W. H. FLETCHER.

HUMIDIFIER.

APPLICATION FILED MAY 12, 1911.

1,053,802. Patented Feb. 18, 1913.

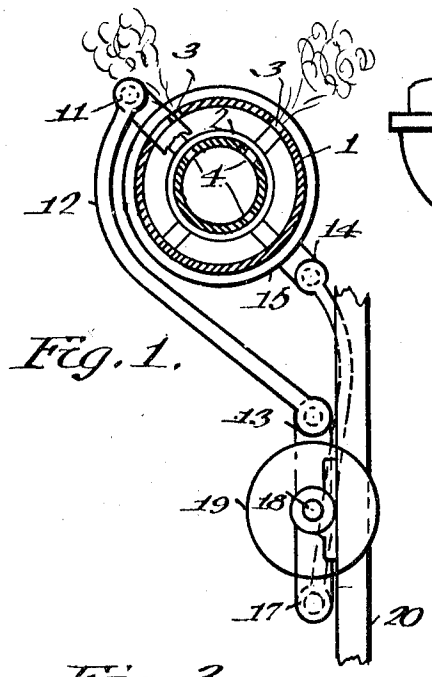

Fig. 1.

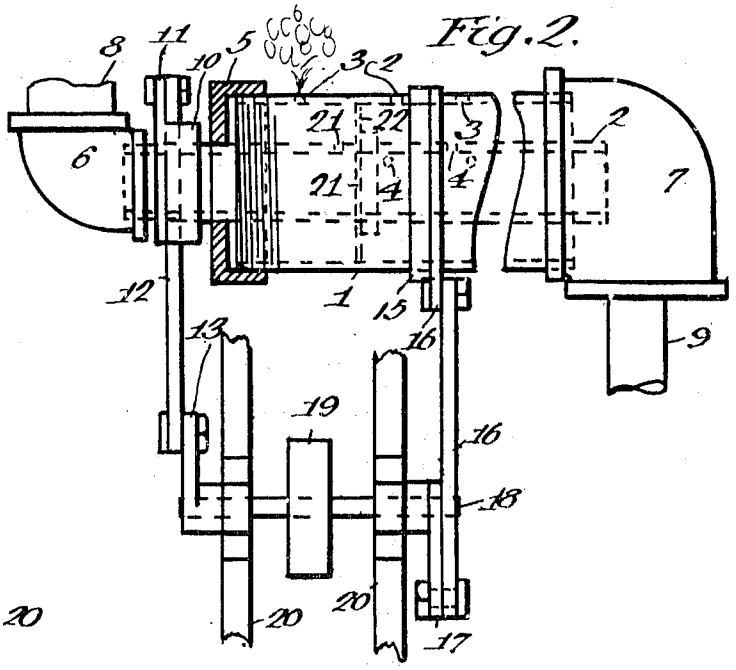

Fig. 2.

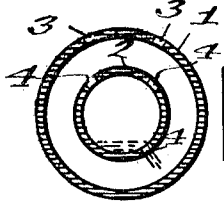

Fig. 3.

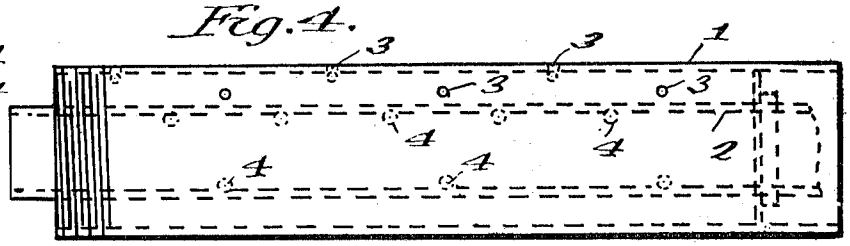

Fig. 4.

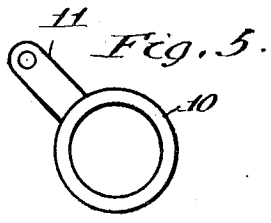

Fig. 5.

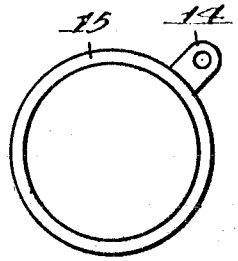

Fig. 6.

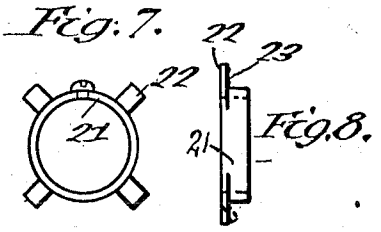

Fig. 7.

