

(No Model.)

4 Sheets—Sheet 1.

C. GRATTAN.
TRAVELING THRASHER.

No. 497,717.

Patented May 16, 1893.

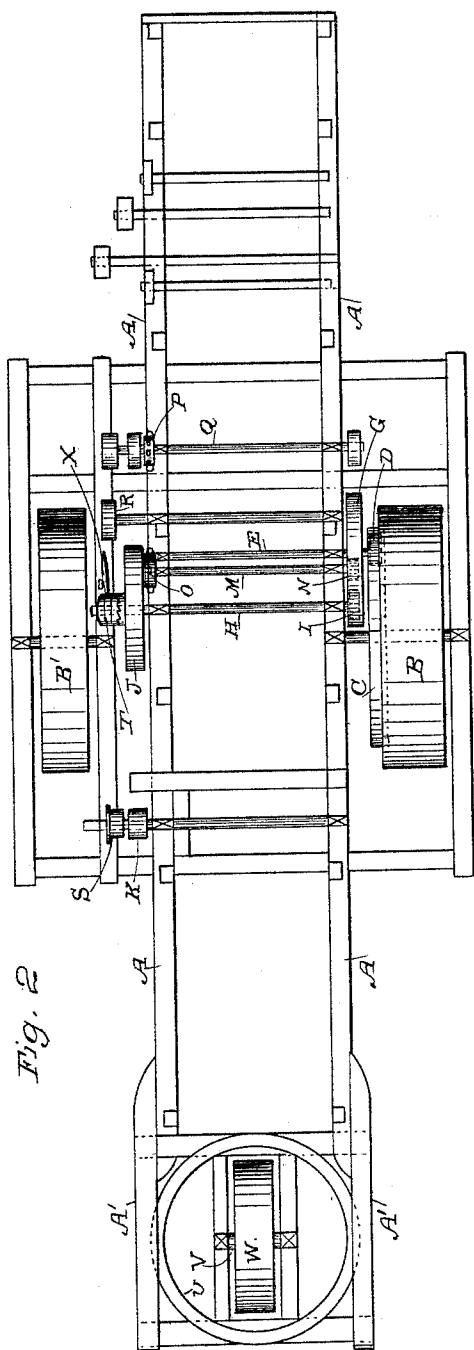


Fig. 2

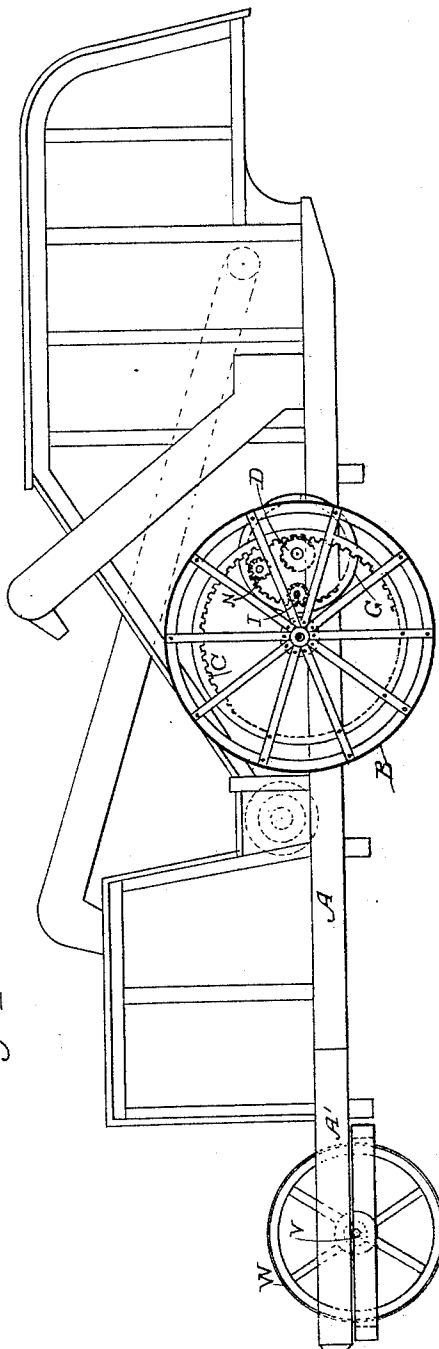


Fig. 1

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(No Model.)

