Peter Flickinger's

Improved Grain Separator.

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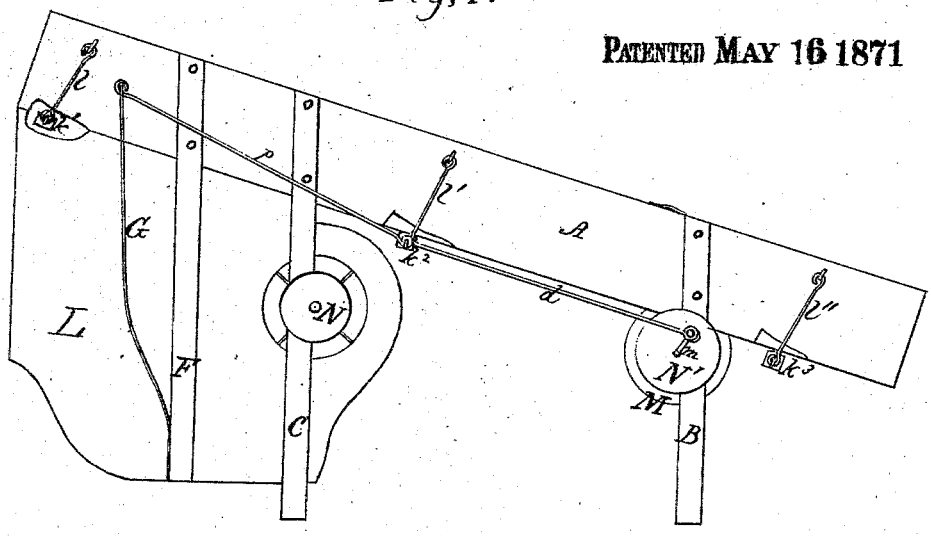
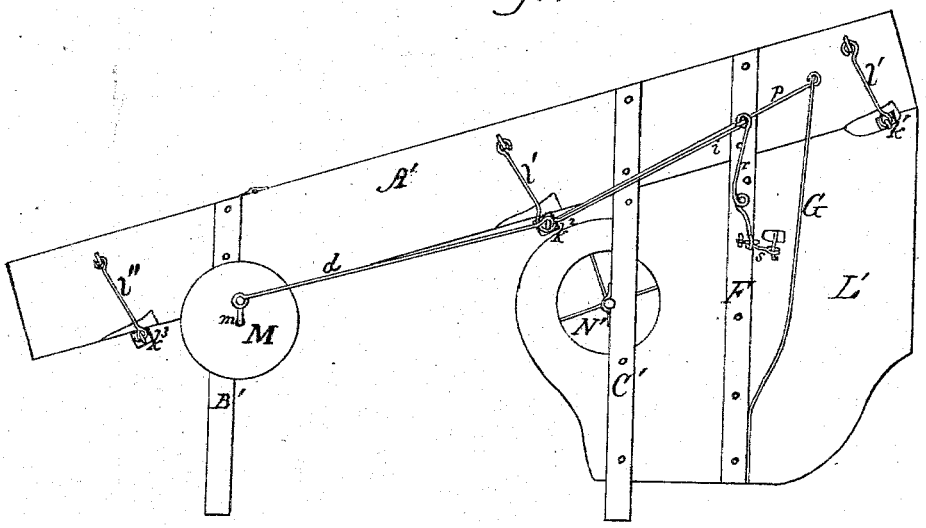
Sheet. I.

Fig, 1.

PATENTED MAY 16 1871



Fig, 2.



