(No Model.)

R. McWILLIAMS.

DUST COLLECTOR.

No. 527,341. Patented Oct. 9, 1894.

Fig. 1.

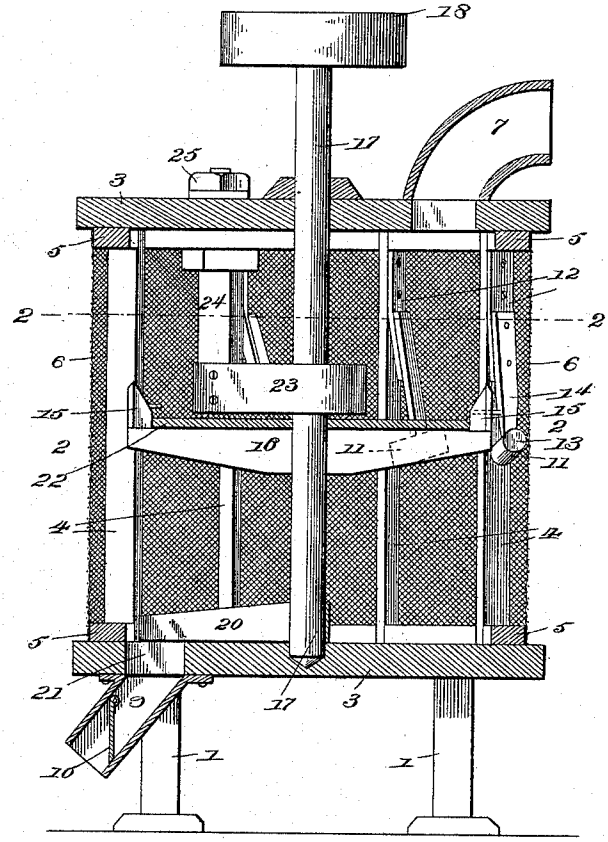
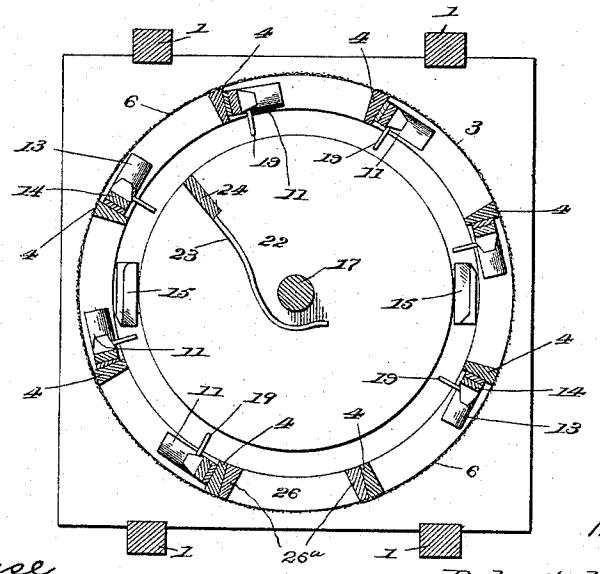


Fig. 2.



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ROBERT McWILLIAMS, OF WEST NEWTON, PENNSYLVANIA.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 527,341, dated October 9, 1894.

Application filed May 14, 1894. Serial No. 511,251. (No model.)

To all whom it may concern:

Be it known that I, ROBERT McWILLIAMS, a citizen of the United States, residing at West Newton, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Dust-Collectors, of which the following is a specification.

My invention relates to dust collectors which are commonly used in flour mills and it has for its object to purify the dust-laden air located in the room. This I accomplish by means of a cloth-covered cylinder into which the dust-laden air is forced, and which allows the air to escape but retains the dust within the cylinder from whence it is conveyed away to a suitable receptacle. Some of the dust generally adheres to the cloth surrounding the cylinder and is shaken from it by means of hammers hinged to the framework of the cylinder and caused to strike against the framework by means of a pair of cams carried by cross-pieces rigidly secured onto the shaft which passes through the cylinder. This constant knocking against the framework causes the dust to drop to the bottom of the cylinder from whence it is removed by means of a scraper also carried by the shaft.

