

(No Model.)

G. W. MORRIS.
GRAIN SEPARATOR.

No. 394,001.

Patented Dec. 4, 1888.

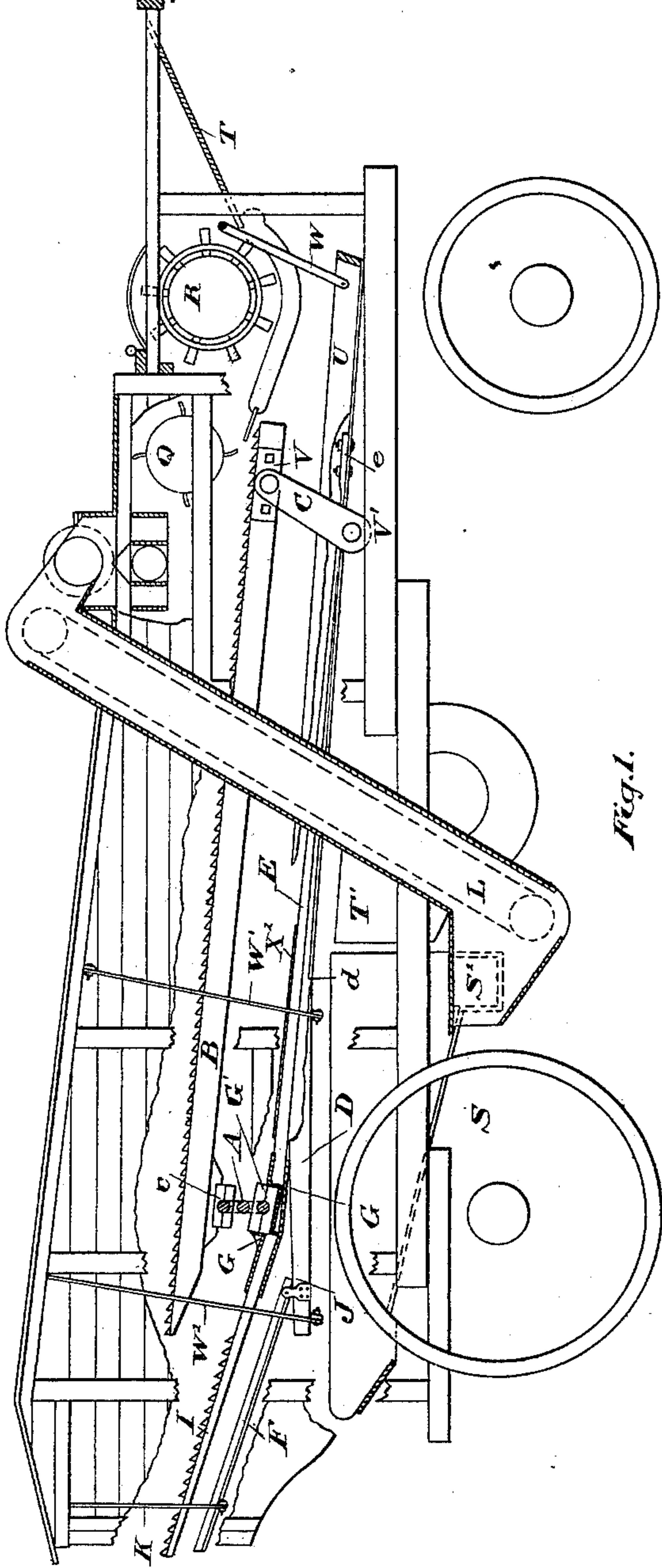


Fig. 1.

