

(No Model.)

W. A. LOUD.
LAWN MOWER.

No. 483,157.

Patented Sept. 27, 1892.

Fig-1-

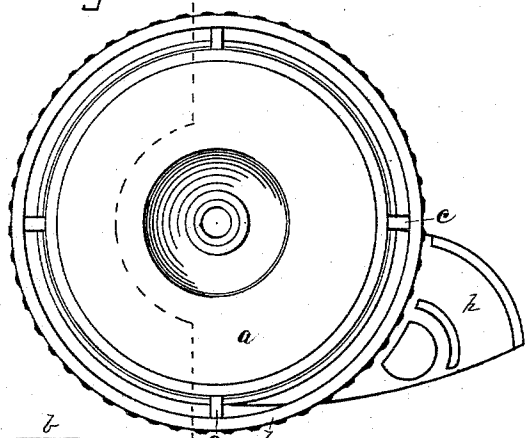


Fig-2-

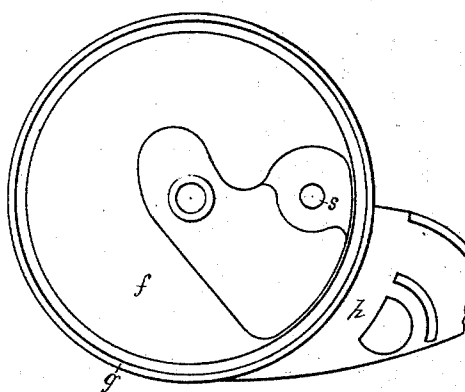


Fig-3-

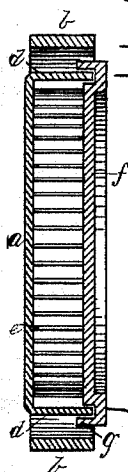


Fig-4-

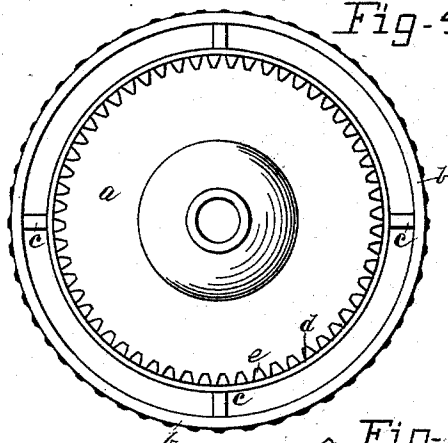


Fig-5-

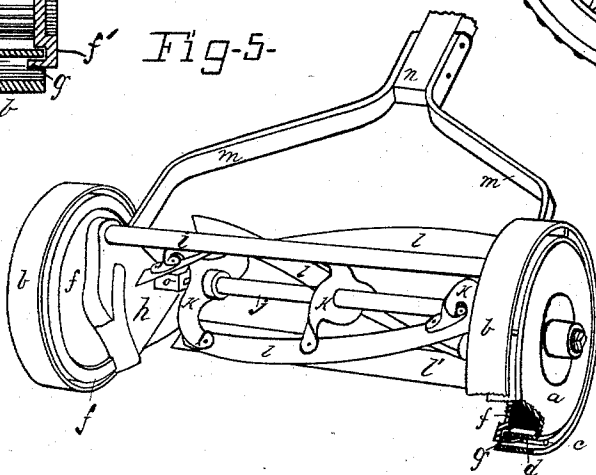


Fig-6-

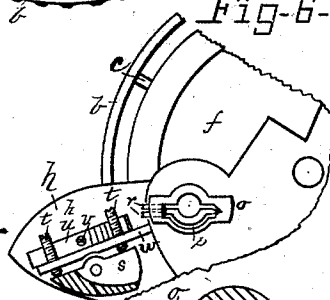
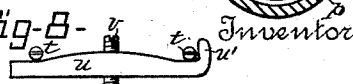


Fig-7-



Fig-8-



Witnesses
Robert F. Riddell.
J. H. Bartlett.

Inventor
Waldo A. Loud
By Allen Webster
Attorney

UNITED STATES PATENT OFFICE.

WALDO A. LOUD, OF SPRINGFIELD, MASSACHUSETTS.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 483,157, dated September 27, 1892.

Application filed November 28, 1890. Serial No. 372,899. (No model.)

