(No Model.)

J. TAYLOR.

HUMIDIFIER.

No. 517,310. Patented Mar. 27, 1894.

Fig. 1.

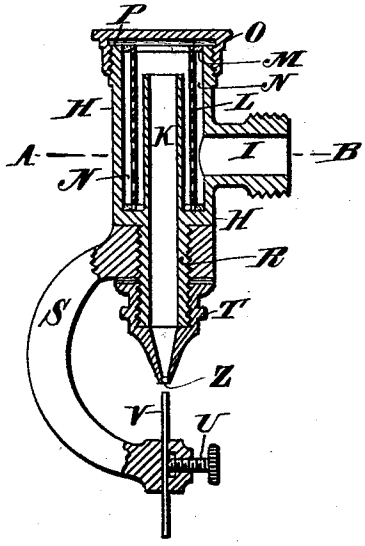


Fig. 3.

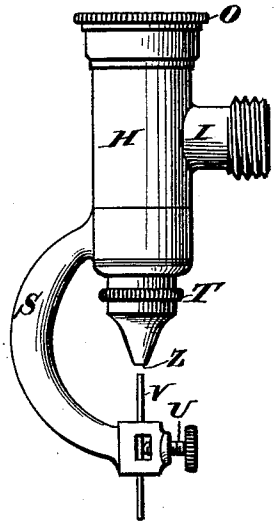
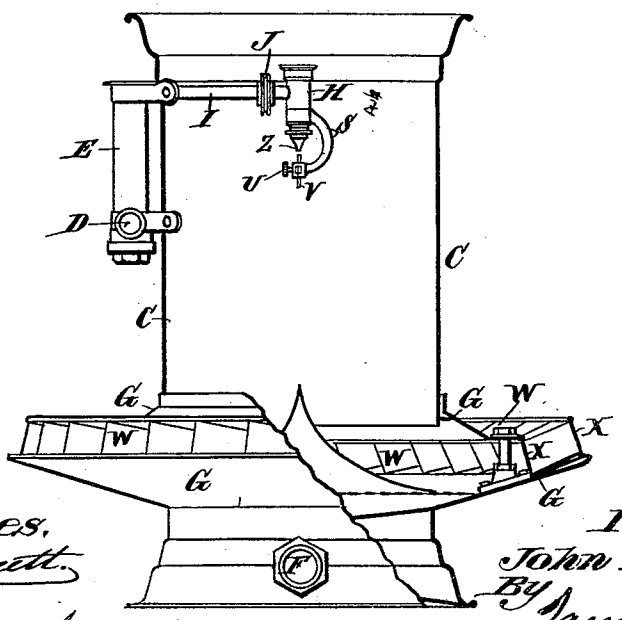


Fig.

Fig. 4.



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JOHN TAYLOR, OF MANCHESTER, ENGLAND.

HUMIDIFIER.

SPECIFICATION forming part of Letters Patent No. 517,310, dated March 27, 1894.

Application filed October 19, 1893. Serial No. 488,630. (No model.) Patented in England June 12, 1893, No. 11,494.

To all whom it may concern:

Be it known that I, JOHN TAYLOR, of the firm of Dawson, Taylor & Co., Limited, fire-engineers, of Blackfriar's Bridge, Manchester, in the county of Lancaster, England, have invented new and useful Improvements in Humidifiers, (for which I have obtained a patent in Great Britain, No. 11,494, dated June 12, 1893,) of which the following is a specification.

This invention relates to improvements in humidifiers for moistening or saturating air in mills, weaving sheds, factories, and other buildings, and consists of an improved water dispersing nozzle and the manner of constructing the eduction vanes or outlets.

My invention in connection with the dispersing nozzle consists in placing before the orifice, through which the water passes, a pin which divides the current into a very large cone shaped spray, which, when placed in the cylindrical casing of the humidifier, induces a current of air through it, which is washed and moistened by coming in contact with the particles of water, thereby issuing cool or warm according to the temperature of the water.

