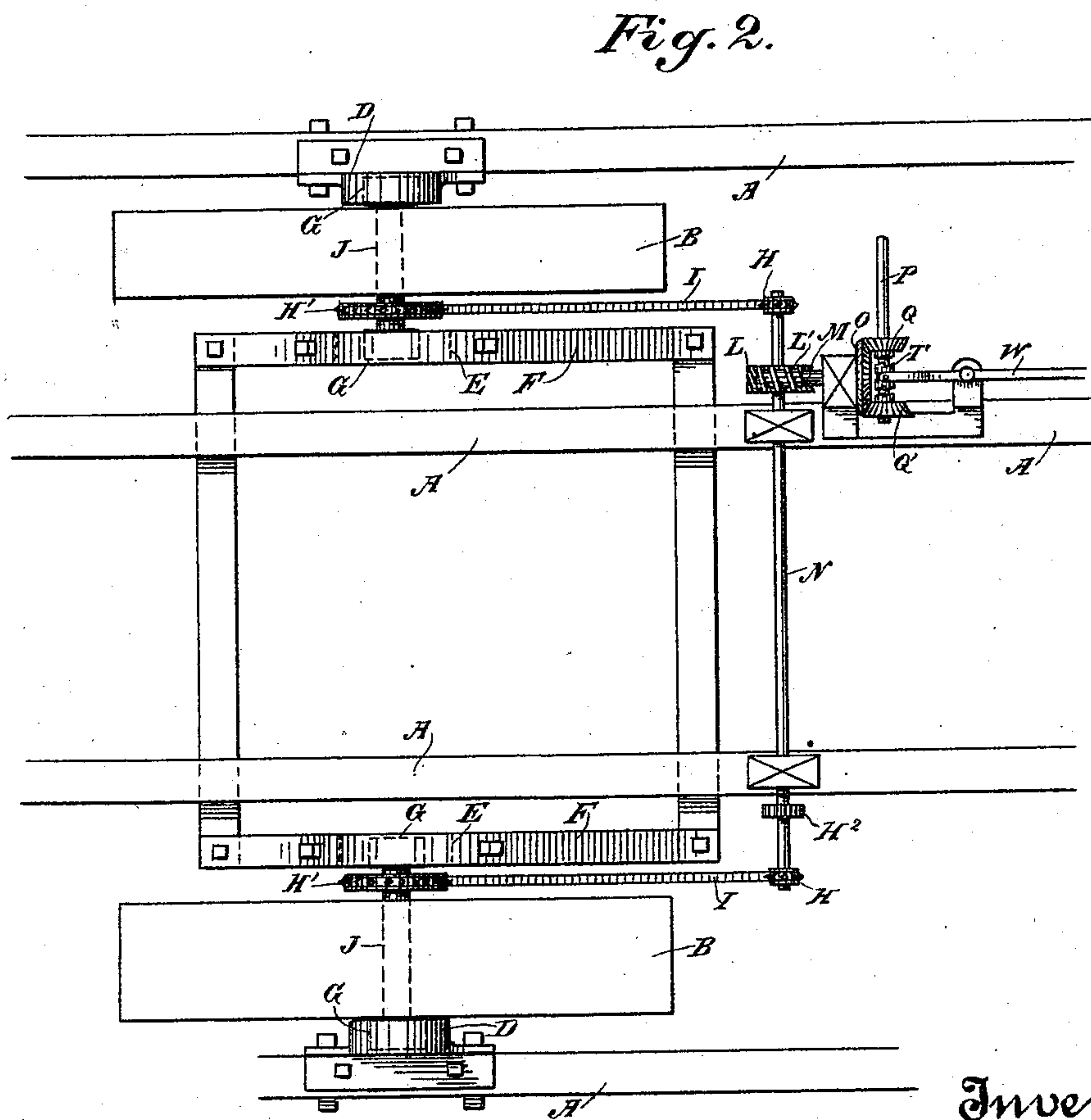
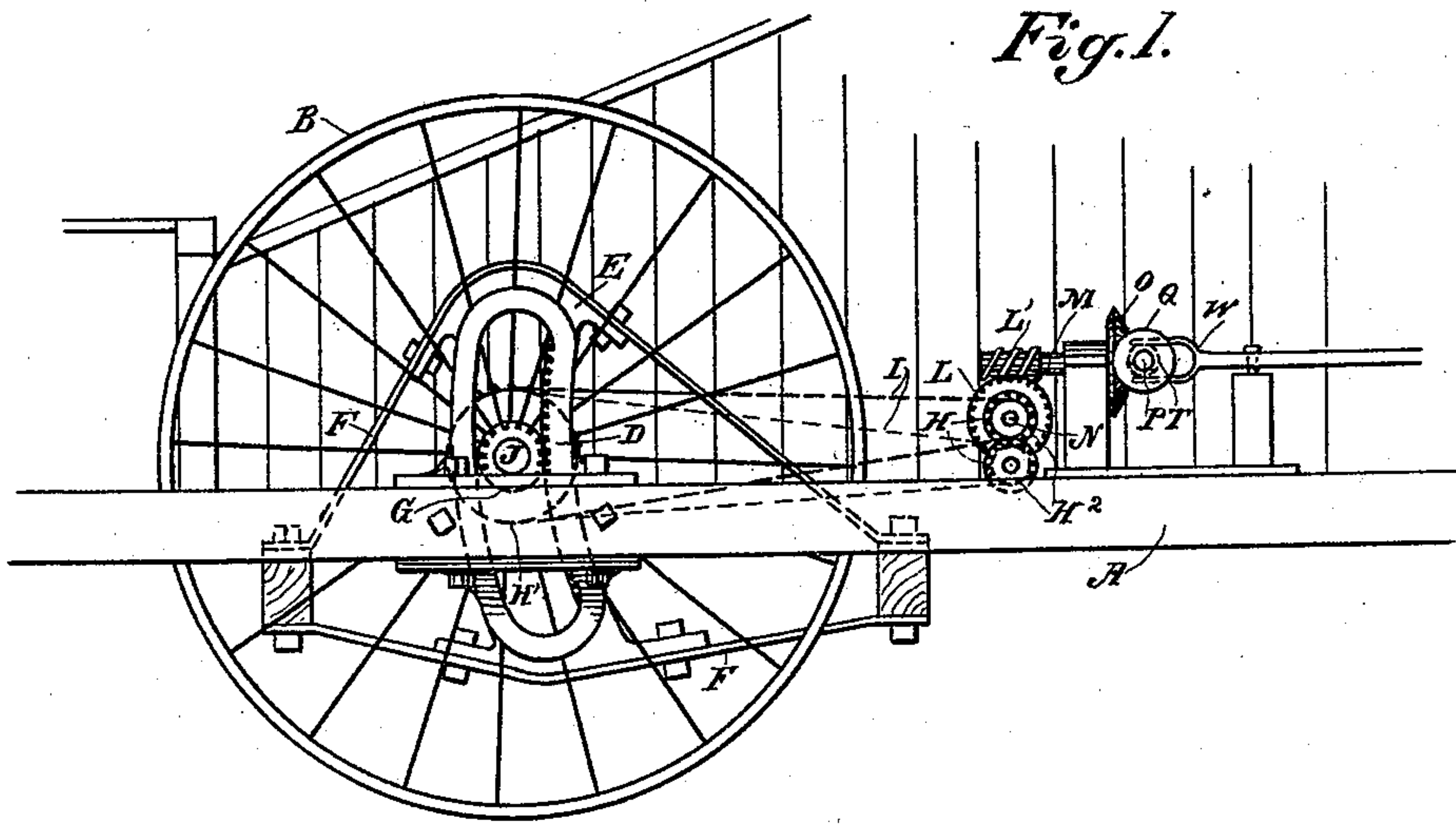


