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A. J. WILHARM

DUST COLLECTOR

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2 Sheets-Sheet 1

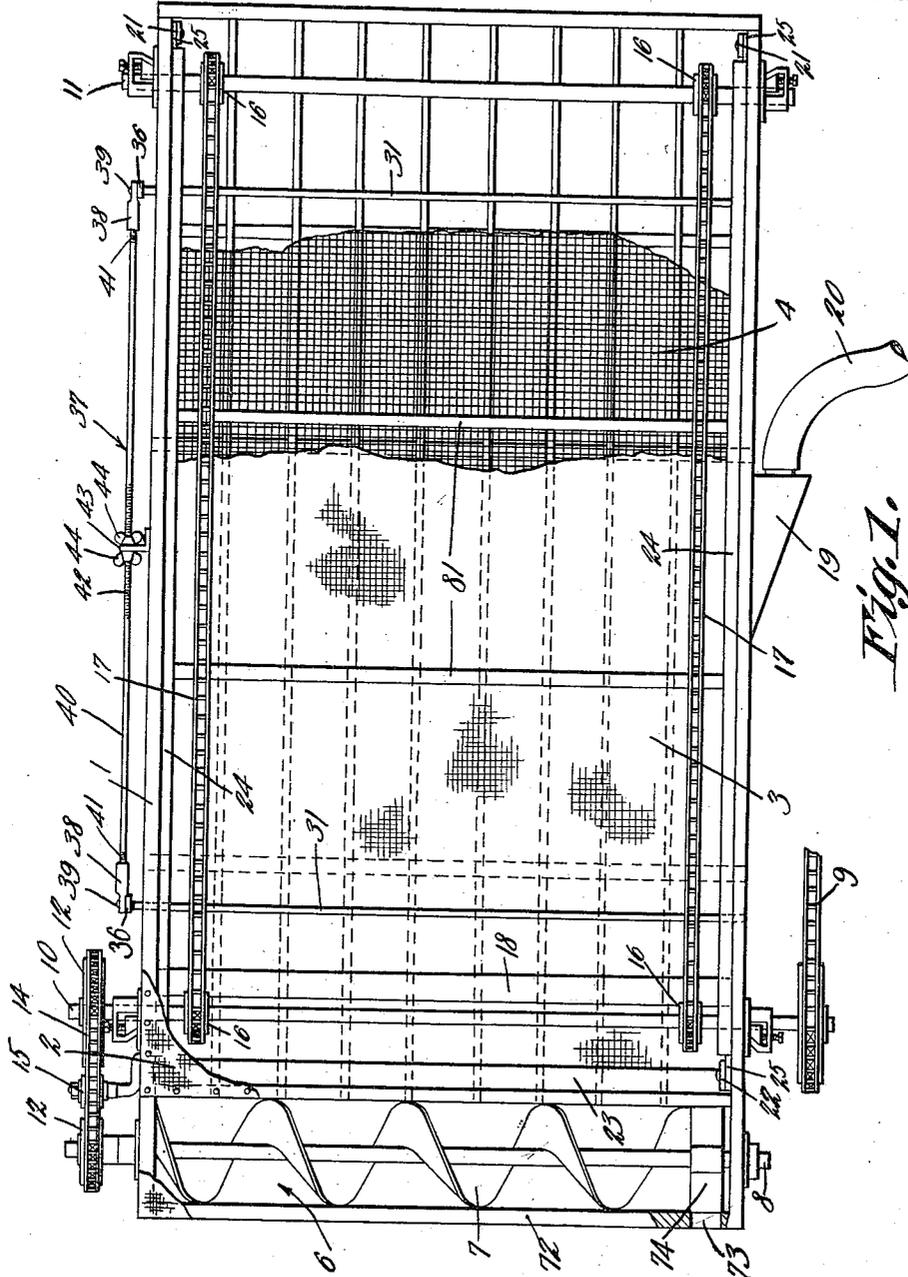


Fig. 1.

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DUST COLLECTOR.

Application filed June 3, 1921. Serial No. 474,641.

To all whom it may concern:

Be it known that I, ADOLPH J. WILHARM, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Wisconsin, have invented a new and useful Dust Collector, of which the following is a specification.

The device forming the subject matter of this invention is adapted to be used for saving dust in flour mills and other like places. A machine of the general type herein disclosed is shown in my co-pending case, Serial No. 416,596, filed on the 13th day of October, 1920.

