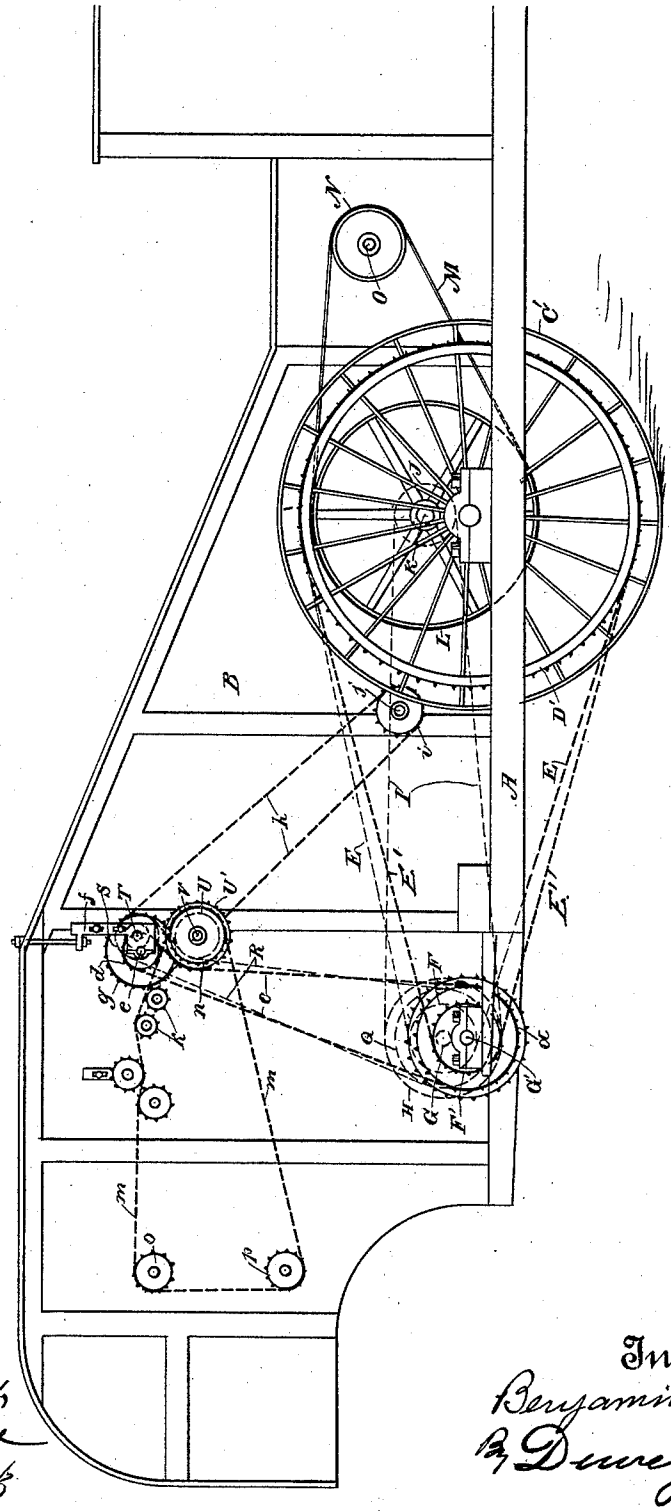
(No Model.) 3 Sheets—Sheet 1.

B. HOLT.

TRAVELING THRASHER.

No. 499,113. Patented June 6, 1893.

Fig. 1



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(No Model.) 3 Sheets—Sheet 2.

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TRAVELING THRASHER.

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Fig. 2.