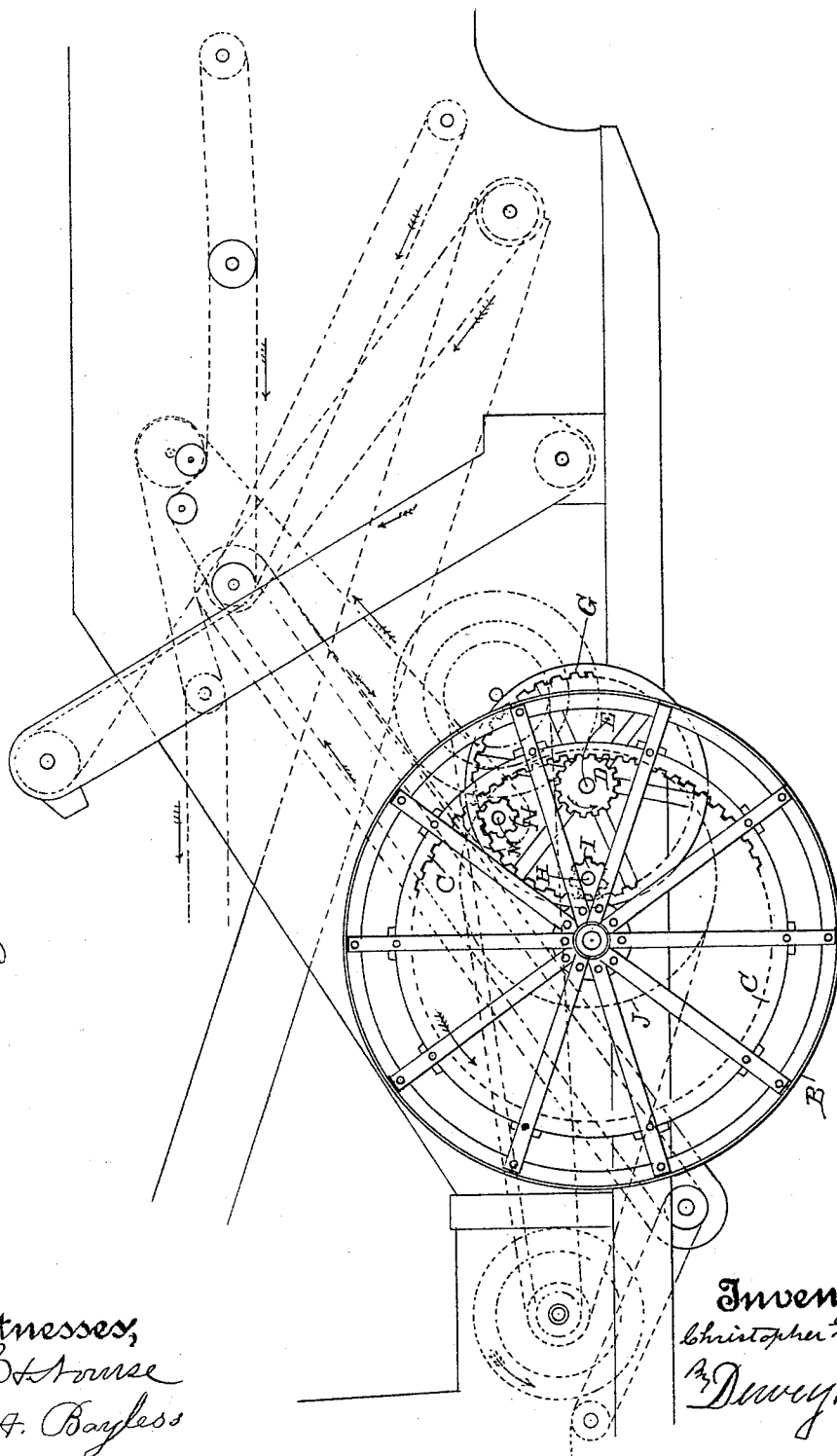
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Fig. 3.



