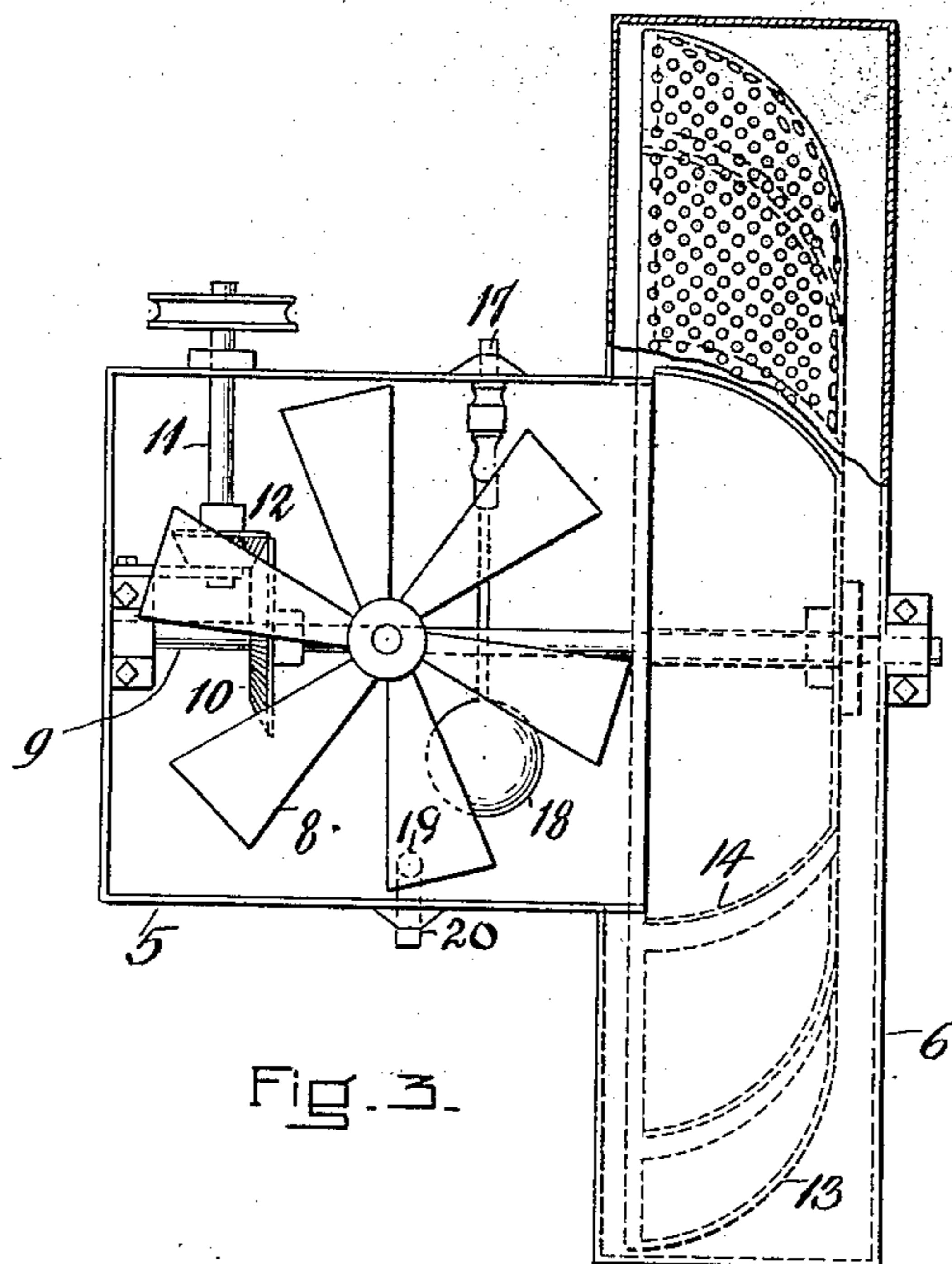


Fig. 3.

