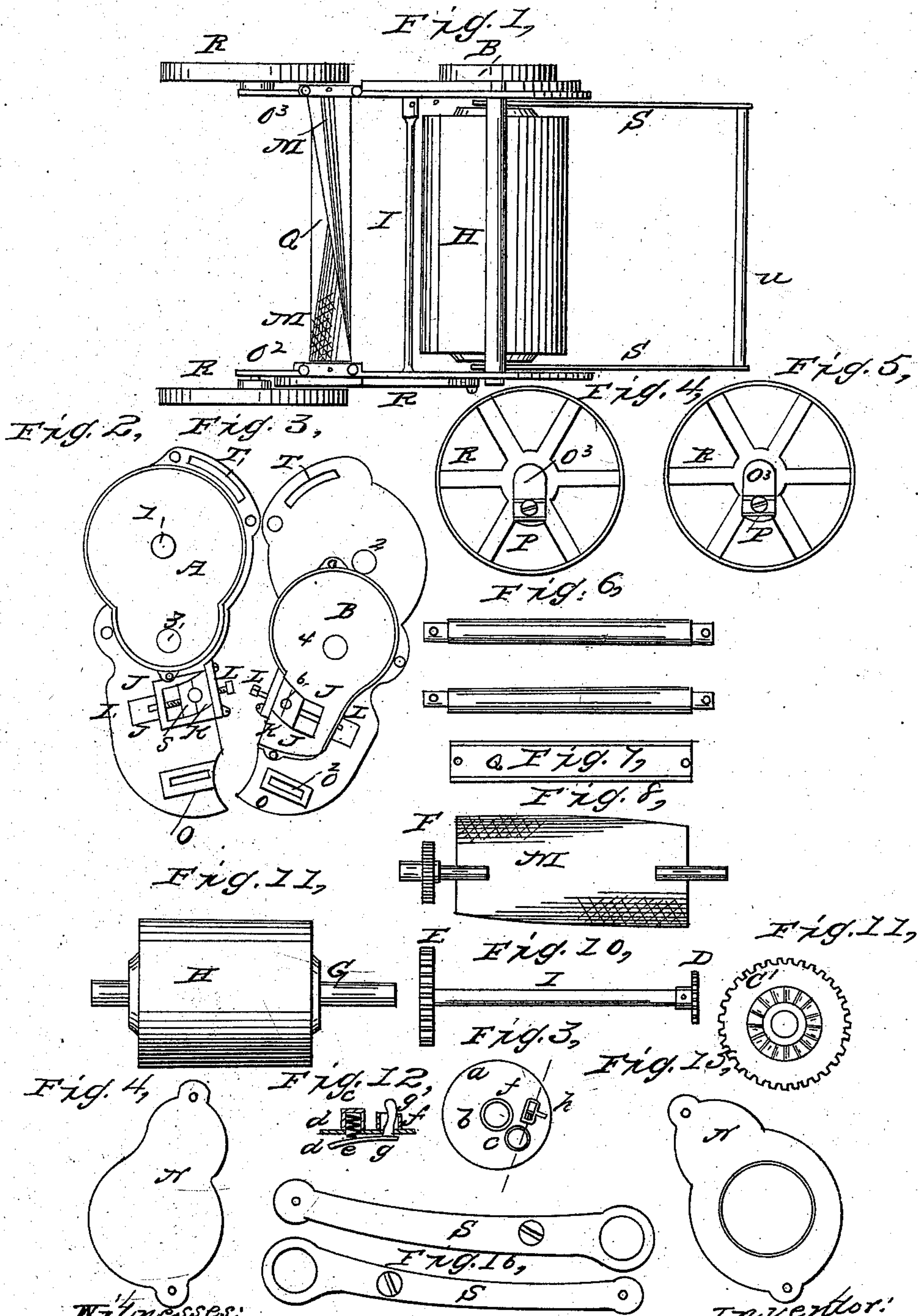


J. ARBEITER.

Lawn Mower.

No. 100,840.

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Witnesses:
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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN LAWN-MOWERS.

Specification forming part of Letters Patent No. 100,840, dated March 15, 1870.

To all whom it may concern:

Be it known that I, JOSEPH ARBEITER, of East Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Lawn-Mowers; and to enable others skilled in the art to make and use the same, I will proceed to describe its construction and operation, referring to the drawings, in which the same letters and figures indicate like parts in each of the figures.

In the accompanying drawings are shown the several parts which when put together, make up a working machine, the object of which is to show in the drawings themselves as much as possible the form and construction of each distinctive part or portion of the machine; and the invention consists in the combination and arrangement of the parts that enter into the construction of the operating parts of the machine, and the combination of special parts for special purposes.

Figure 1 is a top or plan view of this invention. Figs. 2 and 3 are outside views of the sides or frame-work of the machine. Figs. 4 and 5 are wheels and stud-plates upon which they are hung and by which they are adjusted to secure a proper elevation, and allow it (the machine) to glide easily and freely over the ground. Fig. 6 are the girts by means of which the sides or frame-work are secured firmly together. Fig. 7 is a fixed or stationary straight-edge cutter-blade. Fig. 8 is a spirally-formed rotating cutter, having the gear by which it is driven secured upon one end of its axis-bearings. Fig. 9 shows the ground-roller which supports the frame-work, and from the revolutions of which motion or action is imparted to the working mechanism of the machine. Fig. 10 shows a shaft having a gear secured upon each end thereof, for transmitting motion from the ground-roller to the revolving cutter. Fig. 11 is a driving-gear having a ratchet formed thereon, and in use is fitted closely and turns freely upon the shaft of the ground-roller. Fig. 13 is a flange-collar, which is fitted and secured firmly upon the shaft of the ground-roller outside of and in close proximity with the driving-gear, having a spring-pawl device arranged therein, which will allow the ground-roller to turn backward without imparting motion to the

mechanism of the machine. The spring-pawl J can be so constructed as to be held away from the ratchet K at pleasure, so that the machine can be run forward or backward without turning the cutter. Fig. 12 shows the details of the pawl device, which is arranged in the said flange-collar. This pawl works in the notches of the ratchet, and when the machine is pushed forward imparts motion to the whole working mechanism of the machine.

