

(No Model.)

2 Sheets—Sheet 1.

B. F. MOHR.
DUST COLLECTOR AND CONVEYER.

No. 481,185.

Patented Aug. 23, 1892.

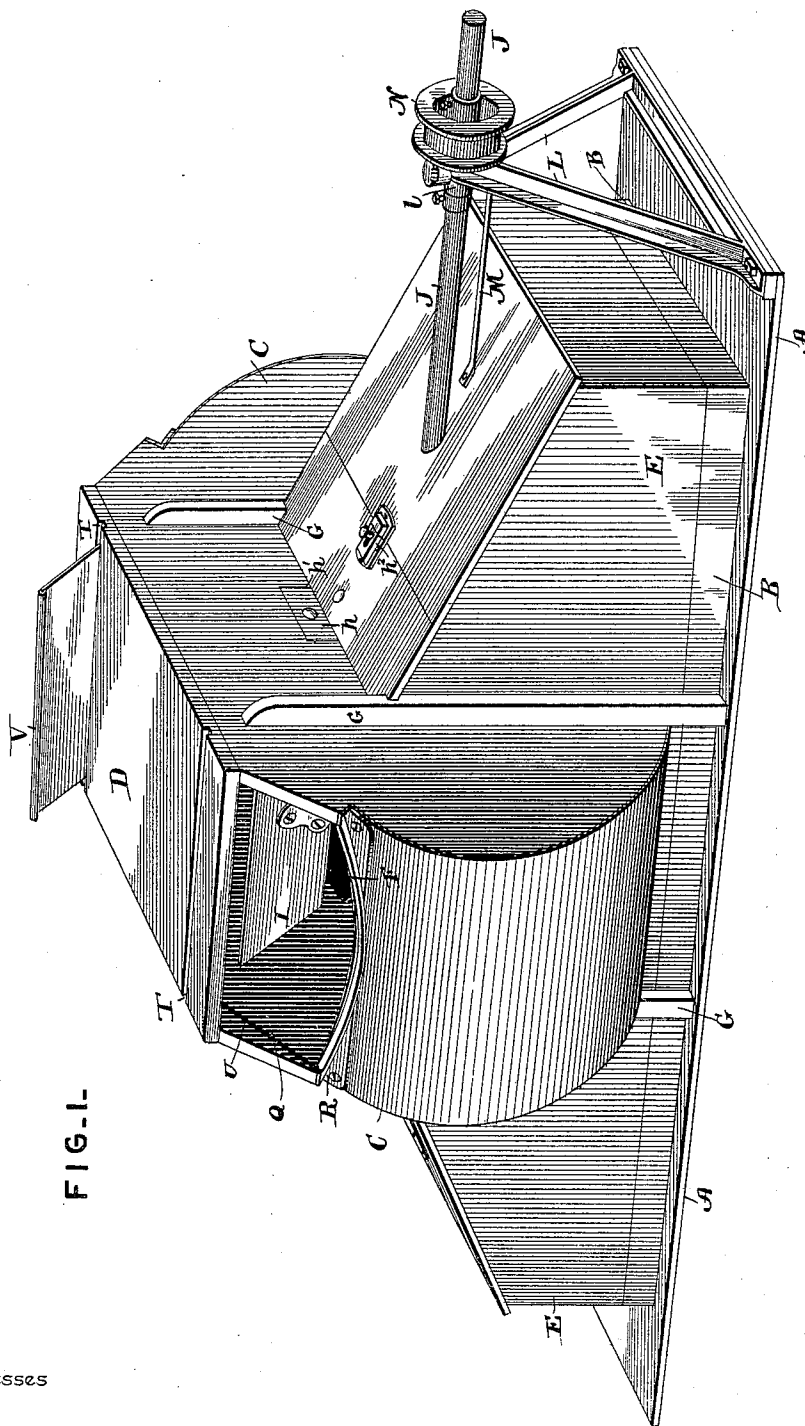


FIG. 1.

