

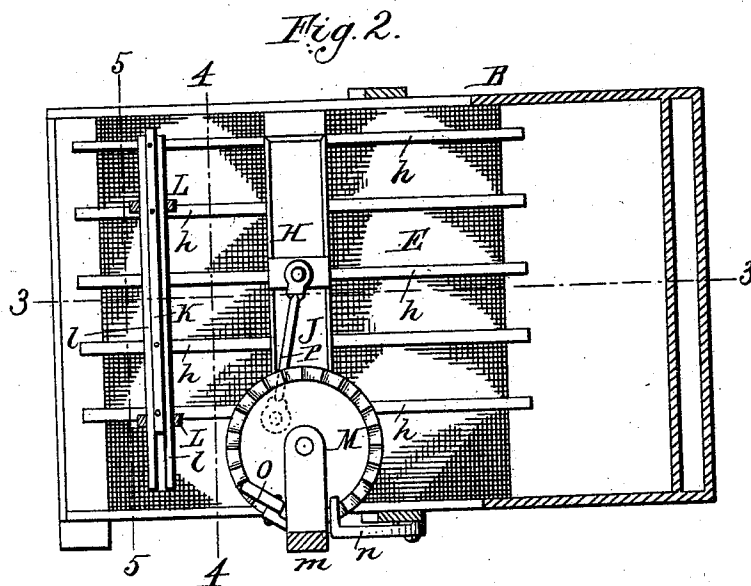
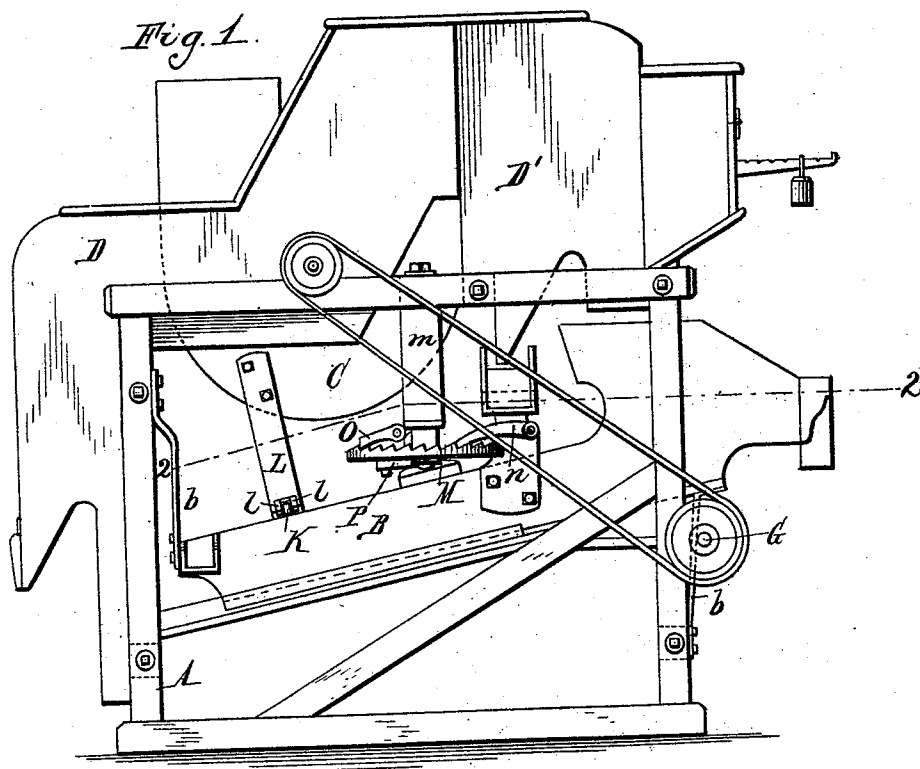
(No Model.)

2 Sheets—Sheet 1.

H. HAMPER.
GRAIN SEPARATOR.

No. 498,388.

Patented May 30, 1893.



Witnesses:
Gustav F. Wilhelm.
Emil Neuhart.