a, in Fig. 13, is a flange-collar, having a hub, b, by means of which it is made fast upon the outer end of the shaft G in any common way. This flange is also provided with a chamber, c, to receive and allow a spiral spring, d, to work in and act upon the spring-pawl e. (Seen in Fig. 12.)

f is a boxing in which the pawl-lever g is arranged, and operates to hold the pawl e out of contact with the ratchet-teeth k on gear-wheel C¹. This lever g is pivoted in boxing f at i, so that when it is thrown back, it (the spring-pawl e,) will contract spring d, and will be held out of contact with ratchet-teeth k on gear-wheel C¹, and is held out of contact by means of a pin, h, inserted through the boxing f, which allows rollers H to revolve freely in either direction without operating the mechanism which revolves the cutter; and whenever it is desirable to operate the cutter, it is only necessary to remove the pin h, when the spring-pawl e will engage with the teeth k on gear-wheel C¹, and the cutter will again be made to revolve by pushing the machine forward.

Figs. 14 and 15 are caps which cover the boxing and the mechanism arranged therein, formed on the sides or frame of the machine. Fig. 16 are oscillating arms, arranged upon the shaft of the ground-roller, and adjusted to their proper position by means of bolts or screws working through slits formed in the side frame-work, by means of which the operator pushes the machine before him.

The sides or frame-work, as shown in Figs. 1 and 2, are designed to be made of cast metal, having the boxing A B to receive, cover, and protect the gears C D E F from being clogged or otherwise injured or rendered inoperative by exposure. These gears may be varied in size, number of teeth, &c., to secure the

desired number of revolutions of the revolving cutter and the easy working of the machine, and the gear C¹ may have its ratchet-teeth cast or formed thereon.

The orifices 1 and 2 are made having proper reference to suitable bearing-surface for the shaft G of the roller H, as also those of 3 and 4 for the shaft I.

Suitable guideways J are also formed in the frame-work, in which the sliding adjustable journal-boxes K are fitted, so as to be raised and lowered, as desirable, by means of set-screws L, for the purpose of adjusting the cutting-edge of the revolving cutter M in close proximity with the edge of the stationary cutter Q. These journal-boxes K are fitted closely to the ways J, and so as to be easily raised or lowered, as desirable, and held firmly in the desired position by means of the set-screws L. They are also provided with bearings 5 and 6, to receive the bearings of the revolving cutter M.

I propose, in the manufacture of these machines, to arrange a blade upon and near the outer edges of the cutter M, having slits therein for the passage of fastening and adjusting bolts, for the purpose of adjusting and changing them from time to time, as desirable, to compensate for wear, breakage, &c.

N, caps for covering the boxes A B, and are secured thereon by screws, so that they can be easily and quickly removed and replaced.

O are toothed or rack surfaces formed on the frame-work, having slots O² formed therein for the reception and play of fastening-bolts P, the object of which is to adjust and firmly secure the studs O³, also having teeth or rack-surfaces to fit the surface O, and so as to be easily adjusted up or down to the desired place, and held firmly in the desired position by means of fastening-bolts P. These studs O³ are provided with an axis-pin, upon which the wheels R are secured. The object of these wheels is to hold the front portion of the machine at its proper height from the ground, and by being constructed of larger diameter than ordinary guide-wheels in lawn-mowers, and so as to be adjusted at any required position on the ma-

chine that when the machine is reversed in its position, in other words, the top side turned to be the under side, then the machine rests upon the wheels R, and by raising the adjustable arms the machine is readily and easily propelled from place to place.

Bosses are also formed on the inner sides of the frame-work and near the lower edge, directly under the boxes K, for the purpose of securing the ends of the stationary cutter Q.

One end of the arms S is placed upon the shaft of the roller H, and is further secured to the frame-work by screws or bolts working through the slots T formed in the frame-work. The outer ends of these handles are connected by a cross-bar, U.

I have thus endeavored to show in the drawings and specification the nature and the construction of this invention, so as to enable a person skilled in the art to make and use the same therefrom.

What I claim, therefore, and desire to secure by Letters Patent, is—

1. The combination of the roller H, flanged collar fast on shaft G, and having spring-pawl provided with the engaging and disengaging mechanism described, arranged therein, with the ratchet-teeth on gear-wheel C, which freely revolves upon shaft G, and gives motion to the revolving cutter through intermediate gear-wheels, when all the parts are constructed and arranged to operate in the manner and for the purpose described.

2. The roller H on shaft G, having the flange-collar and spring-pawl provided with the engaging and disengaging mechanism described, the ratchet-teeth on wheel C, inclosed gear-wheels C D E F, and intermediate shaft, revolving adjustable cutter M, transverse cutter Q, adjustable wheels R, and adjustable arms S, all constructed and arranged with relation to each other and to the frame of the machine, as herein described.

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Witnesses:

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