

No. 617,584.

Patented Jan. 10, 1899.

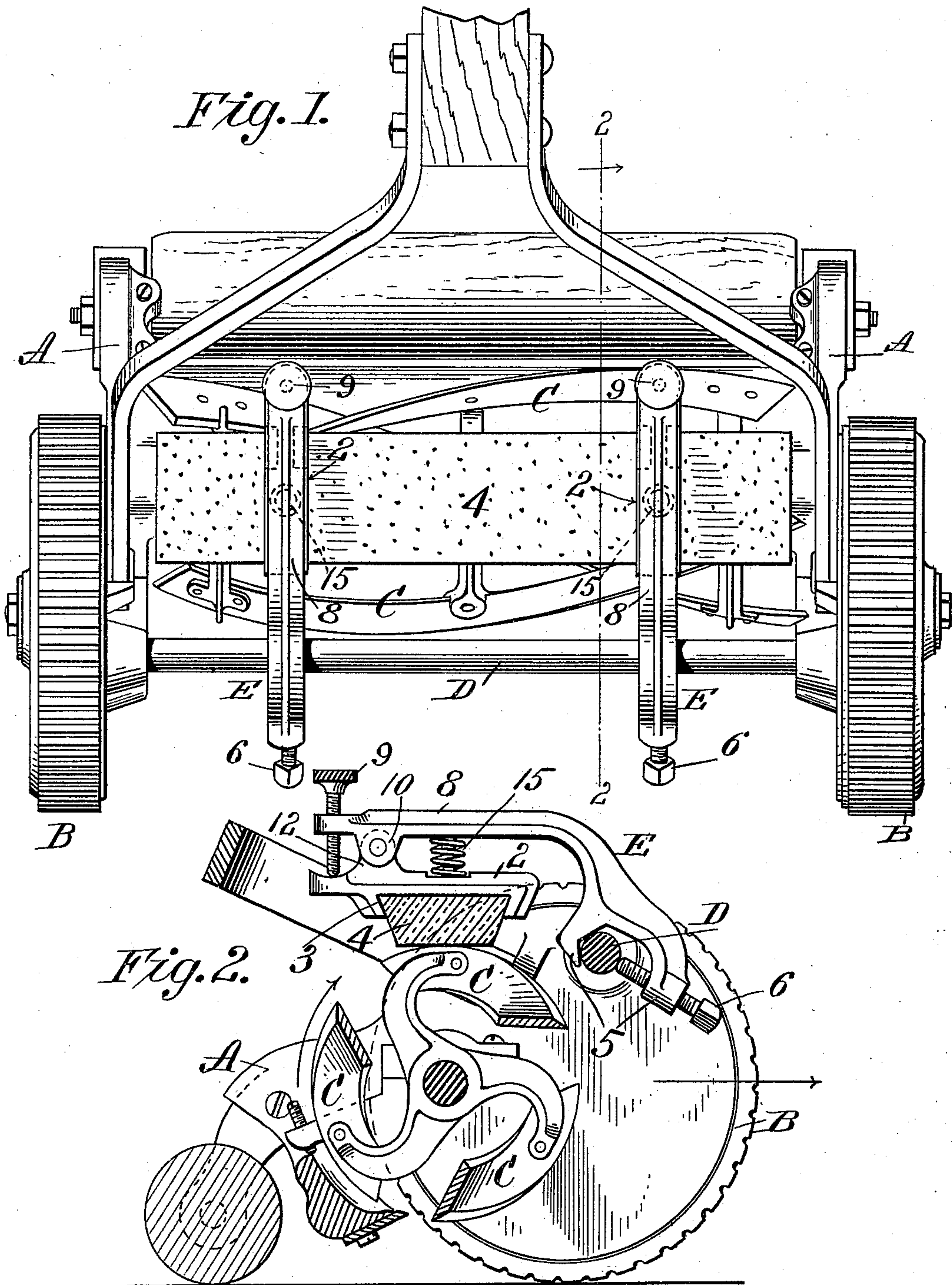
W. P. LESHURE.

LAWN MOWER.

(Application filed Mar. 29, 1898.)

(No Model.)

2 Sheets—Sheet I.



Witnesses:  
J. D. Goff  
H. O. Clemens

Inventor  
Willard P. Leshure,  
by Chapin & Co  
Attorneys.

