No. 891,867. PATENTED JUNE 30, 1908.

H. O. SECREST.

LAWN MOWER.

APPLICATION FILED MAY 25, 1907.

Fig. 1

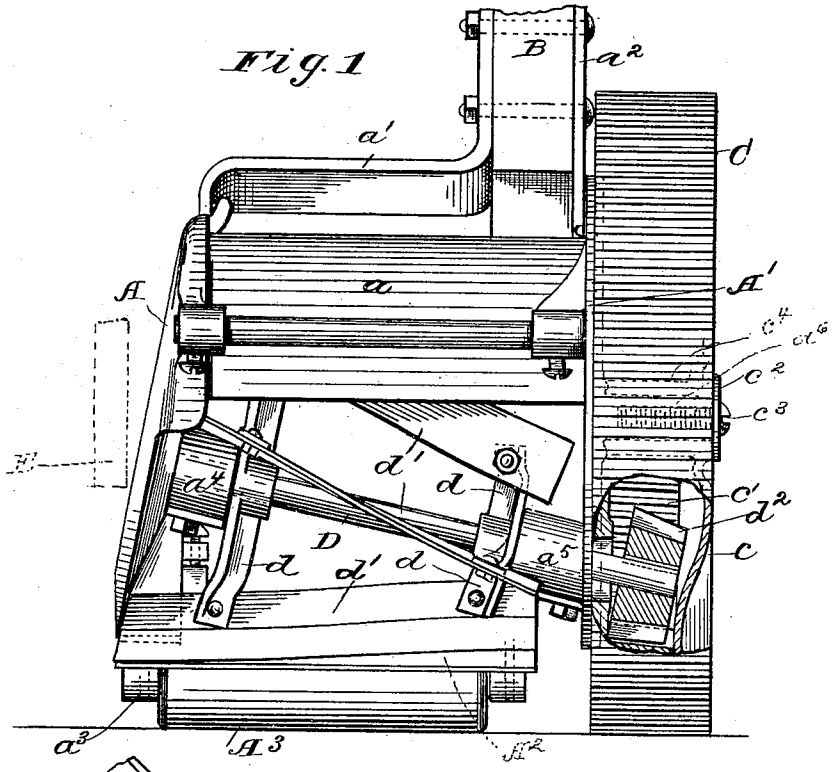
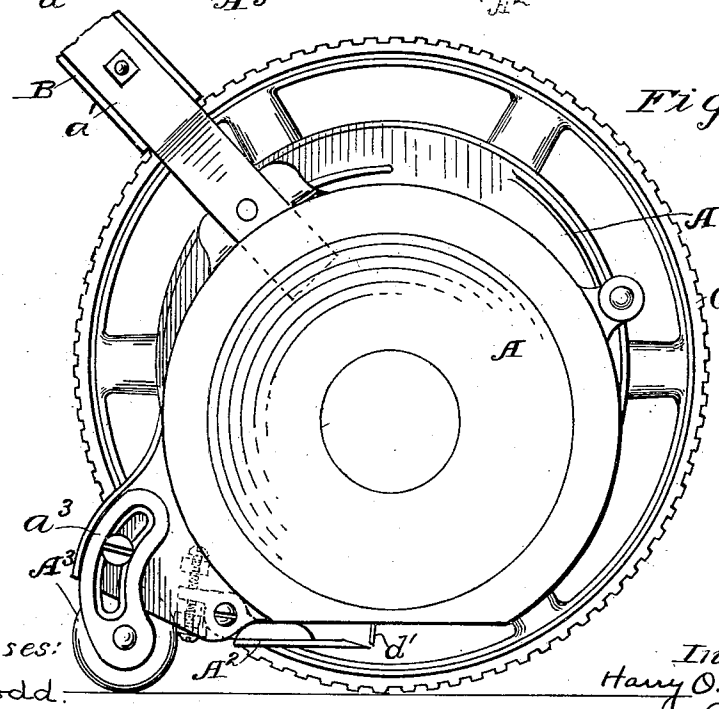


Fig. 2



Witnesses:

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LAWN-MOWER.

No. 891,867. Specification of Letters Patent. Patented June 30, 1908.

