(No Model.)

J. G. E. REICHARD.

DUST COLLECTOR FOR FLOUR MILLS.

No. 265,868. Patented Oct. 10, 1882.

Fig: 1

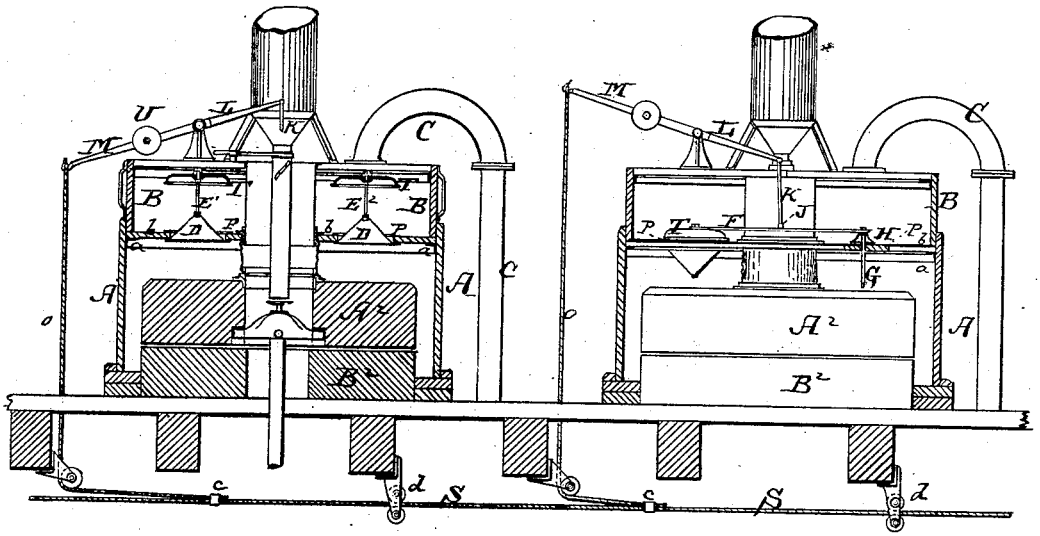


Fig: 2

Fig: 3

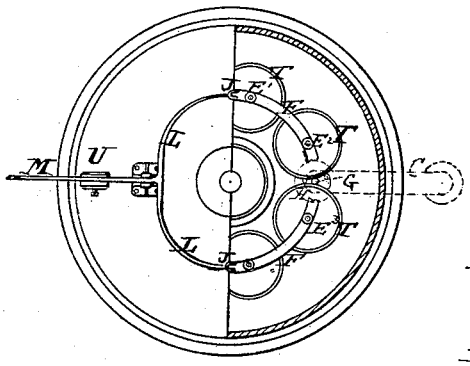


Fig: 9

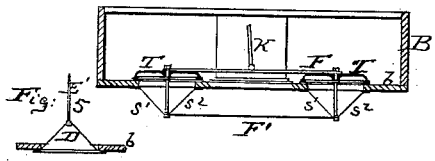


Fig: 6

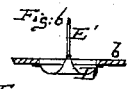


Fig: 7

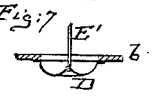


Fig: 8

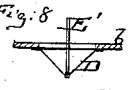


Fig: 10

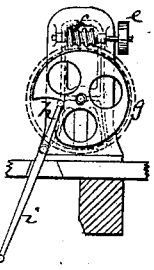
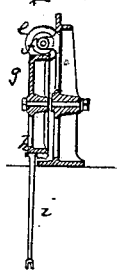


Fig: 11



Witnesses
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UNITED STATES PATENT OFFICE.

JOHANN G. E. REICHARD, OF ZWENKAU, NEAR LEIPSIC, GERMANY.

DUST-COLLECTOR FOR FLOUR-MILLS.

SPECIFICATION forming part of Letters Patent No. 265,868, dated October 10, 1882.

Application filed July 11, 1882. (No model.) Patented in Germany September 17, 1880, No. 13,226.

To all whom it may concern:

Be it known that I, JOHANN G. E. REICHARD, of Zwenkau, near Leipsic, Germany, have invented an Improved Dust-Collector for Flour-Mills, (for which I have received Letters Patent of Germany, No. 13,226, dated September 17, 1880, for fifteen years,) of which the following is a specification.

