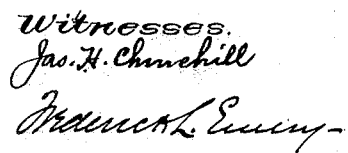


W. J. ADAMS.
BORDER CUTTER.

Patented Aug. 4, 1891.



Inventor:
William J. Adams
by Leroy Strong atty

UNITED STATES PATENT OFFICE.

WILLIAM J. ADAMS, OF NEWTON, MASSACHUSETTS.

BORDER-CUTTER.

SPECIFICATION forming part of Letters Patent No. 456,928, dated August 4, 1891.

Application filed December 9, 1890. Serial No. 374,046. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. ADAMS, of Newton, county of Middlesex, State of Massachusetts, have invented an Improvement in
5 Border-Cutters, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object to improve the construction of a border cutter or trimmer for lawns; and my invention comprehends the employment of a stationary blade and a series of rotary knives, both arranged on a hub or
15 shaft which is adapted to be connected with gearing by a suitable clutch mechanism, and a heavy roller is provided for operating said gearing, said roller also serving to roll the border.

20 Figure 1 shows in side view a border-trimmer for lawns embodying this invention, the trimming-blades being represented in operative position; Fig. 2, a detail of the ratchet-wheel connection, whereby the blade or blades
25 may be rotated when the roller is rotated in one direction and held at rest when the roller is rotated in the other direction; Fig. 3, a horizontal section of the trimming-blades and gearing, taken on the dotted line *xx*, on an
30 enlarged scale.

The roller *a* is made very heavy and has suitable journals. A yoke is provided, to which the handle *a'* is attached, one arm of said yoke receiving one of the journals of the
35 roller *a*, and the other arm, as *a''*, terminating at a point near the perimeter of the roller *a* and having formed integral with it or secured to it a slotted and preferably toothed curved
40 plate *a'*, the curvature of which conforms to the arc of a circle about the shaft of the roller *a* as a center. A shell-like casing or frame *b* is mounted on one of the journals of the roller *a*, which has at one end a projection *b'*,
45 having a curved slot registering with the curved slot in the plate *a'*. The inner side or face of the projection *b'* has on it suitable teeth, and a clamping device, as *b''*, is provided for clamping the frame *b* to the yoke. By means of this clamping device the frame
50 *b* may be adjusted, as desired. The toothed wheel *c* is secured to the shaft of the roller *a*, which engages a pinion *c'*, mounted on an ar-

bor *c''*, which pinion engages a toothed wheel *c'''*. This gearing is all contained in the shell or frame *b*. The toothed wheel *c'''* (see Figs. 55 2 and 3) has a central hole or recess, in which are formed several notches, as 2, three being herein shown, and said wheel *c'''* is placed on a quill *c''''*, through which two gravitating
60 pawls 3 pass, they being arranged at right angles with relation to each other and made to enter the notches 2 of the wheel *c'''*. The quill *c''''* has at one end a plug *c'''''* to strengthen it, and a pin 4 passes through the quill and plug to keep the quill in place. The quill *c''''* 65 has at its opposite end a flange *c''''''*, having a diametrical slot or passage 5 through it. By means of the gravitating pawls 3 the quill *c''''* will be rotated whenever the roller is turning in one direction and will remain at rest when-
70 ever the roller is turning in the other direction. The movable blade or blades *m* (four being herein shown) are arranged at right angles with relation to each other, and are secured to a hub or shaft 7, and the stationary blade
75 *m'* is placed on said hub or shaft 7 and held thereon by a pin 8. This hub or shaft 7, bearing both the blade *m'* and blades *m*, is placed in the quill *c''''* at its flanged end, so that the pin 8 enters the diametrical slot or passage 5. 80 The stationary blade *m'* is then screwed to the frame *b* by screws 9 or otherwise. The blades being thus secured in place, as the roller *a* is turned the movable blades *m* will pass by the stationary blade *m'* to thereby
85 cut the grass between them. The frame *b* will be adjusted by the clamping device *b''*, so that the stationary blade *m'* will follow along just beneath the grass to be trimmed.

Instead of the specific connection of clutch 90 mechanism shown in Figs. 2 and 3 for connecting the toothed wheel *c'''* with the gearing, so that it may be turned in one direction only, any other well-known or suitable clutch mechanism may be employed. The hollow 95 or shell-like frame *b*, it will be seen, incloses all the parts which operate to rotate the knives, and hence will not become clogged with the cut grass or other refuse material. It will be seen that by simply removing the screws 9 both 100 the rotary and stationary blades may be removed from the supporting frame-work and operating parts to be sharpened or for other purposes. The roller *a* being heavy acts to

roll the border as the grass is cut to keep it hard.

I claim—

1. In a border-cutter for lawns, the heavy
5 roller *a* and shell-like frame *b*, mounted on
the journal of said roller, combined with the
rotary knives *m* and hub 7, to which they
are attached, the stationary knife *m'*, the
shank portion of which has a hole through it
10 which receives said hub 7, the pin 8, passing
through said hub, acting to hold the stationary
blade on the hub 7, the quill or shaft having
a diametrical slot or passage 5 at one end
which receives the pin 8 and gearing operated
15 by the roller for rotating said quill, and screws
or other fastenings, as 9, for securing the sta-
tionary blade to the frame *b*, substantially as
described.

2. In a border-cutter for lawns, the combi-
20 nation, substantially as described, of the fol-
lowing instrumentalities, viz: the roller *a*
and shell-like frame *b*, mounted on the jour-

nal of said roller, the toothed wheel *c*, secured
to said journal, the pinion *c'* and pinion *c''*,
meshing with each other and housed by the 25
frame *b*, said pinion *c''* having shoulders or
teeth formed in it, the quill *c'*, having holes
through it, pawls 3 3, arranged in the quill at
right angles with relation to each other and
adapted to pass through the holes to engage 30
the teeth in the pinion, the rotary knives *m*
and hub 7, to which they are attached, the pin
8, passing through said hub, and the stationary
blade placed on said hub between the pin 8
and the rotary knives *m*, and screws or other 35
fastenings for securing the stationary blade
to the frame *b*, substantially as described.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

WILLIAM J. ADAMS.

Witnesses:

BERNICE J. NOYES,
EMMA J. BENNETT.