

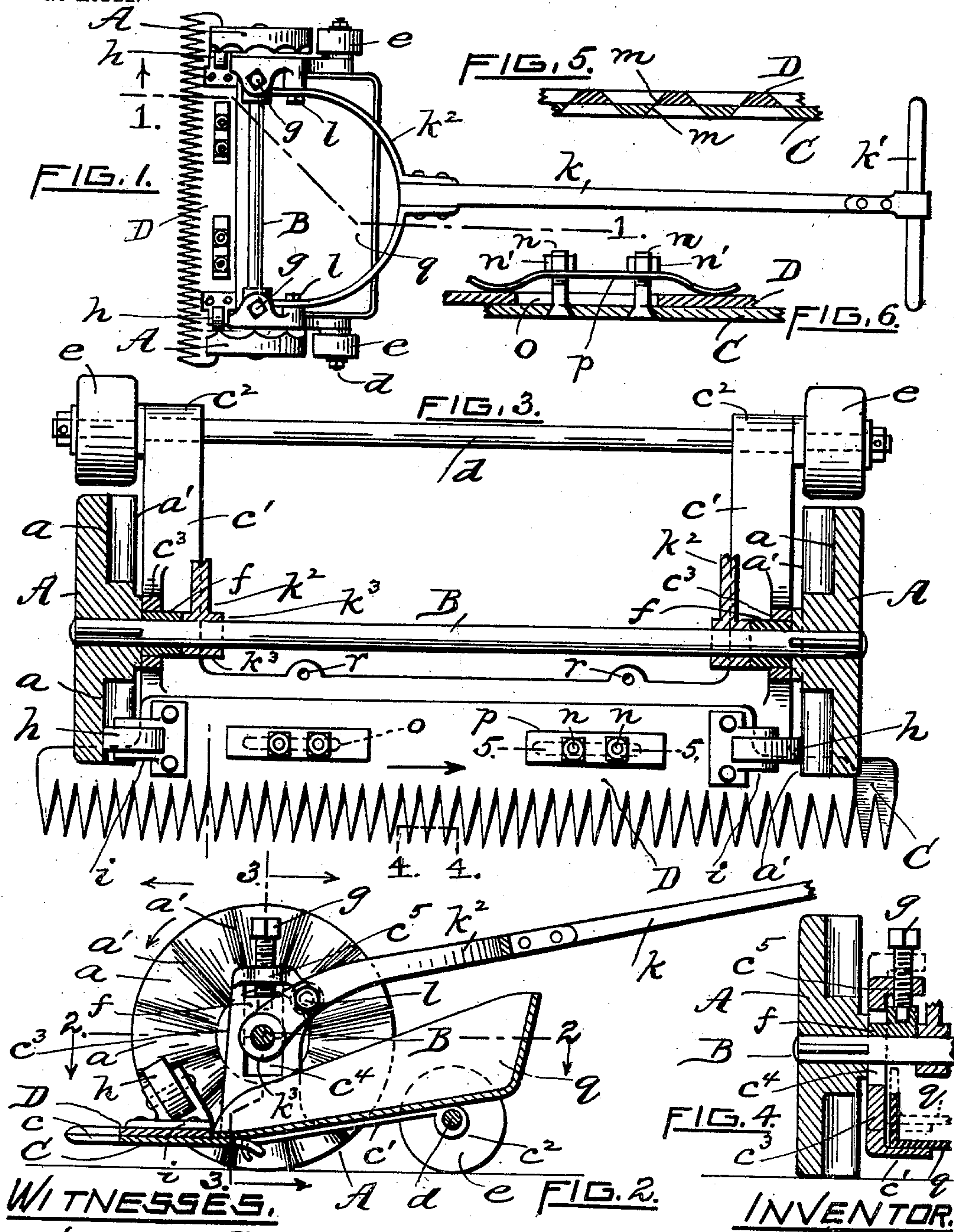
No. 763,125.

PATENTED JUNE 21, 1904.

J. L. SULLIVAN.
LAWN MOWER.

APPLICATION FILED OCT. 3, 1903.

NO MODEL.



WITNESSES.
Albert W. Brown

William H. Peck

INVENTOR.
John L. Sullivan

By Charles J. Hannigan,
Attorney.

UNITED STATES PATENT OFFICE.

JOHN L. SULLIVAN, OF WARREN, RHODE ISLAND.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 763,125, dated June 21, 1904.

Application filed October 3, 1903. Serial No. 175,678. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. SULLIVAN, a citizen of the United States, residing at the town of Warren, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a specification.

This invention relates to a lawn-mower having means for automatically cutting grass upon lawns; and the object of my invention is to provide a stationary cutting-blade situated below a cutting-blade which receives a reciprocating motion by means of the tread-wheels.

The invention consists of the novel construction and combination of parts as hereinafter described, and specifically set forth in the claim.

In the accompanying drawings, Figure 1 represents a top plan view of a lawn-mower as embodying my improvements. Fig. 2 is a side sectional elevation view of the mower, taken in line 1 1 of Fig. 2. Fig. 3 is an enlarged top plan sectional elevation view of the mower without its grass-holder, taken in a plane on line 2 2 of Fig. 2. Fig. 4 is a vertical sectional view taken in line 3 3 of Fig. 2, showing the means for adjusting the blades to the height required for cutting the grass. Fig. 5 is an enlarged partial section taken in line 4 4 of Fig. 3, showing the cutting edges of the blades; and Fig. 5 is a similar section taken in line 5 5 of Fig. 3, showing means for holding the movable blade in frictional contact upon the stationary blade.