My improved dispersing nozzle consists in an adjustable projecting pin disposed in front of the orifice, the said pin being of a diameter equal to the diameter of the inlet of the jet, and having a flat face at right angles with the current of water issuing from the jet.

The other part of this invention relates to the form of the eduction vanes or outlets for the purpose of further breaking up of the particles of water as the same issues from the humidifier.

Figure 1 is a sectional elevation of my improved dispersing nozzle. Fig. 2 is a sectional plan through line A. B. Fig. 3 is an outside elevation of Fig. 1, and Fig. 4 is a part sectional and outside elevation of a humidifier with my improvements applied.

C is the casing or cylinder of the humidifier; D the water inlet; E the filter; F water return pipe, and G the distributing tray or outlet from the apparatus.

The water dispersing nozzle consists of the body H coupled to the filter E by the pipe I and the nut J. The body H of the dispersing nozzle is provided internally with the stand pipe K which leads to the outlet Z of the nozzle.

Between the inner wall of the body H and the outer wall of the stand pipe K is fixed the metallic filter L consisting of perforated gauze; the upper and lower ends being held in position by the rings M to form a tight joint to prevent sediment that may accumulate in the cavity N passing under same. The upper end of the body H is inclosed by the cap or cover O screwed thereon, the joint being effected by the pliable ring P. The under side of the body H is provided with the screwed stem R on which is mounted the arm S, which is secured thereto by means of the nut T; the lower end of the latter forming the outlet Z of the nozzle.

In the arm S is mounted the adjustable projecting pin V secured by the screw U. The pin V is, by preference, of a diameter equal to the diameter of the outlet of the nozzle Z with a flat face at right angles with the current of water issuing from the said nozzle or jet. This particular size and form of pin V splits up the water issuing from the nozzle or jet Z to a degree of fineness which has never been attained hitherto by a jet of this character having only a single stream of water.

I would have it understood that I do not limit myself to the diameter of the pin V, or in the flatness of the face, as a variation in these points may take place without destroying its complete usefulness, but the effect is not so good as when the said pin V is of equal diameter to the outlet of the nozzle Z.

An important part of this invention is that the sharp edge of the flat face on the outer diameter of the pin V meets the outer diameter of the jet of water at its smallest diameter, and close up to the mouth of the jet Z where the velocity is the greatest. In all other jets where a projecting edge has been presented to the water current it has been of a much larger diameter than the orifice of the jet Z, and the water has been divided in the center and expanded before being split up.

Water is supplied to the body H by the pipe I into the cavity N and through the perforated metallic filter L, and rises up the outside of the stand pipe K and flows down the center of same to the nozzle or jet Z.

In the distributing tray or outlet G attached to the lower end of the casing or cylinder C I mount the angular deflectors W for the purpose of further breaking up the spray and arresting surplus water in its outlet from the humidifier; the surplus water flowing down the inclined bottom of the distributing tray G to the water return or outlet pipe F. The angular deflectors W are secured in any convenient manner to the sides or frames X, which may be made in a complete ring, in halves, or other segments for ready removal if desired.

What I claim is—

1. In combination with apparatus for humidifying air, and the nozzle Z for discharging water therein, the adjustable pin V of equal diameter to the diameter of the orifice or outlet Z of the nozzle and provided with a flat upper surface with sharp edges at right angles to the current of the flow of the water to meet the outer diameter of the jet of water at its smallest diameter and fixed close up to the mouth of the jet where the velocity is the greatest, substantially as described.

2. In a humidifier, the combination with the casing or cylinder C having a water-distributing nozzle H, and a water-distributing tray G having an inclined bottom and an outlet pipe F to which the surplus water flows down the inclined bottom, of the angular water deflectors W mounted on the inclined bottom of the distributing tray for further breaking up the water from the discharge nozzle, substantially as described.

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

JOHN TAYLOR. [L. S.]

Witnesses:

GEORGE CROSSLEY,

EDMUND CHADWICK.