Henry Hamper Inventor.
By Wilhelm M. Munn.
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

H. HAMPER.
GRAIN SEPARATOR.

No. 498,388.

Patented May 30, 1893.

Fig. 3.

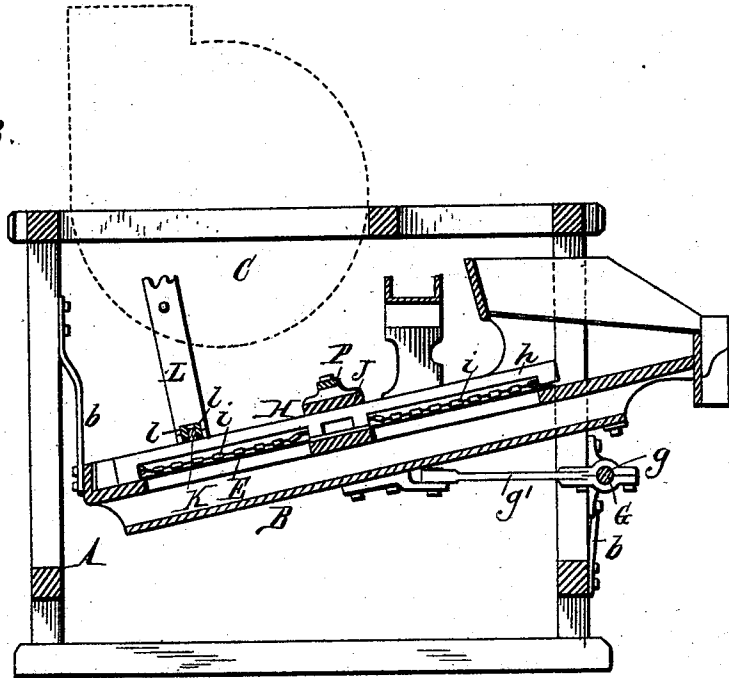
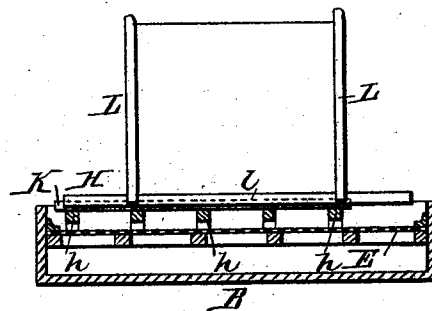
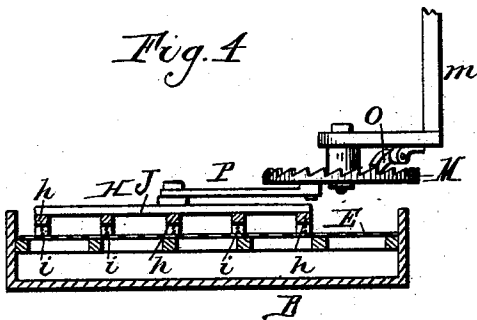


Fig. 5.

Fig. 4



Witnesses:
Gustav F. Wilhelm.
Emil Neuhart.

Henry Hamper Inventor.
By Wilhelm P. Pomeroy
Attorneys.

UNITED STATES PATENT OFFICE.

HENRY HAMPER, OF GREENVILLE, MICHIGAN.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 498,388, dated May 30, 1893.

Application filed October 28, 1892. Serial No. 450,240. (No model.)

To all whom it may concern:

Be it known that I, HENRY HAMPER, a citizen of the United States, residing at Greenville, in the county of Montcalm and State of Michigan, have invented new and useful Improvements in Grain-Separators, of which the following is a specification.

This invention relates to that class of separating machines in which a shaking screen is employed and which are provided with a traveling cleaner which moves back and forth over the screen surface for the purpose of keeping the openings of the screen free from obstructions.

The object of this invention is to provide a simple and efficient mechanism whereby a reciprocating motion is imparted to the traveling cleaner.

