M. H. ALBERTY.

MIDDLINGS-SEPARATORS.

No. 194,320. Patented Aug. 21, 1877.

Fig. 3

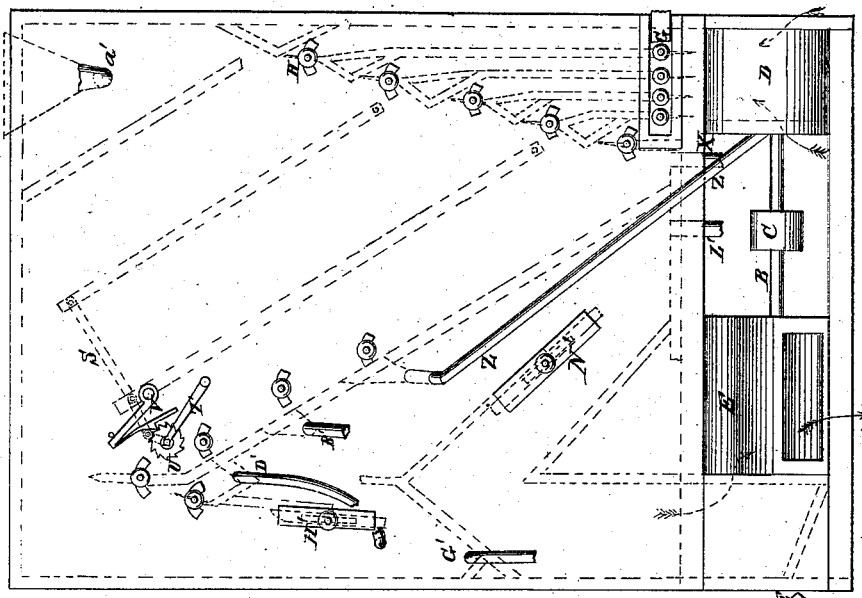


Fig. 2

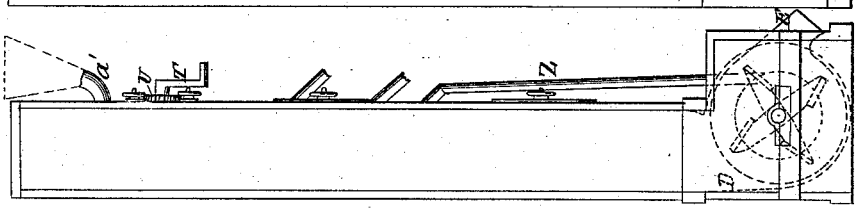


Fig. 4.

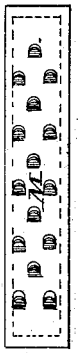
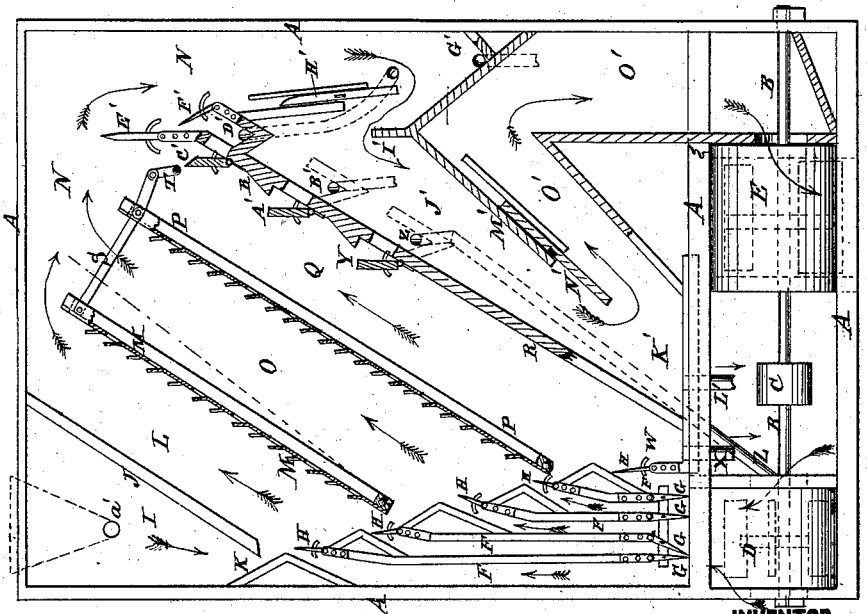


Fig. 1



WITNESSES:

A. W. Almquist

J. F. Scarborough.

INVENTOR:

M. H. Alberty.

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

MYRON H. ALBERTY, OF CHEROKEE, KANSAS.

IMPROVEMENT IN MIDDLINGS-SEPARATORS.

Specification forming part of Letters Patent No. **194,320**, dated August 21, 1877; application filed June 30, 1877.

To all whom it may concern:

Be it known that I, MYRON H. ALBERTY, of Cherokee, in the county of Crawford and State of Kansas, have invented a new and useful Improvement in Middlings Purifier and Separator, of which the following is a specification:

Figure 1 is a side view of my improved machine, the side of the case being removed and parts being broken away to show the construction. Fig. 2 is an end view of the same. Fig. 3 is a side view of the same reversed. Fig. 4 is a detail view of one of the riddles.

