No. 813,328. PATENTED FEB. 20, 1906.

A. SCHMIDT.

APPARATUS FOR MOISTENING AND WARMING ROOMS OR APARTMENTS.

APPLICATION FILED MAY 19, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

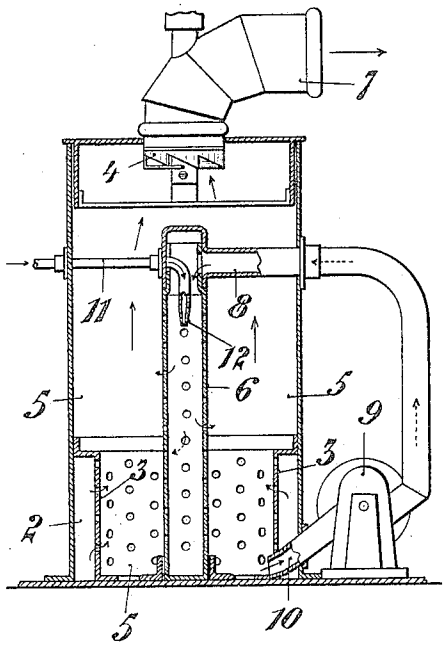


Fig. 2.

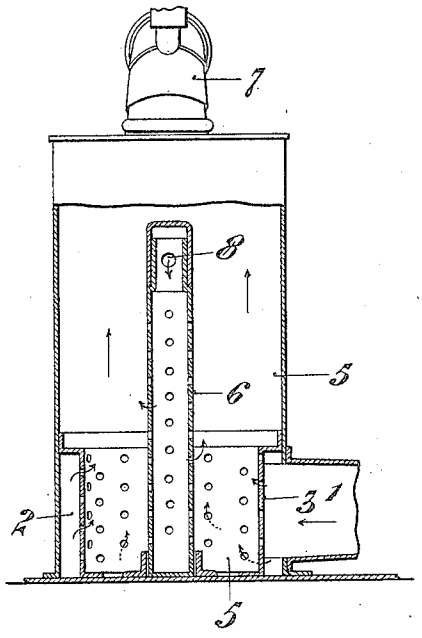
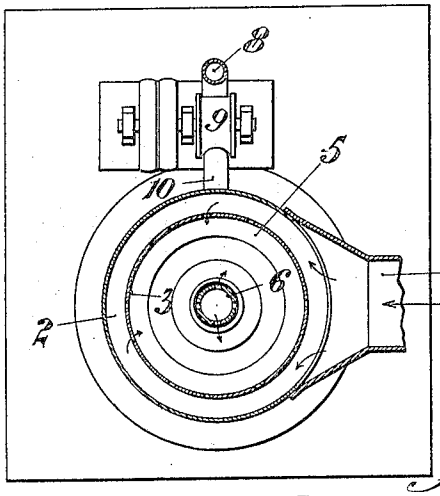


Fig. 3.



Witnesses:

C. D. Hesler

H. B. Hesler

Inventor

August Schmidt

By

James L. Norris.

Atty

No. 813,328. PATENTED FEB. 20, 1906.

A. SCHMIDT.

APPARATUS FOR MOISTENING AND WARMING ROOMS OR APARTMENTS.

APPLICATION FILED MAY 19, 1905.

2 SHEETS—SHEET 2.

Fig. 4.

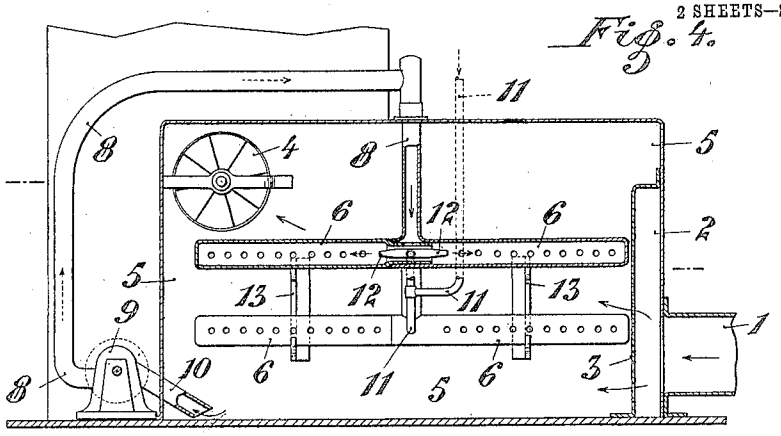


Fig. 5.

