

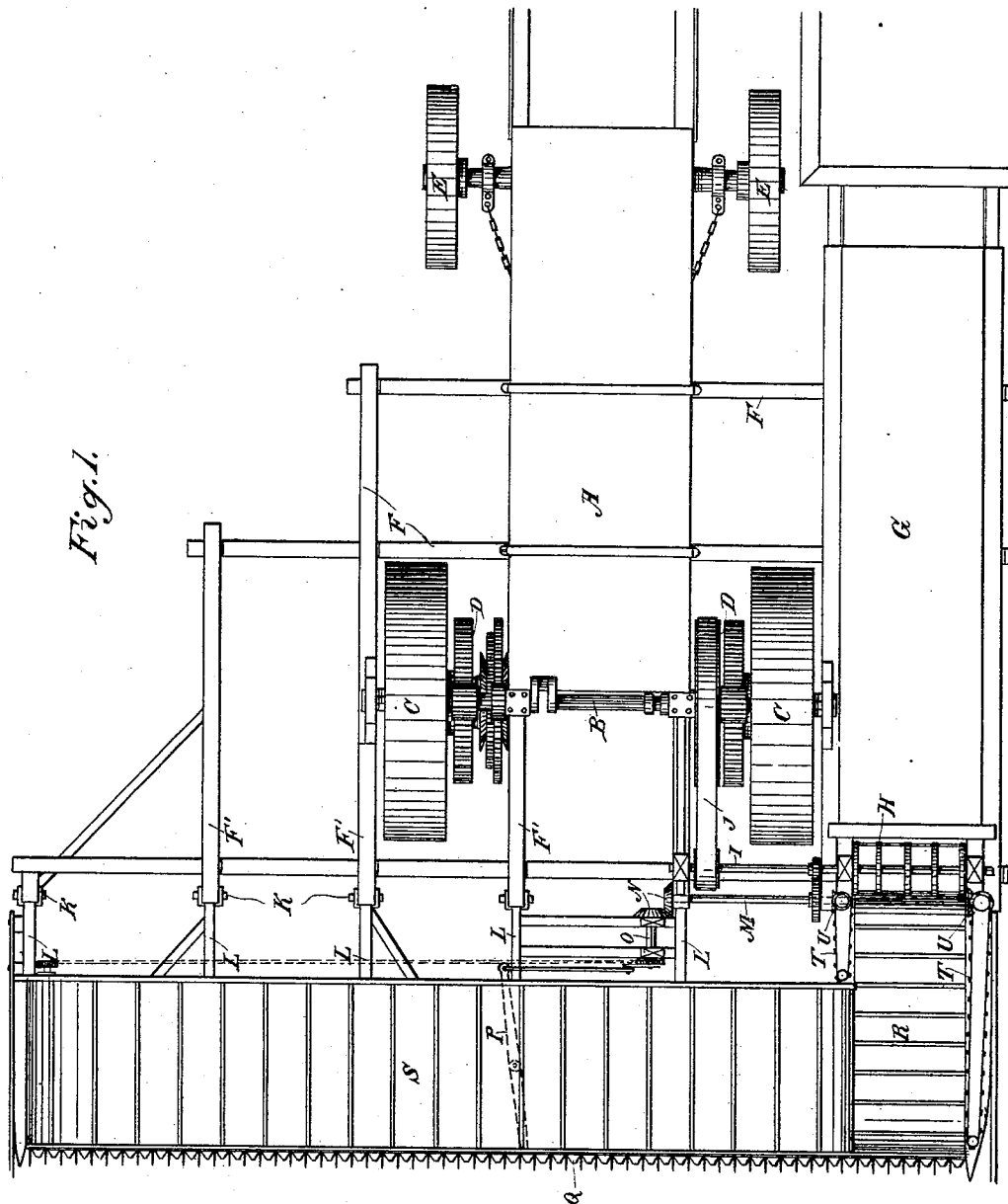
(No Model.)

2 Sheets—Sheet 1.

J. & W. PATERSON.  
HARVESTER.

No. 454,225.

Patented June 16, 1891.



Witnesses,  
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Inventors,  
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# UNITED STATES PATENT OFFICE.

JAMES PATERSON AND WILLIAM PATERSON, OF STOCKTON, ASSIGNORS TO  
THE BENICIA AGRICULTURAL WORKS, OF BENICIA, CALIFORNIA.

## HARVESTER.

SPECIFICATION forming part of Letters Patent No. 454,225, dated June 16, 1891.

