(No Model.) 2 Sheets—Sheet 1.

M. C. HENLEY.

LAWN MOWER.

No. 518,670. Patented Apr. 24, 1894.

Fig. 1.

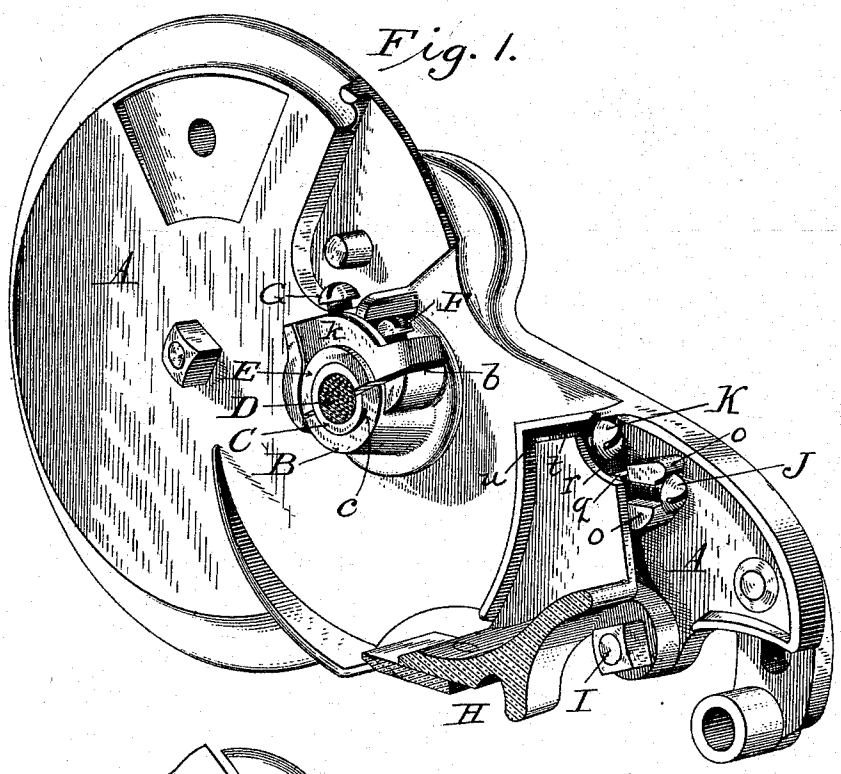
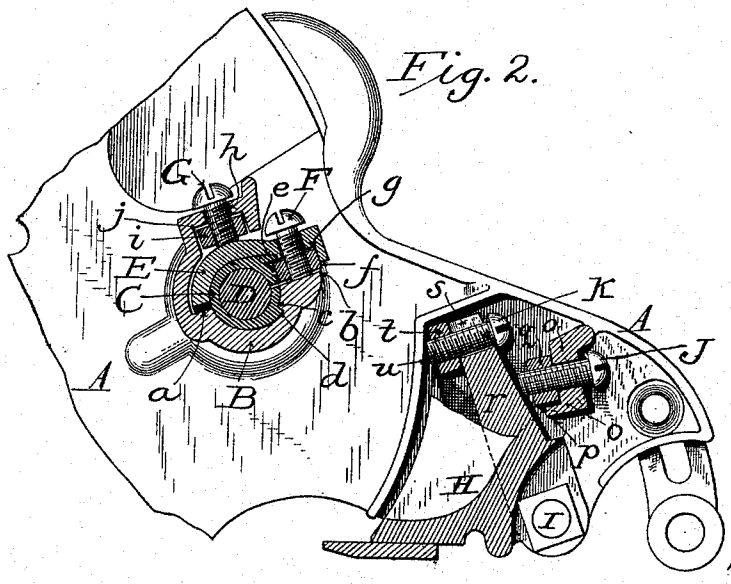


Fig. 2.



Witnesses
Chas. Burdine
Horace A. Dodge.

