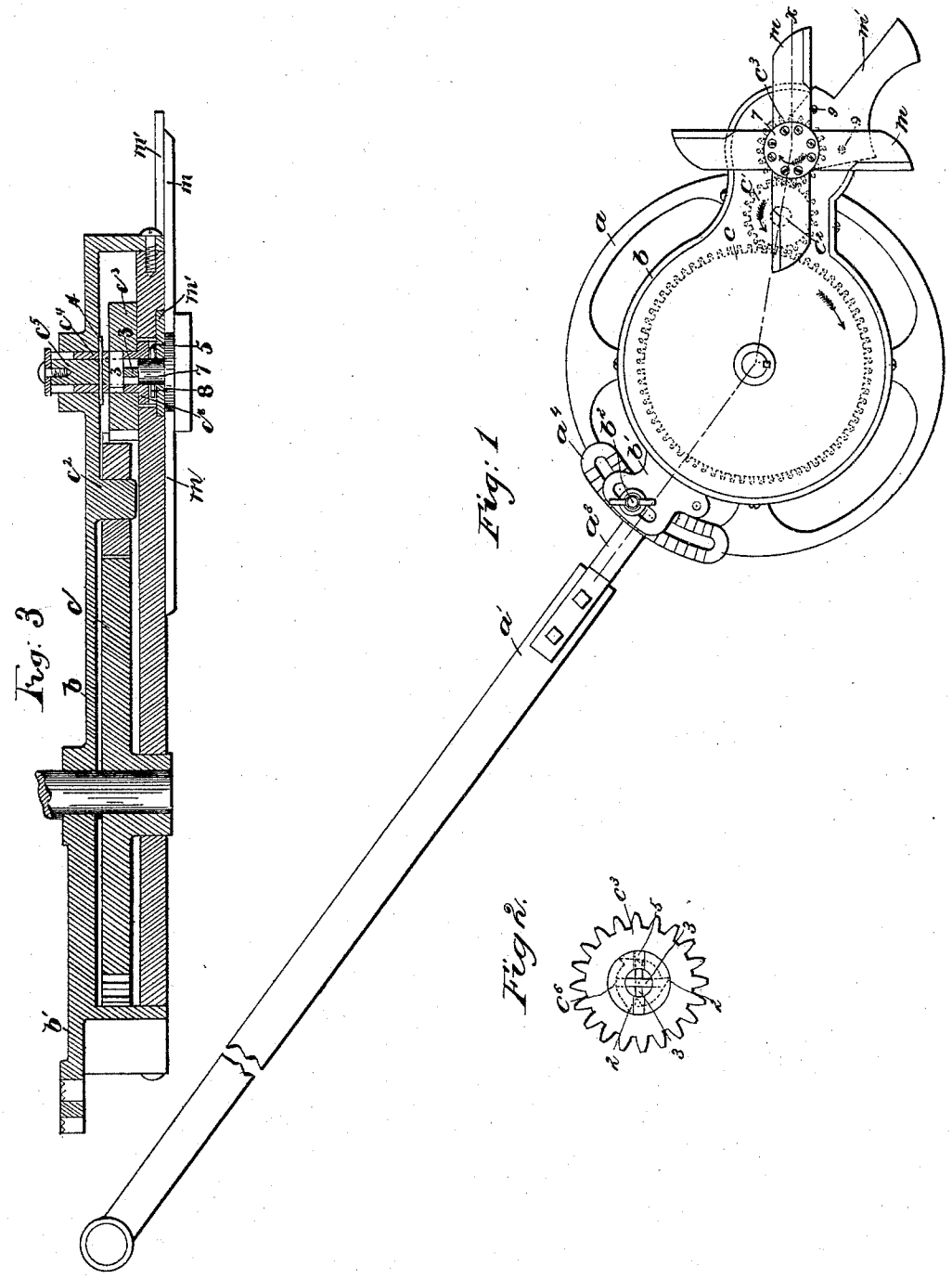
(No Model.)

W. J. ADAMS.

BORDER CUTTER.

No. 456,928. Patented Aug. 4, 1891.



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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 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.

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 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.

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 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 $x\ x$, on an 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 roller a, and the other arm, as a^3, 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 plate a^4, 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', having a curved slot registering with the curved slot in the plate a^4. The inner side or face of the projection b' has on it suitable teeth, and a clamping device, as b^2, is provided for clamping the frame b to the yoke. By means of this clamping device the frame 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 arbor c^2, which pinion engages a toothed wheel c^3. This gearing is all contained in the shell or frame b. The toothed wheel c^3 (see Figs. 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^3 is placed on a quill c^4, through which two gravitating 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^3. The quill c^4 has at one end a plug c^5 to strengthen it, and a pin 4 passes through the quill and plug to keep the quill in place. The quill c^4 has at its opposite end a flange c^6, having a diametrical slot or passage 5 through it. By means of the gravitating pawls 3 the quill c^4 will be rotated whenever the roller is turning in one direction and will remain at rest whenever 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 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^4 at its flanged end, so that the pin 8 enters the diametrical slot or passage 5. 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 cut the grass between them. The frame b will be adjusted by the clamping device b^2, so that the stationary blade m' will follow along just beneath the grass to be trimmed.

Instead of the specific connection of clutch mechanism shown in Figs. 2 and 3 for connecting the toothed wheel c^3 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 or shell-like frame b, it will 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 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 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 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 by the roller for rotating said quill, and screws or other fastenings, as 9, for securing the stationary blade to the frame *b*, substantially as described.

2. In a border-cutter for lawns, the combination, substantially as described, of the following instrumentalities, viz: the roller *a* and shell-like frame *b*, mounted on the journal of said roller, the toothed wheel *c*, secured to said journal, the pinion *c'* and pinion c^3, meshing with each other and housed by the frame *b*, said pinion c^3 having shoulders or teeth formed in it, the quill c^4, 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 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 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.