2 Sheets—Sheet 1.

W. J. McCULLA.

GRAIN-SEPARATOR.

No. 192,445. Patented June 26, 1877.

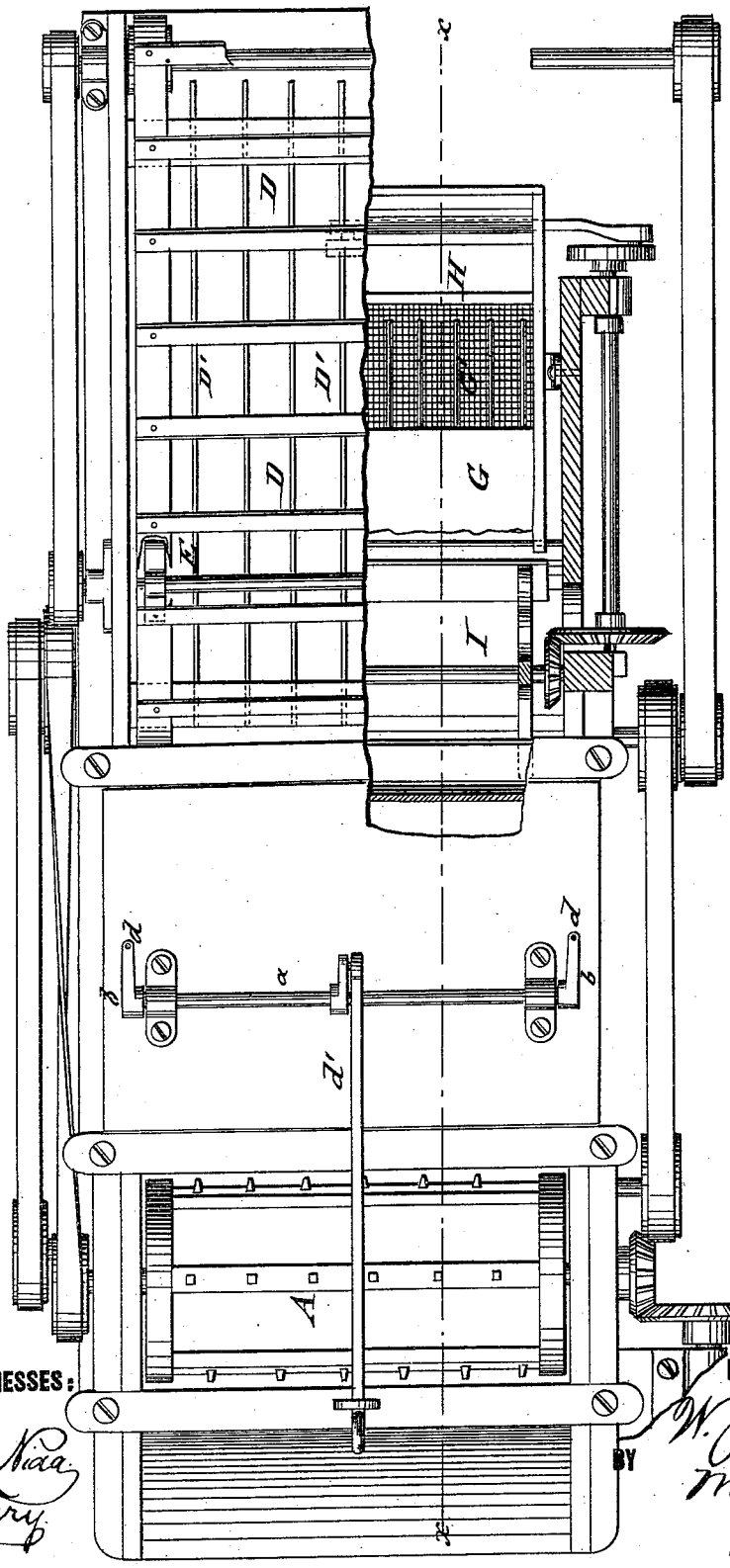


Fig: 1.