(No Model.)

B. HOLT.
TRAVELING HARVESTER.

No. 496,311.

Patented Apr. 25, 1893.



Witnesses,
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UNITED STATES PATENT OFFICE.

BENJAMIN HOLT, OF STOCKTON, CALIFORNIA.

TRAVELING HARVESTER.

SPECIFICATION forming part of Letters Patent No. 496,311, dated April 25, 1893.

Application filed July 13, 1892. Serial No. 439,891. (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
5 invented an Improvement in Traveling Harvesters; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in apparatus designed to cut, thrash, clean and sack grain and it consists of the constructions and combinations of devices which I shall hereinafter fully describe and claim.

Referring to the accompanying drawings
15 for a more complete explanation of the invention,—Figure 1 is an elevation of my harvester. Fig. 2 is a plan of the same.

The object of my invention is to enable a traveling harvester and thrasher to be used
20 upon side hills of any description, and maintain the frame of the thrasher and cleaner at all times in a horizontal position, and at the same time maintain the bearing wheels in a vertical plane.

It also has for its object the application of a suitable simple mechanism by which the positions of the bearing wheels relative to the frame may be changed to suit the varying declivities over which the machine will pass.

In the present drawings I have only shown
30 so much of the outlines of the well known traveling harvester, thrasher, and cleaner, as will enable my present invention and its connection therewith to be clearly understood. I have purposely left out all unnecessary wheels, belts and gears by which the various portions of the machinery within are driven, but which are of common knowledge to every one familiar with this class of machinery.

40 A A are the longitudinal timbers of the main frame of a harvester.

B B are the bearing and driving wheels mounted upon the short shafts J, so that the wheels are supported between the outside timbers A and the inner ones upon each side of
45 the machine. Upon the ends of the shaft J are fixed pinions G.

D is a curved rack secured to the outer portion of the main frame A, and E is a similar
50 rack bolted to the iron frame F which is secured to the inner timbers of the main frame as shown. These racks are curved to a ra-

dius, the center of which is the shaft of the chain-wheel H about which these wheels are raised and depressed.

H' are corresponding chain-wheels fixed
55 upon the main drive wheel shafts J, and chains I pass around the chain wheels H and H' so that by turning them in one direction, the pinions G which engage the racks D and E
60 will be caused to rotate so as to move the racks downwardly, and when rotated in the opposite direction will move them upwardly.