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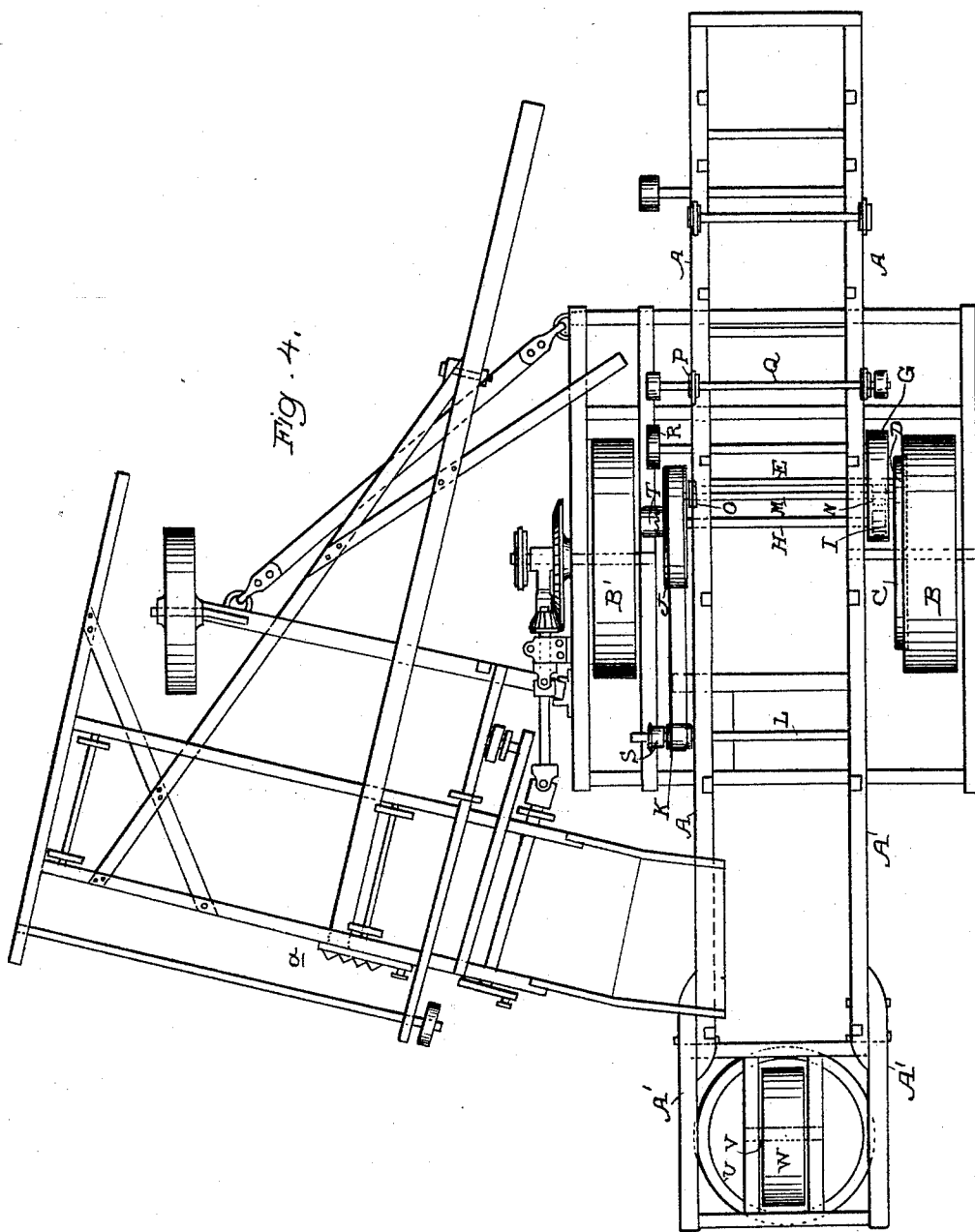
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C. GRATTAN.
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No. 497,717.

