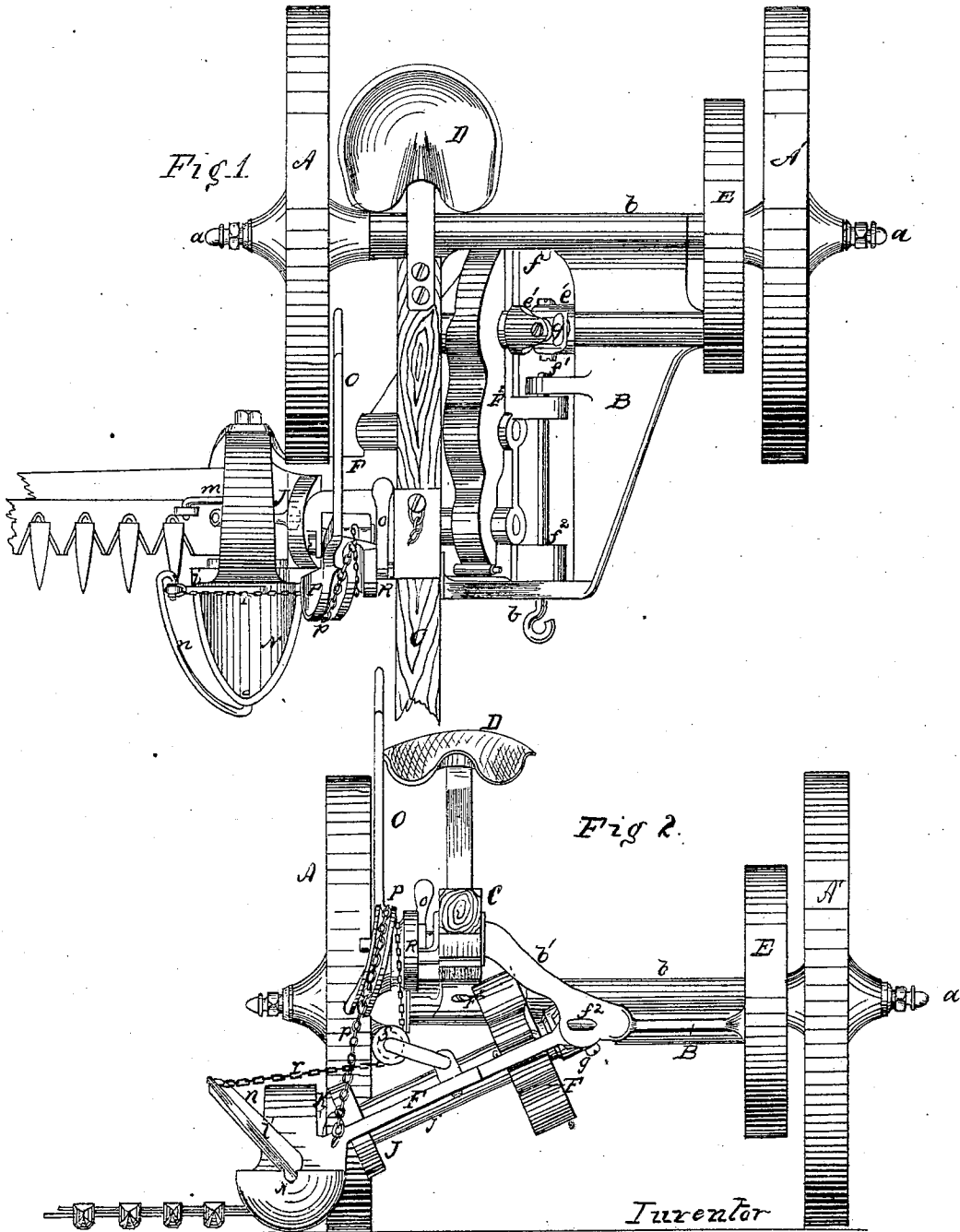


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N<sup>o</sup> 110718

Patented Jan. 3, 1871.



Witnesses  
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# UNITED STATES PATENT OFFICE.

CHARLES M. YOUNG, OF MEADVILLE, PENNSYLVANIA.

## IMPROVEMENT IN HARVESTERS.

Specification forming part of Letters Patent No. 110,718, dated January 3, 1871.

*To all whom it may concern:*

Be it known that I, CHARLES M. YOUNG, of Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Harvesters, of which the following is a specification:

My invention relates to that class of harvesters known as "two-wheeled front-cut hinge-joint machines;" and the improvements herein claimed consist in the combination, substantially as hereinafter set forth, of a main frame, carrying one portion of the driving-gearing, a frame carrying other portions of the gearing, hinged to the main frame and vibrating on an axis parallel with the tongue, and a universal joint connecting the two systems of gearing, said joint being also located in the plane of the hinges; also, in the combination of the main frame and vibrating gear-frame, as above mentioned, with a shoe secured to the vibrating frame and a finger-beam hinged to the shoe, as hereinafter fully set forth; also, in the combination of the main frame, the vibrating frame, the gearing, a crank-shaft mounted in said frame, and a rocking bar or cross-head, oscillated by the crank-shaft and reciprocating the cutters, substantially as hereinafter set forth; also, in the combination of the main frame, the vibrating gear-frame, the gearing, the shoe fixed to said frame, the finger-beam hinged to said shoe, the cutters, the cross-head rocking on the hinge of the finger-beam, and the crank-shaft which oscillates the cross-head; also, in the combination of the fixed shoe, a crank-arm on the pivot on which the finger-beam rocks and by which it is tilted, and a hinged bail connecting the toe of the shoe with the crank-arm.

