2 Sheets—Sheet 1.

HINSDELL, DRAKE & WAY.

Grain Separator.

No. 113,296. Patented Apr. 4, 1871.

Fig 2

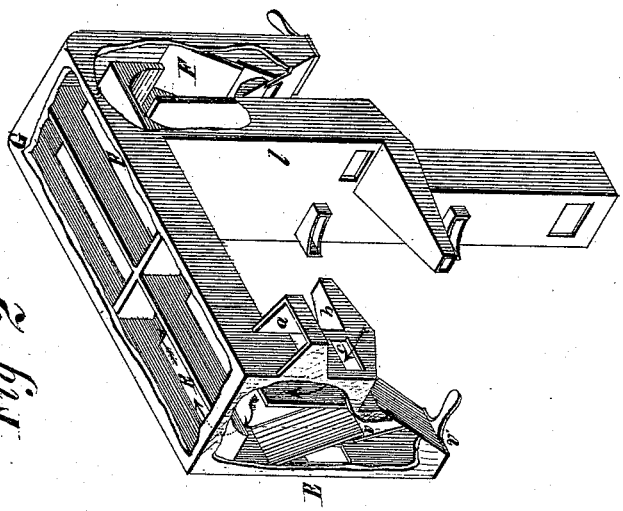
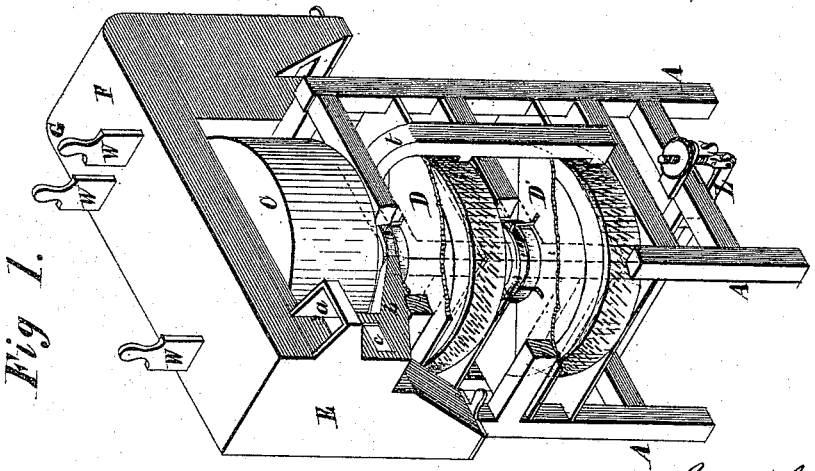


Fig 1.



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2 Sheets—Sheet 2.

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Fig. 3

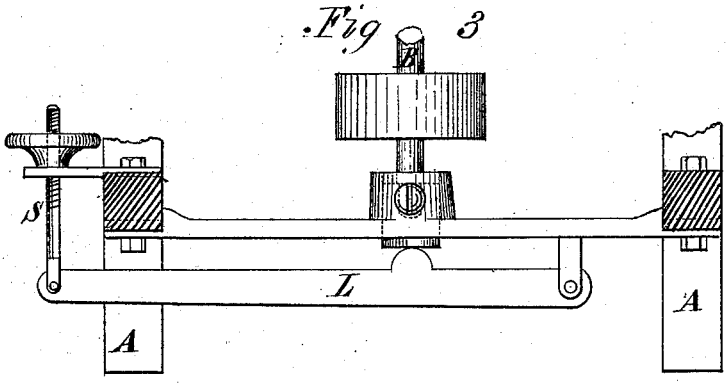


Fig. 4

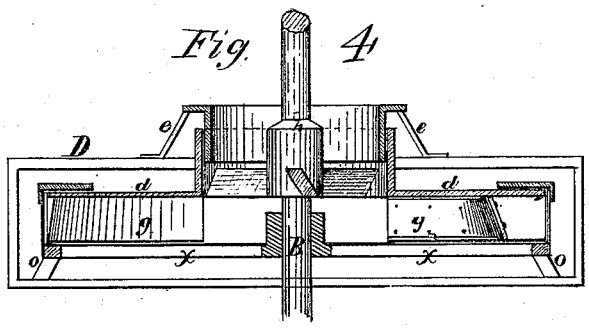
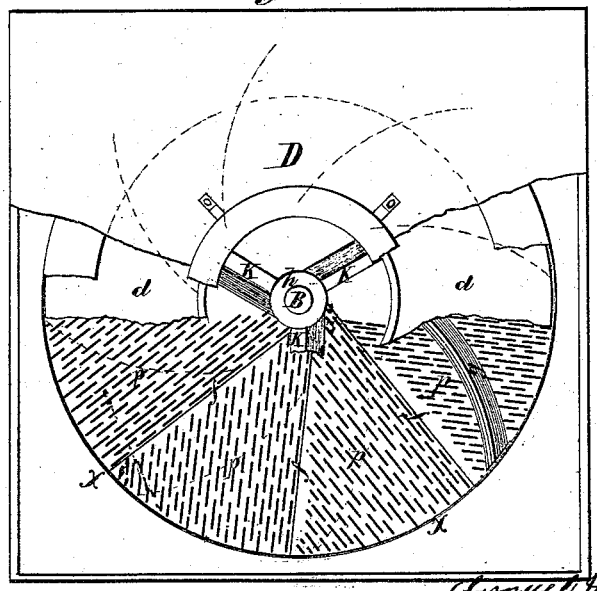


Fig. 5.



