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R. G. CAMPBELL.

HUMIDIFIER.

APPLICATION FILED NOV. 5, 1903.

NO MODEL.

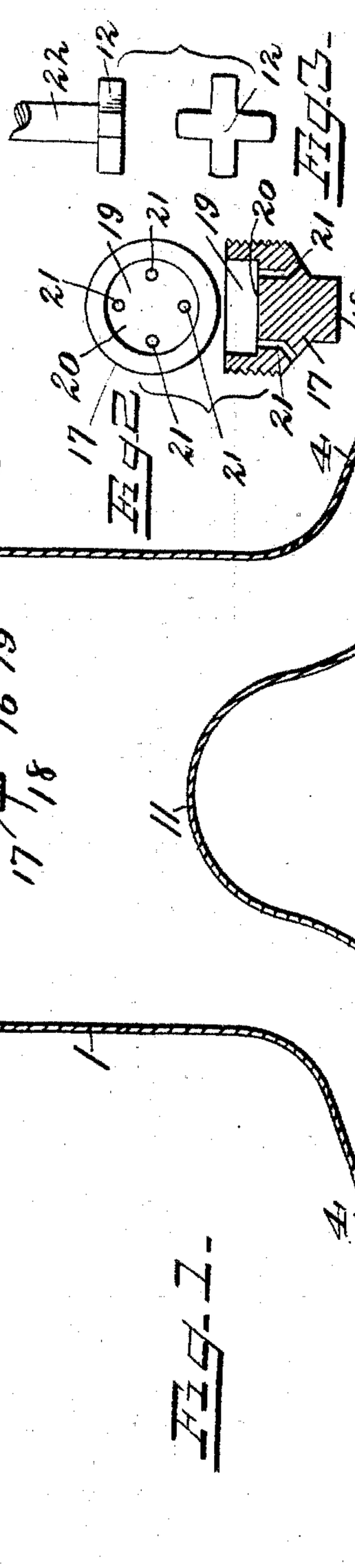

FIG. 2.

FIG. 1.

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UNITED STATES PATENT OFFICE.

ROBERT G. CAMPBELL, OF GREENSBORO, NORTH CAROLINA, ASSIGNOR TO THE AMERICAN MOISTENING COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MAINE.

HUMIDIFIER.

SPECIFICATION forming part of Letters Patent No. 766,989, dated August 9, 1904.

Application filed November 5, 1903. Serial No. 179,873. (No model.)

To all whom it may concern:

Be it known that I, ROBERT G. CAMPBELL, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented certain new and useful Improvements in Humidifiers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to means for moistening and cooling or heating the air in rooms or compartments, such as spinning-rooms, malting-rooms, tobacco-rooms, and other rooms where the air is subject to becoming too dry or liable to be filled with fine particles of dust.

It has for its object to provide an apparatus which will keep the air constantly supplied with any preferred amount of moisture and diffuse such moisture through the room and at the same time serve to cool the air in the room when it is desirable or to warm the room when such a condition is advantageous.

The invention consists in certain improvements in construction, which will be fully disclosed in the following specification and claims.

In the accompanying drawings, which form part of this specification, Figure 1 represents a vertical transverse section, partly in elevation, of a device for the purpose embodying my invention; Fig. 2 an enlarged detail of the valve-seat, and Fig. 3 a like view of the valve.

Reference being had to the drawings and the designating characters thereon, 1 indicates a head, drum, or casing made of sheet metal open at the top and in this instance preferably supported on the supply-pipes 2 and 3 and in an elevated position in a room. The head is provided with a dowwardly-inclined flange 4, on which the dished bottom 5 is supported by bolts 6, which are incased in thimbles 7, and in the bottom 5 is a central discharge-opening 8 for carrying off the excess of water supplied, and from the opening extends a pipe 9 for conducting the water to any preferred receptacle to be used again.

10 is a deflector supported by the bolts 6 and thimbles and is provided with a dome 11, which extends up into the body or cylindrical portion of the head 1 and terminates sufficiently near the discharge end of the valve-case 15 to serve as a baffle, against which the atoms discharged from the valve are projected with sufficient force to break up or disintegrate them and direct the mist or atomic particles of fluid outward over the inclined portion 12′ of the deflector and through the annular opening 13 of the head.

The opening 8 is covered by a screen 14 to arrest any solid matter that may get into the head.

15 indicates the body of the valve or valve-case and is provided with an internally screw-threaded extension 16 at the bottom thereof, into which an externally-threaded plug 17 is screwed, the plug having a head 18 thereon to be engaged by a wrench in inserting the plug. The plug is provided with a rabbet 19, whose bottom forms a valve-seat 20, and through the plug extend passages 21, inclined outwardly at their lower ends to direct the atomized fluid outward against the wall of the head, from which the atomized particles rebound inward against the dome 11 of the deflector and are then directed outward and discharged from the head.

The valve 12 is preferably in the form of a Greek cross and is provided with a stem 22, which extends through the top of the valve-case and is surmounted by a wheel 23 for turning the valve to regulate the size of the streams of fluid discharged through the passages 21. The valve is held to its seat by the tension of spring 24, and the stem passes through a stuffing-box 25, supplied with suitable packing.

The valve-case 15 is provided with necks 26 27 to receive sections of pipe 28 29, on

which are collars 30 31, which are set to engage the interior of the head 1 and secured by screws 32 to hold the head in position on the pipe. The sections 28 and 29 extend through the wall of the head 1 and engage, respectively, stop-cocks 33 and 34, to which the supply-pipes 2 and 3 are connected.

The pipes 2 and 3 may supply water for the summer season to moisten and cool the atmosphere in a room, or steam may be supplied through either of the pipes to warm the drum, moisten the air by the condensed steam, and also warm the air, or water may be supplied through one of the pipes 2 or 3 and steam through the other to effect the moistening of the air largely by water and use the steam as a heating medium. The supply of water and steam is regulated by the stop-cocks 33 and 34.

By this means the humidity and the temperature of the air in a room may be regulated and maintained to suit the purposes and exigencies of the work being done in the room.

It is obvious that water or steam may be used alone and supplied through either of the pipes 2 or 3, if desired.

Having thus fully described my invention, what I claim is—

1. In a humidifier, a head, a supply-pipe for a fluid and provided with a valve for controlling the supply of the fluid, and a valve-case having a detachable plug in its lower end provided with lateral discharge-orifices, a rabbet in the plug above said orifices, and a valve seated in said rabbet and controlling the orifices.

2. In a humidifier, a head, a supply-pipe for a fluid, a valve for controlling the supply of the fluid, and a valve-case having a detachable plug in its lower end provided with a plurality of discharge-orifices, and a valve controlling said orifices.

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

ROBERT G. CAMPBELL.

Witnesses:
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A. H. JONES.