

(No Model.)

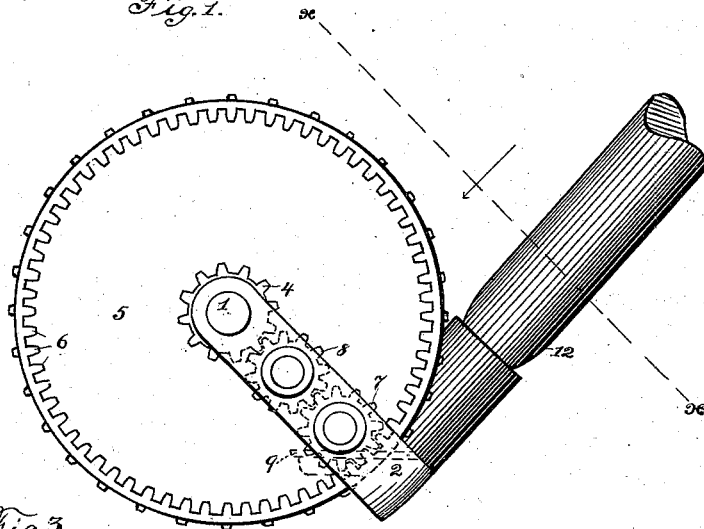
C. F. RITCHEL.

LAWN MOWER.

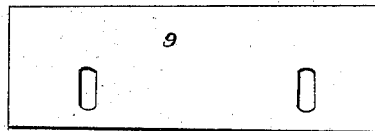
No. 382,388.

Patented May 8, 1888.

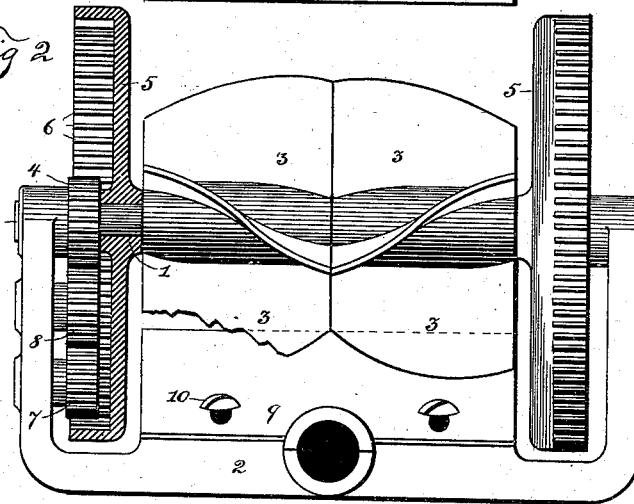
*Fig. 1.*



*Fig. 3.*



*Fig. 2.*



*Witnesses*  
*S. Williamson*  
*W. J. Kaufman*

*Inventor*  
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# UNITED STATES PATENT OFFICE.

CHARLES F. RITCHEL, OF BRIDGEPORT, CONNECTICUT, ASSIGNOR TO J. A. BURKE, OF NEW YORK COUNTY, NEW YORK.

## LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 382,388, dated May 8, 1888.

Application filed April 21, 1887. Serial No. 235,647. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES F. RITCHEL, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Lawn-Mowers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in lawn-mowers, and has for its object to provide a machine of this description which shall be cheap and simple in its construction and not liable to get out of order; and with these ends in view my invention consists in the details of construction hereinafter set forth, and then recited in the claims.

In order that those skilled in the art to which my invention appertains may fully understand its construction and operation, I will describe the same in detail, referring by figures to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of my machine, the train of gearing being shown in dotted lines; Fig. 2, an elevation taken at the angle of the line *x x*, Fig. 1, in the direction of the arrow, the handle being removed from the socket, one of the driving-wheels being shown in section, and one of the blades being broken away to show the edge of the stationary cutter; and Fig. 3, a detail plan view of the stationary cutter.

Similar figures of reference indicate like parts in both views.

1 is the cutter shaft, which is journaled in the yoke-shaped frame 2 of the machine, and 3 are the rotary cutters, which are secured upon shaft 1 in any desired manner. The rotary cutter is made up of two parts, one of which has its blades arranged in the form of a section of a right-hand spiral, and the other of which has its blades arranged in the form of a section of a left-hand spiral. The ends of said cutters abut at the longitudinal center of the cutter-shaft, as seen at Fig. 2. The blades

have at all points the same sweep from the center, and this gives them a continuous shear cut against the edge of the stationary cutter. This arrangement of the rotary cutters is advantageous, since said cutters tend to carry the grass toward the center and away from the driving mechanism, which latter is thereby rendered less liable to clog than it otherwise would be.

4 is a gear secured on the shaft 1, and 5 are the driving-wheels, journaled near the ends of said shaft. One of the driving-wheels is internally geared at 6.

7 is a pinion journaled in one of the arms of the yoke-shaped frame and arranged to mesh with the internal gear-teeth, 6, whereby said pinion is driven, and also with an idle-gear, 8, also journaled in the arm of the yoke, and meshing in its turn with the gear 4 on the stationary cutter-shaft.

9 is the stationary cutter, which is secured to the transverse body portion of the yoke by screws 10, which pass through slots in said stationary cutter and are threaded into the metal of the yoke. The forward or impinging edge of the stationary cutter is perfectly straight and parallel to the axis of the cutter-shaft. This renders the said stationary cutter adjustable, so that it may be caused to engage properly with the edges of the rotary cutters and any wear may be compensated for.

12 is the handle, which is socketed in the rear side of the frame.

The operation of my invention is as follows: When the machine is pushed forward by means of the handle, the revolution of the internally-geared driver, through the gears 4, 7, and 8, transmits a forward rotation to the cutter-shaft and cutter.

In the manufacture of small machines I find that a single set of driving devices is sufficient for all practical purposes; but in machines of wider draft I prefer to drive from both wheels by a duplication of the mechanism shown at Fig. 2 of the drawings.

Having thus described my invention, I claim—

1. In a lawn-mower, the combination, with the straight-edged stationary cutter adjustably

secured to the lower portion of the frame, of the rotary cutters arranged upon the cutter-shaft and adapted to impinge against the stationary cutter, said rotary cutters being made, the one in the form of a section of a right-hand spiral and the other in the form of a left-hand spiral, the ends of said cutters being arranged to abut at the center of the cutter-shaft, substantially as set forth.

2. The combination, with the yoke shaped frame, of the shaft journaled in the ends thereof and carrying the cutters, which latter are made, the one in the shape of a section of a right-hand spiral and the other in the shape of a left-hand spiral and abutting at the center of the cutter-shaft, the drivers journaled near the ends of the cutter-shaft, the straight-edged stationary cutter adjustably secured to the lower portion of the frame, and the gears 4 7 8, arranged between the internally-gearred driver and the cutter-shaft, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. RITCHEL.

Witnesses:

S. H. HUBBARD,  
S. S. WILLIAMSON.