F. P. ROOT.

Thrashing Machine.

No. 3,341. Patented Nov. 15, 1843.

Fig. 1,

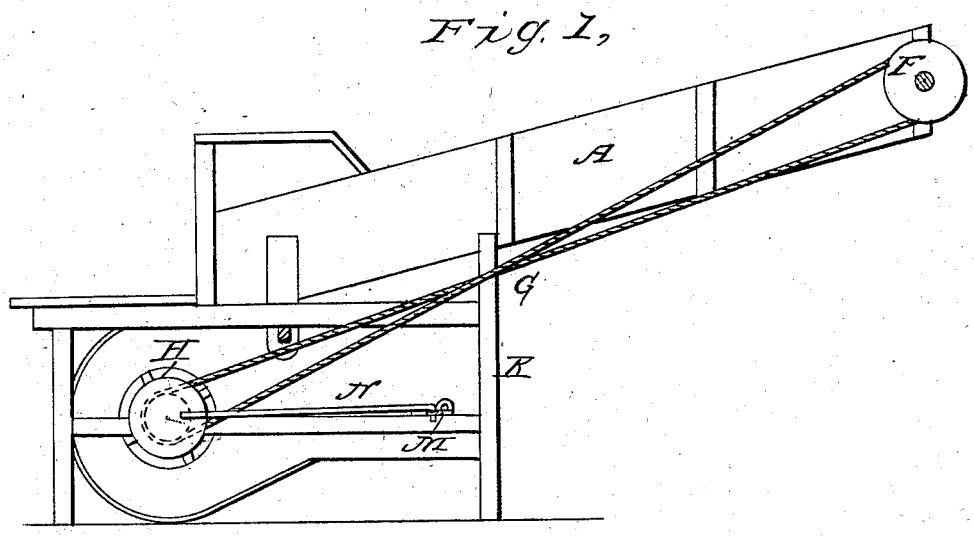


Fig. 2,

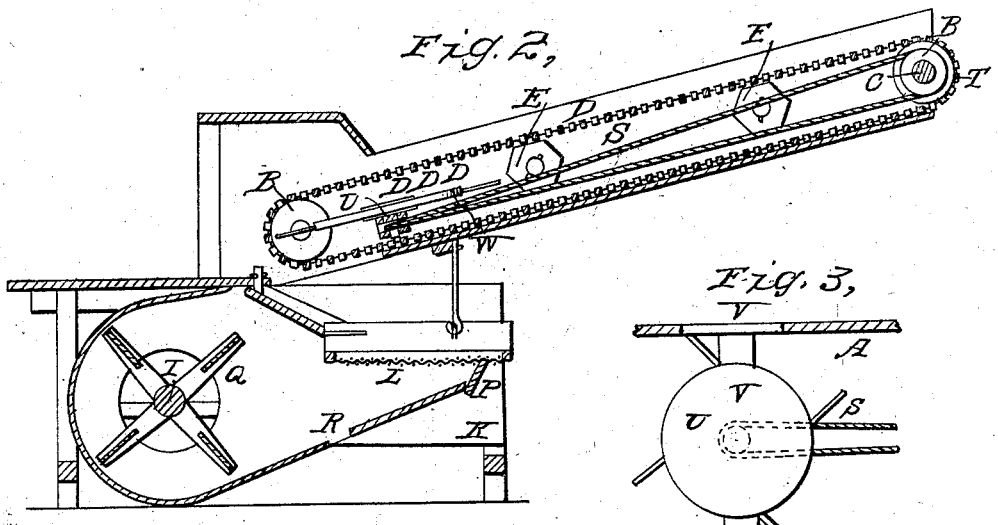
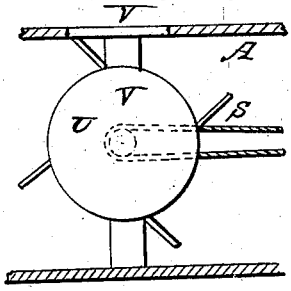


Fig. 3,



UNITED STATES PATENT OFFICE.