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SAMUEL H. HINSDELL, HENRY W. DRAKE, AND CORNELIUS B. WAY, OF CAMILLUS, NEW YORK.

Letters Patent No. 113,296, dated April 4, 1871.

IMPROVEMENT IN GRAIN-SCOURERS AND 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 we, SAMUEL H. HINSDELL, HENRY W. DRAKE, and CORNELIUS B. WAY, of the town of Camillus, in the county of Onondaga and State of New York, have invented a certain new and improved Grain-Scourer and Separator; and we do hereby declare that the following is a full, clear, and exact description of the construction of the same and the form thereof, when complete and ready for use, reference being had to the annexed drawing forming a part of this specification, in which—

Figure 1 represents a general view of the whole machine.

Figure 2 represents the screening-chambers.

Figure 3 represents the lever arrangement for adjusting the scourers.

Figure 4 represents a sectional view of one of the scourers.

Figure 5 represents, mainly, the bed of the same.

The letters used represent corresponding parts wherever they occur.

A is the general frame of the machine, with the necessary girts and floors or beds for the working parts to rest upon.

B is the main shaft, running as near as may be through the center of the frame A, for the suction-fan and revolving disks to be attached to and operated.

C is an ordinary suction-fan, connecting by pipes and apertures with all the different parts where the cleaning is done.

D D′ are the principal scourers.

E is the first screening-chamber.

F is the second screening-chamber, and is used in connection with scourer D.

G is the third screening-chamber, and is used in connection with the scourer D′.

The grain enters the machine at the hopper *a*, and drops down into the head of the spout *b*, which conducts it to scourer D, and, as it thus drops, it meets a current of air which enters at the opening *c* in the side of the screening-chamber E, and is drawn in the direction of the suction-fan C, as indicated by arrows in the drawing. The dust is carried with the current of air into the suction-fan C, and discharged through a spout in any convenient direction.

The screening-chamber E has two valves, V V′. Ordinarily the suction from the fan C closes these valves, and the screenings drop down upon the valve V until their weight opens the valve and they drop to the chamber below, the valve V closing after them; and the valve V′ then opens, and the screenings fall out.

The spout *b* is made to enter the center of the scouring-disk through a dead eye, *e*, and thus passes into the scourer D.

Scourer D consists of a scouring-disk, *d*, which has a hub, *h*, fastened to the main shaft by a set-screw, or other ordinary device, and from the hub *h* arms *k k k* extend, which sustain the body of the scouring-disk *d*. The stream of grain passes down between these arms, and, to prevent them from catching and carrying the grain around with them, they are set beveling.

The scouring-disk *d* is armed on the under side with beaters, *g g*, which may form a part thereof, or may be riveted or secured thereto in any ordinary manner.

On the front side of these beaters strips of leather, or other flexible material, may be fastened and made to extend a little below the edge of the metal part.

These beaters may be straight or curved, and at such an angle with the main shaft and such a curve as may be desired, considering whether the grain is to be held a longer or a shorter time within the scourer.

Beneath the scouring-disk *d* is a stationary bed, *x*, which consists of a spider-frame, *f*, to support perforated bed-plates, *p p p*, in any ordinary way, such perforations being in the form of slots so cut that the action of the beaters will be like shears across the perforations.

Below the stationary bed *x* is a tight floor, leaving a space of about one and one-half inch, more or less, between the box *x* and this floor, and the floor and box *x* are surrounded with a band, *o*, so as to form a dirt-chamber beneath the bed *x*, connected by tubes *t t* to the suction-fan, through which the dust scoured from the grain is drawn up into the fan and discharged, as aforesaid.

When the grain has completed its passage through the scourer D it is emptied into the leg *l* of the screening-chamber F, where it drops into another spout, which carries it to the scourer D′; and in the leg *l* it meets another current of air, which passes through the screening-chamber F in substantially the same manner as the air passes through the screening-chamber E, carrying the dust with it and lodging the screenings upon the valves, as above shown. And the screening-chamber G is made in substantially the same form, and operates the same way as chambers E and F.

Scourer D′ is made in substantially the same form, and operates the same way as D.

The number of scourers may thus be increased to any desired number, or one alone may be used where that will do the work.

L is a lever arrangement at the bottom of the frame A, for the main shaft B to rest upon, and by which the main shaft, with the scouring-disks, can be raised or lowered by means of the screw attachment S.

W W W are slides to regulate the volume of air in the several screening-chambers.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The scourer (or scourers) D, composed essentially of the revolving-disk *d*, with its plate-beaters *g g* beneath, and the stationary bed *x*, with its bed-plate or plates *p p p*, having oblong perforations oblique to the said beaters in position, constructed and operating substantially as and for the purpose herein specified.

2. The screening-chamber E, constructed with the draught-opening *c* beneath the grain-spout or hopper *b*, its vertical draught-space through which the grain falls from the spout, and its self-acting valves V V′ below, all substantially as specified.

3. The separate successive screening-chambers F G, arranged in connection with the successive scourers D D′, as set forth.

4. The grain-scourer and separator, composed of successive scourers D D′, separate screening-chambers E F G, to receive the grain before and after passing through the several scourers, and a suction-fan or blower, C, which produces the several draughts for the screening chambers, all arranged, connected, and operating substantially as and for the purposes herein specified.

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HENRY W. DRAKE.
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Witnesses:
N. B. SMITH,
C. W. SMITH.