No. 654,997. Patented July 31, 1900.

L. C. MEYEROTT.

DUST COLLECTOR.

(Application filed Feb. 23, 1900.)

(No Model.) 2 Sheets—Sheet 1.

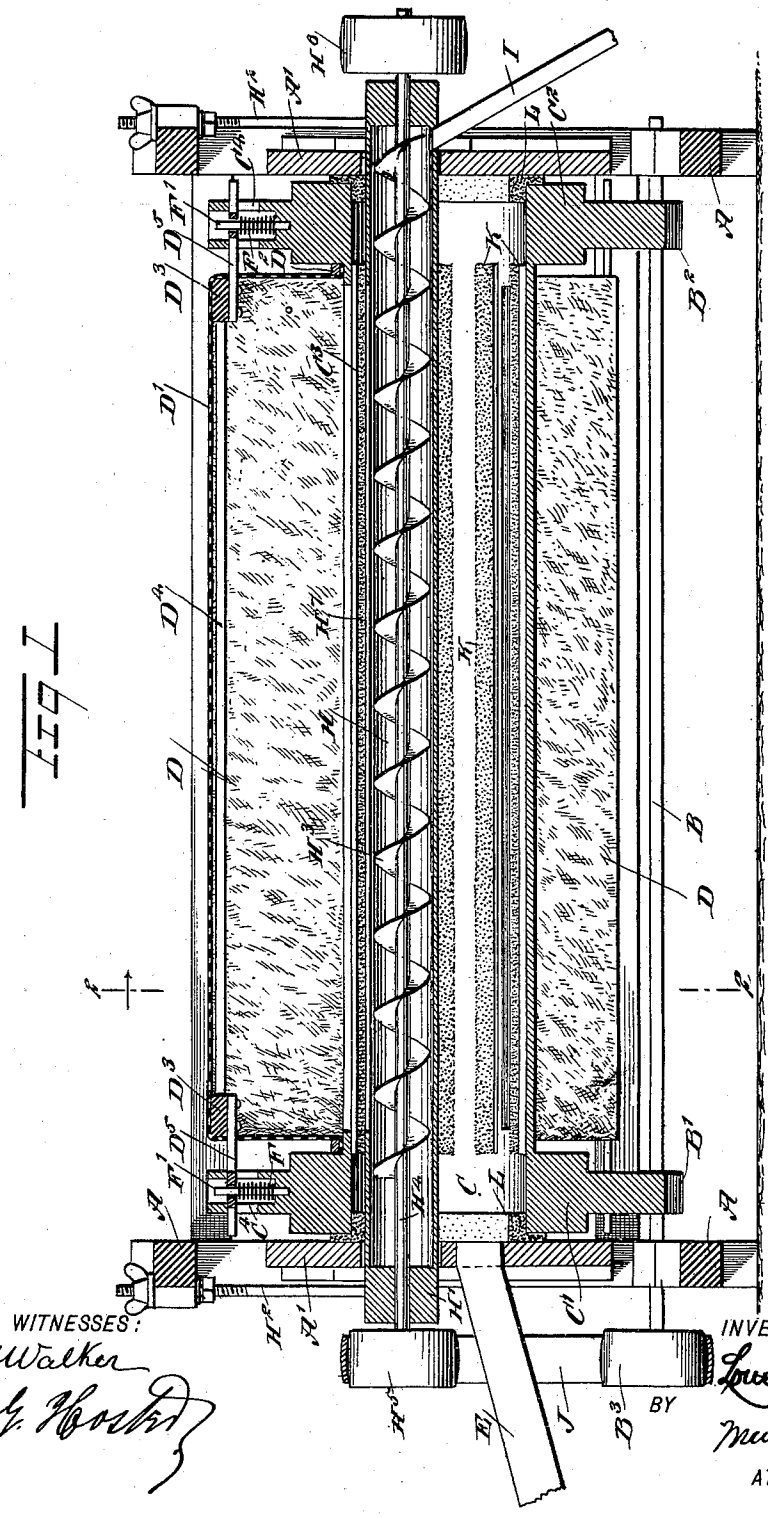

Fig. 1.