Patented May 16, 1893.



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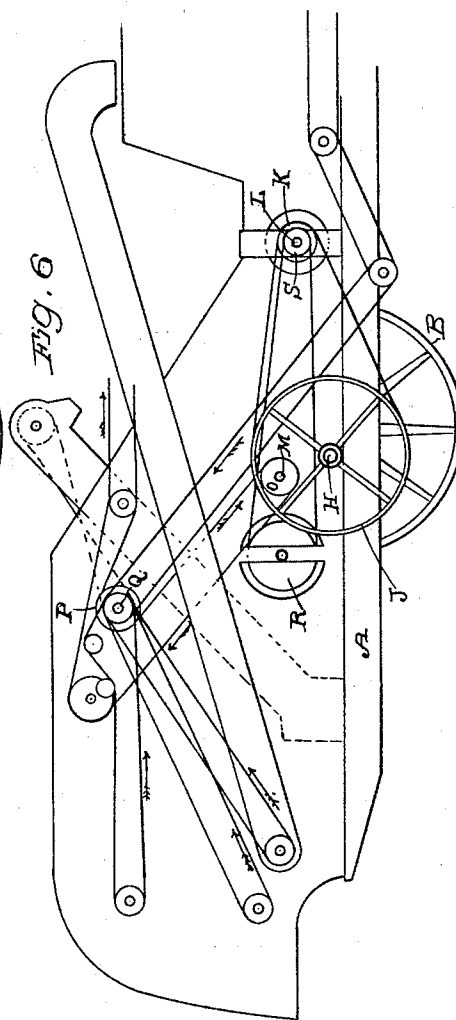
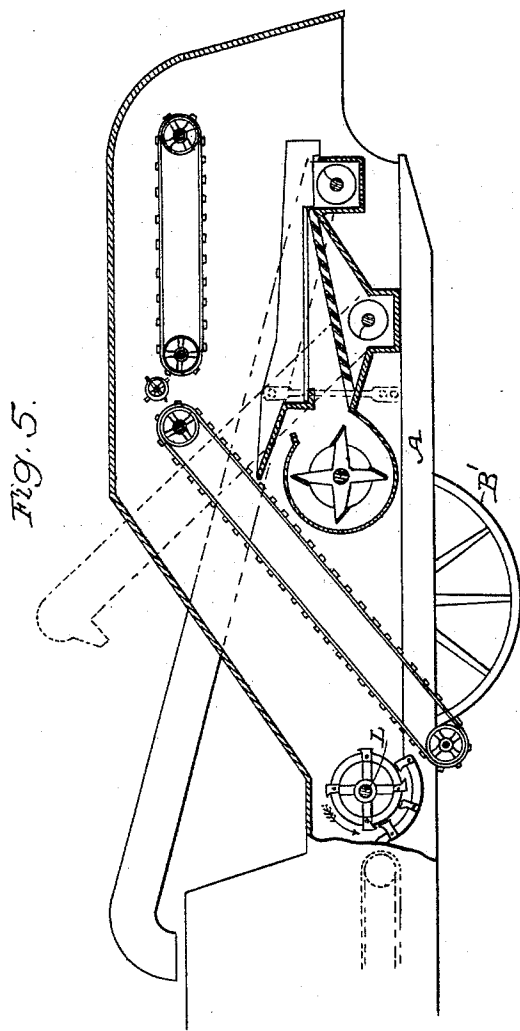
(No Model.)