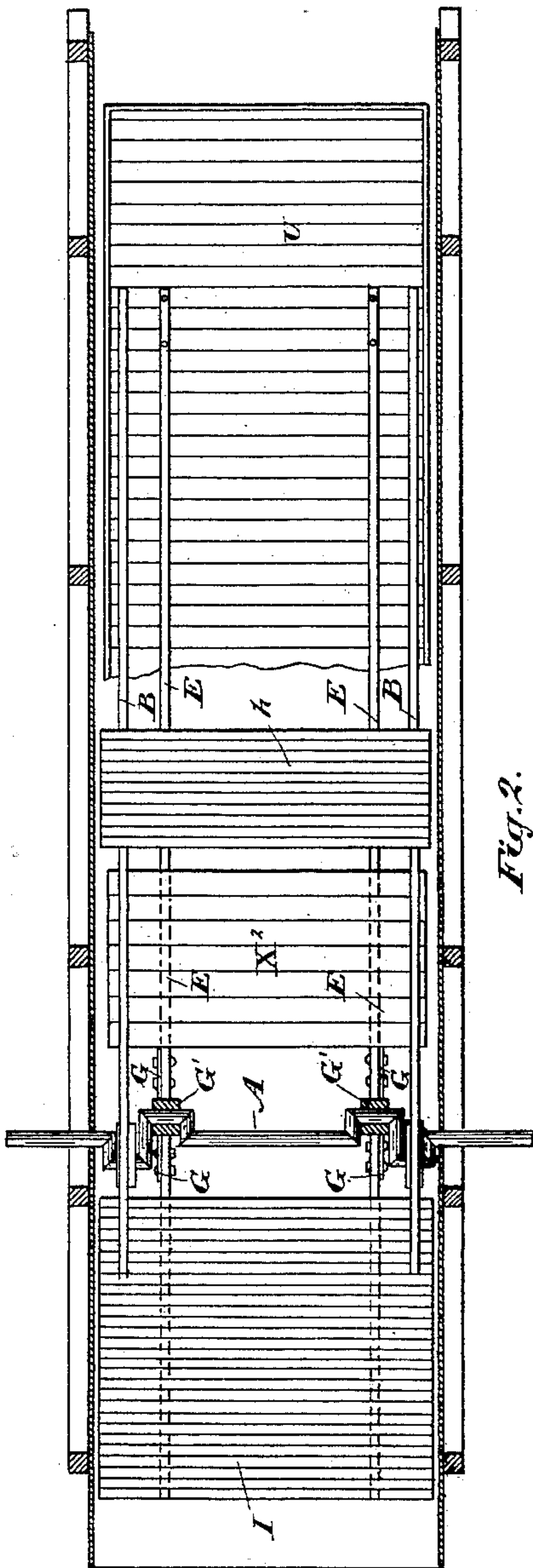


Fig. 2.

Witnesses.

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GEORGE W. MORRIS, OF BRANTFORD, ONTARIO, CANADA, ASSIGNOR TO
ALFRED WATTS, OF SAME PLACE.

GRAIN-SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 394,001, dated December 4, 1888.

Application filed June 1, 1887. Serial No. 239,979. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WILLIAM MORRIS, manufacturer, of the city of Brantford, in the county of Brant, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Grain-Separators, of which the following is a specification.

The object of the invention is to provide a straw deck-extension having a reciprocating as well as a vertical motion when the machine is in operation for the purpose of discharging the straw out of the machine after it has fallen thereon from the upper straw-deck, whereby any grain which still remains in the straw after passing over said upper deck may be completely separated and be carried back to the shoe of the thrashing-machine, thus avoiding such loss of grain as is incidental to the use of the tail-rake in the ordinary thrashing-machine. There is also a light table carried by the tapering spring-pitmen, so placed with reference to the upper straw-deck and the shoe of the machine as to intercept any straws which may happen to fall through the slats of the upper deck, and thus prevent such straws from lodging in the sieve in the shoe and causing it to clog.

Figure 1 is a side elevation of a thrashing-machine, showing the improvements, a portion of the sheeting being removed. Fig. 2 is a plan of the lower portion of the machine, with casing, upper grain-deck, &c., removed.

Like letters of reference indicate similar parts in both the figures.

In Figs. 1 and 2, A is a double-throw crank, which is connected, as hereinafter described, and gives vertical and reciprocating motion to the upper straw-deck, B, straw-deck extension I, and the grain-deck U and chaff-extension and tray F. The upper straw-deck, B, is attached to the throws of the crank, as shown, by means of boxes c.