No. 617,584.

Patented Jan. 10, 1899.

W. P. LESHURE.

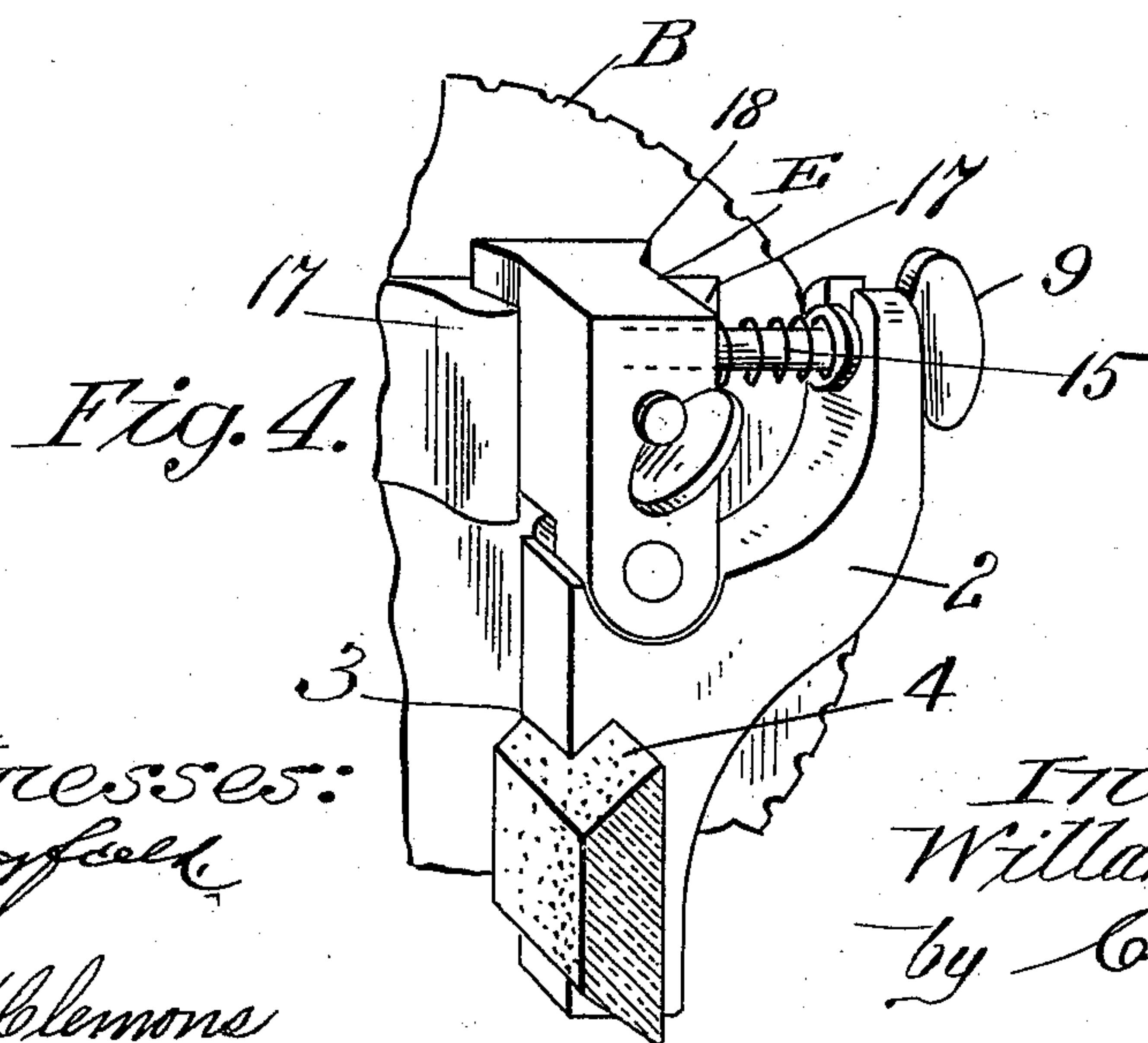
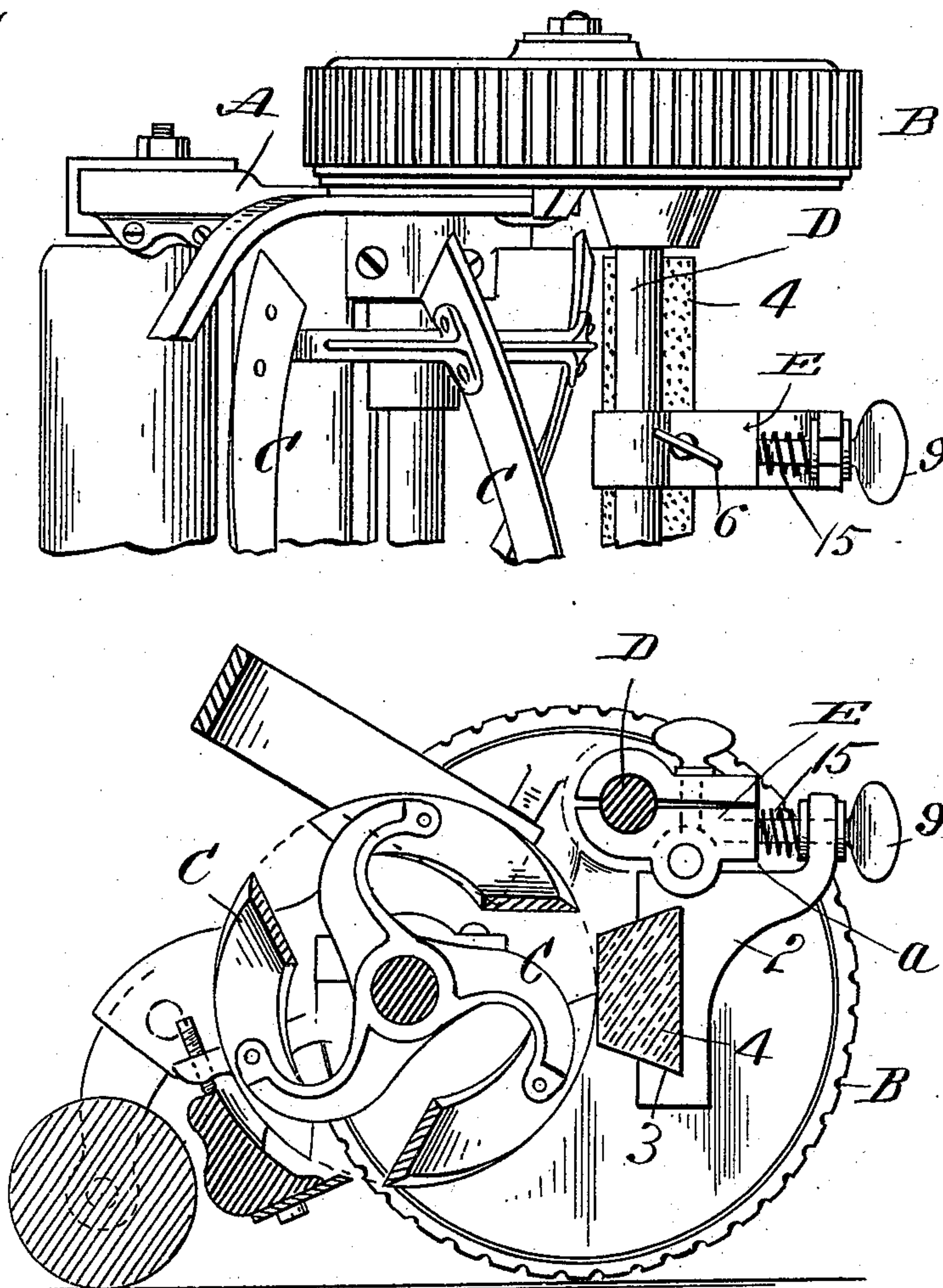
LAWN MOWER.