Witnesses

Jas. H. McLaughlin
D. P. Holhaupst

Inventor

By *his* Attorneys,

B. F. Mohr

C. A. Snow & Co.

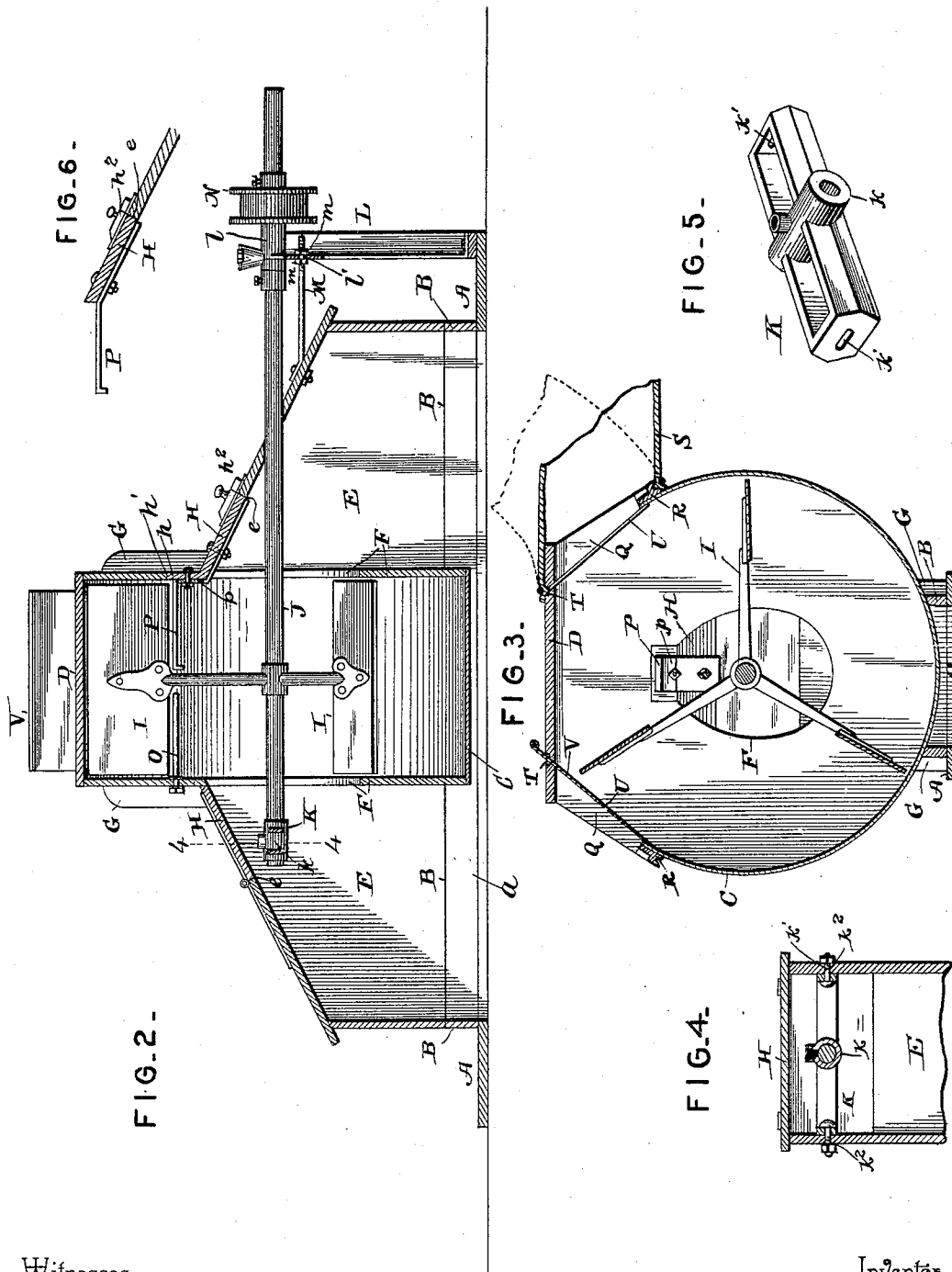
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UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN MOHR, OF MIFFLINBURG, PENNSYLVANIA.

DUST COLLECTOR AND CONVEYER.

SPECIFICATION forming part of Letters Patent No. 481,185, dated August 23, 1892.

Application filed February 26, 1892. Serial No. 422,884. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN MOHR, a citizen of the United States, residing at Mifflinburg, in the county of Union and State of Pennsylvania, have invented a new and useful Dust Collector and Conveyer, of which the following is a specification.

This invention relates to dust collectors and conveyers; and it has for its object to provide a machine of this character that is adapted to be employed in connection with thrashing-machines and is placed above the trunk thereof, so as to collect all the dust and fine particles of matter and convey the same away from the thrasher.

The essential object claimed by this invention is to provide such a machine having an equal distribution of the suction produced by the fan and which by its construction provides for the easy and unimpeded collection of the dust, whereby the same may gather in the whole width of the machine.