C is a rocking arm, one end of which is pivoted to the front end of the straw-deck B at V, while the other end of said rocking arm is pivoted to the frame of the machine at V'. To the opposite throws of said crank A the tapering pitmen E (see Fig. 1) are attached by means of extension-irons G, which project outwardly in a direction parallel to the length of the machine sufficiently far to form brack-

ets G G', to which is firmly bolted the straw-deck extension I. This straw-deck extension I, being rigidly attached to the brackets, requires no supports or hangers at the rear end, and, by reason of its peculiar mode of connection with the tapering spring-pitmen, derives a slight vibrating motion at its rear end, which has been found to very materially assist the complete separation of the grain from the straw, the grain so separated falling through onto the light tray F and thence into the shoe of the machine. Said extension irons and brackets G are attached to the boxes G', through which the cranks work. The pitmen E, which give a reciprocating motion to the grain-deck U, are tapered gradually toward the end farthest from said crank-axle, (see Fig. 1,) and are firmly bolted to the bottom or side of the grain-deck U at e, this springy tapering form of pitman doing away with a pivoted attachment at its front end, preventing lost motion, and lessening the noise when operating the machine. The grain-deck U is hung at the front end upon hangers W, pivoted at each end, and toward its rear end by spring-hangers, as W', attached to the outer casing of the machine, as shown.

D in Fig. 1 is the chaff-extension, which is attached to the under side of the main frame of the grain-deck U by means of a joint at d, and at its rear end is suspended to the main frame of the machine by means of spring-hangers W². This chaff-extension of course partakes of the reciprocating motion communicated to the grain-deck U by the pitmen E. To the rear end of the chaff-extension D is attached, by means of a joint-iron, J, and box, the light extension-tray F, which is also hung to main frame of machine by hangers K. This light tray partakes of the motion of the chaff-extension.

S is the main shoe of the machine, into which the grain is carried, and S' is the discharge-spout. T' is a fan-casing, and L an elevator of ordinary construction, which carries the grain to a grain scourer and smutter, which may be permanently attached to the top of the machine and placed at a convenient distance to the rear of the spiked beater Q and cylinder R.

In Fig. 2 X² is a light table resting on

and attached to the rear ends of the pitmen for the purpose of intercepting straws which may fall through the slats of the straw-deck B and prevent them passing through the apertures in the chaff-extension D (*vide* Fig. 1) and thence lodging in and clogging the sieve in the shoe S:

h, Fig. 2, refers to a portion of the slats in the upper straw-deck, B.

10 In operation the grain is fed into the cylinder R and thrashed in the ordinary manner, after which it is thrown against the round beater Q, Fig. 1, which checks the flying grain and straw, assisting materially in the separation, depositing the straw on the straw-deck B, the reciprocating motion of which carries the straw very rapidly to the rear end of the machine toward my improved straw-deck extension I, upon which it falls—the drop or fall 15 much assisting to further separate any grain remaining in the straw, and the up-and-down and reciprocating motion of the straw-deck extension I completing the separation of the grain, the straw passing out of the machine 20 entirely free from grain. The grain having been gathered in the shoe and cleared from the chaff by the blast-fan, which should be located in the casing T', is carried to the elevator, which is of ordinary construction, said 25 elevator carrying the grain up to and delivering it into the hopper or mouth of a grain-scourer.

The function of the chaff-extension is to effect a still further separation of the grain from the chaff and straw just before the latter are discharged from the machine. The chaff-extension has a vibrating or trembling motion, and any grain which may chance to remain in the straw is shaken through the slats and 30 falls thence into the well, from whence it is

elevated. This chaff-extension is still further to secure the complete separation of the grain from the straw.

No claim is made herein to the grain-cleaner, as the same forms the subject-matter of my application Serial No. 291,306, filed November 20, 1888.

What I claim as my invention is—

1. In a thrashing-machine, the crank-shaft, the straw-deck, the grain-deck, and the straw-deck extension, combined with the spring-pitmen and the extension-irons G, connected to the crank-shaft, and formed with brackets, to which the straw-deck extension is secured, substantially as described. 50

2. In a thrashing-machine, the combination, with the crank-shaft and the spring-pitmen E, of the light table X², attached to said pitmen, and the shoe S, over which said table is placed, substantially as described. 55

3. In a thrashing-machine, the combination, with the crank-shaft and the spring-pitmen E, of the light table X², attached to said pitmen near their rear ends, the chaff-extension D, and the shoe S beneath said table and extension, substantially as described. 60

4. In a thrashing-machine, the combination, with the grain-deck, the chaff-extension D, and the light extension-tray F, connected to and deriving motion from said chaff-extension, of the main frame of the machine, and the spring-hangers K, attached thereto and supporting the rear end of said tray, substantially as described. 65

Brantford, March 31, 1887.

GEORGE W. MORRIS.

In presence of—

PETER PURVES,
A. E. WATTS.