Application filed May 25, 1907. Serial No. 375,629.

To all whom it may concern:

Be it known that I, HARRY O. SECREST, citizen of the United States, resident of Cleveland, county of Cuyahoga, State of Ohio, have invented a new and useful Improvement in Lawn-Mowers, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle so as to distinguish it from other inventions.

My invention relates to devices for mowing grass, and particularly to lawn-mowers, the object being to provide a lawn-mower or trimmer that will be adapted to trim or cut the grass clean from along walls, tomb stones, fences and the like and thus obviate the necessity of trimming such grass by hand with shears or sickle.

Said invention consists of means hereinafter fully described and particularly set forth in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing: Figure 1 is a front elevation, with a portion broken away, of one approved form of lawn-mower embodying my invention; Fig. 2 is a side elevation of such lawn-mower as viewed from the left in Fig. 1.

The frame of my machine in the form shown, comprises simply two end plates A A′ joined together by means of an intermediate portion a against which they are secured in any suitable manner. To the respective side plates A A′ are attached the inner ends of bars a', a^2 between the outer ends of which is secured the handle B wherewith the machine is designed to be pushed or propelled. The form of bars, or handle-braces, a' a^2 is such as to locate handle B to one side of the center of the machine as shown, and to the corresponding plate A of the machine frame is rotatably secured the ground or driving wheel C. The latter in its outer aspect is of the usual form, being provided with a ribbed or otherwise corrugated periphery or tread to give it a more secure foot-hold upon the surface over which the machine is being propelled. Such driving wheel C is provided with an internal bevel gear c' that in the assembled condition of the machine is inclosed between side plate A′ of the machine and the plate c constituting the central portion of the wheel. It is by means of this plate c that the wheel itself is secured to the machine frame, the plate being formed on its inner face with a hollow boss fitted to a stud a^6 projecting outwardly from end plate A′ of such frame. To secure the wheel on the boss, a washer c^2 and screw c^3 or equivalent means are employed. In the lower part of the frame, transversely across the same, is secured the ledger-blade A^2, such blade being adjustably mounted in the usual manner. To the rear of ledger blade A is similarly mounted transversely of the frame the roller A^3, the ends of such roller being secured in brackets a^3 that are vertically adjustable whereby the height at which the grass shall be cut may be regulated.

The rotary cutter that I propose to employ in conjunction with the ledger-blade and other mechanism, above described, constitutes the prime feature of my invention. The shaft D of such cutter is inclined with respect to said cutter bar as clearly appears in Fig. 1, its lower end being disposed towards the driving wheel and extending to within the plane defined by the inner face of the latter. Such shaft is suitably journaled in bearings a^4 a^5 formed in end plates A A′ respectively, and bears on its inner lower end a bevel portion d^2 having ratchet engagement (not shown) of the usual form with the shaft and meshing with the internal bevel gear c' with which, as has been already stated, driving wheel C is provided. Mounted upon cutter shaft D by means of radially projecting arms d in the usual fashion is a plurality of cutter blades d', which latter are in turn inclined with respect to such shaft so as to be coöperative with the ledger blade A^2, aforesaid. In other words the angles of inclination of the shaft and of these cutter blades are so related that the latter lie substantially horizontal when downwardly disposed.

From the unique form given my rotary cutter, such form being evidently substantially that of a truncated cone, and by the disposition of such cutter with its base of greater diameter extending outwardly, it will be obvious that the particular cutter blade in operative position, or in other words, coöperative with the ledger-blade, lies beyond the end of the axis of the cutter shaft. Accordingly I am enabled, by omitting the lower portion of end member A of the ma-

chine frame, to allow the outer end of the ledger-blade and the successive cutter blades coöperative therewith to project wholly outwardly or beyond the frame of the machine, as also beyond the journal wherein is supported the end of the cutter shaft.

The operation of the machine differs in no wise from that of the ordinary lawn-mower, and hence need not be particularly described nor need the advantage arising from the peculiar construction here adopted be dilated upon, for such advantage will be perfectly clear to all accustomed to the use of machines of this character in the connections first referred to above.

