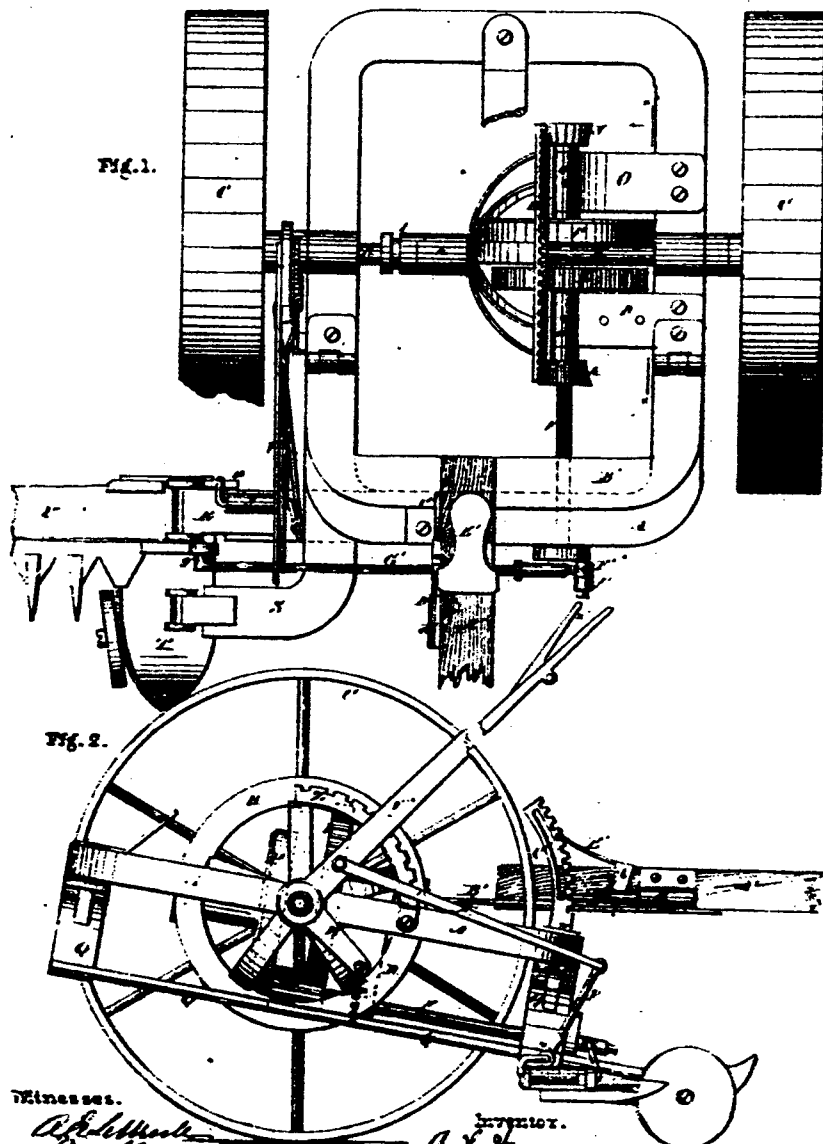


A. H. Wagner,
Mower.

No. 112,750.

Patented Mar. 14, 1871



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W. S. Smart

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Fig. 3.

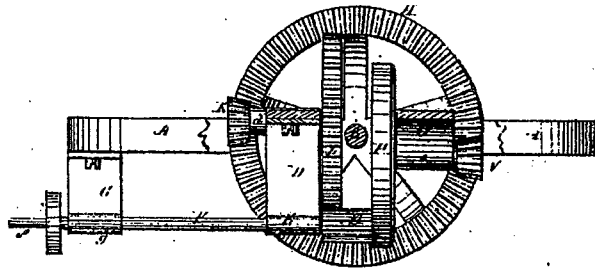


Fig. 4.

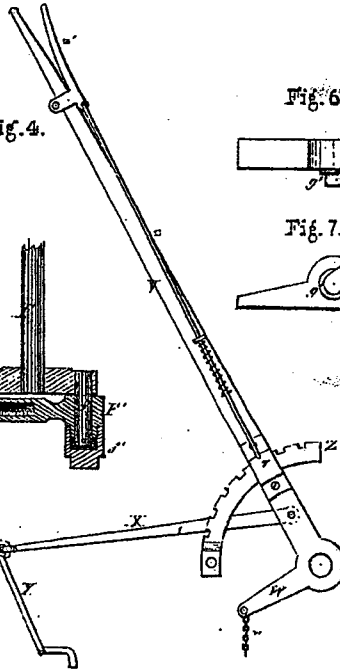


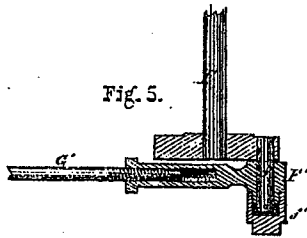
Fig. 6.