WITNESSES:

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A. H. Terry

INVENTOR:

W. J. McCulla

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2 Sheets—Sheet 2

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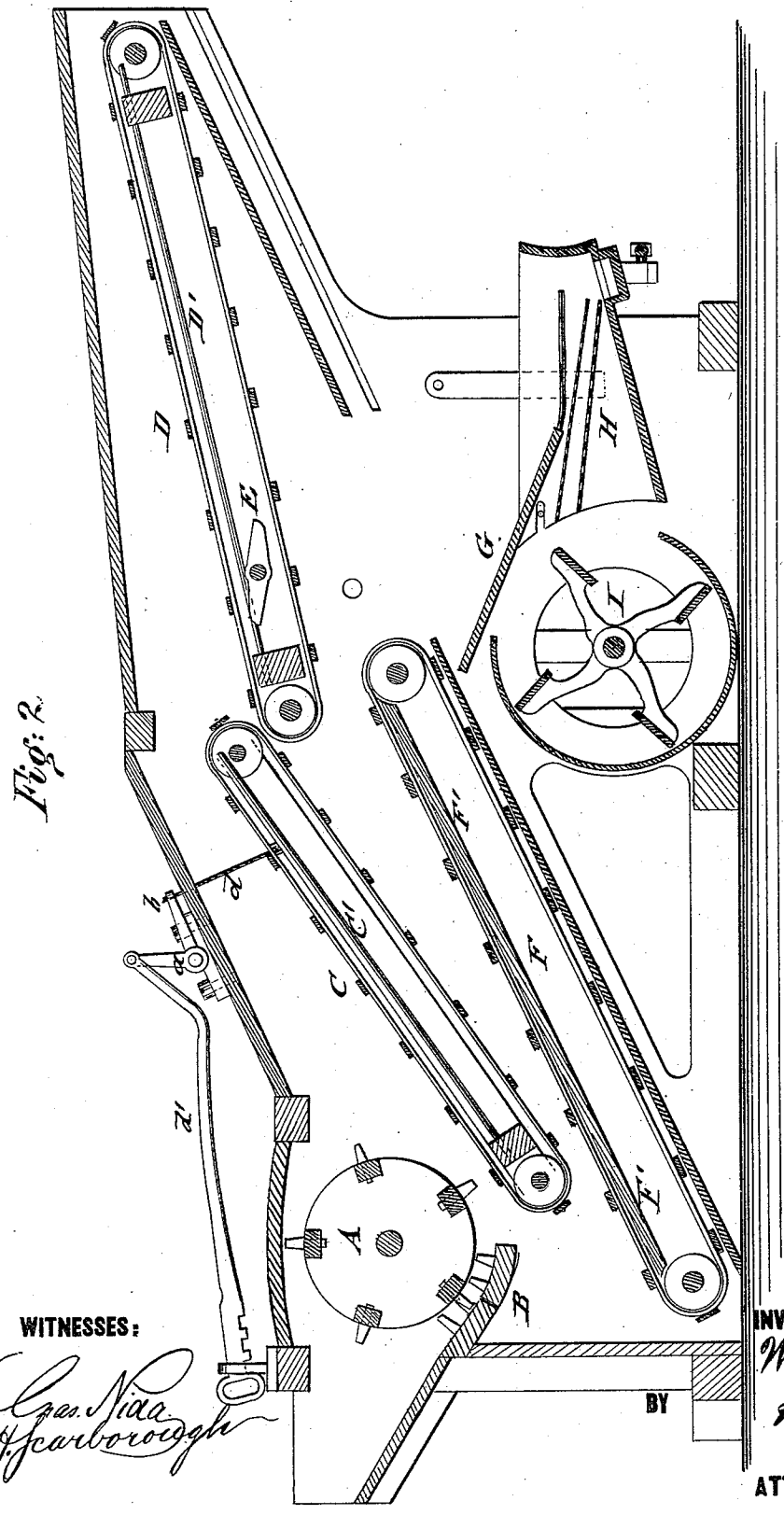


Fig: 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. McCULLA, OF ESTHERVILLE, IOWA.

