(No Model.)

I. T. BARTON.

METALLIC THRASHING MACHINE OR SEPARATOR.

No. 418,152. Patented Dec. 31, 1889.

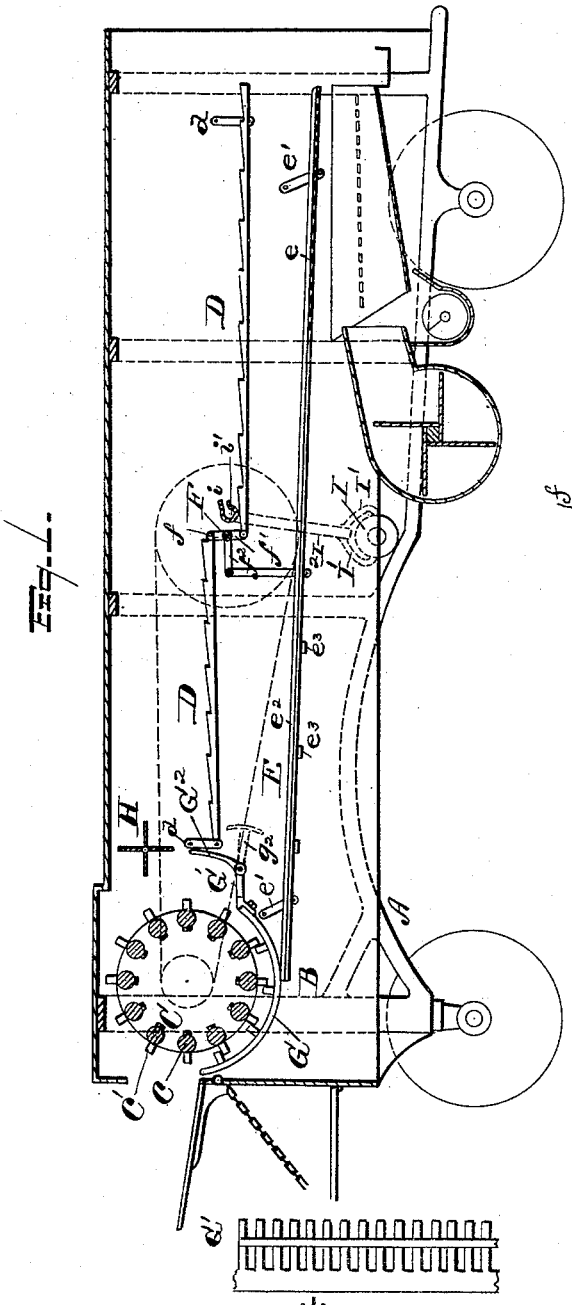

Fig. 1.

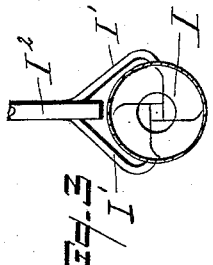

Fig. 3.

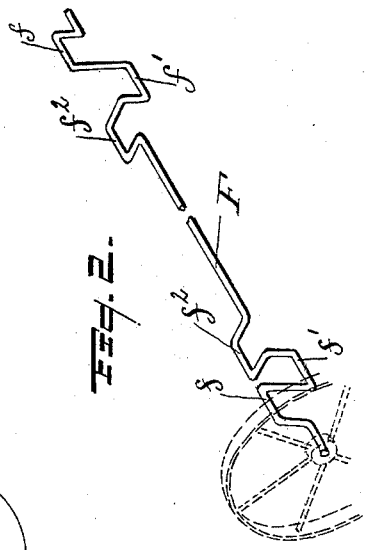

Fig. 2.

Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

ISAAC T. BARTON, OF BATTLE CREEK, MICHIGAN.

METALLIC THRASHING-MACHINE OR SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 418,152, dated December 31, 1889.

Application filed April 26, 1889. Serial No. 308,685. (No model.)

To all whom it may concern:

Be it known that I, ISAAC T. BARTON, a citizen of the United States, residing at Battle Creek, county of Calhoun, State of Michigan, have invented a certain new and useful Improvement in Metallic Thrashing-Machines or Separators; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

In the drawings, Figure 1 is a longitudinal vertical section of a thrashing-machine or separator embodying my invention. Fig. 2 is a separate view of the crank-shaft. Fig. 3 is a separate view of the auxiliary fan. Fig. 4 is a separate view of the grating.

My invention relates to thrashing-machines, and has for its object to provide an improved construction, whereby the object to be attained shall be accomplished in a more thorough and complete manner than has heretofore been possible.