F. P. ROOT, OF SWEDEN, NEW YORK.

GRAIN-CLEANER.

Specification of Letters Patent No. 3,341, dated November 15, 1843.

To all whom it may concern:

Be it known that I, F. P. ROOT, of Sweden, in the county of Monroe and State of New York, have invented a new and useful Improvement in Machines for Separating Grain from Straw and Chaff and other Impurities, called "Root's Grain-Separator," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the machine. Fig. 2 is a vertical longitudinal section of ditto. Fig. 3 is a horizontal section through the lower portion of the fan case showing the wheel W.

Similar letters refer to corresponding parts.

This machine consists of an inclined oblong box or trough A open at the top and upper end, in which are arranged two pair of flanged wheels B, one at the upper and the other at the lower end of said box. The pair at the upper end is secured to a horizontal transverse shaft C, turning in boxes fixed to the sides of said inclined box A. The lower pair turns on pins, projecting from the sides of the box A. Over these wheels are passed two endless chains. To these chains are secured a series of bars D, extending at right angles across, from one chain to the other. These constitute the conveyer D′. On the sides of the box A are placed four or more polygonal wheels E, for the purpose of shaking the chain of bars during its movement around the wheels B. On the shaft C, and outside the box, is secured a pulley F over which is passed a band G extending to a similar pulley H on the fan shaft I. Under the lower end of the box A is arranged a frame K, of suitable size, form, and material, to contain the parts to be described, in which is suspended by cords or rods a horizontal oblong sieve L on which the grain is deposited, after having been separated from the straw, by the endless chain of bars. This sieve receives a vibratory movement by means of the ordinary right angled lever M and connecting rods N. Under this sieve or screen is placed an inclined board O which extends from below the sieve, and near the front end thereof, in an inclined direction toward the opposite end. A transverse board P is suspended on pivots above the upper end of the inclined board O. This board P, is inclined at an angle of about 70 degrees in order to direct the blast of air from the fan, upward, near the end of the sieve, to prevent it from blowing the grain over the edge.

An ordinary fan Q and case are arranged in front of the sieve, the blast of which is directed immediately under the sieve and grain, by means of the inclined boards O, P. A small opening R being left between the trunk of the fan case, and the inclined board to allow the grain to discharge.

On the shaft C to which the flanch wheels are secured, is fastened a grooved pulley T over which is passed a band S extending to another pulley on a vertical shaft U near the opposite end of the box or trough A. To this vertical shaft U, is secured a horizontal wheel W, from the periphery of which four or more wire pins project. These pins are arranged at equal distances apart on a line tangential to the periphery of the wheel in order that they may have a tendency to throw, by centrifugal force, the straw that may collect at that part, through the opening V in the side of the box.

The operation of this machine is as follows: The power being applied to the pulley to the shaft of the fan, either directly from the horse power or threshing machine. The straw and grain after being acted on by the threshing machine is placed on the endless chain of bars (near the lower flanch wheels) which carries it upward toward the upper end of the box A. The polygonal wheels being irregular on their peripheries shake the chain and separate the grain from the straw. The grain falling on the bottom of the box is carried toward the lower part of the same and discharged on the vibrating sieve, where it is met with a blast of air from he fan which separates the chaff and other light impurities from the same. The meshes of the sieve being large enough to allow the grain to pass through, it descends to the inclined board, and is discharged through the opening R. The grain is prevented from being blown over the front end of the screen, (as is the case in the use of the ordinary fan and screen,) by introducing the blast underneath the grain, and the application of the inclined board P. The straw passing through the endless chain of bars, is prevented from collecting, by means

of the pins in the periphery of the horizontal wheel W which force it out through an opening V in the side of the inclined box.

What I claim as my invention and which I desire to secure by Letters Patent is—

The use of the horizontal wheel W with pins projecting from its periphery for preventing the endless chain of bars from choking with stray as described in combination with the conveyer D′ as described.

F. P. ROOT.

Witnesses:
EDMUND MAHER,
JOHN H. JOHNSON