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Fig 2

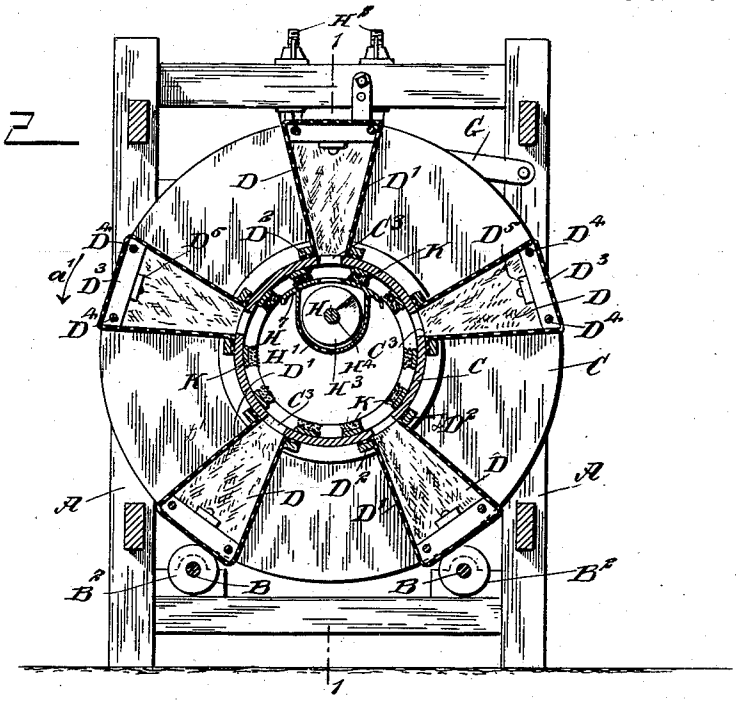
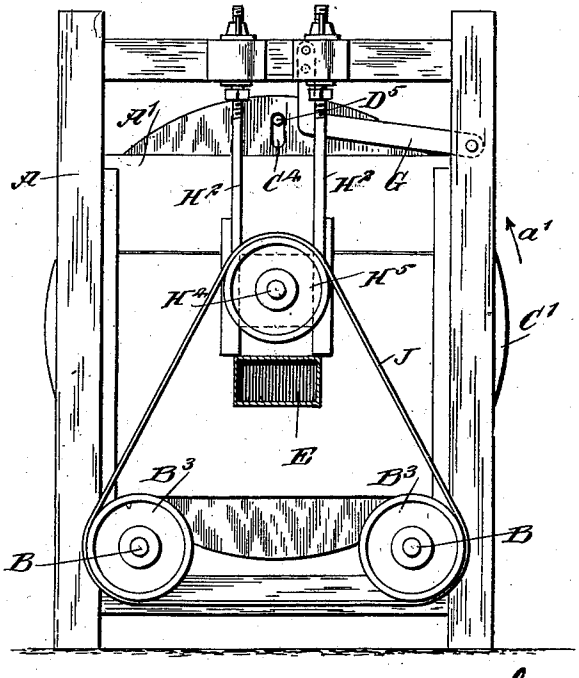


Fig 3



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UNITED STATES PATENT OFFICE.

LOUIS CONRAD MEYEROTT, OF EVANSVILLE, ILLINOIS.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 654,997, dated July 31, 1900.

Application filed February 23, 1900. Serial No. 6,243. (No model.)

To all whom it may concern:

Be it known that I, LOUIS CONRAD MEYEROTT, a citizen of the United States, and a resident of Evansville, in the county of Randolph and State of Illinois, have invented a new and Improved Dust-Collector, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved dust-collector more especially designed for use in flour-mills and arranged to provide a large dust-collecting surface and to insure a constant cleaning of the filtering-cloth and removal of the dust from the dust-filtering compartments without danger of dust-laden air passing into the compartments during the discharge of the dust into the conveyer.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a longitudinal sectional elevation of the improvement on the line 1 1 in Fig. 2. Fig. 2 is a transverse section of the same on the line 2 2 in Fig. 1, and Fig. 3 is an end elevation of the same.

