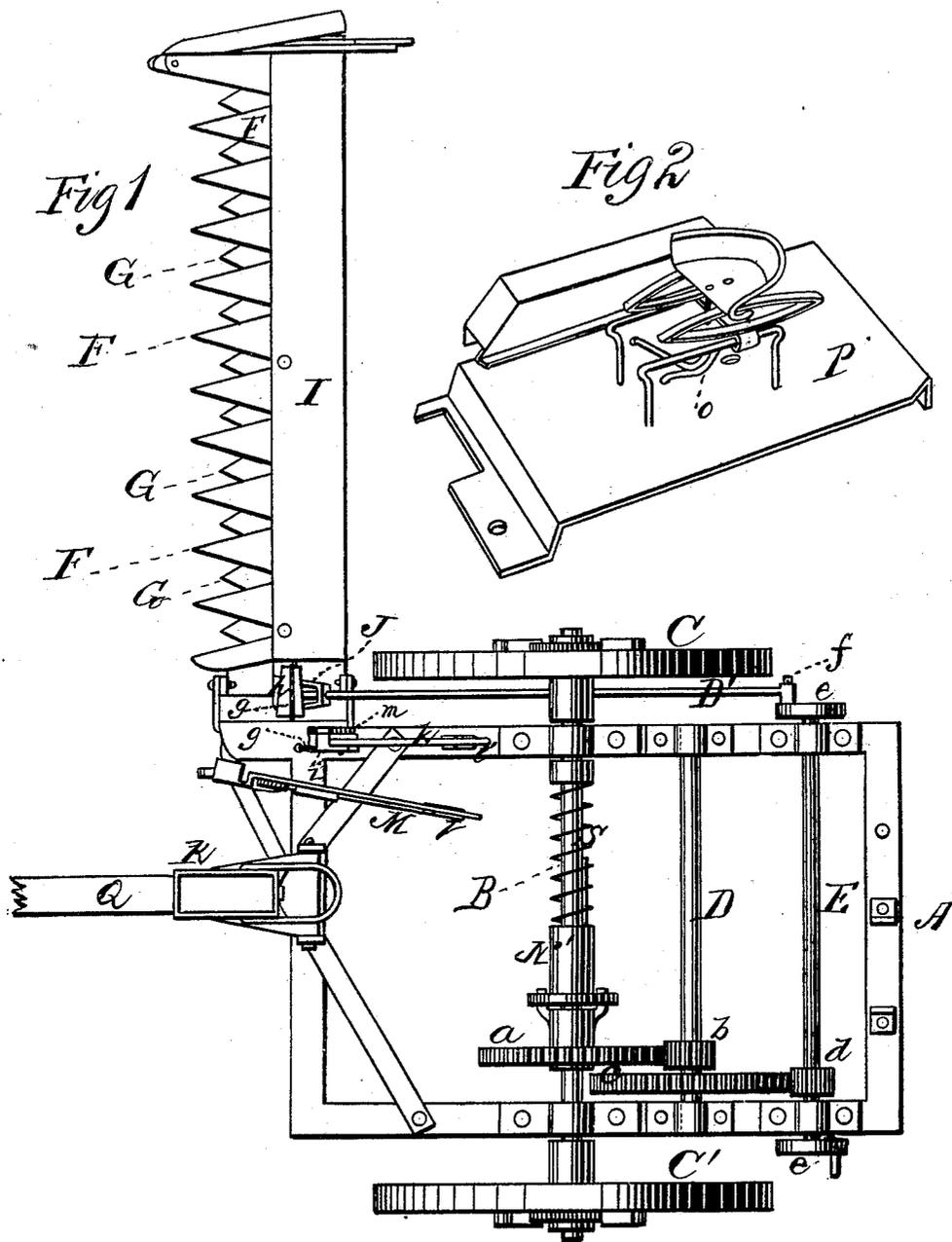


A. HITT & D. M. SMITH.

REAPER AND MOWER.

No. 175,982.

Patented April 11, 1876.