M. C. HENLEY
Inventor
by Dodger & Sons
Attorneys.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

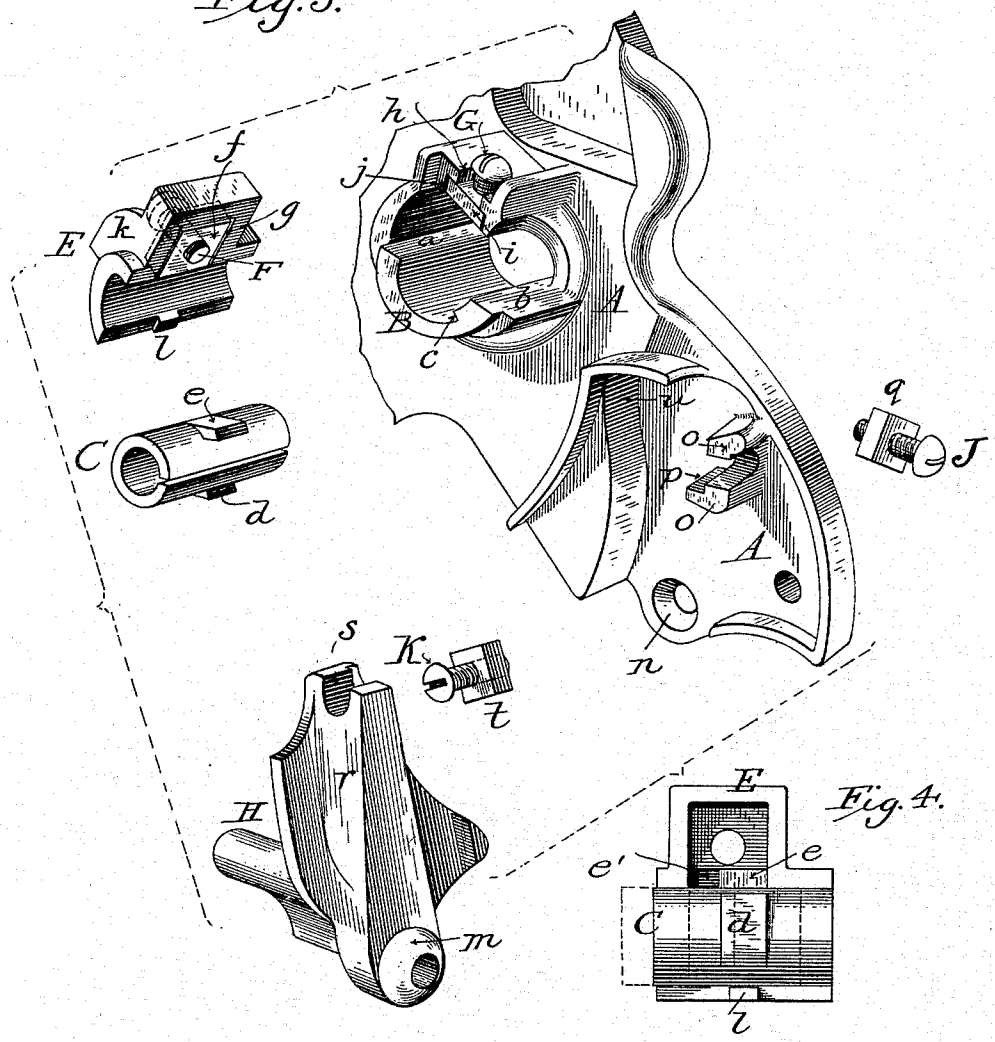

Fig. 4.

Witnesses
Chas. Burdett
Horace A. Dodge.

MICAJAH C. HENLEY
Inventor
by Dodger & Sons
Attorneys.

THE NATIONAL LITHOGRAPHING COMPANY.
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MICAJAH C. HENLEY, OF RICHMOND, INDIANA.

LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 518,670, dated April 24, 1894.

Application filed December 15, 1893. Serial No. 493,749. (No model.)

To all whom it may concern:

Be it known that I, MICAJAH C. HENLEY, a citizen of the United States, residing at Richmond, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Lawn-Mowers, of which the following is a specification.

My invention relates to lawn mowers, and consists in various features hereinafter set forth and claimed.

In the drawings,—Figure 1 is a perspective view of one of the side plates of a lawn mower, constructed in accordance with my invention, the cutter-shaft and the fixed knife being shown in transverse section; Fig. 2, an inside face view of the same with the box for the cutter-shaft, and with the fixed knife and knife bar in section; Fig. 3, a perspective view of the parts separated; and Fig. 4, an under side view of the cap of the cutter-shaft bearing.

A indicates one of the side plates or frames of a lawn mower, which has on its inner face a horizontal box B, which is adapted to support the brass box or bushing C which encircles the cutter-shaft D. This box B is made concave and is provided, at front and back, with bearing faces *a* and *b;* and is also provided with a depression *c* in its concave face.

The brass box or bushing C which fits the concave seat in the box B, is slotted lengthwise in order that it may be adjusted circumferentially to compensate for wear as hereinafter described, and is provided with two lugs *d* and *e*, the former of which engages the depression *c* formed in the upper or concave face of the box, as shown in Fig. 2. The upper lug *e* engages or is seated in an elongated socket *e'* formed in the removable cap E which is applied to the upper side of the bushing when the latter is in its seat. This cap E bears upon or is supported at its forward end upon the face *a* of the box B, see Fig. 2, while its rear end carries an adjusting screw F which bears upon the face *b*. Screw F engages a nut *f*, which, as shown in Figs. 2 and 4, is seated in a socket *g* formed in the under side of the rear part or portion of the cap E,—the said nut being held against turning by the socket, while the screw, which passes freely through the cap, may be turned so as to project more or less below the face of the nut. It will also be noticed that the lug *e* fits over the upper face of the nut *f*, see Fig. 4.

In the upper or overhanging portion of the box B there is a hole or slot *h* through which projects a second adjusting screw G, which engages a nut *i* seated in a suitable socket *j* formed in the under side of the overhanging portion of box B, as clearly shown in Figs. 2 and 4; the said adjusting screw being adapted and arranged to bear upon the upper face or top of the cap E, and is capable of being turned while the nut remains at rest. Upon the upper face of the cap E is formed a lug *k*, which, by bearing against the inner end of the overhanging box B, limits the approach of the cap toward the plate A.

