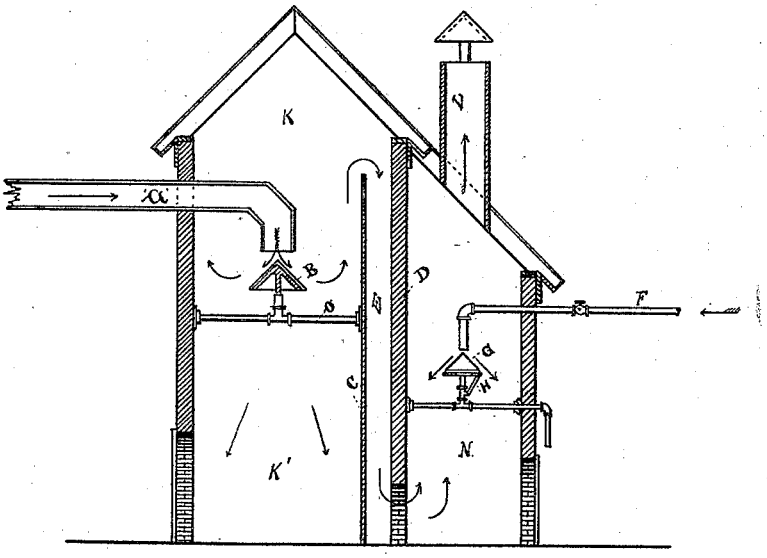
(No Model.)

D. D. DRUMMOND.

DEVICE FOR CONVEYING AND PRECIPITATING DUST ARISING FROM WOOD WORKING MACHINERY.

No. 301,223. Patented July 1, 1884.



Witnesses;
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UNITED STATES PATENT OFFICE.

DAVID D. DRUMMOND, OF CHICAGO, ILLINOIS.

DEVICE FOR CONVEYING AND PRECIPITATING DUST ARISING FROM WOOD-WORKING MACHINERY.

SPECIFICATION forming part of Letters Patent No. 301,223, dated July 1, 1884.

Application filed July 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, DAVID D. DRUMMOND, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Devices for Conveying and Precipitating Dust Arising from Wood-Working Machinery, &c., of which the following is a specification.

My invention consists in providing suitable mechanical appliances for utilizing steam, preferably from the exhaust, (being the more economical,) for the purpose of precipitating and collecting the dust created principally by wood-working machinery of all kinds, and to separate such dust from coarser or heavier materials—such as shavings, &c.—while the material to be cleansed and separated from the dust it contains is being conveyed to a receiving room, box, or other suitable structure by means of a fan or fans, or any method whatsoever, and to effect which I construct the shavings-tower with two compartments, K and N, and employ the combination or equivalent of such as shown in the drawing herewith and forming a part hereof.

The figure shows a sectional view of the shavings-tower, in which A represents the ordinary flue connected with the fan, and, entering the shavings-tower, discharges on the distributing-surface of shavings-distributer B; B, a cone with its apex located centrally beneath the discharge end of the main air-pipe A, (for distributing the air and for checking the force of its current,) resting on brace O; C, a partition in the tower, open at the top; D, another partition in the tower, open at the bottom; E, air-passage formed by the relative position and construction of partitions C and D, through which the dust is conveyed by the modified current into the steam-compartment N at such a point that before escaping through air-vent L it is brought in contact with the steam discharging through steam-pipe F; F, steam-pipe discharging on the distributing-surface of steam-distributer G; G, cone similar to cone B, for distributing the steam, having a trough around its base to receive the product of condensation and discharge it in waste-pipe H; H, waste-pipe for condensed steam; K, main shavings-tower; N, steam-chamber and receptacle for the dust after precipitation, connected with compartment K by means of the opening through the base of partition D and over the top of partition C.

Operation: The débris entering tower K through pipe A is thrown upon distributer B, which distributes the current of air and scatters the material with which it is charged, permitting the heavier portion to fall, while the dust rises and passes downward through air-passage E into chamber N. As the air charged with dust rises after entering chamber N, it encounters the steam distributed by cone G and condenses the same, which in turn precipitates the dust through the minute subdivision of the particles of moisture, while the air rises cleansed and purified and escapes through air-vent L.

It is evident that fair results in the precipitation of dust can be obtained in a single chamber in which to admit both air and steam, in which case the dust and shavings would be thrown down together; but by the use of an auxiliary chamber in which to bring the lighter portions of the débris in contact with steam the dust and shavings are separated and the shavings kept dry for fuel, and that distributers differing in form and construction from cones B and G may be substituted. I therefore do not confine myself to the use exclusively of separate chambers for air and steam, nor to any particular form of construction of distributers B and G; but

What I claim as new, and desire to secure by Letters Patent, is—

1. In a dust-controlling apparatus, in combination with an air and shavings inlet pipe, A, shavings-distributer B, arranged in such a manner as to cause an even distribution of the shavings and dust introduced through pipe A, chamber K, containing said distributer B, air-channel E, connecting the receiving-chamber K at a point above the apex of cone B, with steam-chamber N at a point below the apex of steam-distributer G, located in said chamber N, for the purpose set forth.

2. In combination with the aforesaid air and

shavings inlet pipe A, shavings-distributer B, chamber K, and air-passage E, chamber N, steam-inlet pipe F, steam-distributer G, (arranged in such a manner as to cause an even distribution of the steam when introduced through pipe F in chamber N,) and air-vent L, arranged at such a point in chamber N with reference to steam-distributer G that before escaping the dust-charged air must first pass through the saturated atmosphere, all constructed separately and connectedly substantially as and for the purpose set forth.

DAVID D. DRUMMOND.

Witnesses:

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