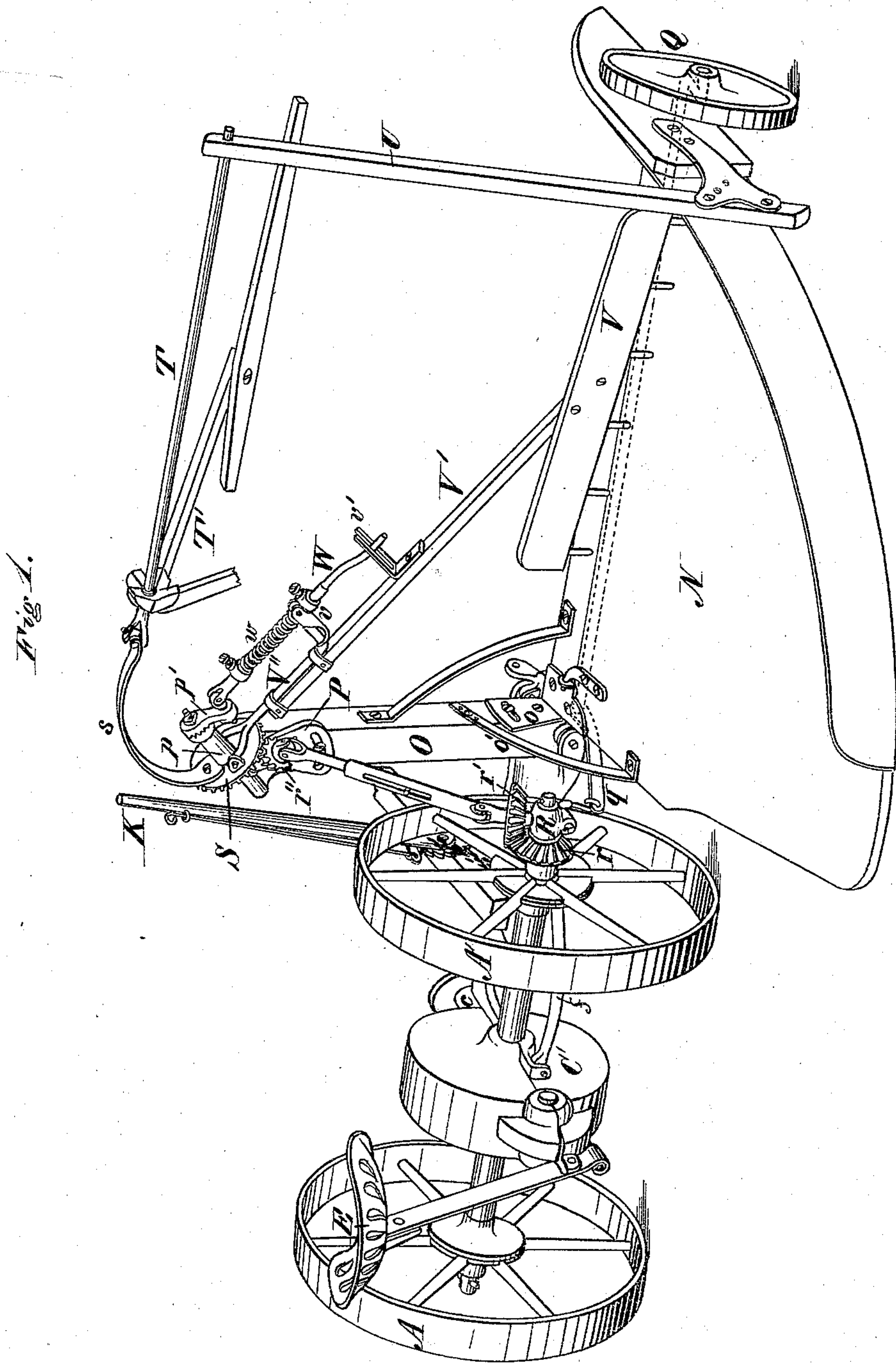


J. F. SEIBERLING.
Harvester-Rakes.

No. 153,913

Patented Aug. 11, 1874.