In this apparatus sundry improvements are proposed, especially, the provision of means whereby the tracks which carry the brush may be adjusted toward and away from each other and, more specifically, toward and away from foraminous members which form a part of the casing, to the end that the brush may cooperate with the said members, and sweep the same clean of dust which may have collected thereon.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that, within the scope of what is claimed, changes in the precise embodiment of the invention shown can be made without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 shows in top plan, a device constructed in accordance with the invention, parts being broken away; Figure 2 is a side elevation; Figure 3 is a longitudinal section; Figure 4 is a detail enlarged from Figure 3, a portion of the belt which carries the brush being omitted; and Figure 5 is a fragmental transverse section showing the means whereby the material is finally fed out of the machine.

Since the device forming the subject matter of this application is based on the structure shown in my co-pending case above alluded to, the description may be shortened accordingly, notice being given at the point where the description of that which is old

ends, and the description of that which is new begins.

In carrying out the invention there is provided a box-like casing 1, open at the top and bottom for the passage of air, the casing being closed against the passage of dust, by a foraminous top 2 and a foraminous bottom. The top 2 may consist of a layer of cloth, whereas the bottom preferably consists of a layer of cloth 3, supported on wire netting 4. The numeral 5 designates, generally, means for bulging up the bottom of the casing, or for preventing the bottom of the casing from sagging, such a device being shown in my co-pending case and meriting no specific and detailed description in this application. For the sake of reinforcement, the opposite side portions of the casing 1 may be united by cross bars 81.

The casing 1, at one end carries and communicates with a transverse chute 6 wherein a feed screw 7 is located, the feed screw being mounted on a shaft 8 journaled in the casing and extended transversely thereof. The shafts 10 and 11 extend transversely of the casing 1 and are journaled on the casing adjacent to the ends thereof. The shafts 10 and 8 are provided, as shown in Figure 2, with sprocket wheels 12 engaged by a sprocket chain 14, a tightener for the chain being provided, as shown at 15. The numeral 9 designates any suitable means for driving the shaft 10. Within the casing 1, the shafts 10 and 11 carry sprocket wheels 16. Endless flexible members, such as chains 17 are engaged with the sprocket wheels 16 and are connected by a transverse brush 18. The casing 1 has an offset pocket 19 wherewith a tube 20 communicates.

The foregoing description includes those portions of the device for which no patentable novelty is claimed, in this application, saving in so far as they may enter into patentable combinations with other parts hereinafter mentioned. In practical operation, air laden with dust, enters the casing 1 by way of the tube 20 and the pocket 19. One machine, constructed as shown in the drawings, may receive air from another like machine, or the dust laden air may be delivered into the tube 20 in any suitable way. The air, laden with dust, enters the casing 1 and passes outwardly through the foraminous top 2 and through the foraminous bottom 110

3—4, the dust in the air lodging on the inner surfaces of the top and the bottom. When rotation is imparted to the shaft 10, the sprocket wheels 12 and the sprocket chain 14 drive the shaft 8, motion being transmitted to the chains 17 by the sprocket wheels 16. The brush 18 travels along the under surface of the top of the casing, and along the upper surface of the bottom of the casing. The dust thus is swept off the top and the bottom of the casing and is carried by the brush 18, into the cross chute 6, within the field of operation of the feed screw 7, the dust being advanced transversely of the machine, by the feed screw.

Passing to the essentially new features of the device, it will be observed that upright brackets 21 are mounted on the sides of the casing 1 adjacent to one end thereof. Upright brackets 22 are mounted on the side walls of the casing 1 adjacent to the cross chute 6, the brackets 22 being connected, if desired, by a cross bar 23 against which the brush 18 strikes, to aid in ridding the brush of dust. Upper and lower guides 24 extend along the sides of the casing 1, these guides being in the form of channel members, each comprising a vertical body 25, an inwardly projecting upper flange 26 and an inwardly projecting lower flange 27. The ends of the lower flange of the upper guide and the ends of the upper flange of the lower guide are inclined, respectively, downwardly and upwardly, as shown best at 70 in Figure 4. The extremities of the body portions 25 of the guides extend behind the brackets 21 and 22 and carry studs 29 mounted to move in vertically elongated slots 30 on the brackets.