WITNESSES
H. Bates
F. J. Chasi

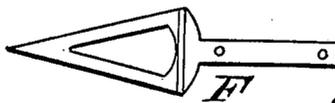
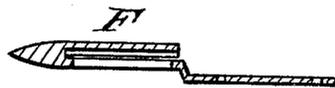
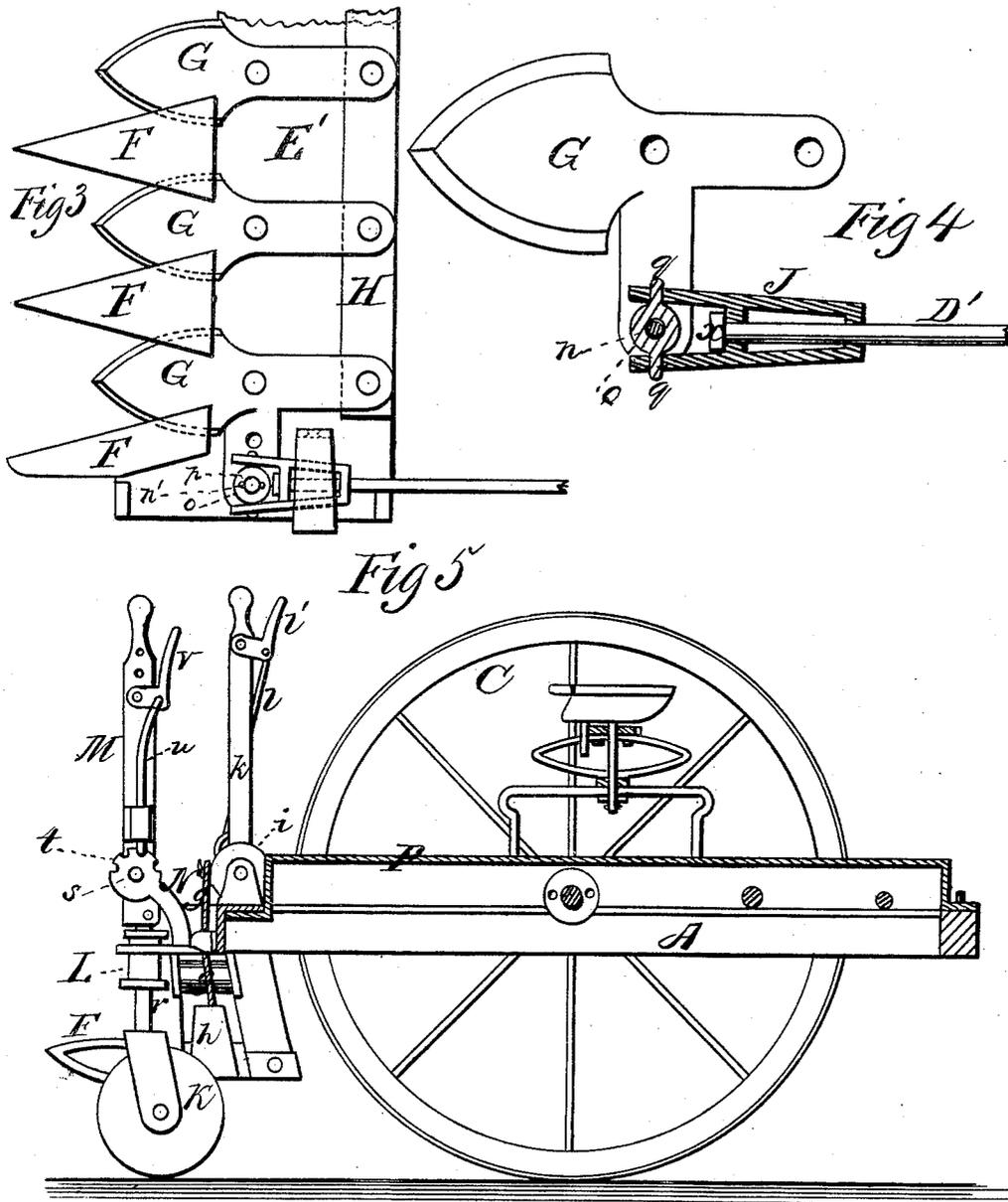
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UNITED STATES PATENT OFFICE.

ADRIAN HITT AND DANIEL M. SMITH, OF FLORA, ILLINOIS.

IMPROVEMENT IN REAPERS AND MOWERS.

Specification forming part of Letters Patent No. **175,982**, dated April 11, 1876, application filed December 24, 1875.

To all whom it may concern:

Be it known that we, ADRIAN HITT and DANIEL MILTON SMITH, of Flora, in the county of Clay and State of Illinois, have invented a new and valuable Improvement in Reapers and Mowers; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a plan view of our reaper and mower. Fig. 2 is a perspective view of the lever and housing, and Fig. 3 is a plan view of the fingers, vibrating cutters, and cutter-bar. Fig. 4 is a sectional view through the fastening of a vibrating cutter, and Fig. 5 is a longitudinal vertical sectional view of the machine.

This invention has relation to improvements in reaping, mowing, and hedge-cutting machines; and it consists in the arrangement and novel construction of the various devices used, whereby very desirable results are obtained, as will be hereinafter more fully explained.

