(No Model.)

B. A. DAVIS.

DUST COLLECTOR.

No. 351,023. Patented Oct. 19, 1886.

Fig. 1.

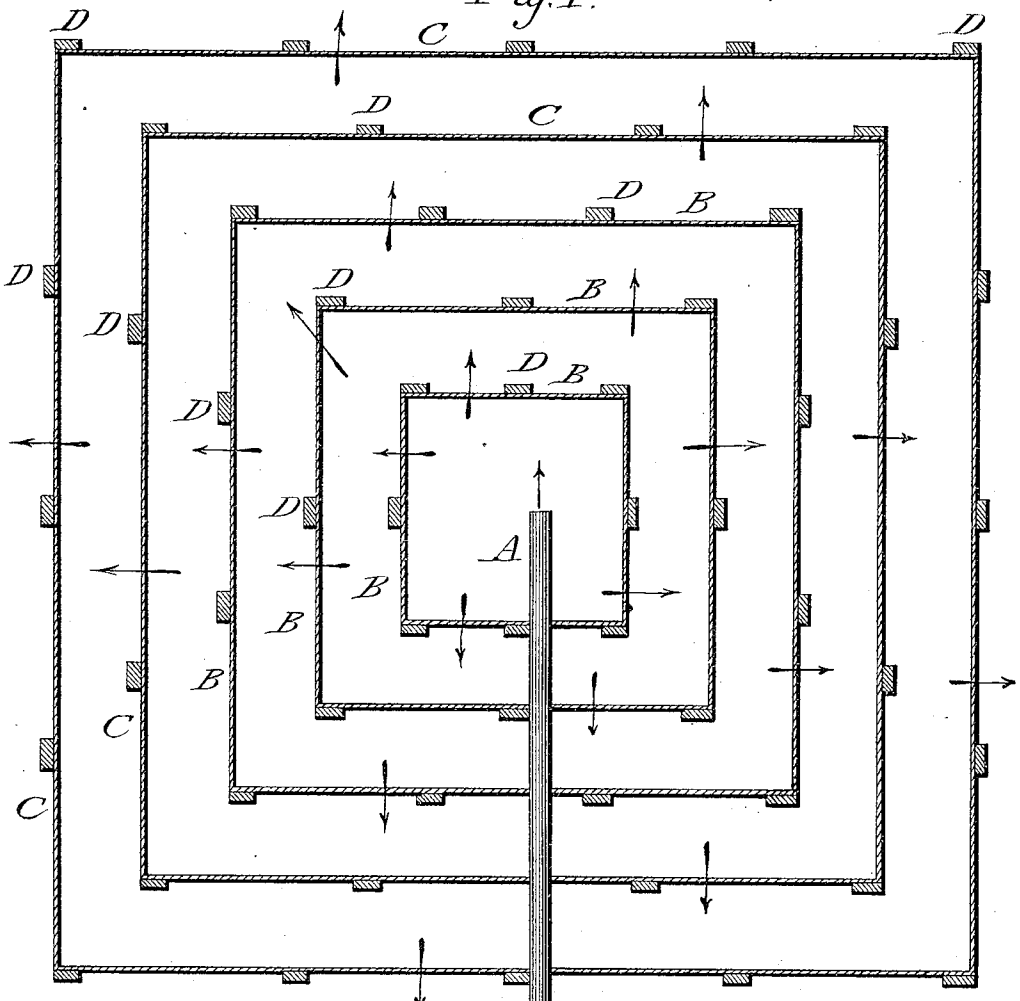
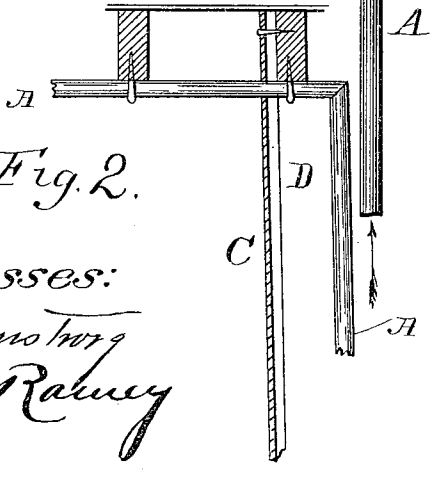


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

BENJAMIN ANSLEY DAVIS, OF BERMUDA OCHRE WORKS, ASSIGNOR TO GEORGE DAVIS, OF PETERSBURG, VIRGINIA.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 351,023, dated October 19, 1886.