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Peter Flickinger's
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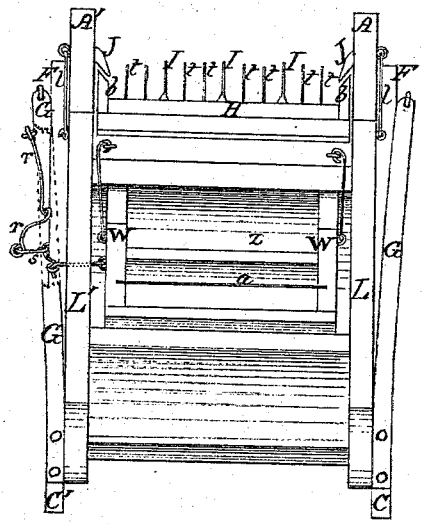
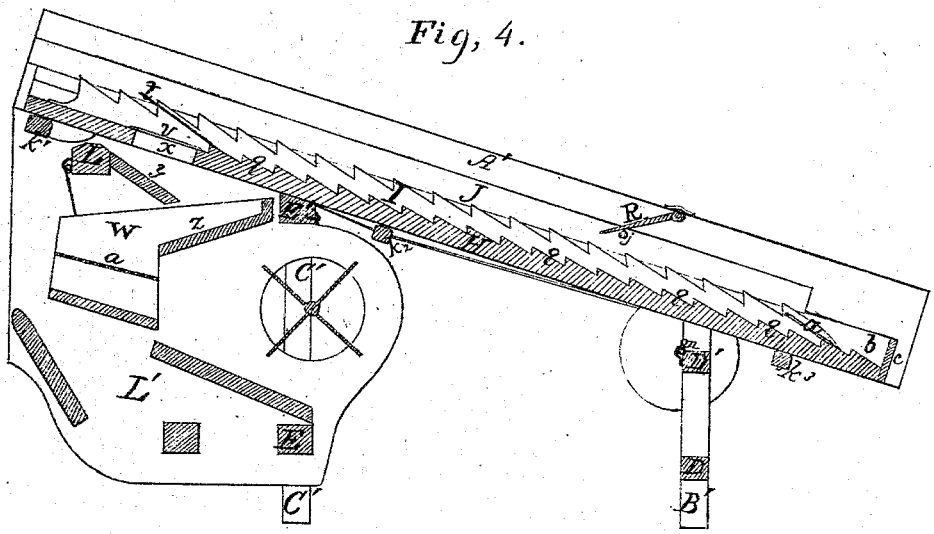
Fig, 3.

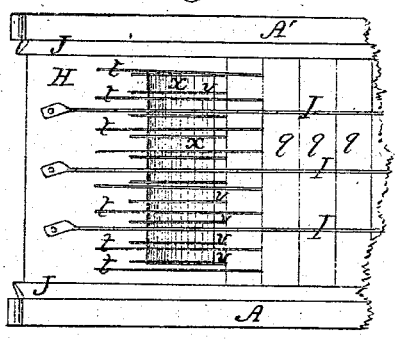
Sheet II



Fig, 4.



Fig, 5.



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PETER FLICKINGER, OF HANOVER, PENNSYLVANIA.

Letters Patent No. 114,789, dated May 16, 1871; antedated May 11, 1871.

IMPROVEMENT IN GRAIN-SEPARATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, PETER FLICKINGER, of Hanover, in the county of York and State of Pennsylvania, have invented a new and useful Improvement in Grain-Separators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, which forms a portion of this specification.

The grain-separators now in use, which receive the straw, headings, chaff, and grain from thrashing-machines, and serve the purpose of separating the straw and headings from the grain and chaff, while they conduct the latter into winnowing-machines, are all defective in their modes of operation, for the reason that they all waste more or less of the grain.

My improvement in grain-separators is intended to remedy the aforesaid defect, and, in practice, I have discovered that it does perfectly accomplish the desired result.

In the accompanying drawing—

Figures 1 and 2 are side views of my improved grain-separator;

Figure 3, a view of the front end of the same;

Figure 4, a longitudinal vertical section; and

Figure 5, a top view of a portion of the front end of the separator.

Similar letters indicate the same parts in the drawing.

The supporting frame-work of my improved grain-separator is composed of the inclined side pieces A A′, the legs B B′ and C C′, and the transverse beams D D′ and E E′, substantially as represented in the drawing.

The lowest end of my improved grain-separator is placed immediately opposite the delivery-spout of a thrashing-machine, and in such a position that all the straw, headings, chaff, and grain discharged from said thrashing-machine will fall upon the upwardly-inclined and reciprocating conductor H of the separator.