Witnesses.

Harry King.
B. H. Morse

John F. Seiberling
by his Attorney
Wm D. Baldwin

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Fig 2.

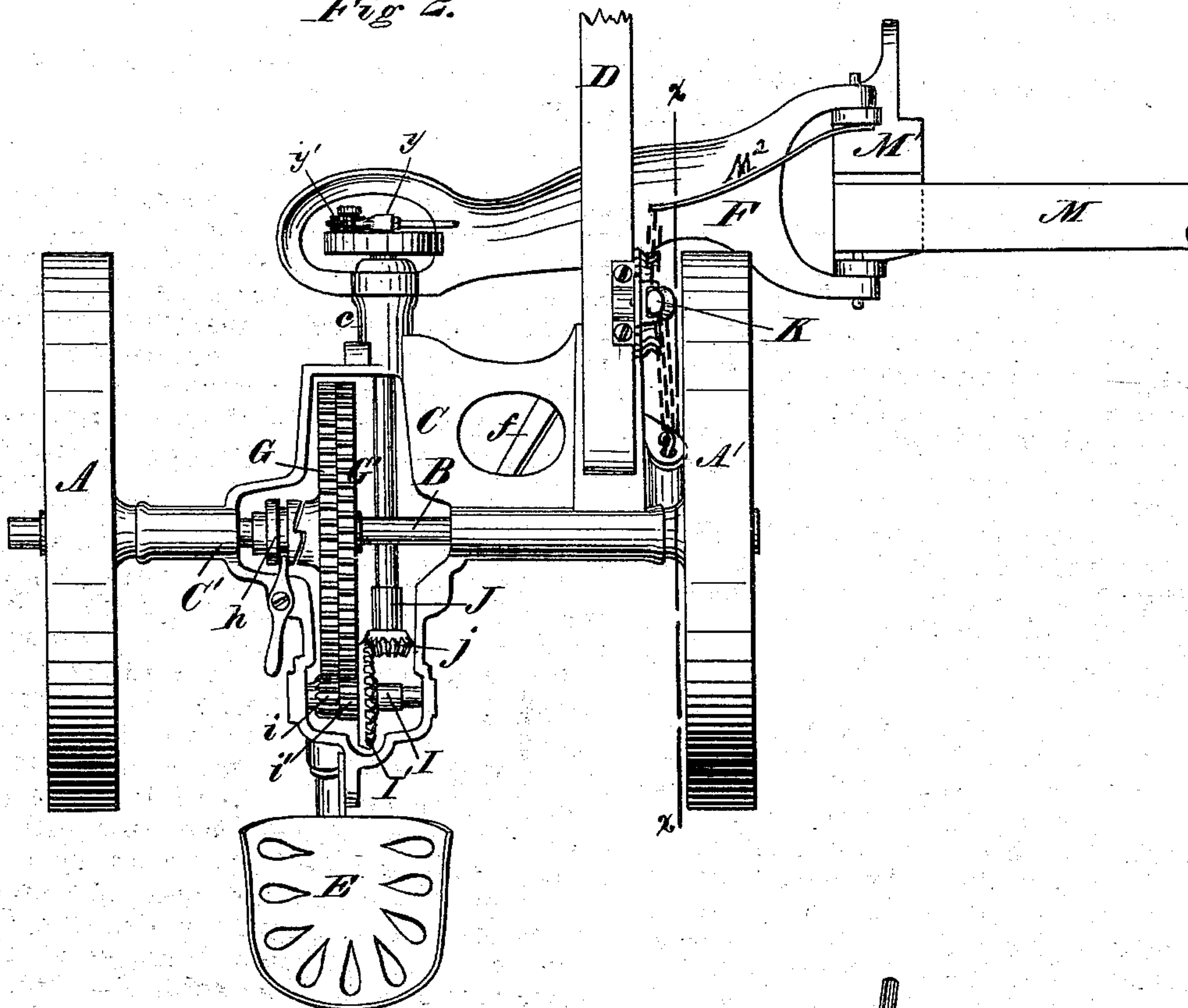
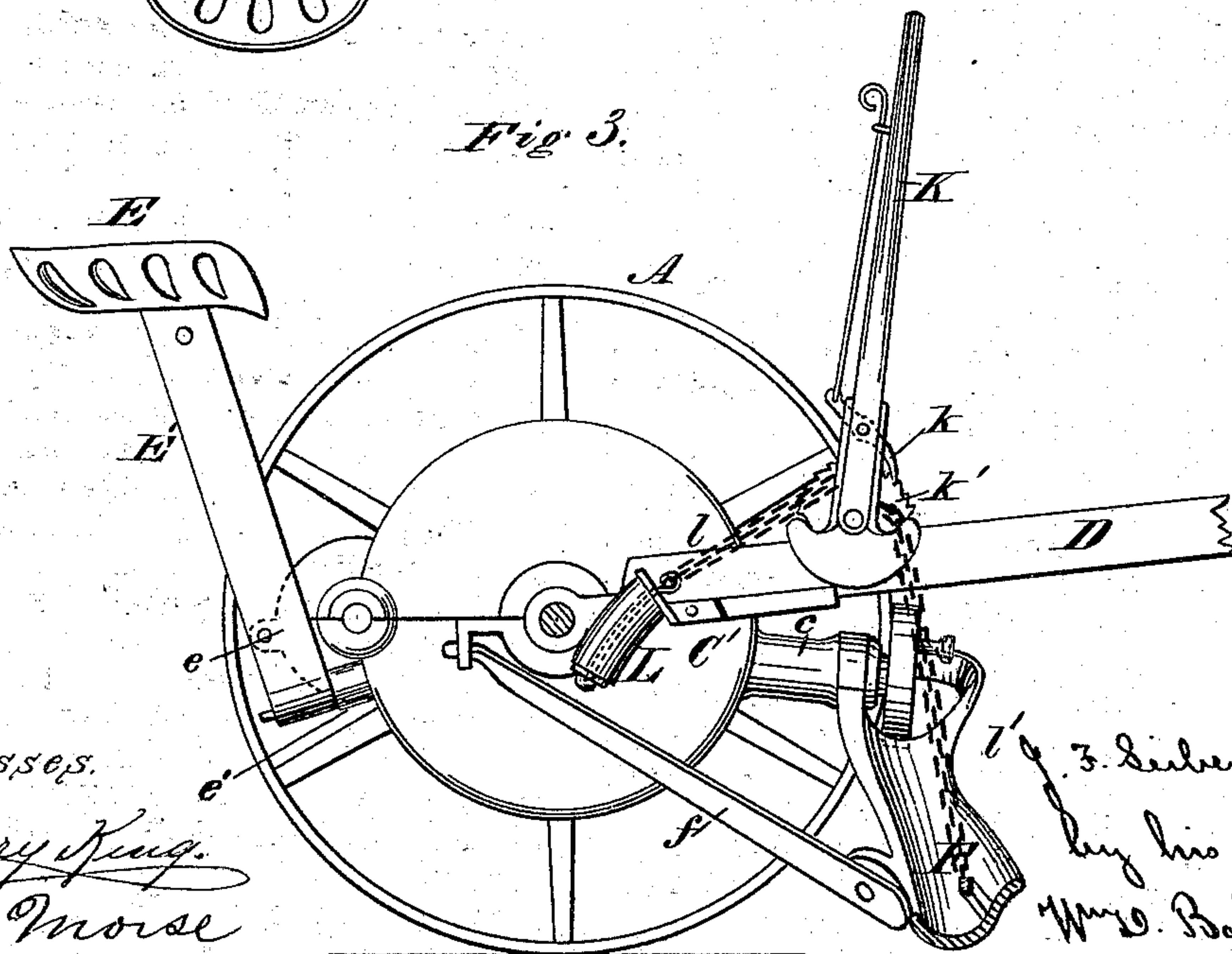


Fig. 3.



