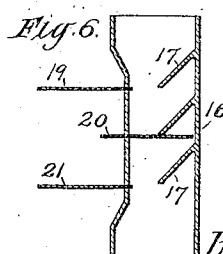
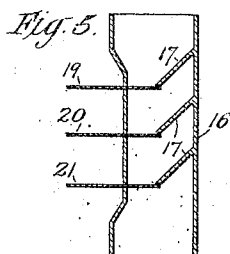
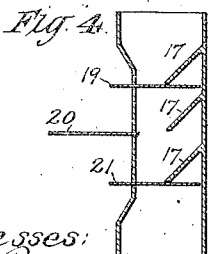
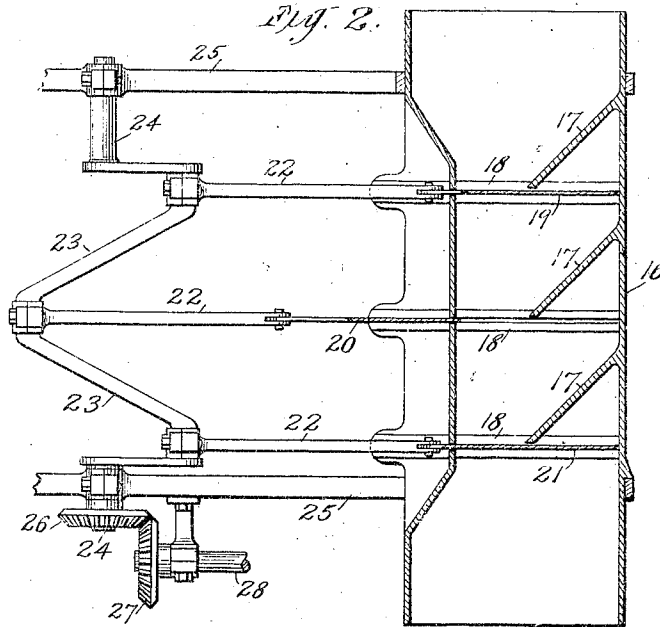
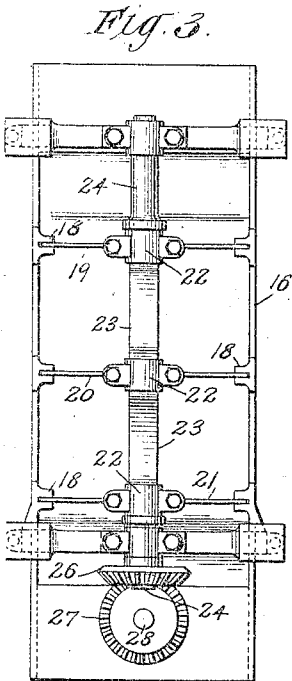
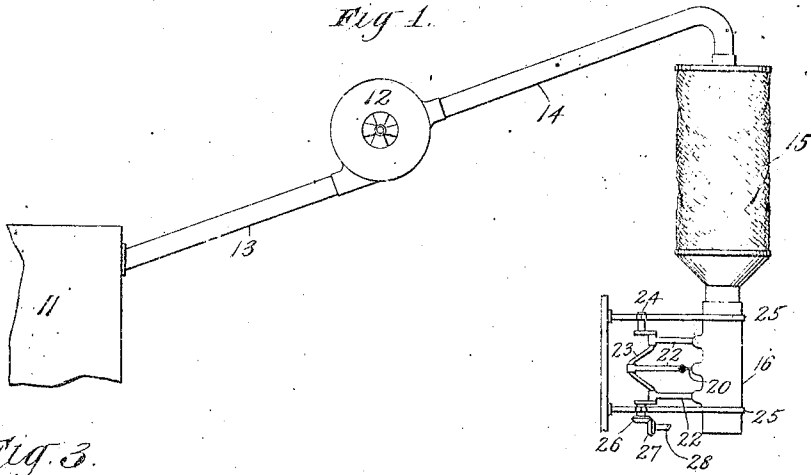


A. JORGENSEN.
DUST COLLECTOR AND THE LIKE.
APPLICATION FILED NOV. 22, 1912.

1,056,552.

Patented Mar. 18, 1913.



Witnesses:
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J. H. Donovan.

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Philip Samuel Rice Kennedy

UNITED STATES PATENT OFFICE.

ALEXANDER JORGENSEN, OF NEW YORK, N. Y., ASSIGNOR TO WILLIAM E. FOX, OF NEW YORK, N. Y.

DUST-COLLECTOR AND THE LIKE.

1,056,552.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed November 22, 1912. Serial No. 732,832.

To all whom it may concern:

Be it known that I, ALEXANDER JORGENSEN, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Dust-Collectors and the Like, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to apparatus for the collection of powdered materials and the separation of air therefrom, with particular reference to the handling of dust, flour or similar grinding products.