Fig. 7.



Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

AUSBERT H. WAGNER, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 112,750, dated March 14, 1871.

To all whom it may concern:

Be it known that I, AUSBERT H. WAGNER, of Chicago, in the county of Cook, and in the State of Illinois, have invented certain new and useful Improvements in Harvesters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a plan view of my improved machine. Fig. 2 is a side elevation of the same with one traction-wheel removed. Fig. 3 is a side elevation of the crank-shaft and driving-gear. Fig. 4 is a like view of the lever used for elevating and depressing the cutting devices. Fig. 5 is a horizontal central section of the crank and pitman or connection-box; and Figs. 6 and 7 are a plan view and side elevation, respectively, of the pitman and cutter-bar at their point of attachment.

Letters of like name and kind refer to like parts in each of the figures.

My invention relates to a class of machinery used for cutting grass and standing grain; and it consists in the employment of a male and female spur-gear wheel, positively driven by the same gear, and caused to mesh with the crank-shaft pinion from opposite sides, substantially as and for the purpose hereinafter set forth.

It also consists in the means employed for securing vertical adjustment of the forward end of the main frame, and of the cutting device attached thereto, substantially as and for the purpose hereinafter specified.

In the annexed drawing, A represents the frame, nearly rectangular in shape, having journaled therein an axle, B, which is supported by or upon two traction-wheels, C, secured upon its ends outside of said frame.

A brace, D, secured to the side of the frame A, and extending inward in front of and in line with the axle B, and from thence vertically downward, is provided upon its lower end with a box, E, which furnishes a bearing for the rear end of the crank-shaft F, the front end of which is supported within and by a similar box, G, forming part of a second brace, G, extending downward from the front portion of the said frame.

Journaled loosely upon the axle B is a bell-shaped bevel-gear, H, made concave inside of the line of teeth, and provided, upon the outer end of its hub *h*, with suitable radial grooves or notches, for the reception of corresponding elevations upon the contiguous face of a sliding clutch, L, of usual construction, by means of which said axle and gear are locked together, so as to revolve at one and the same time.

A beveled pinion, K, is secured upon one end of a short shaft that rests within a box, *d*, forming a part of the brace D, and meshes with and receives motion from the gear H, which motion is communicated through said shaft to a spur-gear, L, attached to the rear end of the latter, and through said gear L to the crank-shaft F, by means of the pinion M, attached to said crank-shaft, and meshing with said spur-gear.

A second bevel-pinion, N, corresponding in size with the pinion K, is attached to one end of a similar shaft, which rests within a box, *e*, formed within the outer end of a brace, O, that is so attached to the frame A in the rear of the axle B as to cause said pinion N to engage with the gear-wheel H.

A female gear-wheel, P, corresponding in interior size and number of teeth with the exterior of the spur-gear L, is attached to or upon the front end of the shaft containing the pinion N, and meshes with the lower side of the pinion M upon the crank-shaft, to accomplish which result the rear shaft containing said female gear is dropped downward below the corresponding front shaft a distance equal to the diameter of said pinion M.

As thus arranged, it will be seen that the motion of the axle is communicated to the crank-shaft pinion M through two trains of gearing—viz., the bevel-gear wheel H, pinion K, and spur-gear L—and through the said bevel-gear H, pinion N, and female gear P, and that as said trains operate upon said crank-shaft pinion M from opposite sides, the strain and pressure of each thereon will be neutralized by the other, so as to cause the crank-shaft to revolve freely, and without increased friction, within its bearings.

The object sought by the employment of the female gear P is to enable the crank-shaft pin-

ion M to be driven from opposite sides, while the shafts of the driving-gear are upon the same side of said pinion, and capable of being actuated by the same gear, so as thereby to reduce the number of gearing required to communicate the motion of the axle to the cutter-bar, and also render said gearing more compact.

Hinged to or upon the lower side of the frame A is a supplementary frame, Q, having the general form of one-half of said frame, if divided longitudinally, and provided with two arms, R and S, that extend outward laterally, and have hinged to their outer ends the shoe T and finger-bar U, all of usual construction.