(Application filed Mar. 29, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 3.



Witnesses:  
J. D. Goff  
H. J. Clemons

Inventor  
Willard P. Leshure,  
by *Chapman & Co.*  
Attorneys.



# UNITED STATES PATENT OFFICE.

WILLARD P. LESHURE, OF SPRINGFIELD, MASSACHUSETTS.

## LAWN-MOWER.

SPECIFICATION forming part of Letters Patent No. 617,584, dated January 10, 1899.

Application filed March 29, 1898. Serial No. 675,555. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD P. LESHURE, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Lawn-Mowers, of which the following is a specification.

This invention relates to devices for sharpening lawn-mowers and analogous machines of the type in which a rotary knife is used; and the object of the invention is to produce an improved sharpening device for the rotary knife of such machines which can be applied thereto and be used to sharpen the blades of the rotary knife while the machine is in operation and which can readily be adjusted out of contact with the knife as soon as the sharpening operation is completed.

The invention consists in the construction shown and described in the following drawings and specification and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 represents a top plan view of a lawn-mower having my improved sharpening device applied thereto. Fig. 2 is a sectional elevation of a lawn-mower, taken on line 2 2, Fig. 1, and looking to the right of said line. Fig. 3 is a plan and end elevation of a lawn-mower having the knife-sharpening device applied in front thereof instead of on the top of the knife, and said figure shows a slightly different arrangement of the parts. Fig. 4 shows a modified construction of the screw-operated fastening device for supporting the sharpening device on lawn-mowers of a different construction to that shown in the other figures.

Referring to the drawings, A represents the frame of the lawn-mower, having the driving-wheels B and a rotary knife C supported and driven in the usual manner.

D represents the transverse brace-rod of the machine, to which may be secured the sharpening device which is the subject of this invention. Said sharpening device consists of two supports 2 2, having dovetailed transverse grooves 3 therein for the reception of a sharpening-stone 4, formed with beveled edges to correspond with the said dovetailed groove 3

in the said supports 2. Said stone fits snugly therein and is rigidly supported thereby in a position parallel with the axis of the rotary knife C. A screw-operated fastening device is provided, on which said supports 2 2 are pivotally supported, and said fastening device of necessity varies in form somewhat, according to the design of the lawn-mower or according to the location of the sharpening-stone 4 relative to the periphery of the rotary knife C. Figs. 1 and 2 show the stone applied to the top of the knife C, and Figs. 3 and 4 show the stone applied to the knife in front of it and at right angles to the position shown in Figs. 1 and 2. In either case the stone must be spring-held against said knife to insure the most effective operation thereof and to avoid injury to the knife, and these two positions being reversed, the one relative to the other, necessitates the application of the spring in one case on one side of the pivotal support of said supports 2 2 and in the other case on the opposite side of said pivotal support. Hence in the construction shown in Figs. 1 and 2 (which is the preferred construction) the screw-operated fastening device consists of a casting E, having the rigid jaws 5, and through one of said jaws a screw 6 passes whose inner end engages the brace-rod D of the lawn-mower, the jaws 5 opposite the end of said screw being slightly V-shaped, as shown at 7, to insure a firm grip on said brace-rod D of the screw 6. An arm or extension 8 of said casting E extends over said knife C horizontally at right angles to the axis thereof, and in the extreme end thereof is located the vertical adjusting-screw 9. Near said screw and between it and the screw 6 is a boss 10 on the under side of said arm 8, and an upstanding boss 12 on said support 2 is located near one end thereof. A pin 13, passing through said bosses 10 and 12, pivotally unites said support to said fastening device. The end 14 of said support is extended outward under said screw 9, whose end bears thereagainst, and a spring 15 on the opposite side of said pivotal support and compressed between the support 2 and the arm 8 of the fastening device serves to hold said end 14 of the support in contact with the end of the screw 9, whereby the manipulation of the latter moves said support



on its pivot-pin 13, as desired, to effect the contact of the stone with the knife C to any degree within the range of the expansive power of the spring 15.

5 It is obvious that by the use of a stone of sufficient weight, together with the weight of the supports 2 2, in the construction shown in Fig. 1 the springs 15 might be dispensed  
10 with without destroying the efficiency of the sharpening device, as the weight of said stone and supports might be made sufficient to produce the desired abrading effect be-  
15 tween the stone and the rotary knife. As much or as little of the weight of the stone could be allowed to rest upon the stone as  
20 might be desirable by the manipulation of the adjusting-screws 9. Thus the weight of the stone and its supports might be made to per-  
form the functions of the said springs 15, and  
25 while the construction shown in said Fig. 1 is the preferred one the above-described con-  
struction would still be within the scope of this invention.