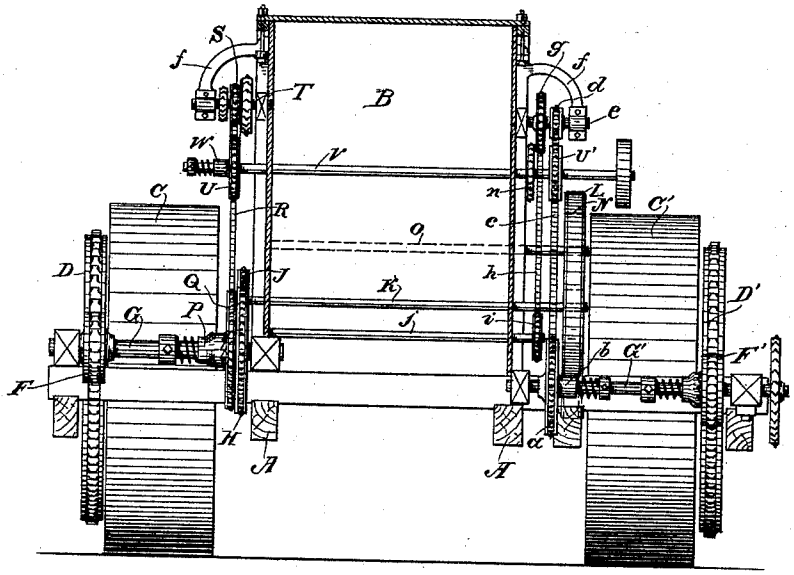
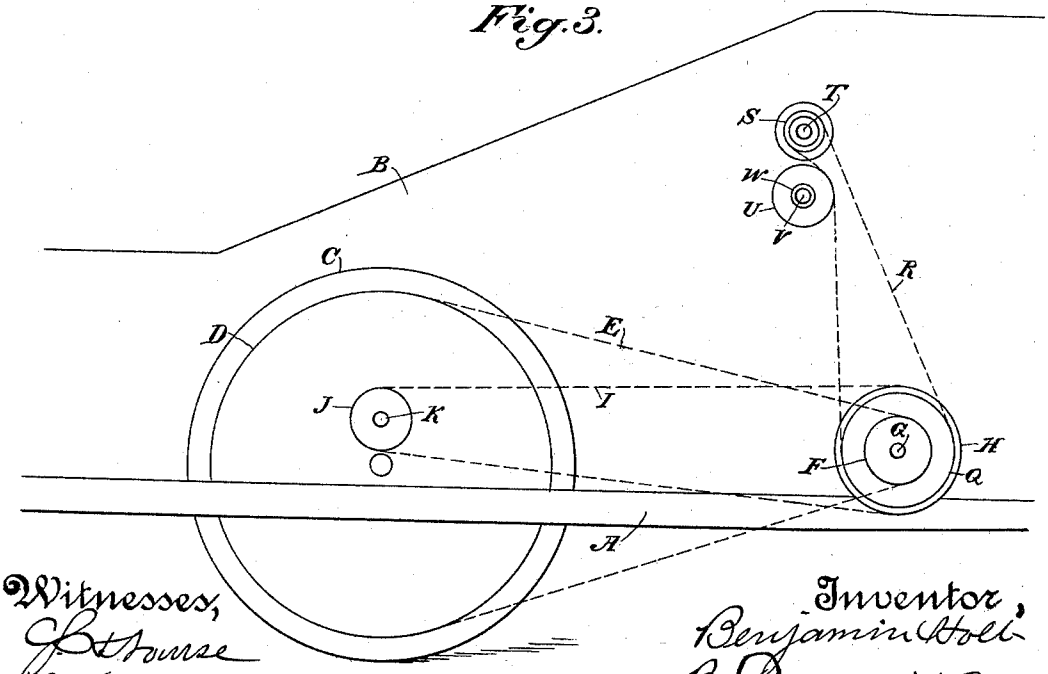


Fig. 3.



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(No Model.) 3 Sheets—Sheet 3.