As it is desirable to move one side of the frame downward while the other is being
65 moved upward, the chain from the chain-wheel H upon one side passes directly to the chain-wheel H', but upon the opposite side an intermediate wheel H² is employed which reverses the movement of the chain-wheel H'
70 upon that side, so that while one side is moved upward, the other is moved downward. By this movement it will be manifest that when the machine is working upon a side hill, the pinions of the wheel upon one side will be
75 caused to travel upwardly within the racks D and E, while the pinions upon the opposite side will correspondingly move downwardly, and the first named bearing wheel will be raised with reference to the main frame A,
80 while the opposite wheel will be correspondingly depressed proportionately to the incline of the surface over which the machine is traveling, and the main frame will remain approximately level, it being desirable to main-
85 tain it as nearly as possible in this condition on account of the thrashing and cleaning mechanism which are carried upon it. The pinions H by which the chains I are driven to rotate the pinions G, and thus raise and
90 depress the wheels are mounted upon a transverse shaft N which extends across the machine at any suitable or convenient point with relation to the main bearing wheels. Upon this shaft is fixed the worm-wheel L which is
95 engaged by screw L' upon the shaft M, so that by the rotation of these screws in either direction, they will act to rotate the shaft N, and thus operate the chain and gear wheels, as previously described.

Upon the end of the shaft N which carries the worms or screws is fixed the beveled gear O, and extending across the front of this bevel gear is a shaft P having upon it the bevel
100

pinions Q and Q' which engage with the opposite side of the bevel-gears O. These pinions are loose upon the shaft P and ordinarily receive no motion from it, the shaft P being free to turn within them, but either one of the pinions is caused to engage so as to turn the gear-wheel O by means of a clutch sleeve T which slides upon a feather on the shaft P intermediate between the pinions Q and Q'. The shaft P being rotated in one direction all the time, it will be seen that when the clutch T is moved to engage one of the pinions Q, it will revolve the gear O and the shaft N and worm L' in one direction, and through this the chain wheels and the pinions G on the main wheels will be driven so as to cause them to rotate in the racks D and E, and thus raise or depress the wheels with reference to the main frame as previously described. By reversing the clutch T and causing it to engage with the opposite pinion Q, the movement of the parts in the opposite direction will be produced.

Power to drive the shaft P is derived from the driving shaft of the self-feeder, and as the self-feeder is always in motion when the machine is traveling, it will be seen that the shaft P will also be driven with it, and it will only be necessary to operate the clutch T by suitable mechanism to engage either of the pinions Q or Q' and thus raise or lower either side of the machine. The connection to drive this mechanism may be made with any convenient part of the machine, and will ordinarily consist of a clutch lever W, the forked ends of which engage the groove or channel in the clutch T. This clutch lever is fulcrumed and by suitable connections is brought within reach of the driver to operate the same. When the declivity is approximately the same for some distance, it is only necessary to place by the lever the clutch centrally when the wheels will remain in that relative position to each other as long as may be desired.

I do not claim broadly in this application the arrangement of the bearing and driving wheels whereby as one is moved vertically in one direction the other is moved in a like manner in a reverse direction, as the same is shown, described and claimed in my patent No. 438,449, of September 29, 1892.

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

1. In a traveling harvester and in combination with the main frame thereof, bearing wheels journaled independently of each other upon opposite sides of the frame, vertically disposed toothed racks fixed to the frame in proximity to each of the wheels, pinions upon the wheel axles turning independently of the wheels and engaging the racks, a counter-shaft with sprocket-wheels and chains through which power is applied to rotate one of the gears directly, and sprocket-wheels and chains with an intermediate gear driven from the counter-shaft, whereby the gears engaging the racks upon opposite sides are caused to traverse the racks in opposite directions, substantially as herein described.

2. In a traveling harvester, a main frame upon which the thrashing and cleaning machinery is supported, independent, bearing and driving wheels upon opposite sides of the frame, each having its own shaft with pinions fixed upon the ends, racks secured to the main frame and having teeth which are engaged by the pinions upon the main wheel shaft, a shaft geared with the wheel shafts to impart motion to them so that one wheel is raised and the other depressed simultaneously with reference to the main frame, substantially as herein described.

3. In a traveling harvester, a main frame upon which the thrashing and cleaning machinery are supported, toothed racks secured in pairs upon each side of the main frame, bearing and driving wheels having short independent shafts with pinions upon the opposite ends adapted to engage the teeth of the racks upon the main frame, sprocket-wheels secured to the shafts of the bearing wheels, other sprocket wheels secured to a counter shaft and chains connecting the sprocket wheels of the counter shaft with those of the bearing and driving wheels, in combination with a reversing mechanism whereby the shafts may be caused to rotate in opposite directions and one will be raised and the other depressed with relation to the main frame, substantially as herein described.

In witness whereof I have hereunto set my hand.

BENJAMIN HOLT.

Witnesses:

W. W. WORTHING,
GEO. H. COWIE.