(No Model.)

A. BACKUS, Jr.

DUST ARRESTER FOR WOOD WORKING FACTORIES.

No. 257,271. Patented May 2, 1882.

Fig. 1.

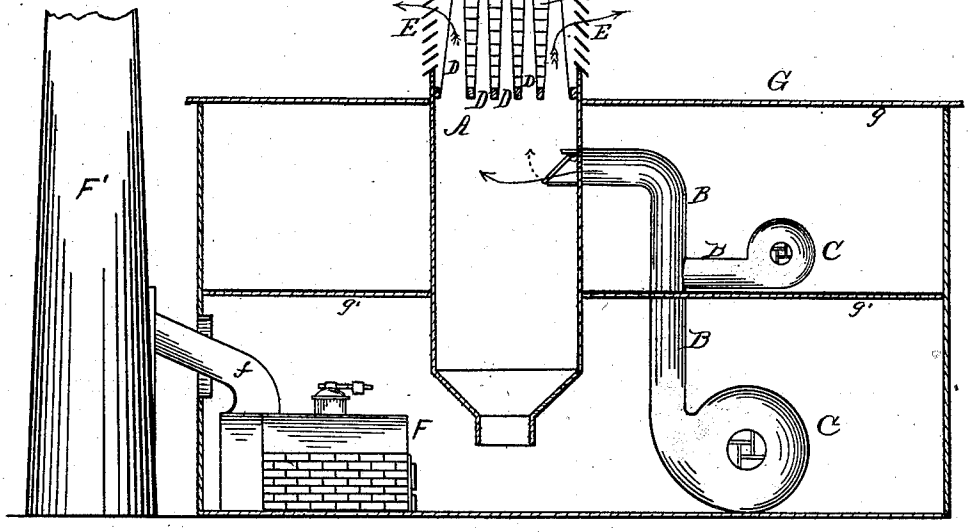
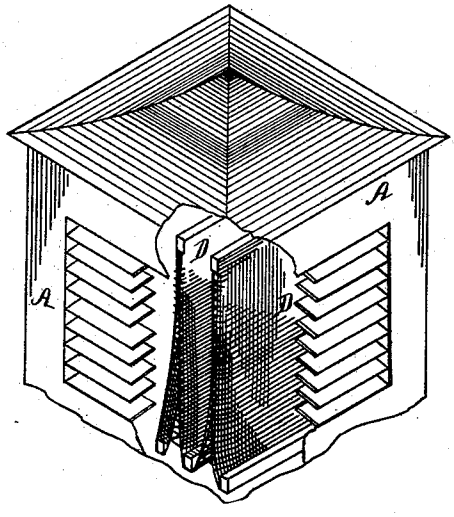


Fig. 2.



WITNESSES

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DUST-ARRESTER FOR WOOD-WORKING FACTORIES.

SPECIFICATION forming part of Letters Patent No. 257,271, dated May 2, 1882.

Application filed September 3, 1881. (No model.)

To all whom it may concern:

Be it known that I, ABSALOM BACKUS, Jr., of Detroit, county of Wayne, State of Michigan, have invented a new and useful Improvement in Dust-Arresters for Wood-Working Factories; and I declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of the combination of devices and appliances hereinafter described, and more particularly pointed out in the claim.

In the drawings, Figure 1 is a vertical section of a building provided with dust-arresting devices according to my invention. Fig. 2 is a perspective view of the upper end of a dust-tower with a portion of its walls broken away in order to show a preferred form of dust-screen arranged therein.

Heretofore great difficulty has been experienced in disposing of the dust in box-factories, planing-mills, wood-working factories, and places of like character. The danger from fire has been greatly increased by the accumulation of such dust within and upon the building, and the annoyance arising from its blowing upon the roofs of adjacent houses and into yards, alleys, &c., has also been very great.

It is the object of my invention to overcome this difficulty and do away with this annoyance by disposing of the dust as it comes from the machinery, having been drawn away by a blower or other like device.

To this end, A is a dust-tower arranged vertically in a building and extending upward through the roof *g* and downward through an intermediate floor, *g'*, thereof, and into which all the dust and dirt from the machinery are blown through the pipe B by means of a blower or other like device, C, of the ordinary character, one of which should be arranged in each room of the building in which dust is likely to be caused, and connected with the dust-tower by a discharge-pipe, as shown at B, connecting with said tower below the screen D, which is arranged in its top.

The screen D is composed of a series of bags or pockets made of burlap or other loose sleazy fabric. I prefer to stretch it vertically on a wooden rack or frame in such a manner that as the air-blast laden with dust enters the tower at any suitable height it has to pass through these bags or cavities in order to escape from the upper part of the dust-tower by apertures E, made for that purpose. The blowers C take in the dust-charged air from the rooms through their induction-openings in the ordinary manner.

Now, the effect of the fabric above mentioned is to separate the dust and dirt from the air, and while the latter is allowed to pass freely through and out the dust accumulating on the inside of these bags or cavities falls by its own gravity to the botton of the tower, where it can be utilized as fuel for a furnace, preferably located near the tower for this purpose, as shown at F, said furnace being shown as provided with a flue, *f*, leading to a smoke stack, F', outside the building.

I wish it understood that I do not confine myself to the vertical arrangement of the bags or pockets, for it will be seen that the same effect might be produced by a series of bags arranged horizontally, or by a single piece of burlap or similar fabric stretched across the tower above the entrance of the blast-pipe and below the apertures for the emission of the air; but I have found the device herein described to be admirably adapted to the purpose. A person may enter the tower above the fabric at the openings for the emission of the air and facilitate the dropping of the accumulated dust by agitating the bags or pockets with a stick or pole. This is done when the blower is not running, say at noon, or at intervals two or three times during the day; but without this agitation the operation of the device is quite satisfactory. The vertical arrangement of the burlap and the peculiar bag forms shown are desirable, inasmuch as they provide a very large and extended surface through which the air can escape, while a simple horizontal surface of the fabric extending across the tower would considerably impede the passage of the air, thus requiring a tower of large dimensions, or else a fabric with so open a mesh as not to properly intercept the dust. My invention, however, contemplates any arrangement of the fabric which will permit the air to pass with sufficient freedom and yet arrest the dust.

The particular bag form of device shown in the drawings is formed from a continuous piece of material, or of separate pieces arranged as shown in Fig. 1, and then the outer edges sewed together, as shown in Fig. 2, so as to prevent the otherwise free escape of air at such edges.

When the fabric is arranged across the tower in any direction, and especially in the devious course shown, the air rising from beneath the cloth is buoyed up, so that when the blast ceases the cloth sags down and thus clears itself of dust. This is particularly the case with the zigzag arrangement opposite the open spaces in the tower, for the air blowing through the openings will cause the cloth or fabric to flap and thus clear itself. The device thus becomes automatic to a certain degree.

What I therefore claim is—

The combination, with a house or building having inclosed compartments or rooms, of a dust-tower extending from the interior to the outside of said building, and having an inward extension into one or more rooms thereof, a screen of loose-meshed fabric arranged across the interior of said tower, one or more blowers arranged in a room or rooms of the building and provided with openings or an opening communicating with the interior of said room or rooms, and a discharge pipe or pipes leading from the said blower or blowers to the dust-tower below the screen therein, said tower having an opening or openings at or near its top, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ABSALOM BACKUS, JR.

Witnesses:

J. EDWARD WARREN,

SAMUEL E. THOMAS.