Application filed May 7, 1886. Serial No. 201,479. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN ANSLEY DAVIS, a citizen of the United States, residing at the Bermuda Ochre Works, in the county of Chesterfield and State of Virginia, have invented a new and useful Improvement in Dust-Collectors, of which the following is a specification.

My invention relates to improvements in dust collectors or arresters wherein it is desirable to employ a powerful air-blast; and my object is, mainly, to employ within a room of a building a number of cloths of different degrees of fineness, hung so as to form a series of rectangular spaces or passages, and to combine therewith an air-duct leading into the interior space, and communicating with an air-blower or other suitable air-forcing engine.

The invention which I am about to describe is especially intended for use in factories where it is desirable to store the dust and utilize it for various purposes, and at the same time avoid danger from fire should the dust be allowed to escape from the building.

I attain my object by the device illustrated by the annexed drawings, in which Figure 1 is a horizontal section of the dust-collector taken near the top thereof; and Fig. 2 is a vertical section through the ceiling or upper floor of a building, showing the blast-pipe A secured to the ceiling, a part of one of the cloth partitions, and a studding.

Referring to the drawings by letters, A designates a pipe, which, in practice, will be connected to the blast-mouth of a suitable blower, fan, or other air-forcing engine, by means of which the air laden with dust is forcibly injected into the center of a rectangular inclosure. The pipe A may be carried from the floor of the building or room in which the dust-collector is arranged to the ceiling or upper floor, and suitably secured thereto, and thence carried through or above the cloth partitions, hereinafter described, to the central inclosure. This dust-collector is composed of a series of cloths, which are nailed to the ceiling of the room, and which extend to the floor thereof. External to each cloth partition, and at suitable distances apart, are studding D, which also extend from the ceiling to the floor, to which they are nailed, and are necessary for the purpose of keeping the cloths in place and resisting the powerful blast of air from within the inner inclosure in its passage outward through the several cloth partitions, as indicated by the arrows on the drawings. It will be observed by reference to Fig. 1 that the cloth partitions are arranged in squares, one within the other, leaving dust-collecting spaces between them. The three inner rectangular inclosures are formed by means of walls or partitions B B B, of thin cotton cloth, usually called "cheese-cloth." The two outer partitions or walls, C C, are formed of cotton sheeting or other cloth of like texture. The upright pieces or studding D, which serve to resist the outward blast of air against the cloth partitions, are preferably arranged about three or four feet apart, and the cloth partitions need only be nailed to the ceiling, so that they will be allowed to wave freely when the force of the air-current is diminished or entirely cut off. Beneath the room or structure may be arranged a hopper for catching the fallen dust, which latter may be carried by a conveyer wherever desired; but these devices are not necessary, for the reason that the dust may fall upon the floor and be swept off after raising the cloth partitions. The effect of the inner walls or partitions, B B B, is to collect or arrest the coarser particles of dust, and the outer partitions arrest and collect the finer particles, so that (I have found in practice) the air which escapes through the outer partitions is entirely freed from dust. The pipe A, it will be understood, is connected with a suitable blower, into the eye of which the dust-laden air is drawn by suction, and thence discharged or forced through the pipe.

I am aware that prior to my invention and improvement storage and dust-arresting structures of various kinds have been known and used in mills and other factories, most of which

consist of open-meshed fabrics for arresting the dust in connection with air-blast. Such devices I do not broadly claim; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

The within-described dust-collector, consisting of a series of vertical cloth partitions arranged in rectangular form, one within the other, and having spaces between them, in combination with a blast-pipe leading into the space inclosed by the inner rectangular partition, substantially as described.

BENJAMIN ANSLEY DAVIS.

Witnesses:
J. H. MEACHAM,
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