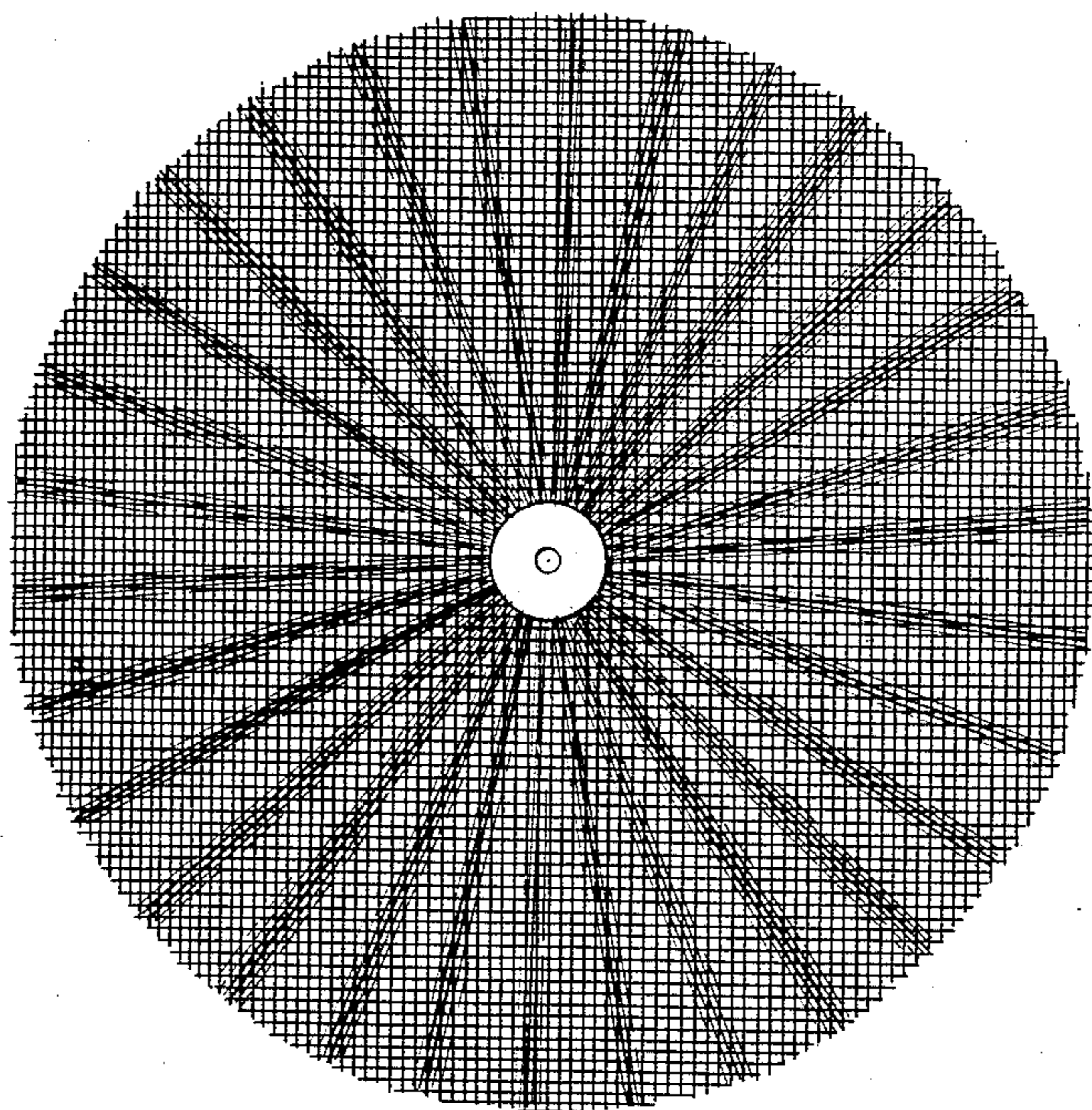


Fig. 4.

WITNESSES  
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# UNITED STATES PATENT OFFICE.