Fig. 8.

Fig. 9.

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HUMIDIFIER.

1,053,802. Specification of Letters Patent. Patented Feb. 18, 1913.

Application filed May 12, 1911. Serial No. 626,824.

To all whom it may concern:

Be it known that I, WILLIAM H. FLETCHER, citizen of the United States, and resident of Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Humidifiers, of which the following is a specification.

This invention relates to means of conveying steam to the different parts of a room where it is required to moisten the air.

The object of my invention is to humidify the dry air in a room where the said dry air interferes with the working of threads in the manufacture of textiles. I attain these results by the mechanism, as illustrated in the accompanying drawings, in which similar numerals refer to similar parts throughout the several views.

Figure 1 is a view of a section of my invention as seen from the end. Fig. 2 is a side view of the device. Fig. 3 is a cross section of the two pipes. Fig. 4 is a detail showing the two pipes. Fig. 5 shows the piece which surrounds the inner pipe. Fig. 6 is a view of the piece which surrounds the outer pipe. Fig. 7 is the piece which keeps the inner pipe in the center of the large one. Fig. 8 is a side view of Fig. 7. Fig. 9 is a view of the connecting arm.

In the drawing a device is shown by the means of which the air in a room may be made to maintain a uniform moisture so that in dry weather the winding and working of threads in the manufacture of textile fabrics may be facillitated.

The steam issuing from the pipes must not be wet or contain condensed steam as in that case it will spatter the fabrics and rust the machinery. To prevent this damage it is necessary to have the condensation taken out of the steam. This is accomplished in the following way: In the drawing 1 shows a pipe with holes 3 placed at intervals throughout the whole length of the pipe; on one end of this pipe 1 there is an elbow 7 for the purpose of carrying away the condensed steam through the pipe 9. On the other end of the pipe 1 there is a cap 5 through which a pipe 2 passes and the hole in the cap serves as a bearing so that the pipe 1 with the cap 5 can turn freely around the pipe 2. The pipe 2 also has holes placed at intervals throughout its full length. This pipe receives the steam by means of the connection 8 and the elbow 6, the said pipe 2 fits loosely in the elbow 6 so that it can turn freely back and forward on the end in the thread in the elbow. The other or extreme end may be plugged if desired. The pipe 1 also turns freely in the thread in the elbow 7.

At intervals around the pipe 2 and inside of pipe 1 there are supporting pieces as shown in Figs. 7 and 8, these pieces or rings 21 are made to receive the pipe 2, the feet 22 rest on the inside of the pipe 1. This ring serves the purpose of keeping the pipe 2 centrally located in the pipe 1 and allows of a movement of the pipes on their axes.

The movement of the two pipes about a quarter way around is caused by the pieces as shown in Figs. 5 and 6, these pieces fit tightly over the pipes, the piece 10 over the inner pipe 2 and the piece 15 over the outer pipe 1.

From the lug 11 on the encircling piece 10 the connecting arm 12 is operated from the crank 13 and from the lug 14 on the ring 15 the arm 25 is operated from the crank 17. The cranks 13 and 17 are operated and secured by and on the shaft 18, which is revolved by means of the pulley 19.

When the shaft 18 is revolved the connections mentioned cause the outer and inner pipes to revolve about one quarter the way around and back again, each pipe turning in a direction opposite to the other. This turning of the pipes has the effect of causing the steam emitting from the holes in the outer pipe to be thrown in different directions in the room. And the similar turning of the inner pipe causes the condensed steam in the inner pipe to empty from the holes as indicated by 4, as shown in Fig. 1, into the larger or outer pipe and thus escape from the end connection 7.

The steam escapes from the holes 4 in the inner pipe and strikes against the walls of the outer pipe since the holes in the outer pipe are not opposite the holes in the inner pipe. The partially condensed steam is thus taken out and escapes through the lower end of the pipe 1 at its end 7; and the steam which then passes through the openings 3 into the air of the room is comparatively dry.

Having thus described my invention, what

I claim and desire to secure by Letters Patent is:

In a device for humidifying air, a perforated outer pipe rotatably supported at its ends, a perforated inner pipe rotatably mounted in the outer pipe and supported centrally therein by pieces placed at intervals along its length, a ring with a lug secured to each of the pipes, cranks for rotating the pipes, arms connecting said lugs with said cranks, and a shaft to which said cranks are connected as set forth and described.

Signed at Paterson, in the county of Passaic and State of New Jersey, this eleventh day of May, A. D. 1911.

WILLIAM H. FLETCHER.

Witnesses:

H. HENNIG,

HERBERT GOBLE.