With these and many other objects in view, which will readily appear as the nature of the invention is more fully understood, the same consists in the novel construction, combination, and arrangement of parts herein-after more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a dust collector and conveyer constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a vertical transverse sectional view of the same. Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 2. Fig. 5 is a detail in perspective of the bearing-casting. Fig. 6 is a detail view of a modification.

Referring to the accompanying drawings, A represents a rectangular base having an opening *a* extending nearly the entire width of the same and inclosed by the upwardly-extending longitudinal side and end pieces B. The said side pieces support the intermediate and rounded fan-casing C, having the flat top D, and by being supported and resting upon the opposite longitudinal side pieces B the closed bottom of said fan-case is thus held above the plane of the base-board A, which is secured to the top of the trunk of a thrashing-machine and communicates with

an opening therethrough. Such a disposition of the fan-casing, which in most dust-collectors of this character is fastened directly to the bottom board, which then must necessarily have an opening on each side of the fan-case, provides for a freer circulation of the dust from the trunk beneath the collector into the opposite side bottomless collecting-compartments E, also supported upon said longitudinal and end supporting-strips B. The said compartments E form collecting-chambers for the dust from the thrasher and inclose the side openings or ports F in the sides of the fan-casing. Vertical supporting and strengthening posts G rise from opposite sides of the base A against the sides of the fan-casing, and said collecting-compartments E serve to strengthen and hold firmly together the various parts of the collector and conveyer. Each of the compartments E is provided with top openings *e*, inclosed by the hinged or detachable lids H, by means of which ready access may be had to the interior of the machine for removing straw and other foreign matter which may have accumulated within the same.

A revolving fan I, of ordinary construction and having the ordinary blades and blade-arms, is keyed upon the longitudinally-disposed shaft J, driving said fan in the inclosing fan-casing. The said shaft J terminates at one end within one of the compartments E and is journaled therein a short distance from the adjacent port or opening F in the interiorly-located bearing-casting K. The bearing-casting K is provided with a center bearing *k*, receiving the inner end of said shaft, and at the opposite closed ends thereof with the adjusting-slots *k'*, which receive the securing and adjusting bolts *k²*, engaging said slots and secured in the opposite sides of the compartment within which the casting is located. The said shaft J extends through the top of the opposite compartment E from that in which the bearing-casting is located and is journaled in the bearing at the upper end of the bearing standard or bracket L. The said standard L is bolted to the base-board A and is provided at its upper end with the bearing *l*, receiving said shaft, and the transverse adjusting-perforation *l'*, located directly beneath said bearing and receiving the

threaded end of the adjusting-rod M. The adjusting-rod M is secured rigidly to the top of the adjacent compartment E and receives upon its other end the adjusting-nuts *m*, working upon the threaded end thereof on opposite sides of the opening *V* through said standard. After the shaft has been mounted in the bearings the nuts *m* are moved in either direction, as the case may require, until the bearing-standard has been brought into a true vertical position or into such a position that the bearing thereof is brought in perfect alignment with the inner bearing-casting and the disposition of the shaft. The slots in the interiorly-located casting allow the said casting to be also adjusted in perfect alignment by slightly turning the same in either direction, as will be readily apparent. After the alignment of the shaft in the bearings, which provides for the easy turning of the fan, the bolts and nuts are permanently tightened, but if worked loose may be readily readjusted. A belt-pulley N is keyed to the outer end of the shaft J and is connected by belting with any suitable driving machinery.

A clearing finger or arm O is bolted in one side of the fan-casing above the side port therein and is so disposed as to be always in close proximity to the inner edges of the fan-blades upon one side of the blade-arms and as the fan revolves serves to clear the fan-blades and prevents the clogging of the same and prevents the blades from carrying about the straw during their revolutions. To correspond with the clearing finger or arm O an opposite clearing arm or finger P is secured to the lid or cover H, inclosing the opening in the compartment E, in which it is fitted. The said lid or cover H is detachable and is provided with an upwardly-extending tongue *h*, fitting in the notch *h'* in the side of the fan-casing, and the said lid or cover is securely held in position over the opening *e* by means of the spring-latch *h*². The clearing-arm P is secured to the underside of said lid or cover and has an offset or upwardly-extending portion *p*, fitting the tongue *h*, while the clearing arm or finger proper lies in close proximity to the inner edge of the fan-blades opposite to the clearing finger or arm O. By being connected with the detachable lid or cover the said clearing-arm is entirely out of the way of the fan-case port F directly thereunder, and which when said lid is removed also carries with it the straw that may have lodged thereon, while at the same time serving to strengthen the said lid and prevent the same from warping. As illustrated in the modification in detail, the removable lid may dispense with the upwardly-extending tongue, and in such case the offset or shoulder of the clearing-arm is unnecessary and the said arm answers to keep the upper end of the lid from raising and allows the said arm to clear the blades. The said fan-casing is provided upon opposite sides or faces with the upper slanting discharge-openings Q, one or both of which may