The improved dust-collector is mounted on a suitably-constructed frame A, in the lower portion of which are journaled longitudinally-extending shafts B, carrying sets of rollers B' B^2 for supporting the heads C' C^2 of a drum C, adapted to rotate when the shafts B of the rollers B' B^2 are turned to cause the drum to rotate in the direction of the arrow a'. On the drum C, between the heads C' C^2, are arranged a plurality of longitudinally-extending filtering-cloth compartments D, arranged to gradually collapse and to suddenly expand, as hereinafter more fully described, for the removal of the dust carried by the dust-laden air which passes into the drum C through a dust-flue E. Each of the filtering-cloth compartments D is provided with a shell of filtering-cloth D', each shell being open at the inner end, strips D^2, of wood or other material, securing the cloth to the drum around a longitudinally-extending opening C^3, formed in the peripheral surface of the drum C to establish communication between the interior of the drum and the interior of the compartment. The cloth is stretched at its ends over transversely-extending bars D^3, connected with each other by longitudinal rods D^4, and each of said bars D^3 is provided with a longitudinal bar D^5, extending outwardly through the end of the cloth to pass through radial slots C^4, formed in the heads C' C^2 of the drum C. The bars D^5 are pressed outward by springs F, coiled around rods F', held in recesses formed in the heads C' C^2, so that the cloth of the compartments is normally held in a stretched position over the bars D^3 until the bars D^5 are pushed inward against the tension of the springs F by fixed cams G, secured on the frame A at the ends thereof, as will be readily understood by reference to Fig. 3. When the drum C rotates in the direction of the arrow a', then the bars D^5, when nearing an uppermost position, come in contact with the cams G, and are thus pressed inward in the radial slots C^4 to cause the bars D^3 to move in a like direction, so that the cloth D' becomes slack, and consequently the compartment D, while moving into an uppermost position, collapses until the bars D^5 suddenly drop off the cams G, and the springs F now force the bars D^5 outward to again cause the bars D^3 to stretch the cloth, and thereby jerk the same and cause the adhering dust to become loose and drop inside of the compartment through the opening C^3 down into a conveyer H of any approved construction and extending longitudinally through the drum C. The conveyer H, as shown, is provided with a conveyer-casing H', supported at the ends on screw-rods H^2, adjustably held on the main frame, and one end of said casing H is provided with a discharge-spout I for carrying off the dust moved to the entrance of the spout by the conveyer-screw H^3, extending in the casing H' and secured on a shaft H^4, journaled in the ends of the casing. One end of the shaft H^4 carries a pulley H^5, over which passes a belt J, also passing over pulleys B^8 on the shafts B. The other end of the shaft H^4 carries a pulley H^6, connected by belt with other machinery for imparting a rotary motion to the shaft H^4 and the conveyer-screw H^3, and the rotary motion of the shaft is

transmitted by the pulleys H^5 and B^3 and the belt J to the shafts B, so that the rollers B' B^2 thereof rotate the drum C in the direction of the arrow a', as previously mentioned.

In order to prevent dust-laden air from passing from the drum C into a compartment D at the time the latter is collapsing, it is necessary to provide the inside of the drum C with longitudinally-extending spaced brushes K, adapted to engage the segmental top H^7 of the conveyer-casing (see Fig. 2) at the time the brushes pass into an uppermost position. The brushes are spaced on opposite sides of an opening C^3, so that when a compartment D passes into an uppermost position then the corresponding set of brushes K is in contact with the top H^7, and consequently the interior of the drum is cut off at this point from the interior of the compartment to prevent dust-laden air from passing into the compartment during the time the drum collapses and is again suddenly expanded, as previously explained.

