W. M. REDD.

Grain Separator.

No. 108,391. Patented Oct. 18, 1870.

Fig. 1.

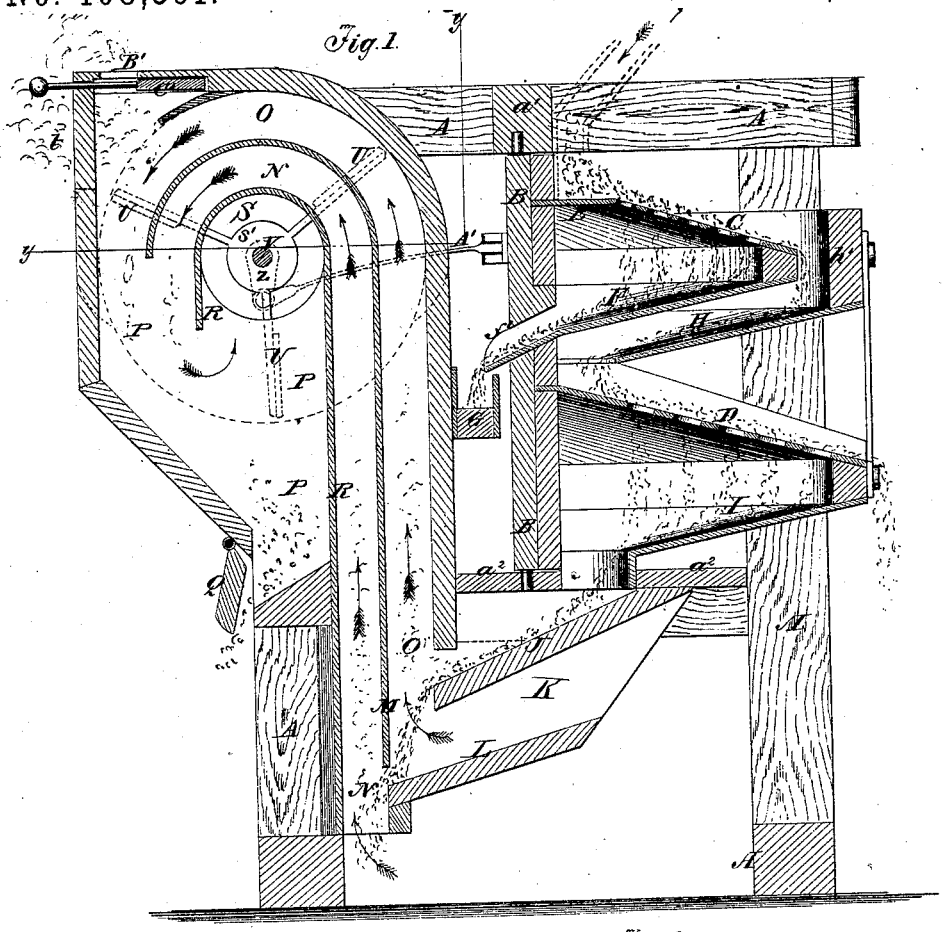
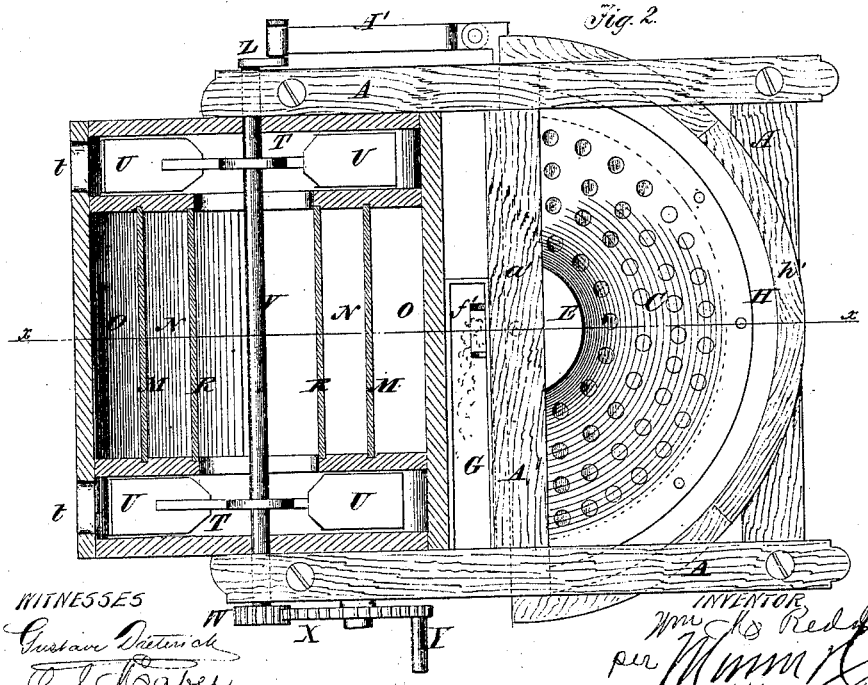


Fig. 2.