Transverse notches *q q* are formed in the exposed face of the inclined conductor H, as shown in fig. 4.

The beveled strips *b b*, which are secured to and rise above the sides of the conductor H, pass under the overhanging guiding-slats J J, which are secured to the inner surfaces of the sides A A′ of the supporting frame, as shown in fig. 3.

The end board *c*, fig. 4, which is secured to the lower end of the conductor H, rises to about the same height above the upper surface of the same as do its sides *b b*.

The conductor H is suspended by and vibrates upon the three pairs of pivoted or jointed pendants, *l l′*.

The upper ends of said pendants are pivoted or jointed to the sides A A′ of the frame of the separator, and their lower ends are pivoted or jointed to the projecting ends of the transverse slats k^1 k^2 k^3, which are secured to the under side of the conductor H.

The requisite reciprocating motion is imparted to the inclined conductor H from the double-cranked driving-shaft *m*, figs. 1 and 2, by means of the rods *d d* on opposite sides of the separator, which connect the cranks of said shaft with the projecting ends of the central slat k^2, which is secured to the under side of said conductor.

For the purpose of imparting sharp jerking forward movements to the conductor H the projecting ends of the slat k^3 are also connected to the stiff springs G G by means of the rods *p p*, as shown in figs. 1 and 2.

The said jerking movements of the conductor serve the purpose of throwing forward the kernels of grain from one notch *q* to another on the face thereof, until they reach the opening *x* near the upper end of said conductor, through which the said kernels of grain fall into the hopper *y* of a winnowing-machine, W *a z*, which is properly located, and which is driven by means of a band connection of the pulley N on its fan-shaft with the pulley N′ on the double-cranked main shaft *m*, or by any other suitable means.

Notched metallic plates I I project at right angles from their longitudinal connection with the face of the inclined conductor H, and serve the following purposes:

First, the said notched plates, in consequence of the smooth rearward movements and the jerking forward movements imparted thereto, steadily carry forward the straw up the inclined conductor, and shake all the kernels of grain out of the same before it passes the opening *x* in said conductor; and

Second, the said notched plates keep the straw a sufficient distance above the notched surface of the conductor H to enable the movements of said plates to produce the desired shaking effect thereupon.

The inclined wire teeth *a*, that project from the lower end of the conductor H, aid the teeth of the plates I I in seizing and carrying forward the straw as it is discharged upon the conductor from the thrashing-machine.

The inclined wire teeth *t t*, that rise from the conductor H and project forward over the opening *x* through the same, act in conjunction with the notched plates I I in carrying forward the headings and broken straw, and preventing the same from falling through the said opening *x* in the conductor to the winnowing-machine.

The wires *v v*, which pass across the aperture *x* in the conductor, and are secured to opposite sides of the same, also aid in preventing the headings and broken straw from passing through said aperture to the winnowing-machine.

The grain-shield and straw-detainer R is pivoted to

the sides A A′ of the frame of the separator, and is placed in the best position for performing its respective functions, to wit, arresting the flying kernels of grain from the thrashing-machine that would otherwise pass beyond the reciprocating conductor H and be lost, and preventing any backward movement of the straw during the reverse movements of said conductor.

Said grain-shield and straw-retainer swings freely in a forward direction, but is prevented from falling onto the reciprocating conductor H by the pins *j j*, which project inwardly from the sides A A′ of said conductor.

My said improved grain-separator may be used with any desired style of thrashing-machine, and may be combined with any desired style or manufacture of winnowing-machines.

I claim as my invention—

The combination and arrangement of the grain-shield and straw-retainer R with the reciprocating conductor H, constructed as described, and the shoe W of the winnowing apparatus, substantially as and for the purpose herein set forth.

In testimony that the foregoing is a full and clear specification of my improvements in grain-separators I hereunto subscribe my name this 14th day October, 1870.

PETER FLICKINGER.

Witnesses:

Z. C. ROBBINS,

GEO. D. FRANZONI.