FRANK B. COMINS, OF SHARON, MASSACHUSETTS.

## HUMIDIFIER.

No. 862,541.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed November 29, 1905. Serial No. 289,650.

*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 relates to improvements in air moistening or humidifying machines.

The object of the invention is to sustain a large amount of water in the path of air currents.

Another object of the invention is to so construct a humidifier that the air currents may pass through the water carrier. Another object of the invention is to so construct a humidifier that water may be so collected from a tank and carried into the path of the air currents that the air may pass through the water.

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

The invention consists in a concave foraminous water carrier movably mounted and means for forcing air towards said carrier.

The invention also consists of a casing having an inlet and an outlet, a water tank, and a rotatable foraminous water carrier adapted to work through said tank, together with means for drawing air into said casing.

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 a side elevation of the improved humidifier with parts of the casing removed. Fig. 2, represents a front elevation of the same. Fig. 3, represents a plan view of the same with upper portions of the casing removed. Fig. 4, represents a front view of a modified form of the water carrier.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings in its preferred form 5 represents the air chamber open at its top and communicating with humidifying chamber 6 which is preferably wider than the air chamber, to accommodate the water carrier, and having the semi circular opening 7 in its outer wall. In the upper portion of the air chamber 5 is rotatably mounted the drawing in fan 8 adapted to be rotated in any suitable manner to draw air in large quantities into said chamber.

In bearings mounted on the rear wall of the air cham-

ber and on the front wall of the humidifying chamber is journaled the shaft 9 having the bevel friction disk 10, this shaft 9 is preferably driven by means of the shaft 11 journaled in a bearing in the side wall of the air chamber 5 and having the bevel disk 12 in frictional driving contact with the disk 10. On the shaft 9 is mounted the concave foraminous water carrier 13 preferably having strengthening ribs. 14.

Located in the lower part of the chamber 6 is the water tank 15 having the extension 16 located in the air chamber 5; in this extension 16 is mounted the water supply inlet 17 having any usual valve adapted to be controlled in the ordinary manner by the ball cock 18, the waste pipe 19 extending upward in this extension 16 of the tank 15 to the height of the proposed water level and the draw off 20 being supplied at the lower part of the tank extension.

In Fig. 4 of the drawings is illustrated a modified form of the water carrier formed of foraminous material and having a series of radially extending corrugations which increase the foraminous area.

When in operation the tank 15 is supplied with water and the shaft 9 is slowly rotated to move the water carrier 13 through the water in the tank 15, at the same time the fan 8 is rapidly rotated to draw air into the casing 5. As the carrier 13 passes through the water in the tank the openings through the carrier collect and hold water in thin films and this water, together with the water collected on the surface of the carrier is carried upward, as the carrier rotates, into the upper portion of the chamber 6 where the air seeking an outlet, passes through the openings in the carrier and absorbs the water, as also a portion of the water on the wetted surface of the carrier.

Attention is particularly called to the concave shape of the water carrier in which the air collects and circulates, part of the air passing through the openings of flattened portion of carrier near its axis, but the larger amount of air being forced radially through the openings in the larger area of the concave rim portion of the carrier, thus more thoroughly distributing the humidified air to the outer atmosphere.

The term foraminous is herein intended to include any material having openings therethrough without reference to the manner of forming the said openings by perforating sheet material or by the use of material having a mesh, as wire cloth or fibrous material.

It is evident that the shape and structure of the water carrier 13 may be considerably varied without departing from the spirit of this invention, the object of this

carrier being to take up and carry the largest possible amount of water and to so sustain the water that it will readily be absorbed by the air.

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

A humidifier comprising a casing having an air inlet at its top and an air outlet in the upper portion of one of its sides, a shaft journaled in bearings in the sides of said casing below the outlet, a concave frame mounted on said

shaft, a concave foraminous water carrier on said frame, 10 and a water tank located in the lower portion of said casing, substantially as and for the purpose described.

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

FRANK B. COMINS.

Witnesses:

H. J. MILLER,  
P. E. TONER.