Like letters of reference indicate corresponding parts in the different views of the drawings.

A A designate the tread-wheels of the mower, and these wheels are rigidly secured centrally upon the ends of the axle B. The tread-wheels A A are provided with corrugations *a a*, which are divided equidistantly apart from each other around the inner side faces of the wheels and extending radially to the axial center thereof, as shown in Fig. 2.

C is a flat cutter-blade which extends in a horizontal plane in front of the tread-wheels

and beyond each outer face of the same, and said blade is provided with a series of teeth *c*, formed in the front portion thereof. This cutter-blade C has rear extensions *c' c'*, terminating with hubs *c² c²*, which have openings to receive a shaft *d*, and upon said shaft are mounted weight-rollers *e e*. Integral of the extensions *c' c'* are two uprights or supports *c³ c³* in a plane close to the inner corrugated faces of the tread-wheels A A, and said supports are each provided with a rectangular-shaped opening *c⁴*, arranged to receive a movable block *f*. Each of the uprights or supports *c³ c³* has an inwardly-projecting flange *c⁵*, provided with a vertical screw-threaded opening to receive a set-screw *g*, and the block *f* is held in a fixed position upon the axle B by having the lower end of the said screw *g* entering a socket or aperture formed in the block in the manner shown in Figs. 2 and 4.

D is a flat cutter-blade mounted upon the upper surface of the blade C and provided with a series of teeth of the same size and location as in the blade C.

h h are rollers pivotally mounted in brackets *i i*, which are fixedly secured to the upper cutter-blade D. The peripheral surfaces of the rollers *h h* are made to engage with the corrugated faces of the tread-wheels A A. The corrugations of one tread-wheel have their inner surfaces or lowest points, as *a* in Figs. 2 and 3, in a plane with the outer surfaces or highest points of the corrugations in the opposite tread-wheel, as at *a' a'* in Fig. 3, and so arranged that when one roller *h* is in contact upon the inner surface of one corrugation of a tread-wheel, as in the position indicated at the left of Fig. 3, the other roller *h* will be in contact upon the outer surface of one corrugation of the opposite tread-wheel, as seen at the right in said figure.

This machine is provided with the usual center-pole *k*, having the handle-bar *k'* at one end and a yoke *k²* at its opposite end thereof, each extremity of the yoke having hubs *k³ k³* loosely surrounding the axle B, and bolts *l l* firmly secure the yoke to the uprights or supports *c³ c³*.

When the machine is moved forward by the handle-bar h' , the tread-wheels rotate in the arrow direction indicated in Fig. 2, and this movement of the tread-wheels rotates the rollers h upon the corrugated surfaces a and a' from their positions as above described and causing the upper cutting-blade D to move toward the right or in the arrow direction indicated in Fig. 3, and this movement of the blade D terminates when the right-hand roller h has reached the lowest part of the next following corrugation in the tread-wheel, when both the rollers will be in the reverse order to that of their position as first described.

As the tread-wheels revolve the rollers h move in and out of the corrugations, and in this manner a reciprocating movement is given to the blade D in order to cut the grass upon the lawn.

The cutting-blades C and D are each made from one piece of steel and have the cutting edges of their teeth inwardly inclined toward each other, as at m in Fig. 5. In order to hold the cutting edges of the blades firmly together, I provide a frictional means, as shown in detail in Fig. 6. n are bolts fixedly secured in the lower or stationary blade C, and said bolts project through a slot o , formed longitudinally in the upper or movable blade D. Each of the bolts n has an outer screw-threaded portion to receive a nut n' , adapted to bear against a flat spring p , whose opposite ends contact with the top surface of the movable blade D.

q is the pan or holder for receiving the cut grass, and the sides of this holder rest upon the exposed surfaces of the rear extensions c' of the stationary blade C. Hooks are fixedly secured in the forward part of the grass-holder q and enter openings r formed in the

blade C to keep the grass-holder in place upon the same in the manner shown in Fig. 2.

By having the inner side faces of the tread-wheels corrugated to receive the rollers there is allowed a quick reciprocating movement of the upper cutting-blade. Therefore it is evident that by my construction and arrangement of parts this machine is capable not only of cutting the grass in the open lawn, but also effective in trimming the edges of the lawn where the grass is in close proximity to a wall or building. Furthermore, by means of the adjustment of the set-screws g the cutting-blades may be regulated in accordance to the height desired to cut the grass.

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

In a lawn-mower, the combination, of a stationary cutter-blade having two uprights with inwardly-extending flanges, and said uprights provided with slotted openings; an axle; blocks movable in the openings of said uprights and bearing on said axle; two tread-wheels rigid upon said axle and having their inner sides corrugated; a second cutter-blade movable on the first-mentioned cutter-blade; two rollers properly mounted on said second-mentioned cutter-blade and arranged to engage by their peripheral surfaces with the corrugated surfaces of said tread-wheels; and set-screws in the flanges of said uprights adapted to bear against the said blocks, substantially as set forth.

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

JOHN L. SULLIVAN.

Witnesses:

ALBERT W. BROWN,
WILLIAM H. PECK.