To all whom it may concern:

Be it known that I, WALDO A. LOUD, of Springfield, Hampden county, Massachusetts, have invented new and useful Improvements in Lawn-Mowers, of which the following is a specification, reference being had to the accompanying drawings and letters of reference marked thereon, in which drawings, like letters of reference indicating like parts—

Figure 1 is a view of the outer face side of one of the traction-wheels, having one of the end plates of the frame in position. Fig. 2 is a view of the end plate as it would be seen in Fig. 1 were the traction-wheel removed. Fig. 3 is a sectional view taken on line *xx* of Fig. 1, showing the parts at the left of said line. Fig. 4 is a view of the traction-wheel as seen from its inner face side. Fig. 5 is a perspective view, on a reduced scale, of a lawn-mower containing my improvements and having a portion of one of the traction-wheels and a portion of one of the end plates broken away. Fig. 6 is a view of a portion of one of the end plates in position on the traction-wheel as seen from the opposite end of the machine, showing my improved journal box or bearing, and showing, also, my device for locking the fixed blade-adjusting screws in position. Fig. 7 is an end view of the journal-bearing, on an enlarged scale; and Fig. 8 is an edge view, on an enlarged scale, of the screw-locking device.

Referring now to the drawings in detail, *a* indicates the central or body portion of the traction-wheel; *b*, the outer or tread rim mounted thereon; *c*, the spokes or pieces interposed between the body *a* and tread-rim *b*. *d* indicates the annular rim or wall of the body; *e*, gear-teeth internally mounted on the rim *d*; *f*, one of the end plates of the machine-frame; *g*, an annular flange thereon; *h*, a projecting arm to which part of the operative mechanism is attached; *i*, a frame-rod extending from plate to plate; *j*, a shaft on which the revolving cutters are mounted; *k*, blade-supporting arms; *l*, revolving cutter-blade; *m*, fixed knife; *n*, handle; *o*, journal-box; *p*, cap or adjustable tongue in journal-box; *r*, adjusting-screws in journal-box; *s*, fixed blade-holder; *t*, adjusting-screws for fixed blade; *u*, lock for adjusting-screws *t*; *v*, holding-screw for lock, and *w* rib in which the adjusting-screws *t* are mounted.

The object of my invention is to provide an arrangement by which the gearing within the shell or body of the traction-wheel shall be covered and protected from dirt, and thus prevent clogging.

My object is, further, to protect such gearing without increasing the number of parts or rendering the machine more complicated.

My object is, further, to provide a simple, inexpensive bearing for the rotating cutter-shaft wherein the wear can be taken up in a simple and convenient manner, and also to provide a means of effectually locking the fixed blade-adjusting screws in the desired position.

I accomplish these objects in the manner herein set out; and my invention consists in the construction and arrangement herein shown, whereby the objects of my invention are attained.

In the construction of my device I cast the body portion *a*, traction-rim *b*, and spokes *c* in one piece, the edges of the spokes being far enough away from the inner face of the wheel to allow the flange *g* on the plate *f* to fit over the edge of the rim *d*, which forms part of the body portion of the wheel. Within the cup-shaped portion of the body are cast the internal gear-teeth *e*, these being preferably made integral with the body of the wheel. The end plates *f* of the frame consists of a circular plate, as shown in Fig. 2, preferably having a projecting part *h* cast and made integral therewith. The end plate *f* is of a size to cover the opening in the inner face side of the body of the traction-wheel, and I prefer to cast an annular flange *g* thereon to project over the outer edge of the rim *d*, and I prefer, also, that an annular recess be made in the plate just within the annular flange *g* to receive the edge of the rim *d*. These plates are provided with the usual openings for axial support and cutter-shaft and are provided with recesses to receive the gear which meshes with the teeth *e*. The wheel and plate may be fastened together at the center of revolution in any convenient manner. The plates forming the ends of the frame are also provided with an annular flange *f'*, which projects from the plate toward the center of the machine, and I form this flange upon its opposite side with an an-

nular recess, within which recess the wall of the body portion of the wheel fits. This enables me to set the body of the plate into the body of the wheel and enables me to employ
 5 a longer frame, and consequently a longer blade, while the complete machine remains of the same length as heretofore, and the annular recess having its walls setting over the wall of the body of the wheel effectually ex-
 10 cludes dust and dirt from the internal mechanism, and this form of plate, also having the annular flange recessed, as stated, serves to strengthen the plate, thus enabling me to make it of less thickness and less weight.

15 I am aware that a lawn-mower has heretofore been made having an independently-operating internally-toothed arrangement covered by a plate. With such arrangement, however, the requisite rigidity cannot be had
 20 as conveniently, and the device is rendered more complicated.

As the revolving cutter-shaft is subjected at its bearings to considerable wear, it is desirable to provide some means to readily com-
 25 pensate for the same, and for that purpose I prefer to cast the shell *o* for the bearing with the plate *f*, a recess for one-half the shaft being formed on one side and a cup or tongue *p* being provided with a like opening to receive
 30 and bear upon the opposite side of the shaft, a slight opening being of course left between the two parts of the bearing to allow for the necessary take-up. The tongue *p* is fulcrumed at one end in the shell and its oppo-
 35 site end is moved, as required, for the necessary adjustment.