Now, in order to adjust the bearing (comprising the bushing C and cap E) bodily relatively to the side plate, in the direction of the axis of the shaft, it is only necessary to turn the screw G backward so as to release or relieve the pressure exerted upon the cap by the screw. After the machine is assembled, the screw G is tightened up so as to press the cap upon the bushing and the bushing down to its seat in the box B, whereupon the parts are firmly clamped in position upon the plate or casting A.

After a machine has been used some time, the inner ends of the bushings wear, and thus permit a limited longitudinal play of the cutter-shaft, and to compensate for and take up this wear, it is only necessary to move the bushing inward until its inner end bears against the hub of the cutter. The bushing is pevented from being moved inward or outward too far by means of the socket *e'*, Fig. 3, which, while of a width greater than the lug *e*, is of not such width as to permit an excess of movement. The bushing cannot be moved lengthwise, however, until both screws F and G are turned back or released to relieve the bushing from the pressure transmitted through the cap.

In order to take up or compensate for the wear on the journal or end of the cutter shaft, and on the inner face of the bushing, it is only necessary to open or close the bushing, and this I accomplish by means of the screw F and nut *f*. By turning this screw F to the right,—screwing it through its nut *f*,—the

end of screw will bear upon the surface *b*, and as the screw cannot move lengthwise, and the nut cannot turn, the continued turning of the screw will raise the cap E and nut *f*; and as the lug *e* of the bushing is embraced between the cap and nut, the bushing will be sprung or opened slightly. The engagement of the lug *d* with the depression *c* prevents the bushing from turning during this operation.

When the machine is assembled at the factory, the inner end of the bushing is flush with the inner end of the box B, the lug *e* and socket *e'* being so arranged as to preclude the bushing from being moved outward beyond the inner end of the said box. On the cap E, at the front side, is a lug *l* to bear upon the face *a* of the box or arm B, so that when the screws F, G are tightened up, the cap may be securely adjusted without being mashed or crushed out of shape as would occur were the cap to bear or rest squarely upon the box or arm B.

The bushing may be used either on the right or on the left side plates A, thus avoiding the necessity for different forms of bushings.

When a bushing is worn, it may be thrown away and replaced by a new one with but little work.

The knife-bar H is provided at its ends (only one end being shown) with a conical or rounded boss *m* which fits a corresponding socket *n* in the inner face of the plate A, and through these parts is passed a bolt I, by means of which the knife-bar is pivotally connected to the plates or frames A. Projecting from the inner face of plate A, above the hole or socket *n*, is a pair of lugs *o o*, the lower one of which is flanged as at *p*, Figs. 2 and 4, to hold against turning the nut *q* which receives screw J, the screw, as shown in Figs. 1 and 2, passing freely between and held in position by said lugs. This screw J is designed to project through the nut *q*, and to bear upon a rib or flange *r* formed on the head or outer end of the knife-bar. The upper end of the rib or flange *r* is slotted as at *s*, Figs. 2 and 4, to receive a screw K carrying a nut *t*, which nut, by bearing against the face of the plate A, is prevented from turning with the screw. The screw K is adapted to bear against a flange or abutment *u*, Figs. 1, 2 and 3, formed in the side plate or frame A. By turning the screw K through the fixed nut *t*, the knife-bar will be rocked or tipped upon its pivot bolt I, and after the desired adjustment of the bar has been effected, it is held securely in its proper position by turning the screw J firmly against the flange *r*.

From the foregoing description it will be noted that a most complete adjustment of the knife-bar, and of the cutter-shaft bearing may be readily effected by means of a screw-driver, as all the adjusting screws are within easy reach. It will also be observed that no part of the side frames or plates requires tapping for the reception of the adjusting screws, all of which engage wrought iron or steel nuts which can be bought at small cost. By thus avoiding the formation of screw threaded holes in the frames or castings A, much time and labor are saved, and the cost of manufacture materially reduced.

Heretofore when the threads in the plates or frames became stripped, it was necessary to throw the plates away; but under the present construction, if either the screws or the nuts become injured, they can be replaced at slight cost without reference to the side frames.

Having thus described my invention, what I claim is—

1. In a lawn mower, the combination with the side frame or plate having the box B with the depression *c* therein; of a cap E; a slotted bushing C provided with lugs *d* and *e*; and the screw F carried by the cap and having a nut *f*.

2. In a lawn mower, the combination with the side frame or plate having the box B; of the cap E provided with socket *e'*; and bushing C provided with a lug *e* of less width than the socket whereby longitudinal adjustment is permitted.

3. In a lawn mower, the combination with the side plate or frame having box B with a depression *c* therein; of a slotted bushing C seated in said box and provided with lugs *d* and *e*; a cap E applied to the bushing; a screw F and nut *f* for expanding the bushing; and a screw G and nut *i* for holding the cap and bushing in place.

In witness whereof I hereunto set my hand in the presence of two witnesses.

MICAJAH C. HENLEY.

Witnesses:
W. E. BELL,
F. H. WILLIAMS.