PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Tall Grass and Weed Cutting and Feeding Attachment for Mowers.

I, CHARLES VINCENT WARDROP, of Lautoka, in the town of Lautoka, in the Colony of Fiji, a British Subject, do hereby declare the nature of this invention and in what manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

This invention relates to grass mowers of the rotary cutting cylinder type, either hand or power operated.

The conventional mower is generally inefficient or ineffective in cutting tall grass or weeds, particularly when the growth is lush. The object of this invention is to provide an attachment for such mowers, which is simple of construction and may be applied to such mowers without difficulty, and which will permit the mower to effectively cut tall grass or weeds.

The attachment comprises essentially a bladed "feeder" cylinder, mounted in advance of the cutter cylinder and rotatably driven from the mower, which gathers tall grass, weeds or the like and either severs the stems or feeds them to the cutter cylinder for severing.

The invention consists in a cutting and feeding attachment for cylinder mowers for the purpose set forth, comprising a bladed "feeder" cylinder disposed in axial parallelism with and in advance of the cutter cylinder of the mower and having greater ground clearance than the cutter cylinder and rotated in the same sense as the cutter cylinder, the blade or blades thereof being inclined at an acute angle to the tangent of the circle traced by the blade or blades during rotation.

In order fully to describe the invention reference is made to the accompanying drawings which depict a preferred embodiment thereof as applied to a conventional type of hand mower and in which:—

Fig. 1 is a perspective view of the mower with attachment;

Fig. 2 is a side sectional elevation thereof on plane 2—2 of Fig. 1, and

Fig. 3 is a perspective view of a modified form of the feeder cylinder.

The conventional mower includes frame cheek plates 4, 4 on which are mounted ground wheels 5, 5 driving the cutting cylinder 6.

The feeder cylinder in accordance with the invention comprises three blades 7, 7 mounted on spiders 8, 8 carried by a rotatable shaft 9 mounted in bearings 10, 10 at the outer end of brackets 11, 11 attached respectively to the cheek plates 4, 4.

The blades 7 of the feeder cylinder are helically arranged thereon, and are outwardly inclined from the cylinder at a few degrees inclination (Fig. 2) to assist in cutting.

The shaft 9 of the feeder cylinder is driven by a chain 12 from and in the same sense as one ground wheel 5, at a peripheral speed greater than that of the ground wheel.

The feeder cylinder, which has a greater diameter than the cutter cylinder, is higher from the surface than the latter (2 inches ground clearance is suitable for general purposes) and has some clearance therefrom, as shown in Fig. 2, which clearance may suitably be 1 inch for a hand mower.

In use the feeder cylinder, rotating in advance of the cutter cylinder, engages tall grass and weeds, either severing them, or doubling them over and feeding them at a desirable rearward inclination, into the cutter cylinder. Growth inclined away from the direction of travel of the mower and sufficiently tall to be engaged by the feeder cylinder, is rearwardly inclined by the latter and so fed at an advantageous angle into the cutter cylinder.

It is found in practise that best results are obtainable when the peripheral speed of the feeder cylinder is 7 to 10 times that of the ground wheels and when the feeder cylinder has the number of blades to give approximately 25 "cuts" per yard of travel of the machine. With (say) a 10 inch diameter for ground wheels and for the feeder cylinder, such desiderata are obtained with a 7:1 drive to the feeder cylinder and 3 blades to such cylinder.

With a sufficiently high peripheral speed of the feeder cylinder the number of blades may be reduced to two, as shown in Fig. 3 wherein the cylinder is designed for a motor mower and the blades are divided into two sets 13 and 14 disposed relatively at right angles. With sufficiently high speeds, one blade only may be necessary.

The feeder cylinder may be driven from a source of power other than the ground wheels, for instance from the motor of a motor mower, through chain, belt, shaft, or gearing.

The blades of the feeder cylinder may be parallel to the cylinder axis if desired, and they may be

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toothed for greater efficiency with certain types of growth.

The invention provides means by which conventional mowers are enabled to cut tall or lush growth on which they would otherwise be ineffective or inefficient.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is :—

1. A cutting and feeding attachment for cylinder mowers for the purpose set forth, comprising a bladed "feeder" cylinder disposed in axial parallelism with and in advance of the cutter cylinder of the mower and having greater ground clearance than the cutter cylinder and rotated in the same sense as the cutter cylinder, the blade or blades thereof being inclined at an acute angle to the tangent to the circle traced by the blade or blades during rotation.

2. An attachment according to Claim 1, in which the blade or blades of the feeder cylinder are helically disposed thereon.

3. An attachment according to Claim 1 or Claim 2, in which the blade or blades of the feeder cylinder are shaped for cutting as well as feeding.

4. An attachment according to any of the preceding claims in which the feeder cylinder is rotated with a higher peripheral speed than that of the ground wheel(s) of the mower.

5. An attachment according to Claim 4, in which the peripheral speed ratio of the feeder cylinder to the ground wheel(s) is in the range 7 to 10 to 1.

6. An attachment according to any of the preceding claims, in which the feeder cylinder is fitted with the number of blades to give not less than 20 "cuts" per yard of travel of the mower.

7. A cutting and feeding attachment for mowers substantially as herein described.

Dated this 13th day of April, 1948.

For the Applicant :
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