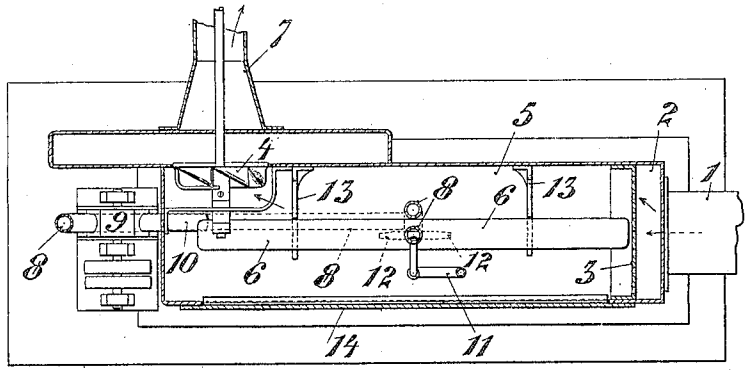
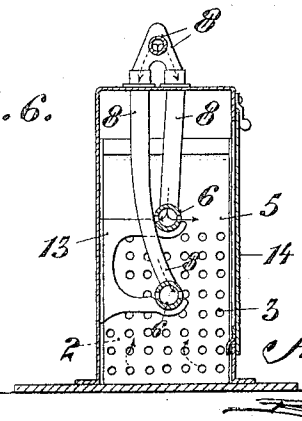


Fig. 6.



Witnesses:

C. J. Kesler

F. B. Kelly

Inventor

August Schmidt

By

James L. Norris

Atty

UNITED STATES PATENT OFFICE.

AUGUST SCHMIDT, OF LANGENSALZA, GERMANY.

APPARATUS FOR MOISTENING AND WARMING ROOMS OR APARTMENTS.

No. 813,328. Specification of Letters Patent. Patented Feb. 20, 1906.

Application filed May 19, 1905. Serial No. 261,273.

To all whom it may concern:

Be it known that I, AUGUST SCHMIDT, gentleman, a subject of the King of Prussia, German Emperor, residing at Langensalza, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in or Relating to Apparatus for Moistening and Warming Rooms or Apartments, of which the following is a specification.

My invention relates to improvements in apparatus for moistening and warming rooms and apartments by means of warm moistened air, and aims to provide in a manner as hereinafter more specifically referred to an air-moistening apparatus which shall be simple in its construction, strong, durable, efficient in its use, readily set up, and comparatively inexpensive to manufacture.

With the foregoing and other objects in view the invention consists of the novel construction, combination, and arrangement of parts hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention; but it is to be understood that changes, variations, and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings, Figures 1 and 2 are vertical sections at an angle of ninety degrees with respect to each other of an air-moistening device in accordance with this invention. Fig. 3 is a sectional plan. Fig. 4 is a vertical longitudinal section of a modified form. Fig. 5 is a horizontal longitudinal section thereof, and Fig. 6 is a vertical cross-section of the structure shown in Fig. 4.

In the construction shown in Figs. 1 to 3 the apparatus has a cylindrical shape, and the divided air and water currents are directed at right angles with respect to and against each other, and in Figs. 4 to 6 a box-shaped or rectangular arrangement is shown in which the subdivided air-currents enter the moistening-chamber in straight horizontal lines and meet divided water-jets sprayed in transverse direction, whereupon they are drawn by the fan and conveyed to the place of utilization.

