(No Model.)

A. PETIT.

AIR WETTING APPARATUS.

No. 418,746. Patented Jan. 7, 1890.

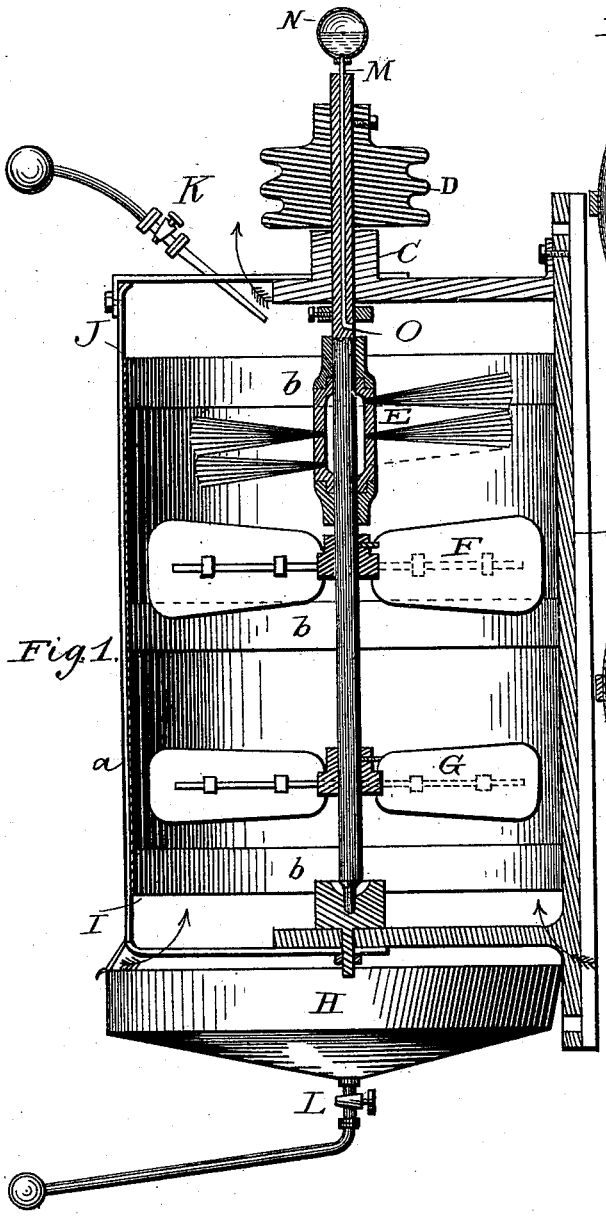

Fig. 1.

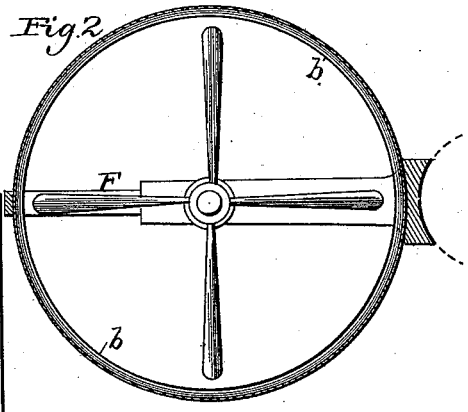

Fig. 2.

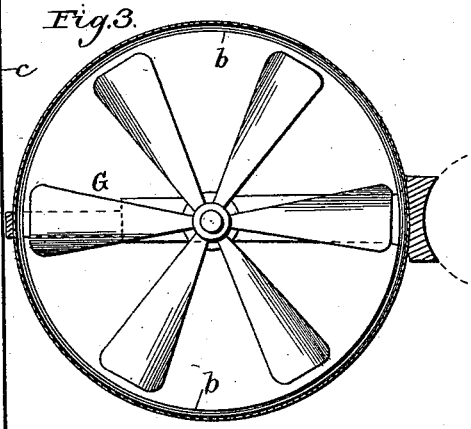

Fig. 3.

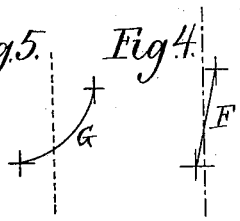

Fig. 5.

Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

ARMAND PETIT, OF FOURMIES, FRANCE.

AIR-WETTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 418,746, dated January 7, 1890.

Application filed November 28, 1888. Serial No. 292,161. (No model.) Patented in France April 25, 1888, No. 190,129.