Witnesses.

Harry King.
B. H. Morse

2' 3. Seiberling
by his atty
Wm. S. Baldwin

UNITED STATES PATENT OFFICE

JOHN F. SEIBERLING, OF AKRON, OHIO.

IMPROVEMENT IN HARVESTER-RAKES.

Specification forming part of Letters Patent No. 153,913, dated August 11, 1874; application filed November 10, 1873.

To all whom it may concern:

Be it known that I, JOHN F. SEIBERLING, of Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Harvesters and Harvester-Rakes, of which the following is a specification, reference being had to the accompanying drawings, which show all my improvements as embodied in one machine in the best way now known to me, and in which—

Figure 1 represents a view, in perspective, of my improved harvester as seen from behind; Fig. 2, a plan of a portion thereof; Fig. 3, a vertical transverse section there-through on the line *x x* of Fig. 2.

Two driving-wheels, *A A'*, are mounted loosely on an axle, *B*, with which they are connected by suitable backing-ratchets. This axle turns freely in boxes in a frame, *C C'*, by preference of metal, cast in such shape as to form part of a casing for the gearing. A tongue, *D*, projects from the inner front corner of this frame, and a seat, *E*, for the driver is mounted on the rear of said frame, so as, in some measure, to counterbalance the weight of the coupling-frame and its connections. This seat, it will be observed, is mounted on a flat spring standard or plate, *E'*, rocking on a pivot, *e*, on the casing. Its projecting lower end bears against a spring, *e'*, of rubber or equivalent material. The seat is thus free to move or yield slightly both longitudinally and laterally. A coupling-arm, *F*, is pivoted on a tubular boss, *c*, on the front of the frame, through which the crank-shaft passes, thus securing a concentric movement of the coupling-arm and shaft. A brace, *f*, is attached at its front end to the coupling-arm, and pivoted to the main frame or gear-casing behind the axle. A lifting-lever, *K*, is pivoted on the tongue or frame, and carries a pawl, *k*, which engages with a sector-rack, *k'*.

When used as a mower, a lifting-chain, *V*, connects the lifting-lever directly with the coupling-arm *F*, which can thus be held at any desired height from the ground by the pawl, or be allowed freely to play up and down by releasing the pawl, as is well understood. The lifting-lever is connected by a chain, *l*, with a spring, *L*, on the frame. The spring is composed of a rubber tube, with the

chain attached to a rod passing through it, and attached to a plate on its rear end. The front end of the spring is fixed to the frame; consequently the resilience of the spring tends to lift the cutting apparatus, thus causing it to run lightly over the ground when mowing.

In reaping, the spring is unnecessary. The chain *V*, instead of being attached directly to the coupling-arm, as in mowing, is attached to a lifting-arm, *M²*, secured to the hinged shoe *M¹*, and projecting inwardly over the coupling-arm. The finger-beam *M* is secured to a shoe, *M¹*, hinged to lugs on the coupling-arm in a well-known way. A platform, *N*, is attached to the finger-beam when reaping.

By lifting by means of the lifting-arm *M²*, which is fast on the shoe, or the end of the finger-beam, much less power is required than when lifting directly on the coupling-frame; and I have in practice found this device particularly advantageous when used with the hinged shoe and the crank-arms, by which the finger-beam, platform, and rake attachments are raised. A post or standard, *O*, is mounted upon the finger-beam or shoe, to which it is connected by adjustable links or brackets *o o'*, by which means it may be set farther backward or forward, as desired. A bracket, *P*, is mounted on this post in such manner as to give it a pretty wide range of adjustment by turning laterally and vertically on a pivot, so as to vary the angle, relatively to the finger-beam, of a fixed stud axle, *p*, upon which an arm, *p'*, is secured by a creased clutch, or other well-known equivalent means of securing it firmly on its stud, while allowing it to be swung around said stud, and adjusted in any desired position relatively thereto. The grain-wheel *Q* is mounted on a cranked axle extending underneath the platform, and having its inner cranked arm *q* pivoted in a bracket, *R*, mounted loosely upon the main axle. A bevel-wheel, *r*, on this axle drives a corresponding pinion, *r¹*, on a stud-axle on the bracket above mentioned. This pinion is connected, by a universal joint and extensible tumbling-shaft of well-known construction, with a bevel-pinion, *r²*, on the rake-supporting bracket. This bevel-pinion drives a corresponding gear, *S*, on the stud-axle *p*, which bevel-gear carries a bow or reel-sup-