In the accompanying drawings consisting of two sheets:—Figure 1 is a side elevation of a grain separator provided with my improvements. Fig. 2 is a horizontal section in line 2—2, Fig. 1. Fig. 3 is a longitudinal section of the lower part of the machine containing the shaking screen, the plane of section being taken in line 3—3, Fig. 2. Fig. 4 is a cross section of the shaking shoe, in which the screen is mounted, and connecting parts, in line 4—4, Fig. 2, looking forward. Fig. 5 is a similar cross section in line 5—5, Fig. 2.

Like letters of reference refer to like parts in the several figures.

A represents the stationary frame of the machine, and B the shaking shoe supported therein by hangers *b*, or other well known means.

C represents the fan and D D' the air trunks which are of any suitable construction.

E represents the screen which is arranged in the shaking shoe or frame in the customary manner. The shaking shoe is actuated by a horizontal shaft G, supported in bearings at the head of the stationary frame, and by one or more eccentrics and rods *g g'*.

H represents the traveling cleaner which is arranged upon the screen and which moves transversely back and forth over the same, so as to free the openings of the screen from kernels of grain or other substances which may have lodged in the same. This cleaner consists of longitudinal strips *h* arranged at

suitable distances apart to practically cover or reach the entire screen surface during the reciprocating movement of the cleaner, and wiping or cleaning contrivances attached to the strips which may be chains *i*, as represented in the drawings, or brushes or flexible strips. The longitudinal strips *h* are connected by a transverse cross bar J, which is secured to the upper sides of the strips about midway between their ends and by a guide bar K, which is secured transversely to the upper sides of the strips near their lower ends. This guide bar moves transversely between two fixed guide bars *ll* supported by hangers L from the fan case or some other stationary part of the machine.

M represents a horizontal ratchet wheel which is pivoted or journaled on a depending bracket *m* secured to the stationary frame of the machine. This ratchet wheel is arranged above the screen on one side thereof and in line with the cross bar J.

n is an actuating pawl which is attached to the shaking shoe and which engages with the ratchet wheel and turns the same forwardly during the forward movement of the shaking shoe.

O represents a detent pawl which is hung to the bracket on which the ratchet wheel is journaled and which engages with the ratchet wheel and prevents backward movement thereof.

P represents a transverse rod which is attached eccentrically to the ratchet wheel and connects the ratchet wheel with the cross bar J of the cleaner and which moves the cleaner back and forth across the screen as the ratchet wheel rotates.

The rapid reciprocating motion of the shaking shoe produces, by means of this mechanism, a comparatively slow intermittent rotary motion of the ratchet wheel which in turn produces a slow and intermittent reciprocating motion of the cleaner. The latter is guided transversely in the guides attached to the stationary frame but rests loosely on the screen surface, so that the cleaner chains or other devices bear upon the screen surface and effectually prevent the openings thereof from becoming filled with grain or other obstructions.

The actuating mechanism of the cleaner is positive in its action, so that, when the cleaner encounters heavy obstructions, for instance sticks which have lodged in the holes of the perforated plates, the cleaner will not stick but will dislodge or break the obstructions.

I am aware that traveling cleaners are old and that they have been operated by various kinds of mechanisms and I do not broadly claim the same.

I claim as my invention—

1. The combination with the stationary frame, the reciprocating shoe or frame in which the screen is mounted and the cleaner, of a ratchet wheel journaled on the stationary frame, an actuating pawl attached to the reciprocating shoe or frame and engaging the ratchet wheel, and an eccentric connection whereby the intermittent rotary motion of the ratchet wheel is transmitted to the cleaner

and converted into an intermittent reciprocating motion, substantially as set forth.

2. The combination with the stationary frame, the reciprocating shoe or frame in which the screen is mounted and the cleaner, of a transverse guide in which the cleaner moves, a ratchet wheel journaled on the stationary frame, an actuating pawl attached to the reciprocating shoe or frame and engaging the ratchet wheel, and a transverse rod attached eccentrically to the ratchet wheel and connecting the ratchet-wheel with the cleaner, substantially as set forth.

Witness my hand this 27th day of September, 1892.

HENRY HAMPER.

Witnesses:

H. D. HAMPER,
ED. H. JONES.