4 Sheets—Sheet 4.

C. GRATTAN.
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No. 497,717.

Patented May 16, 1893.



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UNITED STATES PATENT OFFICE.

CHRISTOPHER GRATTAN, OF STOCKTON, CALIFORNIA, ASSIGNOR TO THE STOCKTON COMBINED HARVESTER AND AGRICULTURAL WORKS, OF SAME PLACE.

TRAVELING THRASHER.

SPECIFICATION forming part of Letters Patent No. 497,717, dated May 16, 1893.

Application filed October 18, 1892. Serial No. 449,270. (No model.)

To all whom it may concern:

Be it known that I, CHRISTOPHER GRATTAN, a citizen of the United States, residing at Stockton, San Joaquin county, State of California, have invented an Improvement in Traveling Thrashers; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in traveling thrashers, such as form a part of the machines known as combined header and thrasher or traveling harvesters.

My invention consists in certain combinations and arrangement of gearing whereby the motion of the bearing or ground wheel is transmitted directly through independent counter-shafts to the thrashing and feeding devices and to the separating and cleaning devices independently.

It also relates to certain details of construction which will be more fully explained by reference to the accompanying drawings in which—

Figure 1 is a side elevation of a harvester thrasher showing my invention. Fig. 2 is a plan view of so much of the frame-work as is sufficient to show the invention. Fig. 3 is an enlarged detail of construction. Fig. 4 is a plan view of the entire machine. Fig. 5 is a longitudinal vertical section of the thrasher. Fig. 6 is an elevation of the thrasher, taken from the side opposite to that shown in Fig. 1.

The machine is of the usual construction consisting of a frame-work A, the bearing wheels B B' mounted upon short shafts which are journaled independently upon opposite sides of the frame.

The reaping or heading attachment by which the grain is cut and delivered to the thrashing mechanism is not here shown, forming no part of the present invention.

The thrashing and cleaning mechanism is all driven from the wheel B in the following manner:—C is an internal gear wheel of smaller diameter than the wheel B and bolted to the spokes of the wheel B upon the inner side next to the frame-work and body of the machine. D is a pinion fixed to the shaft E which is journaled across the frame and this pinion engages the teeth of the internal gear C previously described, and it and its shaft

are rotated thereby. Upon the shaft E, and between the internal gear wheel C and the side of the machine, is fixed a second internal gear G which is thus driven by motion communicated from the first internal gear C through the pinion D to the shaft E. Upon the main sills of the frame of the machine is journaled a shaft H extending entirely across and having a pinion I keyed to one end which is engaged by the teeth of the internal gear G so that this shaft is rotated by the internal gear. Upon the opposite end of the shaft is fixed a belt pulley J and a belt passes from this pulley to the pulley K upon the cylinder shaft L. Through this mechanism motion is communicated directly from the bearing or ground wheel B to drive the cylinder shaft and a sufficient rate of speed is obtained to give it the proper velocity. M is a second shaft extending across the frame parallel with the shaft H and having a pinion N fixed to it which also engages the internal gear wheel G at a point above and behind the point of engagement of the pinion I. Upon the opposite end of the shaft M and upon the opposite side of the machine from these driving gears previously described, is keyed a sprocket wheel O around which passes a belt or chain which also passes around the pulley or sprocket wheel P on the grain carrier shaft. From this shaft Q the grain and straw carrier which conveys the thrashed material from the cylinder to the separating and cleaning mechanism, is driven. The fan is driven by a belt passing around the pulley R upon the fan shaft and around a pulley S upon the end of the cylinder shaft. By this construction it will be seen that the cylinder and the fan are driven by one pinion I which meshes with the internal gear G while the straw conveyers and the separating and thrashing mechanism with the connected parts, are driven by the pinion N which also meshes with the internal gear G through the shaft M upon which the pinion is keyed.