Shafts 31 extend transversely of the casing 1 and are journaled therein. Within the casing and adjacent to the sides thereof, the shafts 31 carry oppositely projecting cranks 32. Shoes 33 are attached to the lower flange 27 of the upper guide, and to the upper flange 26 of the lower guide, as shown in Figure 4. Links 34 are threaded for adjustment in the shoes 33, the links being detachably pivoted at 35 to the ends of the cranks 32. Externally of the casing 1, the shafts 31 carry, as shown in Figure 2, arms 36. The arms 36 are united by a longitudinally adjustable connection, denoted generally by the numeral 37. The connection 37 comprises heads 38 pivoted at 39 to the arms 36, a rod or intermediate member 40 being right and left hand threaded at its ends, as indicated at 41, into the heads 38. The intermediate portion of the rod 40 is threaded as shown at 42 and passes slidably through a bracket 43 fixed to and outstanding from one side wall of the casing 1. Nuts 44 are mounted on the threaded portion 42 of the rod 40 and are adapted to engage the 43.

In practical operation, the ends of the brush 18 ride in the guides 24, between the flanges 26 and 27, the parts 70 serving to direct the ends of the brush into the guides. The connection 37 may be moved endwise, the rod 40 sliding in the bracket 43. When the connection 37 is moved endwise, the arms 36 will be tilted, the shafts 31 being rocked, and motion being transmitted to the guides 24, by way of the cranks 32 and the links 34. In this way, the upper guide may be moved toward and away from the top of the casing 1, and in a similar manner, and simultaneously, the lower guide 24 may be adjusted toward and away from the bottom of the casing. The obvious purpose of adjusting the guides with respect to the top and the bottom of the casing is to cause the brush 18 to sweep along the top and the bottom with the necessary pressure. After the rod 40 has been moved endwise as above explained, it may be held in any position to which it has been moved, by advancing the nuts 44 until they bear upon opposite sides of the bracket 43. The necessary adjustments can be made, since the rod 40 is threaded in opposite directions into the heads 38, and since the links 34 are threaded into the shoes 33.

The dust which has been collected is advanced to one end of the chute 6 by the feed screw 7, the discharge member 74 feeding the dust out of the opening 73. The dust is packed by the feed screw at the end of the chute 6 and there is no appreciable loss of air pressure through the opening 73.

In one end wall 72 of the casing there is an opening 73 communicating with the chute 6. A discharge member is located in alignment with the opening 73 and is disposed at the end of the feed screw of the discharge member comprising radial blades 74 mounted on the shaft 8.

Having thus described the invention, what is claimed is:—

1. In a device of the class described, a casing embodying a screen; a cleaner comprising an endless member movable within the casing and a brush carried by the endless member and cooperating continuously with the screen substantially throughout the entire length of the screen; a guide traversed by a part of the cleaner; a shaft mounted to rock in the casing and under the control of an operator; a crank on the shaft; and means for connecting the crank with the guide thereby to adjust the position of the guide toward and away from the screen, the screen being fixed against movement with respect to the guide.

2. In a device of the class described, a casing embodying a screen, a cleaner comprising an endless member movable within the casing and a brush carried by the endless member and cooperating with the screen,

a guide traversed by a part of the cleaner, shafts mounted to rock in the casing, cranks carried by the shafts, means for connecting the cranks with the guide, arms on the shafts, and a longitudinally adjustable connection uniting the arms. 5

3. In a device of the class described, a casing embodying a screen; a cleaner comprising an endless member movable within the casing and a brush carried by the endless member and cooperating with the screen, a guide traversed by a part of the cleaner; shafts mounted to rock in the casing; means for connecting the shafts operatively with the guide to adjust the position of the guide with respect to the screen; arms on the shafts; a connection uniting the arms; a bracket on the casing, the connection being slidable in the bracket; and means on the connection and cooperating with the bracket to hold the connection against longitudinal movement. 10 15 20 25

4. In a device of the class described, a casing embodying upper and lower screens; a cleaner comprising an endless member

movable within the casing and a brush carried by the endless member and cooperating with the screens; guides traversed by the upper and lower runs of the cleaner; and means for moving both guides simultaneously toward and away from the respective screens. 30

5. A device of the class described, constructed as set forth in claim 4, and further characterized by the fact that the means for moving the guides includes shafts mounted to rock in the casing; means for connecting the shafts with the guides; means for connecting the shafts to secure the simultaneous operation thereof; and means for holding the shafts in any position to which they may have been adjusted. 35 40

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

ADOLPH J. WILHARM.

Witnesses:

ARTHUR S. HANSON,
HAROLD PAULSON.