The object of the invention is to provide a simple, efficient and compact apparatus to take the place of the complicated devices now used in flour mills and other grinding mills for collecting the product and preventing interference by air currents with the bolting or screening operations.

In the drawings:—Figure 1 is a diagrammatic elevation of a complete separating apparatus embodying the invention as applied to one class of such apparatus. Fig. 2 is a sectional side elevation of the collector of the present invention. Fig. 3 is an end elevation of the collector, and Figs. 4, 5 and 6 are diagrammatic views showing the cooperative action of the collector valves.

Referring to the drawings, 11 is a container for the material to be treated, 12 is a blower by which the material is drawn from the container 11 through pipe 13 and forced through pipe 14 to a vertical cyclone 15, which as shown is the usual vertical fabric hopper in which the material circulates rapidly, much of the air passing out through the fabric wall. The apparatus thus far described is that of a common type of apparatus, but the invention may be used in apparatus of other types, either with or without the cyclone or other preliminary air separator.

Referring now to the dust collector embodying the invention, this collector includes a vertical chute 16, and as shown, is provided with three sloping partitions 17, 17 extending downward and halfway across the interior of the chute, and three sets of guides 18, 18 in which valves 19, 20 and 21 are slidably mounted, the partitions and

valves together forming three successive chambers in the chute as shown. The valves are each attached to and moved by a pitman 22, the three pitmen being attached to the two throw crank 23 carried by a vertical shaft 24 journaled in the frame 25 of the collector. The shaft 18 is shown as driven through miter gears 26 and 27 by shaft 28 which may be connected with any suitable prime mover. As shown, the two outer cranks are in line with each other while the center crank is advanced 180 degrees in relation to the outer cranks.

Referring to Figs. 4, 5 and 6, Fig. 4 shows the first position, in which valves 19 and 21 are closed while 20 is open. Fig. 5 shows the positions of the valves after the driving shaft has rotated 90 degrees from its first position, all three valves now being closed. Fig. 6 shows the positions assumed after the shaft has rotated 180 degrees from its first position, valves 19 and 21 being open and valve 20 closed. These positions are each assumed in turn through each half rotation of the crank shaft. In use the powdered product from the cyclone 15 drops downward into the first chamber of chute 16 upon valve 19 and then into the second chamber upon valve 20. Valve 19 is then closed and valve 20 opened to drop the material onto valve 21. Valve 20 is then closed and valve 21 opened to deliver the material at the lower end of the chute to the bolting and screening apparatus of usual construction. As one of the slides or valves 19, 20, or 21 is always in position to close the chute 16, there is never any air current through the chute, so that whatever air may pass through the chambers is quiescent and does not interfere with the bolting or screening operation. Gravity alone is depended upon for the passage of the powdered material downward through the chambers, aided by the jarring movement of the opening and closing valves. If desired, this jarring action may be increased by an auxiliary jarring device.

Modifications of the above devices shown and described as an embodiment of the invention may be made by those skilled in the art, and I therefore do not limit my invention to the specific construction illustrated.

It will be understood that more than three valves may be used, and that for some pur-

poses two valves in combination with the partitions may secure fairly satisfactory results, and such constructions are claimed.

What is claimed is:—

5 1. An apparatus for handling powdered materials having a vertical chute formed of at least three successive chambers, a valve for each chamber, and mechanism adapted to open the valves in succession, the relation of the valves and mechanism being such
10 that at least one valve is always in a closed position.

2. An apparatus for handling powdered materials having a vertical chute having a
15 passage from end to end, a series of at least three valves located at different points along the chute, each of the valves being adapted to close the passage in the chute, and mechanism adapted to move the valves successively and to maintain the closing of the pas-
20 sage by one of the valves at all times.

3. An apparatus for handling powdered materials having a vertical chute having
25 at least three partitions, each of which extends partway across the chute, and valves cooperating with the respective partitions to divide the chute into chambers, said valves having dimensions equal to the cross-sectional size of the chute.

30 4. An apparatus for handling powdered materials having a vertical chute equipped

with at least three partitions, each of which extends halfway across the chute, valves cooperating with the respective partitions to divide the chute into chambers, the said
35 valves having dimensions equal to the cross-sectional size of the chute, and mechanism adapted to open and close the valves in succession.

5. An apparatus for handling powdered
40 materials having a vertical chute having a plurality of partitions, each of which extends partway across the chute, and valves cooperating with the respective partitions to divide the chute into chambers, said valves
45 having dimensions equal to the cross-sectional size of the chute.

6. An apparatus for handling powdered materials having a chute in which is located
50 at least three separate valves having successive movements or alternations, a two throw crank shaft, and connections between said valves and shaft whereby the valves are actuated.

In testimony whereof, I have hereunto set
55 my hand, in the presence of two subscribing witnesses.

ALEXANDER JORGENSEN.

Witnesses:

FRED. H. W. LUHRSEN,
WILLIAM SIEVERS, Jr.