In the structure shown in Figs. 1, 2, and 3 air admitted at 1 first passes into an annular inlet-chamber 2. The inner wall 3 of this chamber is perforated, so that the air can be drawn by the exhauster 4 in divided jets from said chamber 2 into the moistening-chamber 5, in which the air meets water escaping in the form of jets or spray from a centrally-arranged pipe 6, provided with lateral openings. Whereupon the moistened air so formed rises and is conveyed in a well-known manner to the place of consumption through an adjustable pipe 7, arranged behind or above the fan 4. The pipe 6 is closed at the bottom and has connected to the top thereof the forcing-pipe 8 of a pump 9, the suction-pipe 10 of said pump communicating with the bottom of the air-moistening chamber 5. 11 is a steam-pipe which can be open or shut off, as desired, and which is introduced into the top of the water-jet pipe 6 in a central position, its end projecting downwardly in the pipe 6 and is provided with a nozzle 12, so that the escaping steam acts as an injector, and thus besides its main object—that is to say, the heating of the water and of the air to be moistened with it—it also increases the spraying action of the water. Water not absorbed by the rising air-current collects at the bottom of the moistening-chamber 5 and is sucked by the pump 9 and forced up through the pipe 8 in order again to pass into the jet-pipe 6, and so on. Water lost through the moistening of the air is replaced from time to time in any suitable manner.

In the construction shown in Figs. 4 to 6 the moistening-chamber 5 is box-shaped or rectangular, and in its upper portion at the end opposite the end at which is arranged the air-inlet chamber 2 and the air-inlet 1 is positioned a fan 4, which is mounted at the inlet of the pipe 7, leading to the place or delivery of the moistened and heated air. The water-distributing device is arranged in this case in the shape of superposed perforated pipes 6, closed at their ends, and the moistening-water is supplied to them centrally through the delivery-pipe 8 of a pump 9, having the suction-pipe 10 communicating with the moistening-chamber 5. The water-jet pipes 6 are supported by brackets 13, secured to the wall of the moistening-chamber 5. The moistening-chamber 5 is preferably provided with a removable front wall 14 in order to give easy access to the interior. In the same way as in the construction previously described steam-jet nozzles 12 are mounted in the water-jet pipes 6, the said nozzles being supplied with steam from a common steam-pipe 11. The steam-jet nozzles 12 are in this construction arranged in pairs in each pipe 6 in order to enable the water distributed

in two directions and then escaping transversely or radially into the chamber 5 to be sufficiently heated and sprayed in a uniform manner. Owing to the injector-like action of the steam, the moistening-water can, according to the quantity of steam admitted, be heated to such extent that the warm air escaping from the fan 4 into the rooms will heat them to such an extent that even in winter it will not be necessary to heat the room or apartment in any other way.

Having now particularly described the nature of my invention, what I claim is—

1. An air-moistening apparatus, comprising a receptacle provided with a moistening-chamber and an air-inlet chamber, a perforated partition between the said chambers and adapted to divide the air fed from the air-chamber to the moistening-chamber in the form of jets, a perforated water-distributing pipe arranged in the moistening-chamber and adapted to cause the supplying of water to said moistening-chamber in the form of jets to intercept the jets of air thereby moistening the latter, means communicating with the moistening-chamber and with said pipe for withdrawing the surplus water from said chamber and returning the same to said pipe, and a nozzle extending in said pipe and adapted to supply steam thereto under pressure, and a suction-fan arranged in the upper end of said receptacle and in suitable relation with respect to a conducting-conduit.

2. An air-moistening apparatus, comprising a receptacle provided with a moistening-chamber, means for supplying air to said chamber in the form of jets, a perforated water-distributing pipe arranged in the moistening-chamber, adapted to cause the supply of water to said moistening-chamber in the form of jets to intercept the jets of air, thereby moistening the latter, means communicating with the moistening-chamber and with said pipe for withdrawing the surplus water from said chamber and returning the same to said pipe, and a nozzle extending in said pipe and adapted to supply steam thereto under pressure.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

AUGUST SCHMIDT.

Witnesses:
MAX MEYER,
ERNST EBERHARDT.