Similar letters of reference indicate corresponding parts.

The object of this invention is to purify middlings and separate the fuzzy and branny particles, and at the same time separate the heavier from the lighter middlings, by subjecting them to currents of air while passing through the machine, which machine shall be simple in construction and effective in use.

The invention consists in the combination of a series of air-passages provided with gates at their outer and inner ends, with a blast-fan and a set of air-chambers; in the combination, with the blast-fan and the inlet air-passages, of adjustable riddles, an exhaust or settling chamber, and an exhaust-fan; in the combination of grading-valves and dividers with an inclined chute-board, the riddles, the inlet air-passages, and the exhaust-chamber; and in the combination of the slide-board, the divider, the inclined board, and its extension with the exhaust-air chamber, as hereinafter fully described.

A represents the case of the machine, in bearings in the lower part of which revolves a shaft, B. The shaft B is driven by a belt passing around a pulley, C, attached to it, and to it is also attached a blast-fan, D, and a suction-fan, E. With the discharge-opening of the blast-fan D are connected five passages, more or less, F, which are provided with gates G at their lower ends to enable the amount of air passing through each to be regulated as required, and with gates H at their upper ends to enable the angle at which the currents of air strike the middlings to be regulated as required. The middlings are introduced through an opening, *a'*, in the case A into the chamber I, fall upon the inclined boards J K, and pass through an opening between said boards J K into the first air-chamber L, where they are met by one or more currents of air from one or more of the passages F, and by currents of air through the holes in the first riddle M, and the fuzzy and branny particles are carried over the upper end of the said riddle into the chamber N. The heavier middlings fall upon the riddle M and pass down through its holes against the air passing up through said holes into the second air-chamber O, where they are met by a current or currents of air from one or more of the passages F. The fuzzy and branny particles are again blown off by the air from the passages F and the air passing up through the holes in the second riddle P, and are driven over the upper end of the said riddle P into the chamber N. The heavier middlings fall upon the riddle P, and pass through its holes into the third air-chamber Q, where they are again met by a current or currents of air from the passages F, and the fuzzy and branny particles that may still remain are driven over the end of the inclined board R into the chamber N.

The riddles M P are formed by cutting curved slits in sheet-metal plates and turning up the pieces thus cut to form lips, as shown in Figs. 1 and 4. The plates thus formed are attached to frames, and the frames are pivoted at their lower ends to the sides of the case A. The upper ends of the riddles M P are connected by a bar, S, and the said bar is pivoted to a crank, T, which passes out through the side of the case A, and is held in place by a ratchet-wheel, U, and pawl V. This construction enables the riddles M P to be readily adjusted at any desired inclination.

As the middlings enter the air-chamber Q the heavier middlings fall upon the lower part of the inclined board R, slide down it into the hopper W, and pass out through the spout X. The next lighter middlings pass through the grading-valve Y into the spout Z, through which they pass to the blast-fan D, and are blown through the passages F to again pass through the machine. The next lighter middlings pass through the grading-valve A' into

the spout B′, and pass out of the machine. The next lighter middlings pass through the grading-valve C′ into the spout D′.

To the upper end of the inclined board R is hinged a divider, E′, which projects into the chamber N for the heavier particles that have been carried into the chamber N by the air to strike against and fall into the spout D′. The heavier particles that pass over the divider E′ pass between the divider F′ and the divider E′ into the spout D′. The particles that enter the spout D′ are conducted by it into the hopper G′. The air is drawn out of the chamber N by the suction-fan E, so that the particles may encounter no resistance in entering said chamber N, and may pass on with the air. As the particles enter the lower part of the chamber N the heavier particles drop into the hopper G′, and the lighter particles pass beneath the lower edge of the slide-board H′ and over the upper edge of the stationary divider I′ into the chamber J′. The heavier particles fall into the hopper K′, and pass out through the spout L′; but the lighter particles pass with the air around the lower edge of the inclined board M′ and its extension slide-board N′ into the chamber O′, and thence out through the fan E.

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

1. The combination of a series of air-passages, F, provided with gates G at their outer ends, and gates H at their inner ends, with the blast-fan D and the air-chambers L O Q, substantially as herein shown and described.

2. The combination of the adjustable riddles M P with the air-passages F, the exhaust-chamber N J′ O′, the blast-fan D, and the exhaust-fan E, substantially as herein shown and described.

3. The combination of the grading-valves Y A′ C′ and the dividers E′ F′ with the inclined board R, the riddles M P, the inlet air-passages F, and the exhaust-chamber N, substantially as herein shown and described.

4. The combination of the slide H′, the divider I′, the inclined board M′, and its extension N′ with the exhaust-air chamber N J′ O′, substantially as herein shown and described.

MYRON H. ALBERTY.

Witnesses:
ABM. MORLEY,
ISAAC G. MCKIBBAN.