B. HOLT.

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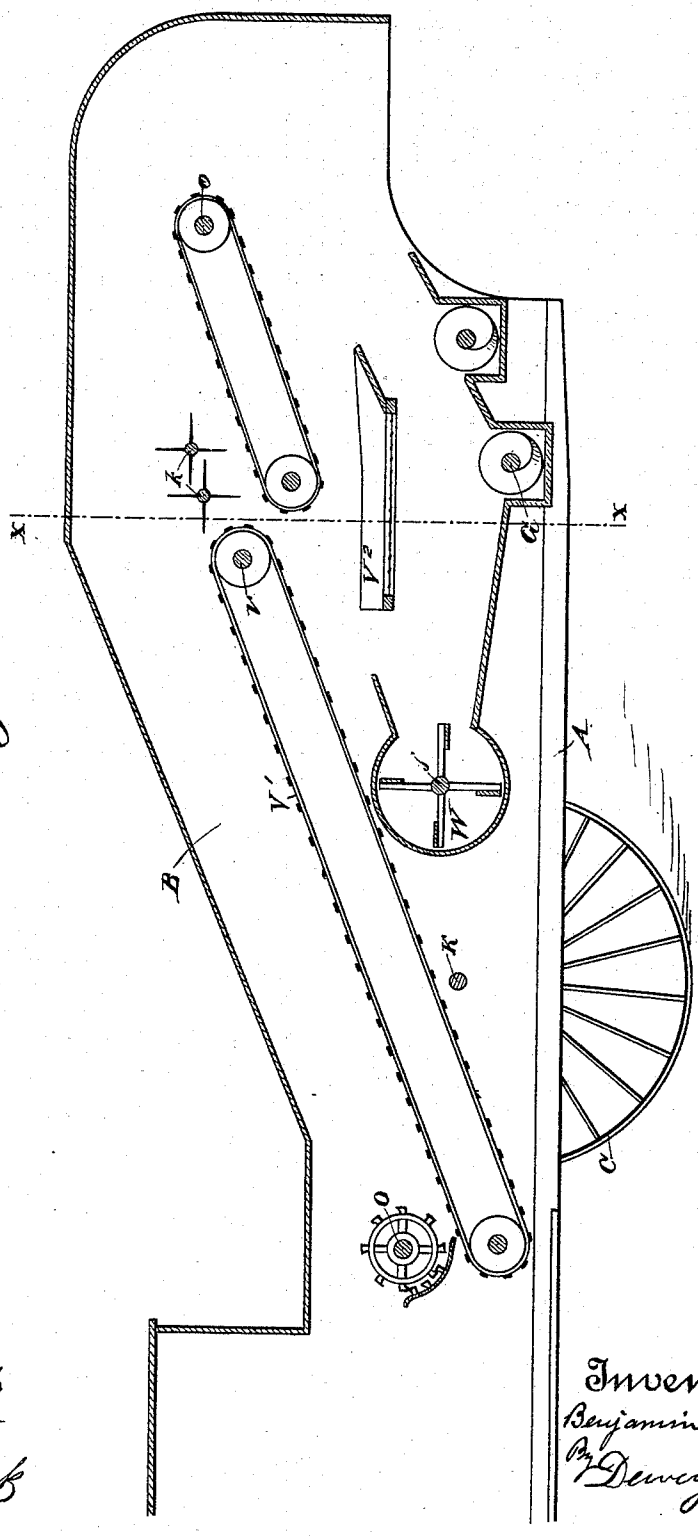

Fig. 4.

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UNITED STATES PATENT OFFICE.

BENJAMIN HOLT, OF STOCKTON, CALIFORNIA.

TRAVELING THRASHER.

SPECIFICATION forming part of Letters Patent No. 499,113, dated June 6, 1893.

Application filed December 24, 1892. Serial No. 456,254. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN HOLT, 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 a traveling thrashing machine of that class which is usually joined with a header attachment by which the grain is cut and delivered to the thrashing machine, from which it passes to the cleaning apparatus.

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

Figure 1 is a view of the grain side of the machine. Figure 2 is a sectional view on the line *x*—*x* of Fig. 4. Fig. 3 is a view of the left side of the machine. Fig. 4 is a longitudinal sectional view of the machine.

