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Manually Operated Lawn Mower Applicable for Grass Cutting

Engineering

KEYWORDS :

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ABSTRACT

The design objective is to come up with a mower that is portable, durable, easy to operate and maintain. The present paper relates to manually operated lawn mower and more particularly to an simple construction and comfort operation of it.

I. introduction

Lawn mowers are usually used in offices, colleges, parks for cutting the grass on the lawn. The electrical energy consuming lawn mowers are the most admired one in the market by the experts in decorating the courtyard inside their fence. Cylinder or wheeled, mulching, tractor pull and hover lawn mowers are mostly being used on the basis of their applications.

II. proposed method

Sickle mowers, also called reciprocating mowers, bar mowers, sickle-bar mowers, or finger-bar mowers, have a long (typically six to seven and a half feet) bar on which fingers are mounted with stationary guard plates. Simple construction, skill reduction, cost reduction are some of the notable advantages of this model.

III. working principle

"Rotary motion into reciprocating motion" is the main principle involved in this model. As the wheel rotates, bevel gear rotates. Again the knob rotates with the help of those gears and this rotary motion is transferred to linear motion of the metal blade having number of teeth linearly.

IV. construction

The whole construction of this system is very simple and efficient. The arrangement and position of components makes this system to function. Each and every component has its own property and responsibility. The manual power obtained is transferred to the wheel on the either side and the wheel makes other components work.

V. COMPONENTS

1.T shaped iron bar
2.Axle
3.Wheel
4.Bevel gear
5.Knob
6.Sickle bar

VI. WORKING OF COMPONENTS

1.T shaped iron bar

The function of this iron bar is to hold the entire set of components. Down portion of T shape is connected to axle and upper portion is to be hold by hand.

2.Axle

A rod that serves to attach a wheel and provide support on which the wheel rotates.

3.Wheel

The mother part of all the components. Attached to the axle and used to move the entire system.

4.Bevel gear

The tooth bearing face of the gear is of conical shape. It's

function is to rotate the knob .

5.Knob

The knob is attached to the sickle blade. The blade reciprocates on other side of the plate.

5.Sickle bar

Among two bars, one bar is stationary and one bar reciprocates.

VII. WORKING PRINCIPLE

In a channel on the bar there is a reciprocating sickle with very sharp sickle sections (rectangular blades). The sickle bar is driven back and forth along the channel. The grass, or other plant matter, is cut between the sharp edges of the sickle sections and the finger-plates (this action can be likened to an electric hair clipper.) The bar rides on the ground, supported on a skid at the inner end, and it can be tilted to adjust the height of the cut. A spring loaded board at the outer end of the bar guides the cut hay away from the uncut hay. The so-formed channel, between cut and uncut material, allows the mower skid to ride in the channel and cut only uncut grass cleanly on the next swath.

VIII. ADVANTAGES

1. Simple mechanism
2. No electronic control required.
3. Skill reduction.

IX. APPLICATIONS

1.Applicable for plain area as well as sloppy lands.

X. WORKING MODEL

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