As the conveyer extends eccentrically through the drum C, it is necessary to pack the ends of the heads C' C^2 on the ends A' of the casing, and for this purpose suitable packing-rings L are employed, as plainly indicated in Fig. 1. The upper portions of the ends A' are preferably removable, so as to permit of obtaining convenient access to the interior of the drum for examining and repairing the brushes or other parts of the device.

From the foregoing it is evident that when the machine is in operation the dust-laden air passing into the drum C can readily pass through the openings C^8 into the several expanded filtering-cloth compartments D, so that the dust carried by the air is retained by the filtering-cloth D', while the air passes through the pores of the cloth to the outside of the compartments into the room in which the device is located. As the drum C revolves the compartments D are carried upward to be finally cut off at the openings C^8 from the interior of the drum by the adjacent brushes K, passing upon the top H^7 of the conveyer-casing H'. During this movement into a final uppermost position the compartments are collapsed by the bars D^5 engaging the cams G, as previously explained, and are finally quickly expanded by the action of the springs F, so that the dust adhering to the inside of the cloth is jerked off the frame and drops down through the openings C^8 into the conveyer-casing H', to be moved longitudinally therein by the conveyer-screw H^3 to the spout I, which carries the dust to one side of the machine.

The machine is simple and durable in construction, is not liable to get out of order, and insures a constant cleaning of the cloth and a removal of the dust from the dust-gathering compartments, as above explained.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A dust-collector, comprising a revoluble drum having slotted and recessed heads and longitudinal openings in its periphery between the heads, a plurality of filtering-cloth compartments secured with their inner, open ends on the peripheral surface of said drum, the openings of a compartment leading to an opening in said periphery, stretching-bars for the cloth of a compartment, and having extensions mounted to slide in the radial slots in the heads of the drum, springs in the recesses of the heads of the drum and pressing on said extensions to force them outward, and fixed cams adapted to engage the said extensions, to move the latter gradually inward against the tension of said springs and collapse the compartment, as set forth.

2. In a dust-collector, the combination with a drum having longitudinal openings and provided with recessed and slotted heads, said heads being of greater diameter than the body of the drum, of a plurality of filtering-cloth compartments arranged on the periphery of the drum, each compartment extending longitudinally of the drum over an opening thereof, bars projecting from opposite ends of the compartments and working in the slots of the heads of the drum, rods secured in the recesses of the heads and projecting through the bars, springs on said rods and bearing against the bars of the compartments, and fixed cams engaging the ends of the bars projecting through the heads, as the drum is revolved, as and for the purpose set forth.

3. A dust-collector, comprising a drum having longitudinal openings and provided with heads of greater diameter than the body of the drum, said heads being slotted and recessed, a plurality of filtering-cloth compartments arranged on the peripheral surface of the drum, each compartment extending longitudinally of the drum over an opening thereof, rods projecting from the ends of the compartments and extending through the slots of the heads, springs arranged in the recesses of the heads and forcing the rods outward, fixed cams for engaging the ends of the rods, a conveyer-casing in the drum and having an opening in its top, a screw-conveyer in said casing, and brushes between the top of the conveyer-casing and the drum, substantially as herein shown and described.

4. A dust-collector, comprising a drum having longitudinal openings and provided with heads of greater diameter than the body of the drum, said heads being slotted and recessed, a plurality of filtering-cloth compartments arranged on the periphery of the drum, each compartment extending longitudinally of the drum over an opening thereof, stretcher-bars arranged transversely at the ends of the compartments and connected by rods with each other, bars projecting from the stretcher-bars beyond the ends of the compartments and extending through the slots of the drum-heads, springs in the recesses of the drum-

heads and pressing said bars outward, a conveyer-casing in the drum and having an opening in its top, a screw conveyer in the casing, and brushes secured to the inner face of the drum, one at each side of each opening thereof, substantially as herein shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LOUIS CONRAD MEYEROTT.

Witnesses:

JOHN J. DAHLEM,

PHILIP ROTHMEIER.