be used at a time. Secured to the rim of the fan-casing at the lower edge of said slanting openings are the semi-elliptical flanged or grooved securing castings or lips R. Flexible conducting-tubes S are also cut at an angle at their joining ends to correspond to the inclined discharge-openings Q and are fitted over said securing lips or castings R and over the top edge of the flat top D of the fan-casing. The said flexible tubes are securely held in such position by being suitably tied under the flanged or grooved securing casting and into the top grooves T, transversely formed in the flat fan-casing top D. It may be readily seen that by putting the long or extended end of the flexible tubing over the top edge of the fan-casing the said tube will take a straight course in line with the machine; but by reversing the tube or turning it the same may be placed to take any direction desired, as illustrated in dotted lines in Fig. 3.

Directly in rear of the discharge-openings Q the opposite sides of the fan-casing are provided with the inclined grooves U, which receive and accommodate the sliding gates V, working through the top D and the grooves T therein. The said sliding gates are adapted to close the discharge-opening in one side of the machine when not needed or, if both discharge-openings are used, may be removed, so that the tubing can be connected with each opening.

The construction, operation, and advantages of the herein-described dust collector and conveyer are thought to be apparent without further description.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dust collector and conveyer, the combination, with a base having an opening, of a fan-casing supported centrally upon said base above the plane of the same and provided with side receiving ports or openings and upper opposite inclined discharge-openings, a revolving fan, opposite bottomless collecting compartments mounted upon said base and inclosing the side ports of said fan-casing and provided with top openings, detachable lids inclosing said openings, and clearing-arms secured to said lids and projecting within the fan-casing, substantially as set forth.

2. In a dust collector and conveyer, the combination of a fan-casing, opposite bottomless collecting-compartments upon each side of said fan-casing, a bearing-casting adjustably secured within one of said compartments, a bearing-bracket located adjacent to the opposite collecting-compartment, an adjusting-rod connected with said bracket, and a fan-shaft mounted in said bearings, substantially as set forth.

3. In a machine of the class described, the combination, with the opposite compartments, the intermediate fan-casing, and the revolving fan-shaft, of a bearing-casting located in

one of said compartments to receive the inner end of said shaft and provided with opposite slotted ends, adjusting-bolts engaging said slotted ends and the sides of said compartment, a bearing-bracket receiving the outer end of said shaft and located adjacent to said opposite compartment, an adjusting-rod secured to said opposite compartment and engaging said bearing-bracket, and adjusting-nuts engaging said rod on both sides of said bracket, substantially as set forth.

4. In a dust collector and conveyer, the combination of an intermediate fan-casing having opposite side ports, upper inclined discharge-openings, flanged casting secured to the lower edges of said discharge-openings, the flexible discharge-tubes engaging under said castings and over the top of the fan-casing, and opposite bottomless collecting-compartments inclosing the side ports of said fan-casing, substantially as set forth.

5. In a dust collector and conveyer, the combination of an intermediate fan-casing having opposite side ports, upper inclined discharge-openings, top securing-grooves and inclined side grooves in rear of said openings, semi-elliptical flanged or grooved securing-castings secured to the lower edges of said discharge-

openings, the flexible discharge-tubes adapted to be secured under said flanged or grooved castings and into said top securing-grooves, removable cut-off gates working in said inclined grooves, a revolving fan, and the opposite bottomless collecting-compartments inclosing the side ports of said fan-casing, substantially as set forth.

6. In a machine of the class described, the combination of a fan-casing having opposite side receiving-ports, upper inclined discharge-openings, top securing-grooves and inclined side grooves in rear of said openings, semi-elliptical flanged or grooved securing-castings secured at the lower edges of said discharge-openings, the flexible discharge-tubes adapted to be secured to said flanged or grooved castings and into said top securing-grooves, and removable cut-off gates working in said inclined grooves, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN FRANKLIN MOHR.

Witnesses:

CHARLES E. CONDON,
JAS. HAUS.