Application filed April 9, 1890. Serial No. 347,250. (No model.)

*To all whom it may concern:*

Be it known that we, JAMES PATERSON and WILLIAM PATERSON, citizens of the United States, residing at Stockton, San Joaquin county, State of California, have invented an Improvement in Harvesters; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to certain improvements in harvesters; and it consists in the combination and construction of parts hereinafter described and claimed.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a plan view of our machine. Fig. 2 is a side elevation.

A is a traction-engine, in which in the present case I have only shown the boiler with the crank-shaft B of the engine extending over the top.

C C are the bearing and driving wheels upon which this engine is supported, and D are the gears through which motion is transmitted from the engine to propel the wheels C C.

E E are the guiding-wheels supporting the rear end of the boiler of the engine, and F is a frame rigidly fixed to the engine-frame and carrying upon one side the thrashing, separating, and cleaning machinery, which are contained in the usual casing shown at G. The frame-work F projects about equally upon each side of the engine, and the thrashing and cleaning machinery is supported upon this frame-work at the left side of the engine without other bearing or supporting wheels, while the portion of the frame which projects to the right side extends far enough to serve as a support for the heading mechanism.

The thrashing-cylinder H is mounted upon a shaft I, which is journaled upon the frame F, and receives power directly from the engine by means of the belt or gearing at J, and as the engine and separator are rigidly connected no provision is necessary to compensate for any changes of position between these two. A separate engine may be mounted on the same frame F and used to drive the harvester parts independently of the traction-engine.

The front ends of the timbers F' of the

frame, which stand parallel with the line of travel of the machine, are provided with hinge-joints K, and to these are connected the timbers L, which extend backwardly from and support the header-frame of which they form a part. These joints or hinges K are in line with the shaft M, from which power is applied through the beveled gearing N, the crank-shaft O, and the oscillating lever P to reciprocate the sickle Q. This same shaft M extends across the thrashing-machine in front of the thrashing-cylinder and carries the drum around which the self-feeder belt R passes and by which this belt is driven. By means of suitable belts, gears, or other connections which do not differ materially from those used for driving the drapers of heading-machines, the draper S, which delivers the cut grain from the sickle to the self-feeder R, is driven from the shaft M by means of a belt and gearing, as shown. It will be manifest from this construction that the whole of the header portion of the apparatus may be raised and depressed about the hinge-joints K and the shaft M without in any way disturbing the driving-gears or other connections, and without reference to any movements of the rigidly-connected thrashing-machine and engine upon which the whole apparatus is supported and carried.

At the side of the self-feeder R which is opposite to the draper S, I have shown a vertically-disposed belt T, turning upon vertical drums and acting as a guard to prevent the straw which is delivered from the draper S to the self-feeder R from being thrown over and beyond the belt T. This belt T is driven by a beveled gearing, (shown at U,) the shaft M carrying one of the wheels of the gear, so that the movements being always made about the common center will not derange the operation of the gear. By this construction it will be seen that as the thrashing and cleaning machinery is supported upon and by the bearing-wheels of the traction-engine which propels the machine about the field and at the same time furnishes power to drive the machinery no provision need be made for any irregularities of movement caused by the traveling over uneven ground, and as the header by which the grain is cut is hinged to

the front of this rigid frame, so that the hinges are in line with the shaft by which power is transmitted from the engine to the header and the various moving parts dependent upon it, the sickle may be raised and lowered to suit the height of the grain which is being cut by any of the usual appliances for this purpose without in any way disturbing the connections. The whole machine may thus be supported, propelled, and operated from the single set of wheels which carry the traction-engine.

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

In a combined harvester and thrashing machine, a traction-engine with a rigid frame upon which the thrasher and separator are mounted without independent movement, a separate frame hinged to the rigid frame in

front of the engine and thrasher and carrying the sickle, draper, self-feeder, and a vertical endless belt with carrying-rollers mounted at the opposite side of the self-feeder from the draper, a main driving-shaft M, journaled upon the rigid frame in line with the hinges of the independent frame and receiving power from the engine, and gears mounted upon said shaft and upon the sickle-driving, draper, and guard belt shafts, so as to maintain their engagement when the header-frame is raised or depressed, substantially as herein described.

In witness whereof we have hereunto set our hands.

JAMES PATERSON.  
WILLIAM PATERSON.

Witnesses:

PHILIP B. FRASER,  
C. H. KEAGLE.