

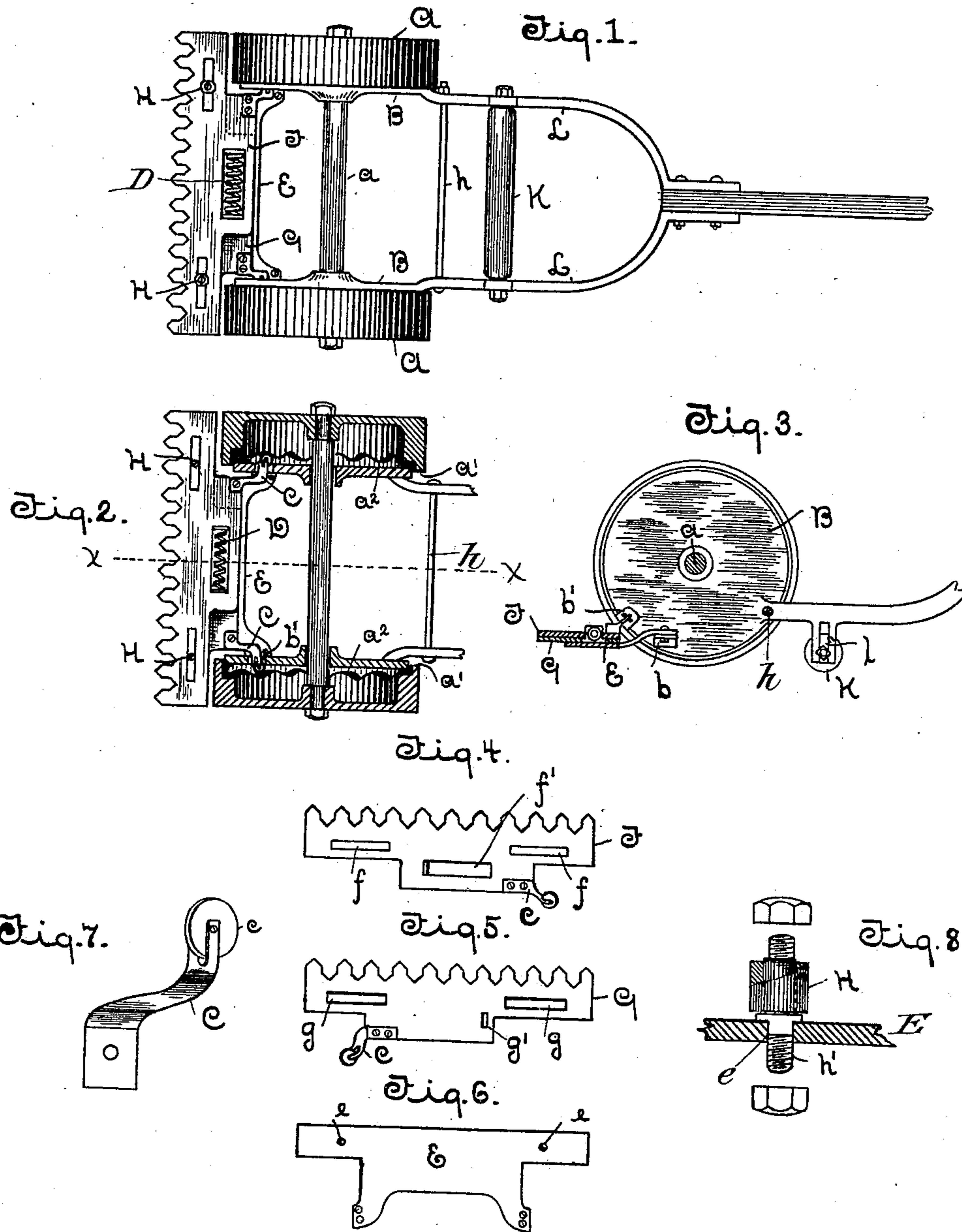
No. 636,190.

W. H. WILLIAMS.  
MOWING MACHINE.

Patented Oct. 31, 1899.

(Application filed Nov. 28, 1898.)

(No Model.)



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM H. WILLIAMS, OF MISHAWAKA, INDIANA.

## MOWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 636,190, dated October 31, 1899.

Application filed November 28, 1898. Serial No. 697,621. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. WILLIAMS, a citizen of the United States, residing at Mishawaka, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Mowing-Machines; 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 improvements in mowing-machines of the class in which the cutting-line is forward of the drive-wheel, and the peculiar construction and arrangement of parts of my invention are especially adapted for lawn-mowers.

