No. 667,459. Patented Feb. 5, 1901.

J. SCHREICK & D. A. HESS.

DUST COLLECTOR.

(Application filed Aug. 4, 1899.)

(No Model.)

FIG. 1.

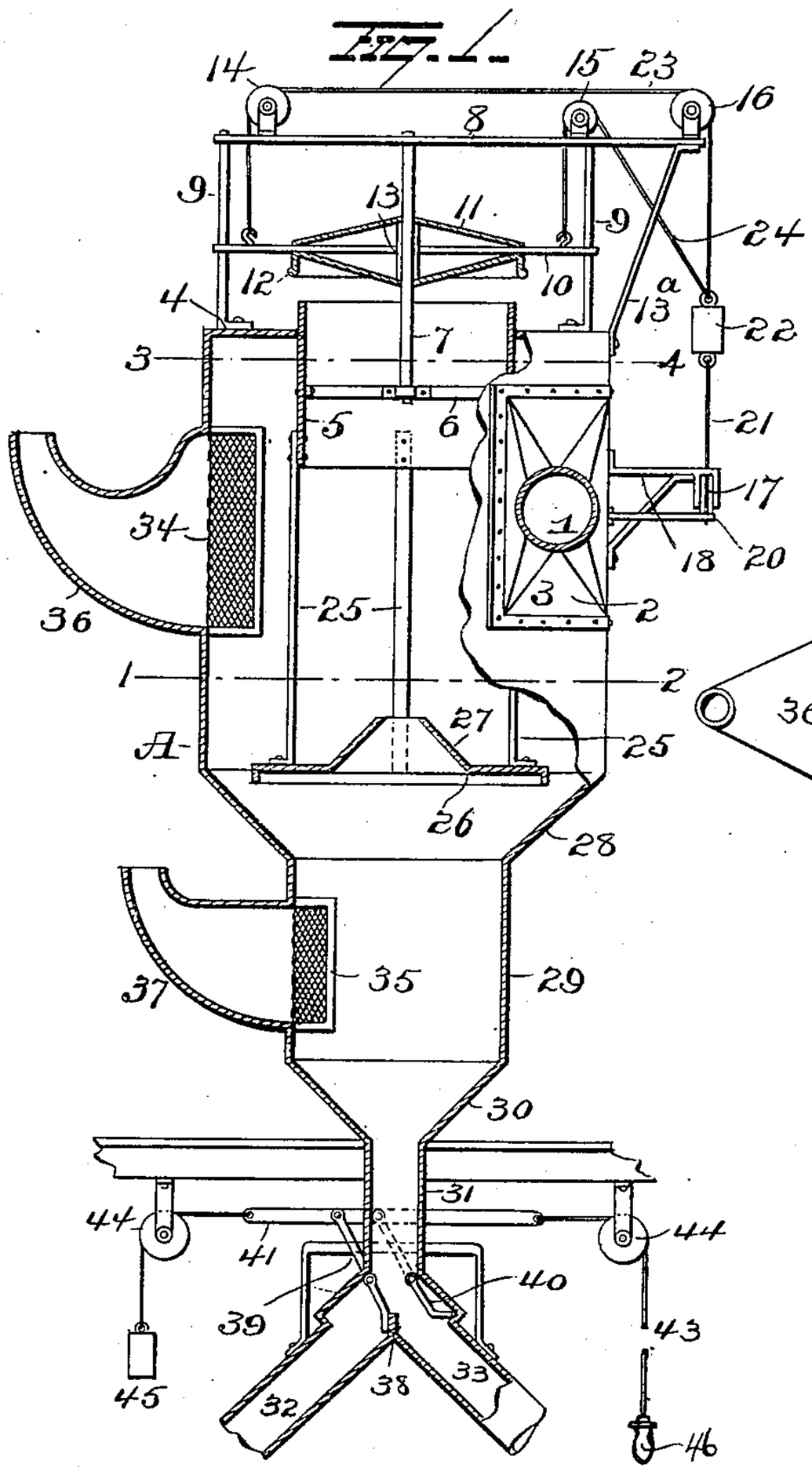


FIG. 3.

