L. H. PARKER.

METHOD OF EFFECTING HUMIDIFICATION.

APPLICATION FILED FEB. 4, 1918.

1,307,875. Patented June 24, 1919.

Fig. 1

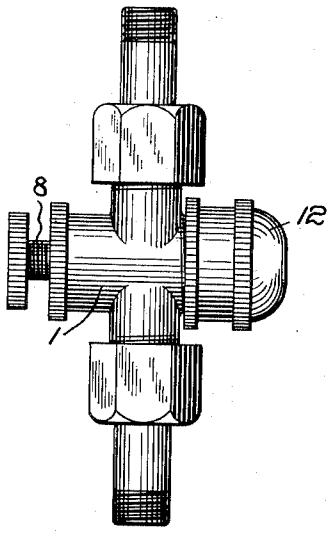


Fig. 2.

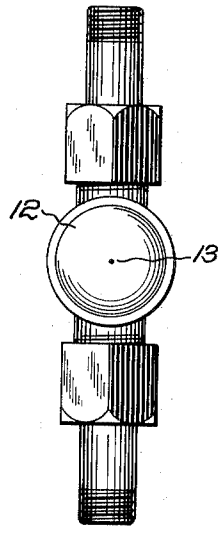
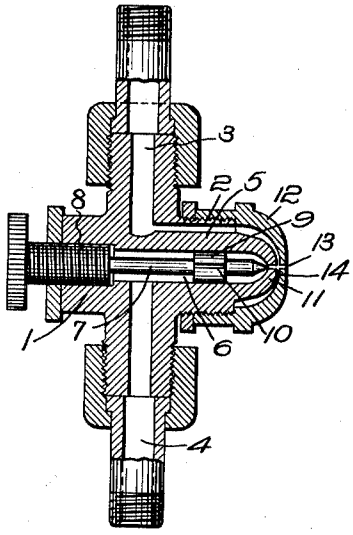


Fig. 3



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UNITED STATES PATENT OFFICE.

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METHOD OF EFFECTING HUMIDIFICATION.

1,307,875. Specification of Letters Patent. Patented June 24, 1919.

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To all whom it may concern:

Be it known that I, LEE H. PARKER, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Methods of Effecting Humidification, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to methods for effecting humidification for various purposes, as, for example, in dwelling houses, mills and plants of various types and descriptions.

In order that the principle of my invention may be readily understood, I will set forth one form of means for practising the same, but without in any way limiting myself to the use of such means in carrying out the method.

Referring more particularly to the drawing, wherein I have represented one form of means for carrying out my method:

Figure 1 is a side elevation of a nozzle whereby my method may be carried out;

Fig. 2 is a front elevation thereof; and

Fig. 3 is a vertical section thereof.

In accordance with my method, I form and maintain a film of the liquid that is employed for humidification purposes and which preferably is water, and I discharge the material of said film into the surrounding air by subjecting such film to the impact of a film breaking and discharging fluid, which is preferably air, but which may be any other suitable medium. Preferably such film is subjected to the impact of the film breaking and discharging fluid in a direction transverse to the film.

The method may be carried out by many different types of nozzles or other devices, but for convenience of description I shall describe in detail a nozzle by which such method is most effectively carried out.

Referring more particularly to the drawing, I have therein represented a nozzle preferably composed of a body 1 having a passage 2, into which water is adapted to be drawn through the passage 3 from any suitable source. The water is preferably admitted under low pressure. Air or other suitable medium is admitted under pressure through a passage 4 from any suitable source. The body 1 of the nozzle has a partition 5, thus providing a substantially axial passage 6 for the air, and which is in communication with the air supply pipe 4, the entering air and water thus being separated by the partition 5. Within the said passage 6 is a suitable needle or other valve 7 having suitable adjusting means 8. Upon the stem of said valve is preferably positioned a guide collar 9 having a groove 10 for the passage of air.

At the forward or outer end of the air passage 6 is a cap-like member 11, which is herein represented as integral with the said partition 5. The water passage 2 communicates with the water supply passage 3, and upon the outer end of the nozzle is adjustably secured by screw threads or otherwise a cap 12 having a central discharge opening 13 in axial alinement with the opening 14 in the cap-like member 11. The construction is such that the air under pressure entering through the passage 4 causes water to be drawn into the passage 3. The water constantly forms a film between the inner surface of the cap 12 and the outer surface of the cap-like member 11, and the thickness of such film may be readily varied by adjustment of said cap 12. Such film is constantly formed and maintained by capillary action between the two cap-like members 11, 12, which are brought close enough together to insure such action. The air entering through the passage 6 breaks through the film at the central portion of the cap and discharges the same in very fine globules into the surrounding air and effects the desired humidification thereof. Such film is constantly broken by the air or other suitable fluid, but is constantly restored through the action of capillarity, hence the water may be merely under suction due to capillary action.

The water or other liquid is maintained as a film between the two cap-like members 11 and 12. The water from which the film is formed is supplied at a comparatively low velocity, and the stream of air entering through the axial passage 6 at high velocity tears apart the water film and drives the same through the opening 13 in the cap 12. As the stream of air issues from the opening 13, it expands and thus forms a conical mass or film of thoroughly atomized water. If the nozzle be placed near an air entrance in the room or building, the atomized water

acts as an aspirator upon the air of the room, and my method involves such use of the nozzle or other means for practising the method. This causes a circulation of the air through the room. Thus the nozzle may be employed in the practice of my invention to create a current of air in the room wherein humidification is to be effected.

While I have specifically described one form of means whereby my method may be practised, it is clearly to be understood that the method may be carried out by any suitable means, and that it is not dependent upon any particular form or structure of mechanism.

Having thus described one form of means whereby my method may be carried out, it is clearly to be understood that although specific terms are employed, they are used in a generic and descriptive sense and not for purposes of limitation, the scope of the invention being set forth in the following claims.

Claims—

1. That method of effecting humidification which comprises conducting by capillarity a film of water between two surfaces so nearly in contact as to establish a film of water by capillarity therebetween, propelling a film breaking and discharging fluid substantially transverse to the established film, effecting the breaking and discharge of said film by the action of the propelled fluid and finally effecting the humidification of the air into which the material of the film is discharged.

2. That method of effecting humidification which comprises conducting by capillarity a film of water between two surfaces so nearly in contact as to establish a film by capillarity therebetween, disrupting said film by discharging a film breaking stream of air under pressure substantially transverse to and against the established film and finally effecting the humidification of the air into which the material of the film is discharged.

3. That method of effecting humidification which comprises conducting by capillarity a film of water between two surfaces so nearly in contact as to establish a film by capillarity therebetween, propelling air under pressure against said film and substantially transverse thereto so as to break and discharge the film, continuously effecting the re-establishment of said film by capillarity and continuously effecting the humidification of the air into which the material of the film as broken is discharged.

4. That method of effecting humidification which comprises conducting by capillarity a film of water into a position substantially transverse to the path of a film breaking flow of fluid, effecting the breaking and discharge of said film of water by the action of said flowing fluid and effecting the ensuing humidification of the air into which the material of said broken film is discharged.

5. That method of effecting humidification which comprises conducting by capillarity a film of water into a position substantially transverse to the path of a current of compressed air, effecting breaking and discharge of said film by the action of said compressed air and effecting the ensuing humidification of air by permitting and effecting the discharge of the material of the film into said air.

In testimony whereof, I have signed my name to this specification.

LEE H. PARKER.