At the end of the shaft H which is upon the opposite side from the driving wheel, and just outside of the belt pulley J, is fixed a clutch mechanism T, the teeth of which are so beveled that the parts of the clutch remain in gear when the machine is in motion, and the

driving power applied to rotate the pulley J and through it the cylinder. The cylinder is of great weight being sometimes as much as eight or nine hundred pounds, and as it is driven up to a velocity of from eight hundred to one thousand revolutions per minute, it will be manifest that the momentum is so great that it will be impossible to stop the cylinder abruptly when the machine stops for any cause, therefore, this clutch will immediately release itself automatically, so that the cylinder is allowed to continue its motion when the machine stops, and while the straw feeder which delivers to the cylinder and the carrier which delivers from the cylinder to the separating mechanism, and the other feeding devices which are driven from the second shaft M will stop when the machine stops, the cylinder will continue its rotation, and will thus clear itself of any material which may be last fed to it before the machine stopped its motion, and by reason of the fan being driven from the cylinder shaft it will be manifest that the blast of air will continue so that the screens will be practically clear of chaff and material which would tend to clog them before the cylinder stops its motion. By this arrangement of the parts, the cylinder and the cleaning shoe, which it is necessary to have clear when the machine starts in operation, are cleared, and when the machine again starts after stoppage, these parts will have attained their full movement before they become burdened with a new supply of material, and will therefore do their work in the proper manner when the machine again starts.

X is a clutch lever fulcrumed upon the frame, and engaging the movable member of the clutch, which slides upon a feather upon the shaft H, so that the latter may be again thrown into engagement when it is desired to start the machine.

In order to allow the use of as large a front steering wheel as possible, I make the extension sill or side pieces A' separate from the main sills A, and bolt them upon the outer sides of the latter, so that they extend to the front sufficiently to admit the horizontal rim U across which the shaft V of the steering wheel W is journaled. By this construction I am enabled to increase the width of the front portion of the frame in small harvesters without undue increase of the width of the main frame, and this enables the use of a large lead wheel with the attendant advantages in turning, and in running over loose land. It also

ened for shipment on vessels or short cars, which is important.

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

1. In a traveling thrashing machine, the main frame having the thrashing cylinder and the feeding mechanism mounted near one end, and the separating and cleaning mechanism near the opposite end with an intermediate carrier by which the material is delivered from the thrashing cylinder to the cleaning mechanism, bearing wheels intermediate between these points having independent shafts journaled upon opposite sides of the frame, an internal gear wheel fixed to one of the bearing wheels, a shaft journaled across the frame having a pinion fixed upon its end so as to engage the teeth of the internal gear wheel, a second internally toothed gear wheel fixed upon this pinion shaft, two independent counter-shafts journaled across the frame, each having pinions which engage with the teeth of the second internal gear wheel, one of said shafts having a pulley upon its opposite end, a belt extending from said pulley to a pulley upon the cylinder shaft whereby the latter is driven, and a pulley and belt from the cylinder shaft whereby the fan is driven, pulleys and connecting belts or chains driven from the second independent counter-shaft whereby the cleaning mechanism and carriers are driven independently from the thrashing mechanism, and a clutch upon the first counter-shaft whereby the pulley which drives the cylinder is allowed to automatically disengage from its driving shaft whenever the machine is stopped whereby the cylinder and fan continue their motion while the carrying and feed belts and other mechanism cease their motion, substantially as herein described.

2. In a traveling thrashing machine, the main side frames or sills A, the bearing and driving wheels journaled upon opposite sides thereof, in combination with the supplemental frame extensions A' removably secured upon the outer sides of the main sills, the horizontal turning rim fitted into said supplemental frame and the lead wheel W journaled transversely upon said rim, substantially as herein described.

In witness whereof I have hereunto set my hand.

CHRISTOPHER GRATTAN.

Witnesses:

M. H. ORR,

F. D. NICOL.