In the annexed drawings, the letter A designates the rectangular metallic frame of our improved machine, swinging from the axle B of two transporting-wheels, C C'. This frame affords bearings for two shafts, D E, arranged at a suitable distance apart, and receiving motion from the driving-wheel C' through the medium of a system of gears, *a b c d*. As shown in Fig. 1, shaft E is provided upon each end outside of the lateral bars of the frame with a crank-wheel, *e*, having a wrist-pin, *f*, to one of which is secured, in the usual manner, a pitman, D', through which motion is communicated to the cutting apparatus, which I shall now proceed to describe. It consists of a metallic plate, E', to which the fingers F are rigidly secured at a suitable distance apart, and of cutters G, arranged between the fingers. These cutters are pivoted at or near the center of their lengths to plate E', and at their rear ends to a sickle-bar, H, from which and from the said plate they are readily detachable when requisite for sharpening or for other purposes, a

plate, I, which is secured, by suitable bolts, to the finger-plate, having been previously removed. This plate rests snugly upon the ends of the pivots, whereby the cutters are pivoted to the finger and sickle bars, and will thus prevent the said cutters from being casually unshipped. As shown in Fig. 1, the finger-plate E' is hinged at one end to the frame, so that it may be raised to pass an obstacle or for trimming a hedge or the incline of a terrace.

The raising of the cutting apparatus is accomplished by the driver in the following manner, to wit: A rope, chain, or jointed rod, *g*, is rigidly secured to a curved guard-plate, *h*, on the end of the finger-plate, passes thence inward through the frame, and is rigidly but adjustably secured to a wheel, *i*, arranged in bearings on the frame. This wheel is caused to rotate by means of a vertically-vibrating lever, *k*, rigidly secured thereto, and will wind up cord *g*, thereby raising the cutting apparatus, which is secured at any desired elevation by means of a spring-pawl, *l*, operated by a handle, *l'*, and engaging with a ratchet-wheel, *m*, rigidly secured to the frame or to the standards of pulley-wheel *i*.

The effect of this construction is that any slope may be smoothly mown with the same facility as an even surface, and that the cutters may be adjusted for trimming a hedge or other upright growth.

In order that this may be accomplished without arresting or retarding the action of the cutters, pitman D' is attached to the cutter-blades in the following manner, to wit: The rectangular arm of the cutter G, next the frame, is provided with an upright pin, *n'*, over which is passed a collar, *o*, which is maintained in position by means of a bolt, *p*, passing through the said pin *n'*. Collar *o* is provided with trunnions *q*, over which the end of an A-shaped metallic plate, J, are engaged. The apex of this plate and its cross-bar are perforated for the purpose of allowing the end of pitman D' to be passed through them, when it will be rigidly secured thereto by means of a ball-nut, *x*. The effect of this construction will be that the cutters G will be operated regularly and speedily, no matter what be the inclination of the cutting apparatus.

The front end of the frame may be raised so as to leave stubble of greater or less height, or for passing a small obstacle without turning off, in the following manner, to wit: A caster-wheel, K, is arranged in suitable bearings, having a shank, *r*, extending through a sleeve, L, on the front of the frame. The upper end of this shank is pivoted in the lower bifurcated end of a lever, M, having its fulcrum at *s* in a ratchet-wheel, *t*, formed on the upper end of a rigid arm, N. When this lever is drawn to the rear it will raise wheel K, thus allowing the front end of the frame to descend, thus bringing the fingers F closer to the ground, and when the lever is thrust to the front the said wheel will raise the frame and with it the cutters, thus enabling me to cut stubble of a greater or less length, or to pass small objects without turning off. In order to preserve this adjustment when attained, the lever M is provided with a pawl, *u*, operated by a handle, *v*, which engages with ratchet-wheel *t* on the end of arm N, and secures the desired result.

In practice the driving-wheel will be connected with the operating mechanism of the cutting devices by means of a sliding clutch, N', which is held in engagement with a collar on gear-wheel *a* by means of a spring, S, applied on shaft B. This clutch will be operated by means of a lever, O actuated by the driver's foot, which projects through a housing, P, covering the frame and the gears operating the sickle. By this means, in driving from place to place, or along roads, the

apparatus above described may be as noiseless as a buggy or other wheeled vehicle.

Fingers F, above alluded to, are of peculiar construction, their under sides being open, as shown in figure, and their edges sharpened, by which means they not only materially assist in cutting the grain, but, being open on their under sides, small twigs and other trash will fall through, thus preventing the cutters from being jammed in the fingers, and allowing the stubble to act as a brush, thus sweeping dust and other substances off the said cutters.

The front end of the frame being vertically adjustable, the draft-pole Q will be inserted into a vertically-vibratory socket, R, on the front end of the said frame, thus making the said pole automatically adjustable to suit such changes of the frame.

What we claim as new is—

In combination with fingers F, vibrating cutters G, and the cutter-bar H of a vertically-vibrating cutting apparatus, the pin *n*, collar *o*, having trunnions *q*, A-shaped plate J, having a perforated cross-bar and apex, pitman D', and holding-nut *x*, substantially as specified.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

ADRIAN HITT.
DANIEL MILTON SMITH.

Witnesses:

JOHN C. ROSS,
GEO. F. ADAMS.