WITNESSES

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WILLIAM M. REDD, OF HAZEL GREEN, WISCONSIN.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **108,391**, dated October 18, 1870.

To all whom it may concern:

Be it known that I, WILLIAM M. REDD, of Hazel Green, in the county of Grant and State of Wisconsin, have invented a new and useful Improvement in Grain-Separators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification.

Figure 1 is a detail vertical section of my improved grain-separator, taken through the line *x x*, Fig. 2. Fig. 2 is a top view of the same, partly in section through the line *y y*, Fig. 1, to show the construction.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish a simple, convenient, effective, and reliable machine for separating the chaff, straw, oats, and other coarse or light substances and fine seeds from wheat; and it consists in the construction and combination of the certain parts of the machine, as hereinafter more fully described.

A is the frame of the separator. B is a post or plate, the upper end of which is pivoted to a cross-bar, a^1, of the frame A, and its lower end is pivoted to the platform or floor a^2 of said frame. To the post or plate B are attached the straight edges of the screws C D, which are made in the form of semi-cones, as shown in Figs. 1 and 2.

E is the feed-plate, which is made in the form of a semicircle, and is secured to the pivoted post B and to the apex of the upper screen C, to receive the grain from the feed-spout and distribute it evenly over the screen C. The screen C is finely perforated, so as to allow the fine seeds to pass through it and drop upon the inclined platform F, from which they escape through the spout f', and pass to the side of the mill through the spout G.

The wheat, oats, straw, chaff, &c., drop from the outer or curved edge of the screen C to the inclined platform H, which is made with an upwardly-projecting flange, h', around its outer or curved edge, to prevent anything from escaping over the said curved edge. The middle part of the inclined platform H is cut away, or has an opening formed through it, through which the wheat, oats, chaff, straw, &c., escape to the screen D. The screen D is perforated with holes of such a size as will allow the wheat and chaff to pass through, but not the oats, straw, and other coarse substances, which coarse substances drop from the outer or curved edge of the screen, and thus escape from the mill. The wheat and chaff drop from the screen D to the inclined platform I, which has an opening in its lower middle part, through which the wheat and chaff drop to the inclined stationary platform J, down which they slide and drop from its lower edge through the air-passage K, the wheat falling upon the inclined platform L, which forms the bottom of the said air-passage K, and passes below the partition M into the passage N, through which it escapes at the bottom of the mill. The chaff, dust, and other light substances are taken by the blast that enters through the passage K and the lower end of the passage N, and are carried up the blast through the passages O and N, and are discharged into the air-chamber P from the curved upper ends of said passages O N, as indicated by the arrows in Fig. 1. In the chamber P a further separation takes place, the heavier parts dropping into the lower part of said chamber P, and escaping through the swinging door Q when enough has accumulated in the said chamber to force the said door Q outward against its own weight and the inward pressure of the door. The lighter parts pass around the lower edge of the partition R into the chamber S beneath the curved upper parts of the passages N O, and escape through the openings s' at the ends of the said chamber S into the fan-chambers T, and escape through the openings *t*.

U are the fans which work in the chambers T, and by the action of which the air is drawn through the passages N O and air-chambers P S T. The fans U are attached to the shaft V, which works in bearings attached to the frame A.

To one end of the shaft V is attached a small gear-wheel, W, the teeth of which mesh into the teeth of the gear-wheel X, pivoted to the frame A of the mill, or to supports attached to said frame, and with which is connected the crank Y, by means of which power is applied to the separator. To the other end

of the shaft V is attached a crank, Z, to the crank-pin of which is pivoted the end of the connecting-rod A′, the other end of which is connected with the screens, and the inclined platforms connected with them to agitate the said screens and platforms.

B′ is an opening in the top of the mill, closed by a slide, C′, so that the force of the air-blast may be regulated by partially opening the said slide, and thus admitting air to the air-chamber P that has not passed through the passages O N.

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

1. The arrangement of the air-passages K O N, air-chamber P, air-chamber S, fan-chambers T, and fans U, in combination with each other, substantially as herein shown and described, for the purpose of removing the chaff, dust, &c., from a stream of falling grain, as set forth.

2. The combination and arrangement of the opening B′ and C′ with the air-passages K O N, air-chambers P S, and fan-chambers T, substantially as herein shown and described, to regulate the force of the blast of air passing through said passages and chambers, as set forth.

WILLIAM M. REDD.

Witnesses:
W. H. LIGHTCAP,
W. H. TEESDALE.