

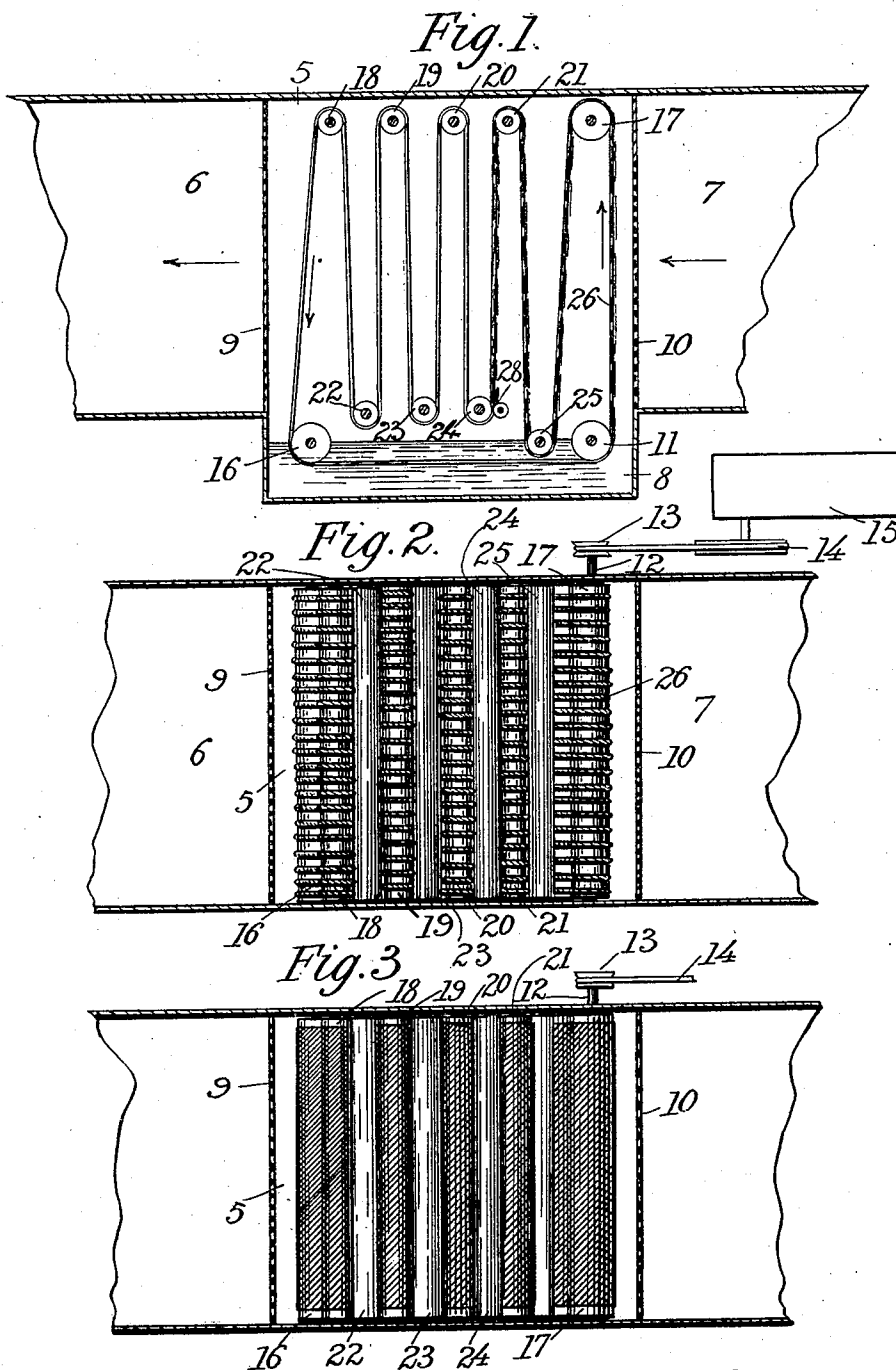
No. 700,858.

Patented May 27, 1902.

R. H. THOMAS.
AIR PURIFYING AND COOLING APPARATUS.

(Application filed Apr. 18, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

RICHARD H. THOMAS, OF CHICAGO, ILLINOIS.

AIR PURIFYING AND COOLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 700,858, dated May 27, 1902.