In order that said cutting apparatus may be adjusted vertically to any desired position, the following-described means are employed: A lever, V, provided at its lower end with a short arm, W, projecting outward at a right angle to the line of said lever, is pivoted at said end loosely upon the axle B, between the frame and the traction-wheel, so as to have thereon a radial motion in a line with the draft.

A chain, *w*, is secured to the end of the arm W, and to the frame Q immediately beneath, so that when the lever V is raised toward a perpendicular position or dropped forward, said frame and the inner end of the cutting apparatus will be correspondingly elevated or depressed.

To raise the outer end of the finger-bar, a connection, X, is pivoted at one end to the lever V a short distance above the axle B, and from thence extending forward has its opposite end pivoted to the upper end of the rod Y, which rod extends downward to the bearing *y*, secured to or upon the arm R laterally outward through said bearing, and is then carried to the rear side of said arm, and terminates in a short downward bend.

A short arm, *u*, secured to the rear edge of the finger-bar, and extending inward beyond the hinge and beneath the end of the crank-rod Y, completes this portion of the device, the operation of which is as follows:

Upon raising the lever V the upper end of the rod Y is drawn to the rear, so as to cause its lower end to press downward upon the arm *u* and raise the outer end of the finger-bar. Upon reversing the movement of the lever V the finger-bar is lowered to its former position.

The lever V is locked in position by means of a toothed quadrant, Z, attached at one end to the frame A, and passing through a suitable guide, *v*, secured upon the side of said lever, and engaging with a detent-rod, *z*, operated by means of a hand-lever, *z'*, pivoted upon or near the upper end of said lever V.

The draft-pole A' is not attached directly to the main frame, but to a sectional frame,

B', which is hinged at its rear ends to or upon said main frame, so as to permit the forward end of the latter to have an independent vertical motion.

A notched segment, C', secured to the frame A, and extending upward beside the pole A', engages with a detent, D', working within a barrel-guide, *d'*, attached to said pole, so as to lock said pole and the main frame in any desired relative position.

In order that the detent D' may be withdrawn from the segment C', a foot-lever, E', having the form shown in Figs. 1 and 2, is pivoted to or upon said pole, and provided with an arm, *i*, which extends downward into a slot within said detent, so that when said foot-lever is pressed downward said detent is carried forward, releasing it from said segment.

As thus arranged, the operator may at will change the relative positions of the main frame and pole, so as to raise or depress the cutting apparatus, by simply pressing downward with his foot upon the lever E, and then moving the lever V forward or backward without withdrawing the detent *z* from engagement with the segment Z.

The box F' of the connection or pitman G' is provided with a cap, *f'*, that screws over the outer end, and completely incloses the outer end of the crank-pin *f*, so as to not only exclude all dust and dirt, but also to retain within the box the oil used for lubrication.

Upon the bearing at the opposite end of the pitman G', I shrink a collar, *g'*, having a diameter of about two inches, and formed of steel, composition, or any desired metal, by which means a large increase in bearing-surface, and, consequently, durability, is secured over similar bearings of ordinary construction.

By my construction of a harvester as hereinbefore described, first, the gearing is simple, compact, not liable to get out of order, and, without unnecessary multiplication of parts, perfectly equalizes the strain upon the crank-shaft, so as to cause the latter to revolve as freely within its bearings as though entirely disconnected from all mechanism; second, the means employed for giving vertical adjustment to the forward end of the main frame, and of the cutting devices attached thereto, are easily constructed and adjusted, efficient, and easily operated, and, in connection with the means used for securing the vertical adjustment of the outer end of said cutting devices, give the operator complete control of the machine upon or over uneven ground.

Having thus fully set forth the nature and merits of my invention, what I claim as new is—

1. In a reaping or mowing machine, a male and a female spur-gear-wheel, positively driven in opposite directions by the same gear-wheel, and caused to mesh with and impart motion to

a crank-shaft pinion upon opposite sides of the same, substantially as and for the purpose specified.

2. In combination with the main frame A, the hinged frame B', the pole A', the segment C', and the detent D', the foot-lever E', the lever V, and the toothed segment Z, for the purpose of securing vertical adjustment to the forward end of said main frame, substantially as shown and specified.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of December, 1870.

AUSBERT H. WAGNER.

Witnesses:

C. J. CORSE,
CHAS. KAESTNER.