2 Sheets—Sheet 1.

R. J. HORTON.

GRAIN-SEPARATOR.

No. 190,327. Patented May 1, 1877.

Fig. 1.

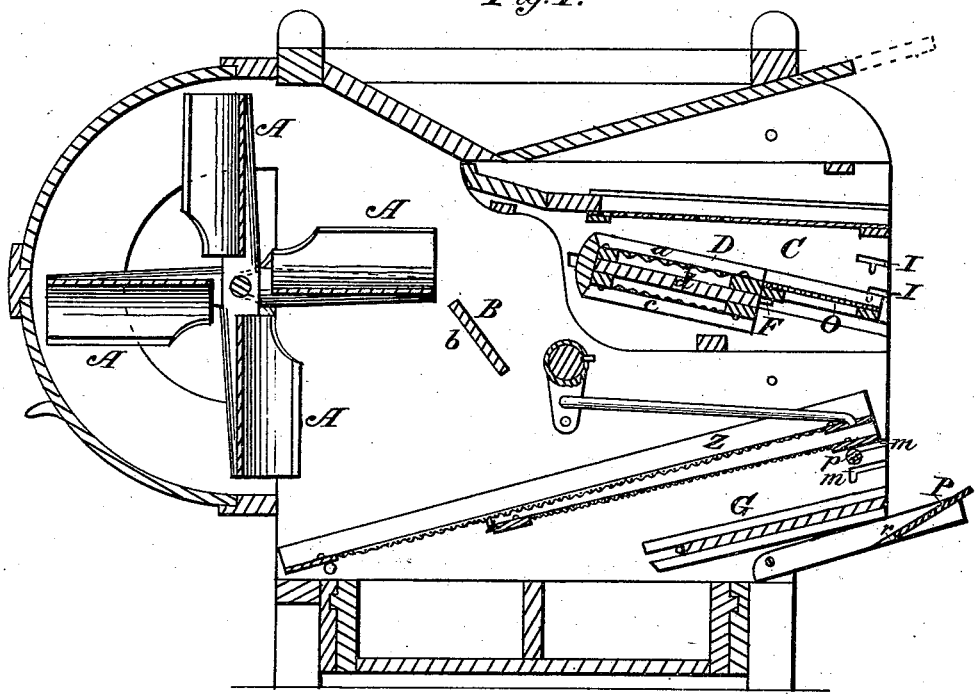
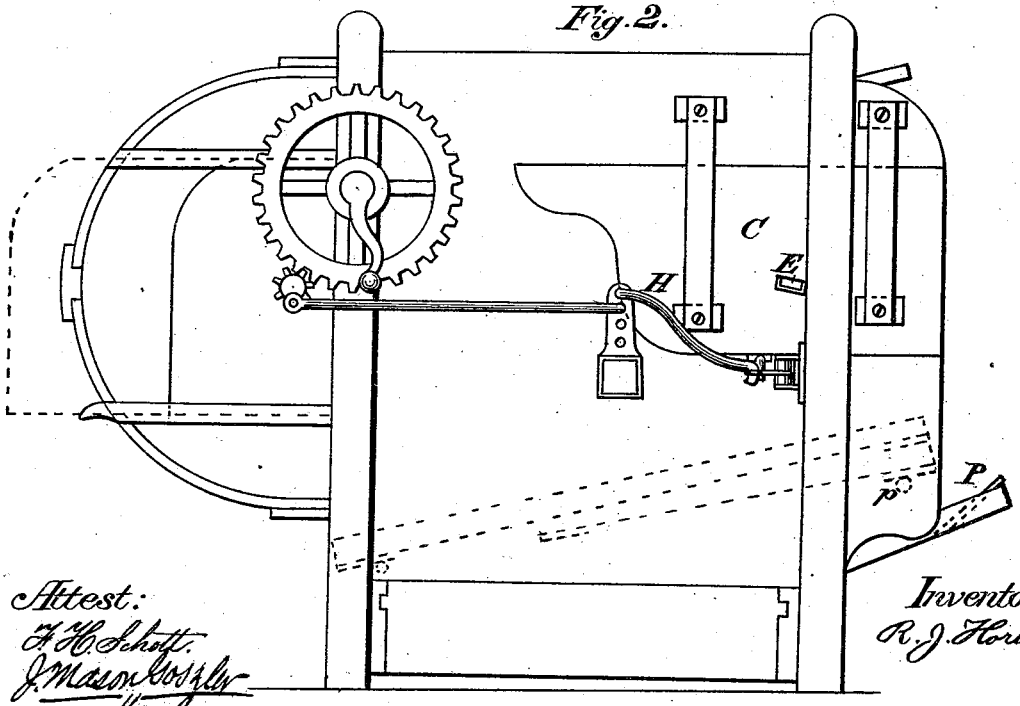