porter, *s*, connected by a swivel-joint with a reel-shaft, *T*, supported at its outer end by a standard, *U*. The reel-standard, it will be observed, stands up high above the tops of the tallest grain. The reel-arms *T'* are attached to their shaft at the inner ends only, so as virtually to constitute an overhanging reel. A rake-head, *V*, is attached to an arm, *V'*, journaled on an arm, *V''*, so as to swing around it to a limited extent. The arm *V''* is bifurcated and pivoted to the bevel-wheel *S* on each side of its stud-axle, and in the same plane as its axis. The outer end of this arm is bent upward and pivoted in a swivel-bracket, *v*. A link-rod, *W*, swiveled to the stud-arm *p'*, works in a vertically-slotted guide, *v'*, on the rake-arm. A coiled spring, *w*, on this link-rod acts upon the rake-arm through the swivel-bracket, for a purpose hereinafter described. The tension of this spring is regulated by sliding collars and clamp-screws, or other well-known equivalent means.

The operation of the mowing part of the machine will be apparent from the foregoing description. The operation of the raking apparatus is as follows: Suppose the rake to start from the position shown in Fig. 1—that is, moving backward just after having descended upon the finger-beam. The stud-arm *p*, it will be observed, is inclined backward and downward at an angle of about forty-five degrees to the horizon, and to the vertical plane of the finger-beam. As the rake moves backward the radial distance between the swivel-bracket on the arm *V''* and the pivot of the link *W* is shortened; consequently the spring *w* is compressed, and the rake caused to bear upon the platform in raking off, as well as to rock slightly on the arm *V''*, as the rake-arm rises and moves forward again. This capacity of the rake-head for rocking enables its arm to move closer to its stud axle or pin than it otherwise could.

As the rake descends it intersects the path of the reel, resumes its vertical position, and descends quickly into the standing grain in advance of the platform, sweeping the grain upon the platform. The reel-supporting bow

s, it will be observed, is opposite the rake-arm, and revolves with the wheel *S* around the stud-axle, but, nevertheless, always maintains the reel-shaft in one fixed position, while moving out of the way of the rake on its forward stroke. This is a novel, useful, and striking feature of my improvement.

The gearing shown forms the subject-matter of another application for Letters Patent, and is not claimed herein.

I claim as my invention—

1. The combination of the hinged finger-beam, the double-cranked rock-shaft, (one crank of which rests on the grain-wheel, and the other is suspended from the main axle,) the lifting-arm projecting from the inner end of the finger-beam, or from the shoe, the lifting-lever, and the chain attached to said lifting-arm, these members being constructed and operating substantially as set forth.

2. The combination of the fixed stud-axle, the hub or wheel revolving thereon, the independent reel-shaft mounted on a support revolving with the wheel around the stud-axle, the rake pivoted on the hub, and the swiveling link connecting the stud-axle and rake-arm, these members being constructed and operating substantially as set forth.

3. The combination of the stud-axle, the gear-wheel turning thereon, the rake-arm pivoted on the wheel, the fixed arm on the stud-axle, the swivel link-rod, the spring, the swivel-bracket, and the slotted guide on the rake-arm, these members being constructed and operating substantially as set forth.

4. The bow-shaped reel-support *s*, constructed as set forth, revolving with the rake and around the stud-axle, whereby the rake and reel support interchange positions in their revolution without interference with each other, while maintaining the reel-shaft in a fixed position.

In testimony whereof I have hereunto subscribed my name.

JOHN F. SEIBERLING.

Witnesses:

JOHN WEMMER,
N. C. BARTON.