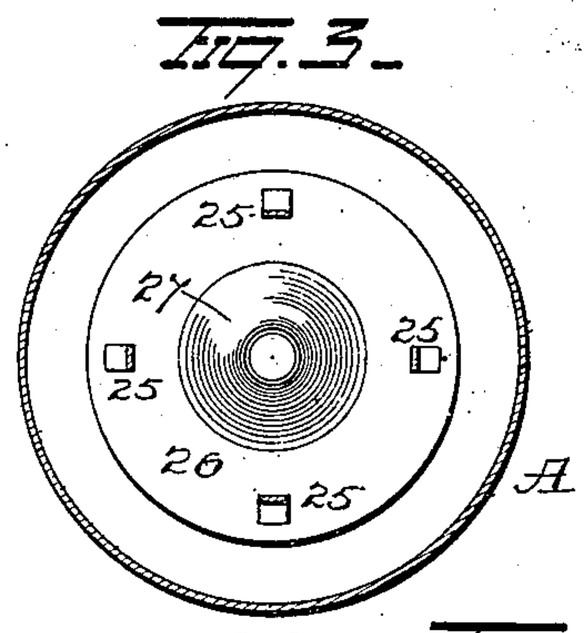
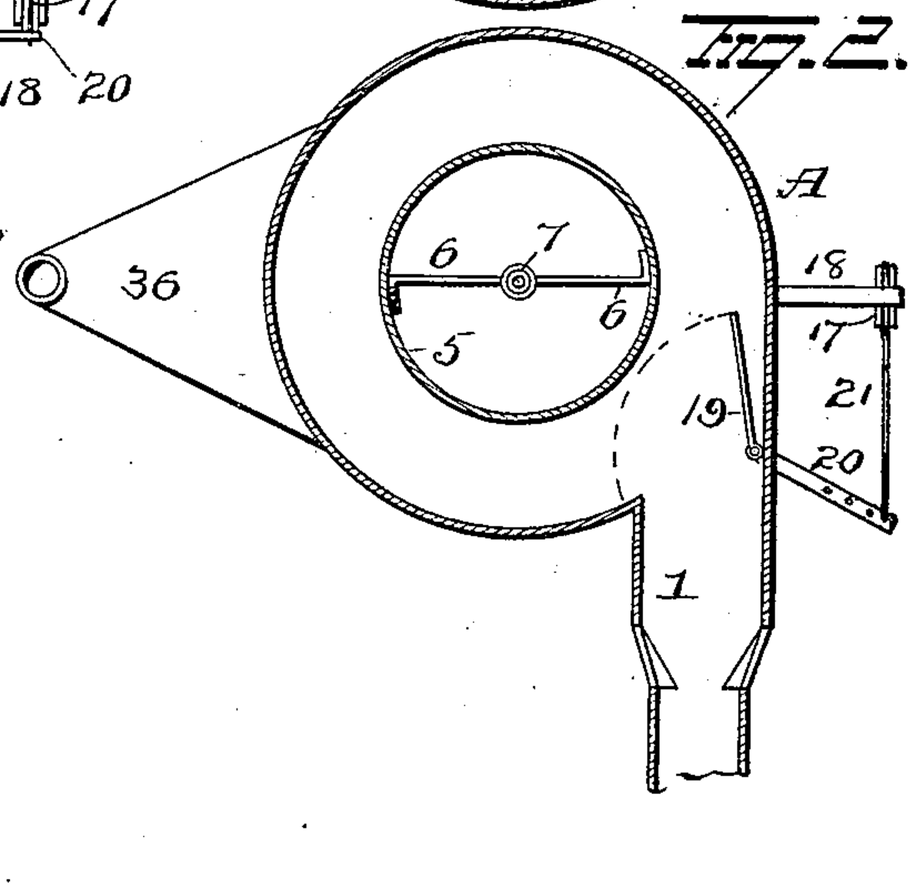


FIG. 2.



WITNESSES

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JACOB SCHREICK AND DANIEL A. HESS, OF LOUISVILLE, KENTUCKY.

DUST-COLLECTOR.

SPECIFICATION forming part of Letters Patent No. 667,459, dated February 5, 1901.

Application filed August 4, 1899. Serial No. 726,185. (No model.)

To all whom it may concern:

Be it known that we, JACOB SCHREICK and DANIEL A. HESS, residents of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Dust-Separators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in dust-separators, one object of the invention being to provide a dust-separator which can be used for cleaning grain or tobacco and for supplying shavings or other clean fuel to a furnace.

A further object is to provide a dust-separator which will be simple in construction, comparatively cheap to manufacture, and most effectual when in operation.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view, partly in section, illustrating our improvements. Fig. 2 is a view on the line 3 4 of Fig. 1. Fig. 3 is a view on the line 1 2 of Fig. 1.