As indicated in Fig. 1, where E designates the pickets of a fence or the like, my machine is capable of being moved along such fence much more closely than would be possible were it of the ordinary construction, and the farthest projecting element of such machine is the outer end of the ledger bar and that portion of the rotary cutter that happens to be disposed in conjunction therewith. Accordingly I am able to cut up to the extreme lateral limit or edge of the machine, and I am able, not only to approach up to the object along which it is desired to cut the grass, but even under as in the case assumed.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

1. In a lawn-mower, the combination with a suitable frame including a substantially horizontally disposed ledger blade projecting beyond said frame at one end, of a rotary cutter mounted in said frame and provided with blades adapted to coöperate with, said ledger blade, such cutter blades extending furthest beyond a fixed vertical line when thus coöperative with said ledger blade.

2. In a lawn-mower, the combination with a suitable frame including a substantially horizontally disposed ledger blade projecting beyond said frame at one end, of a rotary cutter mounted in said frame, and provided with blades adapted to coöperate with, said ledger blade, such cutter blades extending different distances beyond a fixed vertical line at different positions about the axis of the cutter, extending the greatest distance when coöperative with said ledger blade, so as to cut to the projecting extremity of the latter, and extending a lesser distance at remaining positions, so as to lie within said frame.

3. In a lawn-mower, the combination with a suitable frame including a substantially horizontally disposed ledger blade projecting beyond said frame at one end, of a rotary spindle mounted at its respective ends in said frame and cutter blades borne by said spindle and adapted to coöperate with said ledger blade, such cutter blades extending when thus coöperative beyond the end of said spindle corresponding with the projecting end of said ledger blade, so as to cut to the projecting extremity of the latter, and lying within such spindle at another position about the axis of the latter.

4. In a lawn-mower, the combination with a substantially horizontally disposed ledger blade, of a rotary cutter having blades adapted to coöperate with said ledger blade, said cutter having its axis inclined with respect to said ledger blade.

5. In a lawn-mower, the combination with a substantially horizontally disposed ledger blade, of a rotary cutter of general conical form, the axis of said rotary cutter being inclined whereby its blades are adapted to cooperate with said ledger blade.

6. In a lawn-mower, the combination with a substantially horizontally disposed ledger-blade, of a rotary cutter of truncated conical form having blades disposed longitudinally of, and adapted to coöperate with, said ledger-blade.

7. In a lawn-mower; the combination with a frame provided with a substantially horizontally disposed ledger-blade; a single driving wheel mounted in said frame laterally of said ledger-blade; and a rotary cutter of truncated conical form mounted in said frame so as to be coöperative with said ledger-blade, the base of said cutter of smaller diameter being disposed adjacent to said driving wheel.

8. In a lawn-mower, the combination with a frame provided with a ledger-blade; a single driving wheel mounted in said frame laterally of said ledger-blade; an inclined rotary cutter shaft having its lower end geared to said driving wheel; and cutter blades borne by said shaft and inclined with respect thereto so as to be coöperative with said ledger-bar.

9. In a lawn-mower, the combination with a frame provided with a substantially horizontally disposed ledger-blade; a driving wheel mounted in said frame laterally of said ledger-blade, said wheel being provided with an internal bevel gear; an inclined rotary cutter shaft mounted in said frame and having its lower end contiguous to the gear borne by said wheel; a bevel pinion mounted upon such lower shaft end and meshing with said internal gear; and a plurality of cutter blades borne by said shaft and inclined with respect thereto so as to be coöperative with said ledger-blade.

10. In a lawn-mower, the combination of a frame provided with a substantially horizontally disposed ledger blade; a driving wheel mounted in said frame laterally of said

ledger blade, said wheel being provided with an internal bevel gear; an inclined rotary cutter shaft mounted in said frame and having its lower end contiguous to the gear borne by said wheel; a bevel pinion mounted upon such lower shaft end and meshing with said internal gear, and a plurality of cutter blades borne by said shaft and inclined with respect thereto so as to be coöperative with said ledger blade, said frame being formed so as to allow the outer end of said ledger-bar to project therebeyond.

Signed by me this 15th day of May, 1907.

HARRY O. SECREST.

Attested by:
MARY ISRAEL,
JNO. F. OBERLIN.