In carrying out my invention, A represents the frame-work of the body of the separator; B, the siding or frames; C, the thrashing-cylinder provided with rods *c*, instead of the usual legs through which the shanks of the teeth *c'* are passed; D, the raker-bars or separating-slats swung by hangers *d*.

E is the grain-pan perforated at *e* and likewise swung by hangers *e'*.

F is a crank-shaft with cranks *f f'* projecting in directions diametrically opposite each other for operating the raker-bars or separating-slats and with cranks f^2 at right angles with the other cranks for operating the grain-pan.

G is the concave of the thrashing-cylinder. Just in rear of this concave are grate-bars G', through which much of the seed here separated drops onto the grain-pan. In front of these grates and at some distance—a foot, more or less—in rear of the grate-bars is the wing board or surface G^2, and it is preferably made adjustable, so as to stand more or less upright and also to adjust the size of the throat between this board and the beater H. This is accomplished by any suitable means projecting beyond the sides of the machine—as, for instance, by a handle g^2.

I is an auxiliary fan. It discharges a blast of air through the jets *i* of a jet-pipe *i'*, which crosses the machine just in advance of the first series of slats D. Its purpose is to thoroughly loosen up and clear the straw at this point and cause it to release any grain that may be imprisoned in the mass. This fan is provided with two discharge-pipes I', leading into a common conduit I^2. I find that the blast is made stronger and sharper by this arrangement.

The grain-pan is made of sheet metal and has upstanding flanges e^2 at its edges to stiffen and prevent escape of grain. I also prefer generally to stiffen this pan by a few wooden cross-slats e^3 beneath. So, also, the general frame-work A and siding or panels B, feed-board platform, shoe, or other principal parts are all made of metal. The metal may be steel, iron, or other character, and the frame-work may be cast or wrought. So, also, it may be made in the form of angle or channel irons in order to afford strength with lightness.

It is well understood that a thrashing-machine constitutes a heavy load for a team of horses, and that in crossing through soft fields and yards and on muddy roads it is therefore very apt to mire down and require the assistance of several teams to dislodge it. Again, the implement is so heavy that it requires great effort to wheel it up the bridge onto a barn-floor for thrashing. So, also the great weight of the shoe, grain-pan, or other moving parts, when made of wood, requires the exercise of much power to vibrate them and results in injurious jarring and racking of the machine. These difficulties are in a large measure overcome by my metal construction, which makes these parts very light. The machine is at once rendered very strong and durable, derangement of the shafting and boxing by shrinkage and expansion due to moisture and to drying is prevented, much less power is required, and the machine is rendered so very light as to be an easy load for a team, not liable to stick or stall, and easily hauled into the barn by the employés.

The operation of the machine is as follows:

Grain fed to the thrashing-cylinder is first subjected to the action of the cylinder and its concave. This effectually thrashes out the grain from the bolls or pods and a large proportion of it is thrown onto the grating G and falls through onto the grain-pan underneath. Some of the grains, however, are imprisoned by the straw and carried forward by it. This straw strikes against the wing-board G^2, which, with the beater above, sufficiently arrests it that it will cause the grains to rattle out against the wing-board, and falling back will pass beneath onto the grain-pan, while the straw is beaten down by the beater and passed through onto the rake-bars or separating-slats. It is here worked forward by the action of the slats, and grains carried forward are caused to drop through. The straw finally in passing off from the first set of slats onto those in advance is subjected to the blast from the jets of the auxiliary blower, which loosens up the straw and permits the last of the grains to drop out. Having passed onto the grain-pan, it is carried forward to and through the shoe in the usual manner, the tailings being elevated, if necessary, back to the thrashing-cylinder.

I have also discovered that when the crank-shaft has cranks projecting in diametrically-opposite directions—one for one set of separating-slats and one for the other set—and crank-arms at right angles thereto engaging the seed-pan, the machine works with great steadiness and does away with the disagreeable pounding and jarring usual with such machines.

What I claim is—

1. In a thrashing-machine or separator, the combination, with the thrashing-cylinder and its concave, of a grating G′ and a wing-board G^2, standing well off in rear of the thrashing-cylinder, against which the straw may impinge and drop its grain, substantially as described.

2. The combination, with the thrashing-cylinder, its concave, and the beater H, of a grating G′ and an adjustable wing-board G^2, substantially as described.

3. The combination, with the two series of separating-slats and the seed-pan, of the crank-shaft for vibrating the same, said shaft provided with oppositely-projecting cranks for the two series of slats respectively, and with cranks at right angles thereto for the seed-pan, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

ISAAC T. BARTON.

Witnesses:
W. H. CHAMBERLIN,
L. A. DOELTZ.