A represents a cylindrical casing, into one side of which a pipe 1 is adapted to discharge. A fan-chamber 2, having any approved fan 3 therein, communicates with the pipe 1 and is adapted to drive the material therethrough. The cylindrical casing A is provided with a top 4, having a central opening for the reception of a sleeve 5. A cross-bar 6 is secured at its ends against the inner face of the sleeve 5, and an upright 7 is secured centrally on said cross-bar and is secured at its upper end to a cross-bar 8, supported on uprights 9, mounted on the top 4. A cross-head 10 is movably mounted at its ends on the uprights 9, and said cross-head 10 is connected with a double-convex disk cap or cover 11 for the sleeve 5, and said cap or cover 11 is made with a downwardly-projecting peripheral flange 12 to inclose the upper end of the sleeve 5 and is made with a central sleeve 13 for the accommodation of the upright 7.

The cross-bar 8 projects at one end beyond one upright 9 and is supported on a brace 13^a. Three pulleys 14, 15, and 16 are mounted on the cross-bar 8, and a pulley 17 is mounted on a bracket 18, secured to the side of the casing A. The pipe 1 is provided with a gate-valve 19, having an arm 20, and a chain or cord 21 is secured to the end of the arm 20, passed around the pulley 17, and is connected with a counterweight 22. A chain or cord 23 is secured to the upper end of the counterweight 22 and is passed around the pulleys 14 and 16 and secured to one end of the cross-bar 10, and another chain or cord 24 is secured to the upper end of the counterweight 22 and is passed around the pulley 15 and secured to the other end of the cross-bar 10, so that when the gate-valve 19 is opened by the air and material forced into the casing by the fan 3 motion will be transmitted by means of the chains or cords 23 and 24 to raise the cap or cover 11, and when the fan is stopped the cap or cover 11 will by its own weight close and prevent the entrance of rain or snow into the casing and at the same time close the valve 19.

Several hangers 25 are secured at their upper ends to the sleeve 5 and adapted to support at their lower ends a deflector 26. The deflector 26 is made with a central upwardly-projecting conical portion 27 for a purpose more fully hereinafter explained.

The casing A is contracted at its lower end, as shown at 28, and is provided with a smaller casing or chamber 29, and the latter is contracted, as shown at 30, and communicates with a pipe 31, communicating with two diverging pipes 32 and 33.

The casing A and chamber 30 are each provided with screens 34 and 35, which communicate with spouts 36 and 37 for discharging the dust.

A seat 38 is provided where the pipes 32 and 33 unite for parallel valves 39 and 40, pivoted between their ends and connected at their free ends to a bar 41, which latter is connected at its ends with chains or cords 42 and 43, passing over pulleys 44. One end of the chain or cord 42 is provided with a counterweight 45, which normally holds the valves in position shown in Fig. 1, and the lower end of the chain or cord 43 is provided with a handhold 46, by means of which to operate

the valves to open the pipe 32 and close the pipe 33. The pipe 32 preferably empties into a suitable bin (not shown) for grain or tobacco, and the pipe 33 may conduct material to a furnace. (Not shown.)

The operation of our improved device is as follows: Material is forced into the casing A by means of the fan 3 and given a whirling or rotary motion, and as the material passes the screen 34 the dust will escape therefrom. The material in its downward path is deflected by the deflector 26, and the central conical portion 27 in said deflector serves to permit the air below the deflector to pass upward through the sleeve 5 and out of the casing without disturbing the rotary motion of the material. The screen 35 serves to separate any dust which may have remained after passing the screen 34. If the material passed through the separator is to be used for fuel, the valves 39 and 40 will be in the position shown in Fig. 1; but if the material is grain or tobacco the valves will be moved to guide the grain or tobacco into the pipe 32.

Various slight changes might be resorted to without departing from the spirit of our invention, and hence we consider ourselves at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of our invention.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a separator, the combination with a casing having a central exit at its top and means for feeding material to said casing, of a deflector in the casing having a central upwardly-projecting portion provided with an opening for the passage of air, screened openings in the wall of the casing and spouts communicating with said openings for conveying dust from the casing.

2. The combination with a separator, of a pipe into which the separator is adapted to discharge, valves in said pipes, a longitudinally-movable bar to which the valves are connected and a weighted chain or cord connected with one end of said bar and a cord or chain connected with the other end of the bar for moving it in one direction.

3. In a separator, the combination with a casing and a top for said casing having a central opening, of a sleeve in said opening and projecting above the top of the casing, a cap or cover having a flange to fit over the sleeve, a frame secured to the top of the casing, pulleys on the frame, a pipe for supplying material to the separator, a valve for said pipe and chains or cords passed over said pulleys and connecting said cap or cover and valve to operate them simultaneously.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

JACOB SCHREICK.
DANIEL A. HESS.

Witnesses:
ED F. W. KAISER,
A. TRAUERNICHT.