In Figs. 3 and 4, wherein the sharpening-  
25 stone 4 is shown applied to the front side of the rotary knife C, the parts constituting the sharpening device have the same functions as those shown in Figs. 1 and 2, and the dif-  
ference in the two constructions lies only in  
30 certain apparent changes in the shape and location of the parts necessitated by the re-  
versed position of the stone 4 relative to the knife and in using a slightly different con-  
struction of a fastening device.

35 There is no particular advantage in the fast-  
ening device shown in Figs. 1 and 2 over that shown in Fig. 3, and vice versa; but that  
shown in Figs. 1 and 2 is preferred because  
40 it is better adapted to be applied to brace-  
rods of varying diameters than is the device shown in Fig. 3. In Fig. 3 the arm 8 of Figs.  
1 and 2 is shortened up, the location of the  
45 adjusting-screw 9 is different, and the spring 15 is placed on the adjusting-screw instead  
of directly between the casting E and the sup-  
port 2. The spring might just as well be lo-  
cated between said support and said casting  
50 at the point  $\alpha$ , where it would have the same action as in the location shown on the adjust-  
ing-screw.

In the construction shown in Fig. 4 a screw-  
operated fastening device is illustrated adapt-  
ed to secure the sharpening device to a lawn-  
mower constructed without the usual brace-  
55 rod D, and this construction consists in cast-  
ing two lugs 17 on the frame, the inner par-  
allel faces of said lugs being undercut, as  
shown, for the reception of a casting having  
a V-shaped base 18, a screw passing through  
60 said casting against said frame serving to se-  
cure it in any desired position relative there-  
to. The said casting is thus seen to be but  
another form of the casting E shown in Figs.  
1 and 2, and the support 2 in the form shown

in Fig. 3 is pivotally secured to said casting, 65  
as shown.

Said modifications above described thus re-  
solve themselves into mere variations in form  
only of the construction shown in Figs. 1 and  
2, and as such come legitimately within the 70  
scope of this invention. It is obvious also  
that should one of the supports 2 be made of  
such form as to embrace enough of the stone  
4 to afford it sufficiently rigid support on the  
smaller sizes of lawn-mowers one fastening 75  
device and one support could be used instead  
of two, if desired; but the better construction  
is that shown in said Figs. 1 and 2.

Having thus described my invention, what  
I claim, and desire to secure by Letters Pat- 80  
ent, is—

1. In combination with the frame of a lawn-  
mower, a sharpening device for the rotary  
knife thereof consisting of the supports 2, 2,  
a screw-operated fastening device for engage- 85  
ment with the frame of the machine, a hinge  
connection between said fastening device and  
said supports one side of the transverse cen-  
ter of the latter, adjusting-screws engaging  
said fastening device and supports, for moving 90  
the latter, and springs against the tension of  
which said supports are moved in one direc-  
tion by said screws, substantially as de-  
scribed.

2. In combination with the frame of a lawn- 95  
mower, a sharpening device for the rotary  
knife thereof consisting of a support 2, a  
screw-operated fastening device for engage-  
ment with the frame of the machine, a hinge  
connection between said support and said 100  
fastening device, an adjusting-screw located  
on one side of said fastening device and en-  
gaging the latter and said support, a spring  
on the other side of said hinge connection and  
located between said support and a part of 105  
said fastening device, the tension of which  
spring holds said support in contact with  
said adjusting-screw, substantially as de-  
scribed.

3. In combination with the frame of a lawn- 110  
mower, a sharpening device for the rotary  
knife thereof consisting of the supports 2, 2,  
a screw-operated fastening device for engage-  
ment with the frame of the machine, a hinge  
connection between said supports and said 115  
fastening device on one side of the transverse  
center of the latter; adjusting-screws engag-  
ing said fastening device and said supports  
for imparting a swinging movement to said  
supports away from said rotary knife, where- 120  
by more or less of the weight of the sharp-  
ening-stone and its supports may be allowed  
to bear upon said knife, substantially as de-  
scribed.

WILLARD P. LESHURE.

Witnesses:

WM. H. CHAPIN,  
K. I. CLEMONS.