IMPROVEMENT IN GRAIN-SEPARATORS.

Specification forming part of Letters Patent No. 192,445, dated June 26, 1877; application filed March 3, 1877.

To all whom it may concern:

Be it known that I, WILLIAM J. McCULLA, of Estherville, in the county of Emmett and State of Iowa, have invented a new and Improved Grain Thrasher and Separator, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, with parts broken out, of my improved grain thrasher and separator, and Fig. 2 a vertical longitudinal section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

In the drawing, A represents a revolving cylinder, with tapering teeth that work in connection with intermediate teeth of a stationary support, B, at one end of the machine.

The sheaves are fed through an end hopper to the action of the thrashing-teeth, and the grain and straw conveyed by the force of the cylinder A to an inclined carrier, C, that is constructed of leather belts with wooden cross-slats stretched in the customary manner over a driving-roller and tightening-roller.

The carrier C is provided with a number of tapering rods, C′, that extend longitudinally from a fixed block near the lower driving-roller to the upper stretching-roller, the rods being placed closely together to admit the dropping of the grain as the straw is conveyed thereon from the thrashing-cylinder, while the movable slats take up the straw and conduct it upward toward the end of the carrier.

The upper end of carrier C is arranged to be raised or lowered by means of a rock-shaft, *a*, and arms *b*, on top of the machine, the arms being connected by cords *d* to the carrier, and to a gage or shifting rod, *d′*, which is adjusted by suitable mechanism at top of feed-hopper, so as to raise or lower the end of carrier, adapt the same to the thrashing of wet and dry grain, and secure a due separation of the grain from the straw before the latter is conveyed to the second carrier D.

The carrier D is constructed in similar manner as carrier C, of endless leather belts, with wooden cross-slats, which are moved by a lower (driving) and upper (stretching) roller, in the customary manner.

The carrier D is also provided with longitudinal wire rods or wooden bars D′, secured to fixed cross-pieces below the upper half of the carrier. The lower end of carrier D may be placed below the upper end of carrier C, or in line with a third grain carrier or elevator, F, that is arranged below the first carrier C, provided that the ends of the carriers do not come too closely together, so that the straw is taken up without interruption and conveyed toward the open rear end of the casing, where it is conducted to the outside.

The longitudinal rods D′ are so placed in the carrier D as to keep the straw from sagging down and falling through to the lower side of the carrier and prevent straws and broken stalks of weeds from going into the sieves.

The shifting of the first carrier to a higher or lower position either retards or accelerates the motion of the straw, and adapts thereby the machine to the thrashing and separating of the different kinds and conditions of the grain.

The dropping of the grain through the second carrier is secured by a revolving agitator, E, that lifts the belts and keeps the straw continually in an up-and-down motion while being carried forward by the slats, so as to shake out the grain. It is dropped on an inclined board and conducted along the same onto an inclined plane, G, with end fingers G′, to which also the grain dropped from the first carrier C is conveyed by the grain-elevator F. The elevator F is also made of endless belts, with cross-slats, and operated by a lower (driving) and upper (stretching) roller passing close to a smooth grain-board, F′, immediately below the upper half of the elevator and between the rollers.

The elevator F takes up the grain as it falls from the thrashing-cylinder and first carrier, and carries it to the incline G and to the reciprocating sieves H, on which the blast of the fan I is thrown, so as to separate the impurities from the grain, which is finally dropped and discharged below the sieves.

The machine is cased up tightly, so as to

avoid all loss of grain and compel the same to pass through the carriers and along the elevator to the sieves, where the chaff, small pieces of straw, and other impurities are finally separated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A separator provided with two carrier-belts, the primary one adjustably inclined with respect to the secondary one, as shown and described.

2. The combination of the thrashing machinery A B with the carrier C, having its upper end adjustable to and from the top of the casing of the machine, substantially as and for the purpose specified.

WILLIAM JAMES McCULLA.

Witnesses:
AMOS KETCHUM,
HOWARD GRAVES.