I prefer to provide the shell *p* with a V-shaped slot or recess and to shape the inner end of the tongue to enter the same. The angle of
 40 the entering end of the tongue should be more acute than the opening to let the bearing come at the vertex of the angle and give sufficient room for the requisite movement of the tongue. The tongue *p*, being loosely ar-
 45 ranged within its shell *o*, does not require the nice construction and adjustment as would be required were the same mounted upon a fixed pivot or fulcrumed point, so that by the loose arrangement I am enabled to construct
 50 this portion of the device at less expense, and the time required for adjustment and assembling is very much lessened, as the loosely-mounted cap will readily adjust itself to its bearing, after which the locking-screws are
 55 tightened.

To adjust the tongue, I provide two adjusting-screws *r*, which pass through the shell, as shown at Fig. 7, and bear against the free end
 60 ends, will operate to move the free end of the tongue up or down, dependent upon the position of the adjusting-screws. The point of contact of the screw ends with the cap is preferably inclined to give greater area of
 65 contact of the screw end and the tongue.

The fixed or stationary blade is mounted

upon a frame *s*, which frame in turn is pivotally mounted upon the projection *h* of the plate *f*. On the part *h* and above the knife-
 70 holding frame is a rib *w*, through which adjusting-screws *t* pass and which bear against the frame *s* at each side of the pivotal point, thus holding the same firmly in position. It is found, however, in practice that the constant jar resulting from the use of the machine will cause these screws to slacken a trifle,
 75 and thus the requisite rigidity will not be maintained. To overcome this objectionable feature, I provide a screw-lock *u*, which is preferably shaped as shown in Fig. 8, the same con-
 80 sisting, essentially, of a block of metal which will fit loosely between the adjusting-screws *t* and the face of the part *h*. A set-screw *v* is provided, which passes through the block and bears against the part *h*, thus forcing the block
 85 against the sides of the adjusting-screws *t* and securely locking them and preventing all danger of their loosening or moving. To facilitate the placing of this block in position,
 90 I form one end with a bend or projection *u'*, which readily bears against one of the adjusting-screws and brings both bearing-points in the desired position.

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

1. In a lawn-mower, traction-wheels composed of central circular plates formed with inwardly-directed annular rim-flanges having internal gear-teeth, spokes projected radially
 100 from the periphery of said flanges, and a tread-rim integral with the spokes, in combination with a frame provided with circular end plates having annular rim-flanges and oppositely-turned edge flange, forming an
 105 annular groove between the flanges to engage and sit over the edges of the annular rim of the circular plates of the wheels, whereby the disk or body of the end plates sit within the openings of the wheels, as and for the purpose
 110 specified.

2. The combination, in a lawn-mower, of two traction-wheels having the tread-surface arranged about and made integral with the spokes *c* and having the central portion of
 115 the wheel closed and formed with a rim having integral gear-teeth, and a frame the ends of which consist of plates *f*, having outwardly-extended annular flanges *f'*, with an inwardly-extended rim-flange, and a groove between
 120 the flanges in the interior to sit over the rim-wall of the body portion of the wheel, whereby the distance between the inner faces of the wheels is increased, as and for the purpose
 125 specified.

3. The combination of an outer shell or box *o*, a cup *p*, arranged therein and fulcrumed at one end and having oppositely-inclined faces at its opposite end, and set-screws having
 130 taper ends to bear one against each of said inclined faces, and thus move the free end of the cap, substantially as shown.

4. The box-body *o*, having a V-shaped recess at one end and having adjusting-screws *r* at its opposite end, in combination with a cap *p*, arranged in said box, one end being V-shaped to rest within said recess and the opposite end having oppositely-inclined faces at the point of the engagement of the set-screws therewith, substantially as shown.

5. The combination, with one or more adjusting-screws located adjacent to and with the axis of said adjusting-screws approximately parallel with a plane surface, of a lock *u*, consisting of a bar located between said surface and said adjusting-screws and bearing against the side of the latter, and one or more set-screws passing through said bar and bearing

with their ends against said surface, substantially as and for the purposes shown.

6. The combination, in a lawn-mower, of a lock *u*, having a set-screw, with adjusting-screws *t t*, the lock being arranged between the sides of the screws and face of part *h* and bearing against the screws *t*, substantially as shown.

7. The lock *u*, having turned-up end and provided with a set-screw, in combination with adjusting-screws *t* and part *h*, substantially as shown.

WALDO A. LOUD.

Witnesses:

ALLEN WEBSTER,
GEORGE F. LIVINGSTONE.