The object of my present invention is to provide a novel mechanism whereby the main bearing wheels upon both sides of the machine take part in driving the carrying and cleaning mechanism, and that portion of the moving parts which is situated behind the thrashing cylinder.

In the drawings I have only shown so much of the ordinary thrashing machine as is necessary to illustrate my invention.

A are the main frame timbers of the machine, and B the casing within which are contained the thrashing cylinder, carrying belts, shoe and other parts common to a thrashing machine.

C and C′ are the bearing wheels, one at each side of the machine, and each journaled upon its own independent shaft. Each of these wheels is provided with a sprocket wheel D and D′ respectively. From the main sprocket wheel D of the left wheel a chain E passes around a sprocket wheel F upon the independent counter-shaft G suitably journaled near the rear of the machine. Upon the inner end of this counter-shaft is fitted the sprocket-wheel H from which the chain I passes forward and around the sprocket-wheel J which is fixed to a shaft K passing through the machine, and having the belt pulley L fixed to its projecting end on the right side of the machine. From this pulley a belt M passes forward around a pulley N which is fixed to the end of the cylinder shaft O. Power is thus derived from the left hand wheel to drive the cylinder in the usual manner. The counter-shaft G turns loosely inside the chain wheel H and has a spring actuated automatic clutch P by which motion is communicated to the chain-wheel H when the machine is moving forward. If, for any reason, the machine is suddenly stopped or its rate of speed reduced, the momentum of the cylinder will continue its high rate of speed, and this clutch allows all the parts connected with the cylinder beyond the chain-wheel H, and including it, to rotate with the cylinder, and thus any strain or breakage which might otherwise take place is prevented.

Upon the shaft G is fixed another chain driving wheel Q, and from this a chain R passes around a sprocket-wheel S upon the counter-shaft T journaled in a bracket support on the side of the machine. The chain R also passes over the sprocket-wheel U upon the shaft V. This shaft passes through the machine, and has a sprocket-wheel U′ fixed upon its opposite end. The shaft V drives the carrier belt V′ which delivers grain and thrashed straw from the cylinder to the shoe V^2. A spring actuated clutch W is mounted upon the shaft V and this clutch acts to connect the sprocket-wheel U with the shaft V when the bearing wheel C is moving faster than the bearing wheel C′, and thus the grain carrier and the connected parts will be driven from the left side wheel.

Upon the opposite or right-hand side of the machine a sprocket-wheel D′ is secured to the bearing wheel C′ in the same manner as is described for the sprocket-wheel D on the left side of the machine; and from it a driving chain E′ passes around a chain pulley F′ which is mounted upon an independent counter-shaft G′. Upon the inner end of the shaft G′ is a sprocket-wheel *a* which turns loosely upon the shaft.

b is a spring actuated clutch, the teeth of which engage corresponding ratchet teeth on

the hub of the wheel *a* so that when power is derived from the bearing wheel C′ this wheel *a* will be driven from it. From the wheel *a* a driving chain *c* passes around a sprocket-wheel *d*, the shaft *e* of which is journaled in a bracket support *f* which is slotted and adjustable upon the frame, as shown, to regulate the tension of the driving chains.

g is another sprocket-wheel fixed to the shaft *e* and from it a chain *h* passes around a sprocket-wheel *i* upon the end of the fan shaft *j*, and from this power is derived to drive the fan W. The chain *c* also passes over the outside of a sprocket-wheel U′ which, as before described, is mounted upon the right end of the carrier driving shaft V. A chain *m* passes over sprocket-wheels *n*, *o* and *p* and between sprocket wheels m^2 m^3 whereby the tension of the chain is maintained, the said wheel m^3 being adjustably mounted to keep the chain in contact with the sprocket wheel of the picker shaft *k* to prevent its slipping which it would otherwise do because it only makes contact with the top of the sprocket wheel.

