W. H. DRAKE.

Lawn Mower.

No. 109,398. Patented Nov. 22, 1870.

Fig. 1.

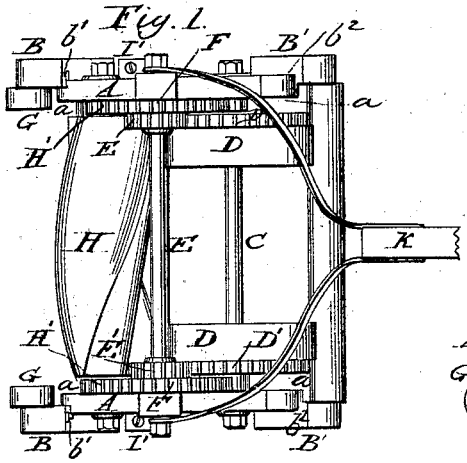

Fig. 2.

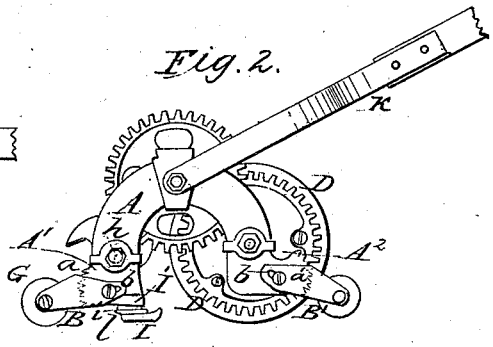

Fig. 3.

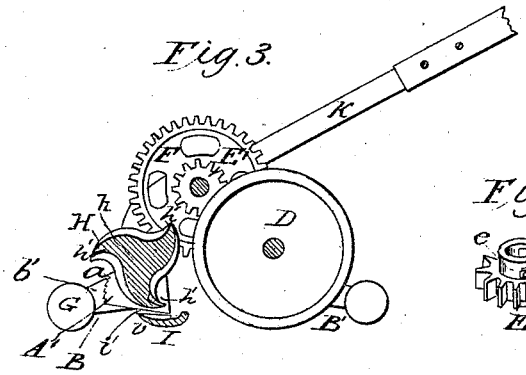

Fig. 4.

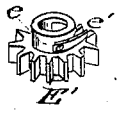

Fig. 5

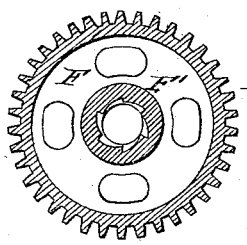

Fig. 6

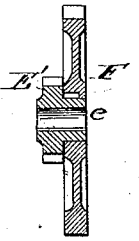

Fig. 7.

Witnesses:
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by his attorney
A. W. Smith

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WHITFIELD H. DRAKE, OF MUSCONETCONG, NEW JERSEY.

IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. **109,398**, dated November 22, 1870.

To all whom it may concern:

Be it known that I, WHITFIELD H. DRAKE, of Musconetcong, county of Warren, State of New Jersey, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making a part of this specification, in which—

Figure 1 is a top or plan view of my improved lawn-mower. Fig. 2 is a side view; Fig. 3, transverse vertical section through the line *x x*, Fig. 1. Fig. 4 is a detached view of the pinion on the secondary shaft. Fig. 5 is a detached view of the ratcheted second spur-gear. Fig. 6 is a vertical section of both the pinion and the driving-spur upon the secondary shaft through line *y y*, Fig. 2; and Fig. 7 is a detached view of the wedge used for adjusting the stationary cutter relative to the cutters.

The invention relates to a novel construction of the secondary spur-gear and its driving-pinion, whereby a cheap and compact arrangement of the backing-ratchet is provided for.

In the drawing, A A represent the arched or U-shaped side pieces which support the working parts of the mower. These pieces are provided at their ends with arms A^1 A^2, turned at right angles, and serrated or notched, as at *a a'*. (Shown in full lines in Fig. 3 and in dotted lines in Fig. 2, the serrated portion being in an arc of a circle the center of which is at *b*.)

B B' are hangers, secured to the side pieces, A A, by means of bolts *b*. Hangers B B' are each formed with a shoulder, b^1 b^2, the inner faces of these shoulders, which abut against the ends of arms A^1 A^2, being in an arc of a circle corresponding to that of said arms, and also serrated in such manner as to readily lock with them. They are slotted, as shown at *b*, Fig. 2, so that when the bolts are loosened they may be moved endwise, and adjusted either up or down upon the arms for the purpose of adjusting the height of cut.

C is a shaft, rigidly secured at each end in side pieces, A A. D D are independent carrying and driving wheels, mounted loosely upon shaft C. They may be secured against undue lateral play by shoulders upon the shaft, or by any well-known construction or devices.

D' D' are spur gears or rims attached to and moving with wheels D D. E is a secondary shaft, made stationary, and serving, with shaft C, to connect the sides A A, thereby forming the frame-work of the machine. E' E' are pinions mounted loosely upon shaft E, and gearing with spur wheels or rims D' D'. Pinions E' are provided with elongated hubs *e*, which form sleeves, upon which are mounted the secondary spur-gear wheels F F. Gear-wheel F is constructed with a chamber, (shown plainly at F', Figs. 5 and 6,) this chamber being ratcheted, as in Fig. 5, and the sleeve *e* is provided with a pawl, *e'*, (see Fig. 4,) so that when the parts are in proper working position they allow the pinion to move in one direction without carrying wheel F with it, as will be readily understood.

G G are supporting or friction wheels, mounted upon studs projecting from hangers B. H is a spiral cutter-head, the journals *h* of which extend through the arched side pieces, A A. This cutter-head has spiral knives *h*, adjustably secured to it in any manner which may be preferred or is common in this class of machines. The cutter-head and knives are driven by means of pinions H' upon each end, said pinions gearing with the secondary spur-gears F F.

K is the handle, forked at its lower end, (shown in Fig. 1,) the ends of the fork being perforated, so as to pass over the ends of either shafts C or E, or the journals of the cutter-head H, as may be desired, by removing the nuts which are employed to secure these parts in proper position.

I is the shoe, bolted to ears I', projecting laterally from the side pieces. (See Fig. 1.) *i* is the stationary cutter, held in place by the same bolt which secures the shoe. This stationary cutter is adjusted relative to the revolving cutter by means of wedges i^1, placed at each end between ears I' and shoe I, the wedge being slotted, as at i^2, Fig. 7, where the bolt passes through to permit such movement of the wedge as may be required to effect the desired adjustment.

The knives of the rotary cutter can be

ground by removing the nuts outside of the frame and applying a crank to the projecting end of the cutter-head journal, when, by turning the cutter backward, they may be ground against the stationary knife, this knife having been properly adjusted and spread with emery and oil, or its equivalent.

It will be readily seen that the handle may be attached to either of the shafts or journals. Thus the power can be applied at such point as the circumstances of the case may require.

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

In a lawn-mower, the loose pinion E′, provided with the sleeve *e* and pawl *e′*, in combination with the loose driving-wheel F, provided with the ratcheted chamber F′, substantially as described.

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