W. S. HAYDEN.

GRASS CUTTING DEVICE.

APPLICATION FILED MAY 3, 1909.

939,837. Patented Nov. 9, 1909.

Fig. 1.

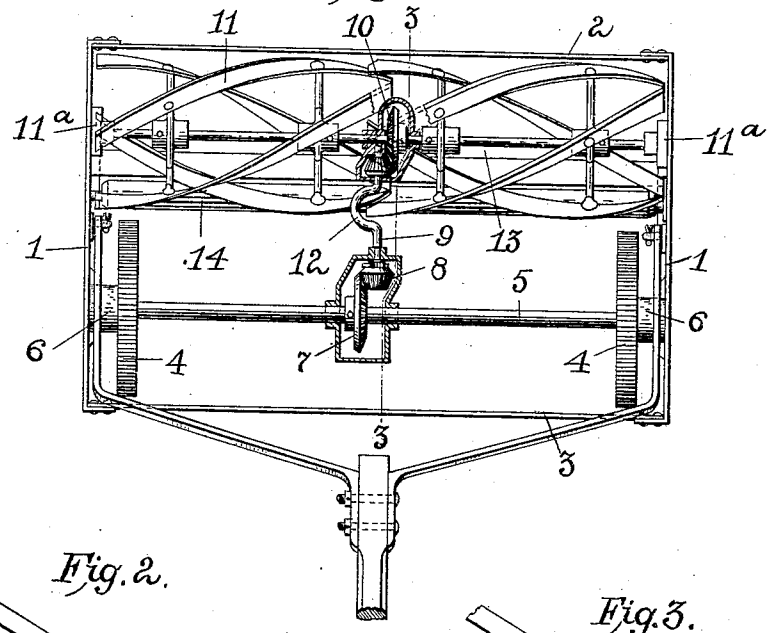



Fig. 2.

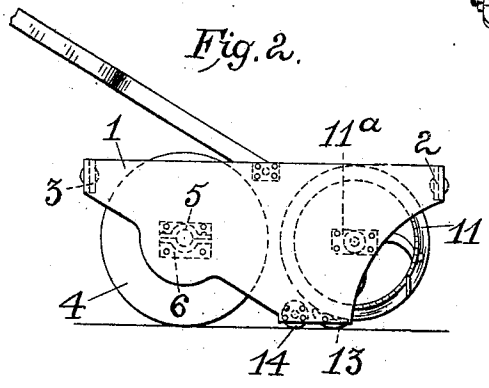



Fig. 3.

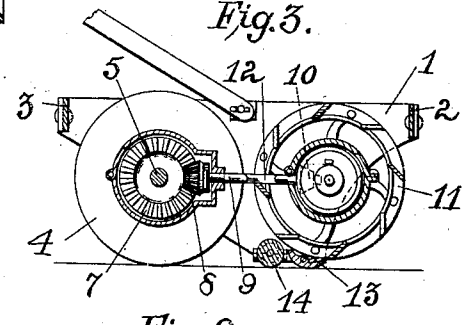



Fig. 4.

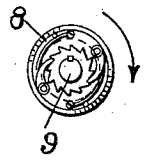



Fig. 5.

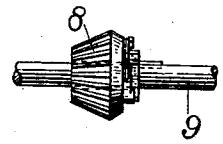
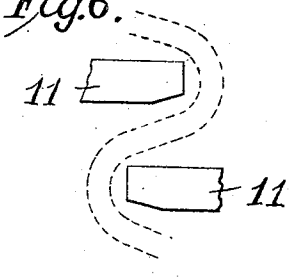



Fig. 6.

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# UNITED STATES PATENT OFFICE.

WILLIAM SCOTT HAYDEN, OF PUEBLO, COLORADO.

## GRASS-CUTTING DEVICE.

939,837. Specification of Letters Patent. **Patented Nov. 9, 1909.**

Application filed May 3, 1909. Serial No. 493,597.

*To all whom it may concern:*

Be it known that I, WILLIAM S. HAYDEN, citizen of the United States, residing at Pueblo, Colorado, have invented certain new and useful Improvements in Grass-Cutting Devices, of which the following is a specification.

My invention relates to improvements in grass cutting devices, of that class in which the driving means are located centrally of the machine, and has for one of its objects to simplify the driving means.

Another important object is to provide a machine capable of cutting very close to houses, fences, trees and the like.

The invention consists in the details of construction, combination and arrangement of parts, as hereinafter described and particularly claimed.

In the drawings accompanying, a lawn mower is represented embodying my invention, in which,

Figure 1 is a top plan view with the gear-housings in section, for clearness of illustration; Fig. 2 is a side elevation; Fig. 3 is a longitudinal sectional view of the machine, on the line 3—3 of Fig. 1, looking toward the left. Figs. 4 and 5 are enlarged detail views illustrating the ratchet movement of the bevel gear, and Fig. 6 is a diagrammatic view showing the dodging motion of the drive shaft out of the paths of the cutter knives when in operation.

Referring now to the accompanying drawing, in which similar numerals indicate similar parts throughout the several figures, the carrying frame is comprised of the side plates 1 connected together by the front and rear bars 2 and 3, which are securely fastened at their ends by bolts or otherwise, to the side plates 1. These side plates are made of thin material between which all of the machine parts are arranged, and on the inner face of which the bearings for the various shafts are located.

The ground driving wheels 4 are positioned in the rear of the machine, and are rigidly secured on the main shaft 5, which finds bearing at both ends in suitable journals 6 on the side plates. This shaft 5 carries intermediate of its length, a bevel gear 7, which is rigidly mounted, and meshes with another bevel gear 8 carried on the end of the drive-shaft 9, said gear having an ordinary ratchet movement as shown in Figs. 4 and 5 to allow the machine to be moved backwardly without imparting motion to the knife-head. This shaft 9 imparts motion through proper gearing 10 to the knife-head 11, which is journaled in suitable bearings $11^a$ carried by the side plates. All the gears are inclosed in proper housings.

In order that the cutting knives may extend substantially over the entire width of the machine, it is necessary to introduce the propelling means intermediate of the two sections of the cutting head. The knife head is built up in two sections, the cutters of one section alternating with those of the other section in circumferential relation at their inner ends, said cutters overlapping one another laterally to produce a continuous cutting across the entire head. The drive shaft 9 in order to pass these knives, is provided with an ordinary crank portion 12 which allows it to dodge the beveled knife ends when in operation.

The rotary head coöperates with a fixed knife member 13 which is secured on the under side in relation thereto, and which is held in proper relation to the ground by the ground roller 14 arranged directly in the rear thereof to assure a smooth result in the cutting operation.

The diagram in Fig. 6 shows generally how the cutter blades are presented to the crank shaft in their rotary movement.

From the foregoing description it will be clear that I provide a combined lawn mower and trimmer, which needs no adjustments or attachments for either use, and at the same time can be built at a minimum cost because of the reduction in the number of parts, especially gears.

Having fully described my invention, what I claim is:

In a lawn mower, thin straight parallel side plates, and front and rear bars connecting said side plates and forming a rectangular frame, a cutter shaft journaled between the side plates, and having two sets of alternate and overlapping blades, a shaft and ground wheels journaled between the side plates at the rear, and a crank shaft having

its opposite ends geared respectively to the cutter shaft and ground wheel shaft, and having its crank arranged to clear the ends of the alternate blades of the cutter shaft, all of said operating parts being located within said rectangular frame, substantially as described.

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

WILLIAM SCOTT HAYDEN.

Witnesses:
GEORGE F. HARPSTER,
JOHN H. OLMES.