Fig. 2.



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R. J. HORTON.

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Fig. 3.

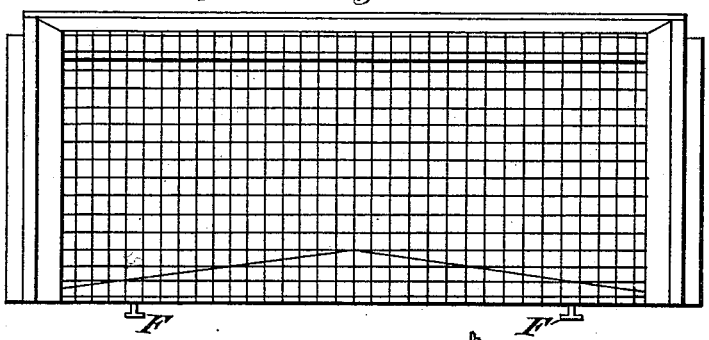


Fig. 4

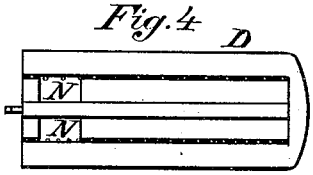


Fig. 5.

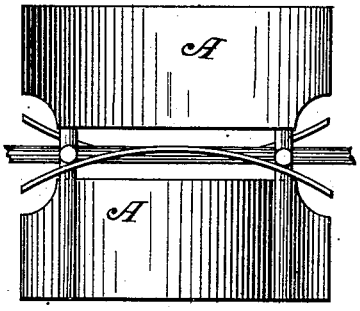


Fig. 6.

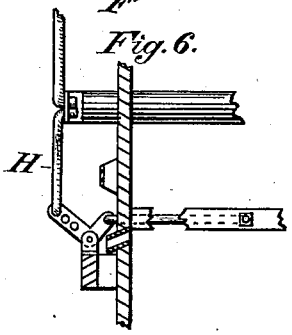


Fig. 7.

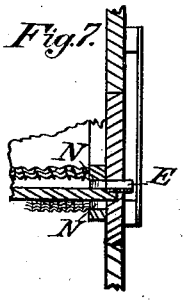


Fig. 8.

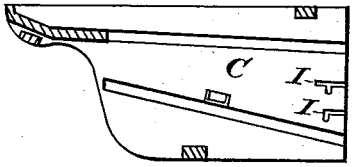


Fig. 9.

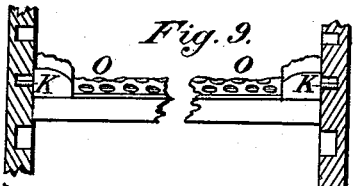
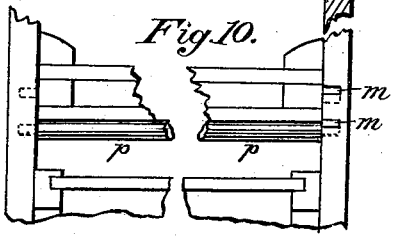


Fig. 10.



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UNITED STATES PATENT OFFICE.