Application filed April 18, 1901. Serial No. 56,507. (No model.)

To all whom it may concern:

Be it known that I, RICHARD H. THOMAS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Air Purifying and Cooling Apparatus, of which the following is a specification.

This invention relates to air purifying and cooling apparatus; and it has for its object to provide a construction by the use of which the air may be first washed of its impurities and then dried, further objects and advantages relating to the details of construction, which will be apparent from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a vertical sectional view taken through an air-chute and showing the arrangement of the washing and drying apparatus therein. Fig. 2 is a section taken at right angles to the section of Fig. 1 and showing the washing and drying apparatus in plan. Fig. 3 is a view similar to Fig. 2 and showing the substitution of fabric for the cables.

Referring now to the drawings, there is shown a chamber 5, having the air-chute sections 6 and 7 connected at opposite sides thereof, so that the chamber is a continuation or portion of the chute, the lower portion of the chamber being extended below the chute-sections referred to and forming a tank 8 to receive water to be used in washing the air.

Covering the openings in the sides of the chamber 5 with which the chute-sections communicate are screens 9 and 10; and within the chamber and between these screens is the apparatus for washing the air.

The air-washing apparatus consists of a driving-roller 11, which is disposed in the front end of the tank and with its lower portion below the water-level, the shaft 12 of this roller being taken outwardly from the casing and having a driving-pulley 13 thereon, with which is engaged the belt 14 from a motor 15, of any suitable character, so that this driving-roller may be rotated. At the opposite end of the tank is a second roller 16, which is likewise disposed with its lower portion below the level of the water in the tank.

Vertically above the roller 11 is a roller 17, close to the top of the chamber 5, and in the rear of the roller 17 are other rollers 18, 19, 20, and 21, and in staggered relation to these last-named rollers and at the bottom of the chamber and adjacent to the water-level of the tank are other rollers 22, 23, and 24, while an additional roller 25 is spaced between rollers 24 and 11 and with its lower portion below the level of the water of the tank.

A series of cables 26 are provided, and each cable is taken from roller 11 upwardly and over roller 17, then down and around roller 25, then up and over roller 18, then down and around roller 24, and so on, in zigzag, and finally around roller 16 and back to roller 11, so that as the roller 11 is rotated the cables will be caused to travel upwardly and downwardly through the chamber 5 and back through the water in the tank, the water serving to wash the cables and to wet them, so that dust particles will adhere. Thus the first vertical portions of the cables are wet, and air coming through the adjacent screen comes in contact with these wet cables, and the solid particles in the air strike the cables and are taken up by the water thereon. The second, third, and fourth sections of the cables are also wet and have the same action to remove impurities; but as the cables pass around the roller 24 they pass between a drying-roller or wringer 28, which acts to compress the cables and to squeeze the water therefrom, and as the rollers 22, 23, and 24 do not carry the cables below the water-level of the tank they act to take up the moisture that may be blown by the air from the wet cables, and the air as it finally passes through the back screen is dry and free from impurities of a solid nature. The cables in their passage through the tank are washed.

In Fig. 3 of the drawings there is shown a construction wherein a fabric belt is substituted for the cables, the operation being practically the same and the fabric being sufficiently open to permit the air to blow through.

In practice other modifications may be made and any suitable materials and proportions may be used for the various parts without departing from the spirit of the invention.

What is claimed is—

1. An air washing and drying apparatus

- comprising a chamber having a tank communicating therewith and adapted to hold a liquid, rollers disposed to dip into the tank, rollers disposed at the top of the chamber, rollers disposed between the first and second series of rollers, a wringer coacting with one of the rollers, an absorbent material extending transversely throughout the width of the chamber and passed over the rollers to move in planes at angles to the liquid-level of the tank, and air-chutes disposed to convey air to and from the chamber for passage through the absorbent material, whereby the air will be first washed and then dried.
2. A device for washing and drying air comprising a chamber having a liquid-holding tank, and absorbent material extending

throughout the width of the chamber, guide-rollers disposed to direct the material first through the tank and then backwardly and forwardly thereabove, and a wringer coacting with one of the rollers, said chamber having air inlet and outlet openings to permit of passage of air to through and from the absorbent material, whereby it may be first washed and then dried.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

RICHARD H. THOMAS.

Witnesses:

CHAS. KILVEEDER,
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