My invention further consists of certain features of novelty that will be hereinafter fully described and specifically pointed out in the claims.

In the accompanying drawings which form a part of this specification—Figure 1 is a vertical section of my device, and Fig. 2 is a horizontal section thereof taken on the line 2—2, Fig. 1.

In the said drawings: 1 represents the uprights of the framework carrying the cloth-covered cylinder 2, and 3 the top and bottom pieces thereof which pieces also form the top and bottom heads of the said cylinder. The said cylinder 2 is composed of the uprights 4, connecting pieces 5 and cloth 6, which is of such a mesh as to allow the air to escape through its meshes but to retain the dust within the cylinder. This cloth is secured to the uprights 4 in any suitable manner. 7 represents the inlet to said cylinder through which the dust-laden air is forced, and 9 the valved outlet thereof through which the dust escapes. The valve 10 in said outlet is of any suitable construction and is to prevent air from entering the cylinder at that point and to allow the dust to escape after the outlet becomes filled.

11 represents a number of hammers located within the cylinder, and hinged at 12 to the uprights 4. These hammers consist of the metallic heads 13 and handle 14, and they are adapted to strike against the said uprights so as to shake the cylinder and cause any dust which may be sticking to the cylinder cloth to drop therefrom. These hammers are worked by means of the cams 15 of any suitable construction carried by the cross-head 16 rigidly secured to the shaft 17 which is driven by the driving pulley 18. These cams revolve with the said cross-head and strike against a projection 19 on the hammers, and force the said hammers away from the uprights, and as the cams are disengaged from the projections the hammers fall back giving the uprights a sharp blow which shakes the whole cylinder. The shaft 17 also carries a scraper 20 which moves on the lower head of the cylinder scraping all the dust therefrom and forcing the same through the opening 21 in the said lower head into the outlet chute.

22 represents a disk also carried by the cross-head 16 and revolving therewith. This disk is to deflect the dust-laden air entering the cylinder causing it to pass over its edge and into the cylinder cloth which allows the air to escape through its meshes but retains the dust within the cylinder.

23 represents another scraper suspended within the cylinder and over the disk 22. This scraper is suspended from the upper cylinder head by means of the hanger 24 secured in said cylinder head by means of the nut 25. This scraper removes the dust from the disk causing it to drop onto the lower cylinder head from where it is removed by the scraper 20.

26 represents a removable section, formed of uprights 26^a secured together at top and bottom by connecting pieces, and a cloth of the same material as that covering the cylinder. This section is secured to the uprights 4 in any suitable manner and is adapted

to be removed in order to gain access to the interior of the cylinder for repairing or cleaning any of the working parts of the device.

From the above description it will be seen that I have constructed a simple and effective device for purifying the dust-laden air in flour mills.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a dust collector, the combination of a cylinder composed of a top and bottom portion and side pieces connecting them, a series of hammers hinged to said side pieces, a cloth covering the cylinder, and a shaft carrying a number of cams adapted to engage and operate the hammers, revolving in said cylinder, substantially as shown and described.

2. In a dust collector, the combination of the cylinder having inlet and outlet openings, a shaft revolving within said cylinder and carrying a number of cams, and a scraper moving over the lower head of the cylinder, and a series of hammers hinged within the cylinder and adapted to be engaged by said cams, substantially as and for the purpose set forth.

3. In a dust collector, the combination of a cloth-covered cylinder provided with inlet and outlet openings a shaft carrying a number of cams, a disk, and a scraper revolving within said cylinder, a series of hammers hinged within said cylinder and adapted to be engaged by said cams, and a scraper suspended from the upper head of said cylinder over the said disk, substantially as shown and described.

4. In a dust collector, the combination of a cylinder composed of a top and a bottom, provided with an inlet opening and with a valved outlet opening, a number of side pieces connecting the said top and bottom, a cloth covering said cylinders, a series of hammers hinged within the cylinder to the said side pieces and provided with projections, a shaft located within the cylinder and carrying a number of cams which engage the projections on the hammers and a disk, a scraper suspended from the cylinder top and over the disk, and a scraper carried by said shaft and working on the bottom of the cylinder, substantially as shown and described and for the purpose set forth.

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