RANSOM J. HORTON, OF MASSENA, NEW YORK.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. **190,327**, dated May 1, 1877; application filed March 20, 1877.

To all whom it may concern:

Be it known that I, RANSOM J. HORTON, of the town of Massena, St. Lawrence county, State of New York, have invented a new and useful Improvement in that class of Grain-Separators known as "Fanning-Mills," which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, making part of the same, in which—

Figure 1 is a longitudinal vertical section of the machine. Fig. 2 is a side elevation. Fig. 3 is a plan view of the double sieve. Fig. 4 is an end view of the double sieve. Fig. 5 is a view of the fan, showing the curved blades thereof. Fig. 6 is a detail view of the mechanism connecting the shoe with the fan-shaft. Fig. 7 is a detail sectional view of part of the double reversible sieve, showing its connection with the discharge-spout. Fig. 8 is a longitudinal sectional view of the shoe with the sieves removed. Fig. 9 is a sectional view of the screens, showing their supporting-pins fitting into slots in the side of the shoe. Fig. 10 is an end view of tumbling-rod and lower sieve.

The object of my invention is by the use of a fan, A, to draw the wind into the mill, and concentrate it on the lower sieves Z, which, by the aid of wind-guide B, not only gives greater power, but dispenses the wind more evenly, than do the fans having a flat surface, and without a wind-guide.

In fans of this form, A, the air drawn in is drawn more rapidly in proportion to the number of revolutions of the fan than in the case of one having straight blades, and the air tends to concentrate its volume in the middle of the length of the fan.

It is therefore necessary, in order to equalize the pressure of the blast over every part of the sieve, as well as to direct the air-current properly, to make use of an adjustable wind-guide, B, which I prefer to place at or about the level of the axis of the fan.

In the shoe C the sieves O are held in place by iron pins K, inserted in side of frame, as shown more in detail in Fig. 9, and which are fitted into slots or grooves I. Thus a difference of pitch is obtained for the sieves. The advantage is this: The oats can be separated from wheat, barley, and other grain more readily than by the old process. Being able to alter the pitch at will expedites the work greatly, and enables the operator to thoroughly separate the different kinds of grain, and prevents waste.

A narrow double sieve, D, with fine wire on one side and coarser on the other, and having a bottom, *d*, between the two, with suitable discharges N, working either side up, is inserted in the shoe. In the sides of frame of this sieve the holes N are cut, connecting with holes E in the side of the shoe.

In front of the said double-sieve frame D iron pins F are inserted, for the purpose of holding short zinc sieve O.

A stationary tail-board, G, is inserted in the lower rear part of the mill, beneath the head of the lower sieves, for directing the refuse to the lower part of the mill.

Below the tail-board is a narrow board, P, as seen in Fig. 1, working in grooves *r* in pivoted adjustable supporting-arms, as shown, and may be raised or lowered at will on the arms, or set in or out in the grooves *r*, and is thus doubly adjustable, the object being to catch the light grain that is blown over the sieves, and carry it back close to the mill, thus dividing the light grain from the chaff.

By the use of the curved rod H on side of mill which connects the rocker-shaft with the elbow-iron, the operator, by changing the rod into the lower holes, is enabled to impart less throw to the sieves.

I claim as my invention in a fanning-mill the following combination, to wit:

1. The fan with curved blades A, in combination with adjustable wind-guides B, substantially as described.

2. The reversible sieve-box D, consisting of the coarse screen *a*, the finer screen *c*, and the intermediate chute-board *d*, dividing the space between the sieves into two compartments having separate discharge-outlets, substantially as described.

3. In combination with the screen and the

casing having grooves M, the rod *p*, formed with journals or spindles at the ends, substantially as and for the purpose set forth.

4. In combination with the long sieve Z and fan, the chaff-divider P below the tail-board, working in grooves *r* in the pivoted arms, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of March, A. D. 1877.

RANSOM J. HORTON.

Witnesses:

H. GOODRIDGE,

H. L. STEDMAN.