To all whom it may concern:

Be it known that I, ARMAND PETIT, engineer, a citizen of the French Republic, and a resident of Fourmies, in the Republic of France, have invented a certain new and useful Air-Wetting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

The above-mentioned invention has not been patented to me in any country except in France, by Letters Patent No. 190,129, dated April 25, 1888.

In all spinning-mills, and particularly in those for spinning wool, the conversion into threads of the slivers or yarns previously prepared is only properly effected when the air in the room contains a certain degree of moisture. In winter this moistening of the air is easily effected by means of steam brought from the boilers and allowed to escape through small cocks or valves placed at suitable distances apart upon a pipe running through the mill. This pipe serves at the same time for heating the rooms; but it cannot be made use of in summer. Moreover, it has the serious objection that it uses a large quantity of steam from the boilers of the mill.

By my invention the required amount of moisture in rooms in which spinning is carried on is very easily obtained at an exceedingly small first outlay and with an expenditure of motive power practically *nil*.

The accompanying drawings are in illustration of my improved moistening apparatus.

Figure 1 is a vertical section through the apparatus fixed upon a column. Figs. 2 and 3 are horizontal sections showing the arrangement of the revolving vanes F and G, hereinafter described. Figs. 4 and 5 show the angle of inclination of the same vanes F and G.

The apparatus is placed in the upper part of the rooms in different positions, and is fixed either to the columns or to the beams of the ceiling.

Each apparatus is composed of a vertical shaft or axle A, supported below by a footstep B and above by a bearing C. Above the latter bearing is fixed a grooved pulley D, which is driven by means of a small cord, and itself drives the next succeeding apparatus by means of a second cord, the amount of motive power being, as will be seen, very small. The shaft A makes about twelve hundred revolutions per minute, and has fixed upon it at G a vane having six arms or blades inclined at an angle of about forty-five degrees, serving to draw in the dry air from the room, while at F is fixed a second vane having four arms or blades, preferably of metal, like those first described, but inclined at an angle of about ten degrees only, which serves to moderate the upward current of air.

At E is fixed a helically-formed brush, which allows the air to readily continue its upward movement.

At K is a cock or valve through which a small stream of cold water is allowed continually to pass, the falling stream being pulverized or atomized by the brush E, so that the air from the vanes G and F can readily absorb it in its upward progress and leaves the top of the apparatus sufficiently saturated with moisture, the degree of saturation being easily regulated by the amount of opening of the cock K. The surplus water falls into the basin H, whence it escapes through a pipe at L.

In order to prevent the water from being scattered about by the speed of revolution of the shaft A, the vanes and the helical brush are surrounded by a casing or envelope of sufficiently-fine woolen cloth, which extends round the circumference of the apparatus from I to J, and through which the air charged with moisture passes, as well as out at the top.

In the drawings the flannel lining is shown in the form of a bag open at the bottom. It is supported by three rings *b b b*, fixed on one side to the support *c c* of the whole apparatus, and on the other side to an arm *a*, which is itself bolted to horizontal arms from the support *c*. The elasticity of the envelope causes it to adhere firmly to the rings *b b b*, its upper end contracting, as shown in the drawings. The combination of this envelope with the rest of the apparatus forms an important part of my invention.

By the use of the apparatus described and shown I have obtained excellent results in my own establishment.

The improved apparatus may also be used

for hygienic purposes, particularly for the aeration and ventilation of inhabited places, hospitals, ships, and the like. There may be added at the top of the shaft A, as shown in the drawings, a small vessel N, containing any suitable antiseptic or perfumed liquid, which is scattered upon the brush E through a narrow passage M and opening O, formed in the interior of the shaft A. The moistened air becomes thus mixed with the contents of the vessel N.

The invention is applicable to all cases in which it is required that air should be moistened.

I do not confine myself to the precise form, arrangement, and materials of the apparatus, which may be varied more or less, as desired.

I claim—

1. In an air-moistening device, the combination of a vertically-revolving shaft with a helical brush attached thereto and turning therewith, a pipe supplying water to said brush, and a casing of some material through which moistened air can pass, all substantially as and for the purpose set forth.

2. In an air-moistening device, the combination of a vertically-revolving shaft with inclined vanes directly connected thereto, a helical brush also fastened to said shaft and revolving therewith, a pipe supplying water to said brush, and a casing for the whole composed of some material through which the moistened air can pass, all substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of November, 1888.

ARMAND PETIT.

Witnesses:
E. KANTE,
E. ANTHONIS.