In the accompanying drawing, which represents all my improvements as embodied in one machine, Figure 1 is a plan; Fig. 2, a front elevation; Fig. 3, a side elevation with one of the driving-wheels removed; Fig. 4, a side elevation of a portion of the gearing; Fig. 5, a view, partly in section, of the mechanism for driving the cutters; Fig. 6, a side elevation of the inner shoe and cutter-driving mechanism.

Two driving-wheels, A A', revolve loosely on a shaft, a, with which they are connected by proper backing-ratchets.

A cast-metal frame, B, is provided with a pipe-box, b, at one end, in which the axle turns

freely. The tongue C is secured at its rear end to a flange on this frame and at its front end to a bracket, b', on the frame, thus making the tongue practically a portion of the frame. A seat, D, for the driver, is mounted on the tongue, and projects behind the axle.

An internal spur-wheel, E, on the main axle drives a corresponding pinion, e, (shown in dotted lines in Fig. 3,) on a shaft, e', turning in a pipe-box on the frame.

A supplementary frame, F, vibrates freely in a vertical plane around the pivots  $f$   $f^1$   $f^2$ .

A universal joint, g, connects the shaft e' with a shaft, g', mounted in proper bearings in the vibrating frame F, and carrying a spur-wheel, G, which drives a corresponding pinion, h, on a shaft carrying another spur-wheel, H, which, in turn, drives a pinion, i, on a crank-shaft turning in a pipe-box, j, in the frame. These gears are inclosed in a case or box, F<sup>1</sup>, cast with the frame, and are covered by a hinged lid, F<sup>2</sup>, by which means the gears are securely protected from dust and dirt.

A balance-wheel, J, on the crank-shaft rotates a crank-arm, k, pivoted to a cross-head, K, which, in turn, oscillates on a pin, l, on which the hinged shoe L oscillates, to which shoe the finger-beam is secured.

The cutters are driven by a short pitman, m, pivoted to the lower end of the cross-head.

A shoe, N, is secured on the inner front corner of the frame in front of the shoe L, which latter oscillates, as before remarked, on a pivot, l, supported by the fixed shoe. A crank-arm, v, is fixed on the pivot l.

A bail or guard, n, connects the toe of the fixed shoe with the end of the crank-arm, and serves to prevent grass from catching at this point.

A lifting-lever, O, vibrates freely on a stud-axle projecting from the frame, and is provided with a detent and tripping-catch, o, of well-known construction, as well as with two lifting-sectors, P R. A lifting cord or chain, p, connects the vibrating frame with the sector P. A similar chain, r, extends from the crank-arm v, under a pulley, S, to the sector R.

By this mode of construction the driver is enabled, first, to lift the divider end of the beam, and then, by a continued backward movement of the lever, to lift the heel end also.

I am aware that gear-frames and finger-

beams have been arranged to vibrate about a gear-center. My invention, on the contrary, enables me to dispense with this mode of construction.

I claim as my invention—

1. The combination of the main frame, carrying one portion of the gearing, the gear-frame, carrying another portion of the gearing, and vibrating on a pivot parallel with the tongue, but eccentric to any gear-center, and the universal joint for driving the gearing, arranged in the plane of the joint and between the two frames, substantially as hereinbefore set forth.

2. The combination of the main frame, carrying one portion of the gearing, the gear-frame, carrying another portion of the gearing, and vibrating on pivots parallel with the tongue, the universal joint in the shaft connecting the two sets of gearing, the shoe fixed to the vibrating frame, and the hinged finger-beam, as hereinbefore set forth.

3. The combination of the main frame, car-

rying one portion of the gearing, the gear-frame, vibrating eccentrically to any gear-center, the gearing, the joint connecting the gearing, the crank-shaft on the vibrating frame, the rocking cross-head, and the cutter-bar, as set forth.

4. The combination of the main frame, carrying one portion of the gearing, the gear-frame, vibrating on a pivot parallel with the tongue, the gearing, the fixed shoe, the hinged finger-beam, the cutter, the rocking cross-head, and the crank-shaft, substantially as hereinbefore set forth.

5. The combination of the fixed shoe, the crank-arm on the pivot of the hinged shoe, and the bail or guard-rod hinged to the fixed shoe and crank-arm, as set forth.

In testimony whereof I have hereunto subscribed my name.

CHARLES M. YOUNG.

Witnesses:

F. N. CLARK,

CHAS. STRATTON.