The especial objects of my improvements are to dispense with crank-arms, pitman-rods, and other parts which add to the expense, increase the weight and friction, and render many of the machines commonly employed liable to get out of order.

A further object is to protect the driving parts of the machine from dirt, grass, sticks, &c., and to so distribute the power that the cutting-knives will be equally and uniformly driven and supported with the minimum amount of friction.

Having these objects to subserve, I construct a lawn-mower as shown in the accompanying drawings, forming a part of this application, in which—

Figure 1 is a top or plan view of my machine. Fig. 2 is a longitudinal sectional view. Fig. 3 is a vertical sectional view on the line  $x x$  of Fig. 2. Figs. 4, 5, and 6 are detail views of the cutting-knives and bed-plate supporting same. Fig. 7 is an enlarged view of the friction-roller for reciprocating the knives, and Fig. 8 is an enlarged view of an anti-friction-roller for securing and retaining the reciprocating knives in alinement.

Referring to the drawings, A A represent the drive-wheels, which are keyed or otherwise suitably mounted on an axle or shaft  $a$ , which also has loosely mounted thereon circular plates B B, which fit within the flange  $a'$  of the wheels A A, as clearly shown in Fig. 2. Rearwardly extending from and suitably secured to the plates B B are arms L, which

when bolted at their outer ends to the handle form a yoke in which is supported a ground-roller K. This roller is adjustably mounted in vertically-slotted extensions  $ll$  of the arms L, and by its adjustment the height of the cut by the knives is controlled in a manner well known. The arms are preferably braced by a rod  $h$ , connecting them at a point between the roller and the drive-wheels.

Bolted to lugs  $b b$ , which extend horizontally from the face of the plates B, near their lower edge, is a horizontal rectangular flat bed-plate E, near either end of which are bolt-holes  $e e$ , in which are secured by nuts vertical pins  $h'$ , upon which are loosely mounted cylindrical rollers or sleeves H. Superimposed upon the bed-plate E is the lower cutting or knife bar G, having formed therein longitudinal slots  $g g$  of sufficient width to receive the rollers or sleeves H, the latter constituting antifrictional bearings for said knife-bar in its reciprocating movement. At one side of the upper face of the knife-bar G is a small lug  $g'$ , set at right angles to the plane of said bar and for a purpose to be explained. Above the knife-bar G is a second or upper cutting or knife bar F, similarly shaped to the bar G and provided with slots  $f f$ , which register with the like slots  $g g$  in the bar G. The bar F has formed therein a central longitudinal opening  $f'$ , in which is located a coil-spring D, one end of which is secured to the lug  $g'$  of the bar G, which passes through one end of the slot  $f'$ , and the other end of said spring impinges against the abutting edge of the plate at the opposite end of the slot, so that the normal tendency of the spring is to force the two plates outwardly to the point limited by the length of the slots  $f$  and  $g$ .

From one corner of the bar F, adjacent to the driving-wheel, extends an arm C, in the outer end of which is mounted a small roller  $c$ , and a similar device is secured to and extends from the opposite corner of the bar G. The arms C and rollers  $c$  are so disposed that the latter have frictional contact with the annularly-formed cam-faces  $a^2 a^2$  of the drive-wheels A, to attain which they pass through suitable openings  $b'$  in the plates B, as shown in Figs. 2 and 3. It will be noted that the

cam-face  $a'$  is formed on a peripheral shoulder of the wheel, which is covered and protected by the circular plates B.

When the parts are assembled, the rollers  
5  $c$  are so set that each rests in a depression in the cam-faces, so that upon the revolution of the drive-wheels both knife-bars will be forced inwardly, overcoming the normal tension of the spiral spring, which tension, however,  
10 serves to force the knives into the depressions in the cam-faces.

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

15 1. In a mowing-machine, the combination of driving-wheels having annular cam-faces on inner peripheral shoulders, cutting-bars having rollers adapted to run on said cam-faces, spring D, bed-plate E, adjustable

ground-roller and plates for covering the peripheral shoulders of the drive-wheels, substantially as described. 20

2. In a mowing-machine, the combination with driving-wheels, a coil-spring, reciprocating cutting-bars adapted to be driven from  
25 said wheels and slidingly secured together, and one of said bars having a central opening to receive the coil-spring, and the other bar having a lug for securing one end of the spring, substantially in the manner and for  
30 the purpose set forth.

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

WILLIAM H. WILLIAMS.

Witnesses:

LOUIS E. OSBORN,  
HUGH A. THOMAS.