In order to shorten the cleansing operation or the intervals between the aspiration in exhausting contrivances for flour-mills, and to prevent the formation of paste in the filter-bags, I have invented the following arrangements.

Figure 1 is a vertical central section of my improved apparatus. Fig. 2 is a side view, partly in section, of same; Fig. 3, a top view, partly in section, of the same; Figs. 5, 6, 7, 8, 9, 10, and 11, detail views of parts thereof.

A cylindrical wooden box, B B, is placed on the angle-iron ring *a a* of the casing A A. The interior of this box communicates with the exhauster through a pipe, C. The bottom *b b* is perforated by a number of circular holes arranged in a circle and shut by conical filter-bags D. The ends or points of these bags are fastened to round iron rods $E' E^2 E^3$, &c., which are riveted to a ring, F. This ring is guided in a straight line by means of three round iron bars, G, Fig. 2, screwed to it, projecting downward, and capable of sliding up and down in the guide-sleeves H, Figs. 2 and 3. The ring F is provided at two diametrically-opposite points with eyes or hinges J J, and these are joined to two bars, K K, which are connected at their upper ends with the fork ends L L of a double-armed lever, M. The lever M is connected at its outer end with a rope, *o*, secured at *c* to the main rope S. Thus when the rope S assumes a to-and-fro motion the lever M is vibrated, and with it the ring F, and its bars, &c., are raised and lowered.

To the rods $E' E^2 E^3$, &c., I secure bell-shaped valve-plates T, for which the felt rings P form valve-seats. The main rope S gets its to-and-fro motion from an automatic apparatus, Figs. 10 and 11, which may work a series of stones simultaneously by means of the rope S and its secondary ropes O O, the main rope S being guided beneath the floor by pulleys *d d*.

Fig. 1 shows the condition of the apparatus when the valve lids or plates T are lifted and the filter-bags D drawn upward. The air coming from between the millstones A^2 and B^2 passes through the filter-bags, and is led through the pipe C to the exhauster. When the filter-bags are charged with flour the automatic apparatus loosens the rope S, thereby lowering the ring F, as in Fig. 2, and the filter-bags are reversed downward. In this position the valve-plates T fit on their felt supports P, and thus interrupt the aspiration.

The filter-pores are cleansed from the particles of flour adhering to them in the following manner: During its reversal the filter-bag passes gradually from the position shown in Fig. 5 into the positions shown in Figs. 6, 7, and 8, whereby all its parts are subjected to a bending, which loosens the flour adhering to its pores. The descending bell-shaped valve-plates draw a certain amount of air with them, which is pressed into the bags when the valve-plates fall on their seats and drives loosened flour from the pores of the bag.

In order to prevent the valves from knocking too violently on their supports, I apply a counter-weight, U, to the lever M, which regulates the violence of the shock.

The construction of the automatic apparatus may be seen in Figs. 10 and 11. The driving-pulley *e* is moved by a belt from any convenient point, and drives the screw *f*, worm-wheel *g*, and the cam *h*, which is secured to the axle of the worm-wheel. This cam causes a two-armed lever, *i*, to move and draw the rope S in the desired manner. The automatical apparatus is so constructed that it cleans the filter-bags once a minute, and interrupts the aspiration every time for one second only.

Instead of using several small conical filter-bags, I may use one large annular filter with a roof-shaped cross-section, which can be reversed or turned up and down. When adopting this arrangement, Fig. 9, a ring, F′, is connected with the circular intersection *r* of the two conical filter-planes s' and s^2. Likewise I replace the several bell-shaped valve-

plates T by one ring-shaped valve-plate having the same section as the above-described small valve-plates. The guides and the parts for effecting the up-and-down motion are not altered in this case.

I claim—

The vertically-reciprocating filter-bag D, combined with perforated plate *b*, valve-plate T, suction-pipe C, lever M, and with mechanism, substantially as described, for moving said lever, and with the grindstones A^2 B^2, for operation substantially as herein shown and described.

JOHANN GEORG ERNST REICHARD.

Witnesses:
ALBERT HENNIG,
JOHANNES MÜLLER.