The operation will then be as follows:—In cutting grain a machine rarely follows an approximately straight line either on account of the contour of natural obstacles like a river bank, or because the character of the grain is such that the machine will sometimes run in, in a long curve, and then make a similar curve outwardly, and this, it will be manifest, will cause the wheels C and C′ to revolve at different rates of speed. The wheels C C′ always drive tne cylinder, and as the turns are made toward the right in passing around the field the speed of the cylinder will be maintained sufficiently to dispose of all the unthrashed straw which is brought to it. The carrying and cleaning mechanism, however, are all driven from the shaft V and this shaft receives power from both the wheels C and C′ through the medium of the independent counter-shafts G and G′. The shaft G′, as before described, has an automatic clutch mechanism *b* which allows the power to be derived from the shaft G and the wheel C whenever the latter is traveling faster than the wheel C′. If, however, the wheel C′ should be traveling faster than the wheel C, the clutch *b* will engage and through the sprocket wheels *a* and U′ will drive the shaft V and connected mechanism, while the automatic clutch W upon the left end of the shaft V will allow the shaft to turn faster than the movement of the sprocket-wheel U. If the machine is moving in an absolutely straight line, the power would be equally divided between the driving wheels provided the gearing is exactly the same, but from the fact that the cylinder is driven from the wheel C, I have found it preferable to arrange the proportion of the gearing so that the wheel C′ drives a very small percentage faster than the wheel C, and if the apparatus should be moving in an exactly straight line, the carrier, fan, shoe, and straw belts, would be practically driven from the wheel C′. This difference in speed, however, does not exceed one or two per cent., and is so little that any slight variation from a straight line which is practically always occurring would throw the work upon either one wheel or the other. By this construction, the straw carrier and chaffer is also driven from the shaft V by means of a chain *m* passing over a sprocket-wheel *n* which is fixed to the shaft V, and thence over the sprocket-wheels *o* and *p* as shown, the wheel *o* being mounted upon the driving shaft of the straw carrier and the wheel *p* simply acting as a direction wheel in returning the chain to the pulley. The picker shafts are also driven by the same chain by means of sprocket wheels *k*. A great advantage of this construction is that any slipping of either drive wheel will throw a part of the work upon the other, and while the wheels are always inclined to slip a little on some kinds of ground, the division of the work between them reduces the slipping so that it does not seriously interfere with the work.

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

1. In a traveling thrasher, the bearing and driving wheels mounted upon independently journaled shafts at opposite sides of the machine, sprocket-wheels and driving chains whereby the counter-shaft from which a cylinder derives its motion is driven by the left-hand wheel, a grain carrier shaft extending through the machine having sprocket wheels U and U′ upon its opposite ends, counter-shafts G and G′ receiving independent motion by means of sprocket-wheels and connecting chains from the driving and bearing wheels, chains leading from sprocket-wheels upon each of these counter-shafts to the sprocket-wheels U and U′ upon the carrier shaft, and automatic clutches by which connection is made or broken with either driving wheel of the machine, whereby power to drive the mechanism connected with the carrier shaft is derived from either or both sides of the machine, substantially as herein described.

2. In a traveling thrasher, bearing and driving wheels mounted upon independently journaled shafts at opposite sides of the machine, sprocket-wheels fixed to each of the bearing wheels, corresponding sprockets fixed to independent counter-shafts upon opposite sides of the machine and chains by which they are driven from the respective bearing wheels, separating and cleaning mechanism, and grain and straw carriers and air-blast fan, and sprocket-wheels and chains by which motion is transmitted from both the counter-shafts to drive these parts, and automatic clutches whereby the power to drive the mechanism may be derived from either of the bearing wheels, substantially as herein described.

3. The combination in a traveling thrasher

having independently journaled bearing and driving wheels, of separate driving mechanisms, actuated by the two bearing wheels, intermediate mechanism by which power from both these wheels is transmitted to all the moving parts behind the cylinder, and automatically acting clutches whereby the whole of the driving power for these parts may be transmitted from either of the bearing wheels, substantially as herein described.

In witness whereof I have hereunto set my hand.

BENJAMIN HOLT.

Witnesses:
GEORGE H. COWIE,
MOLBRY HAYNES.