

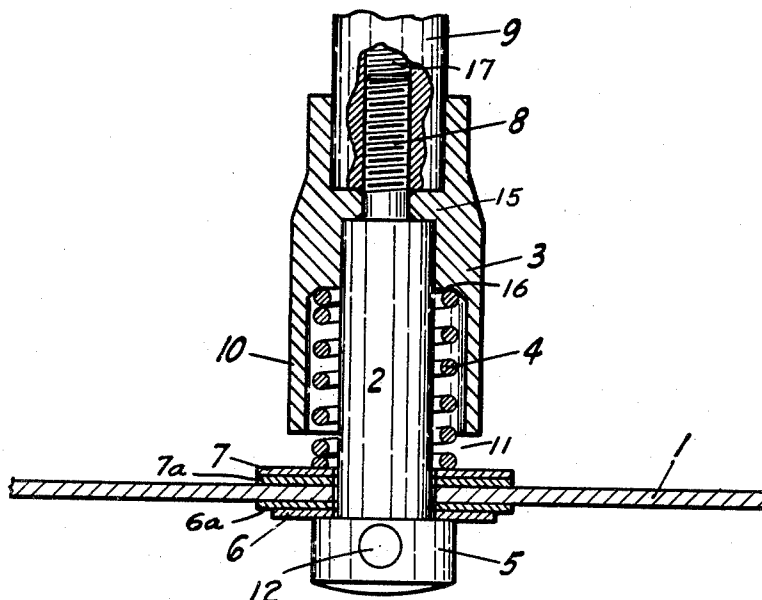
May 3, 1955

C. C. J. THELANDER

2,707,362

YIELDABLE DRIVE CONNECTION FOR A ROTARY LAWN MOWER

Filed Nov. 3, 1952



INVENTOR.

CLEMENT C. J. THELANDER

BY

Merrill M. Blackburn

ATTORNEY

1

2,707,362

YIELDABLE DRIVE CONNECTION FOR A ROTARY LAWN MOWER

Clement C. J. Thelander, Prophetstown, Ill., assignor to
Buffalo-Eclipse Corporation, North Tonawanda, N. Y.,
a corporation of New York

Application November 3, 1952, Serial No. 318,356

3 Claims. (Cl. 56—25.4)

The present invention relates to horizontal blades of lawn mowers. In horizontal blade lawn mowers there are various means for securing the blade in place, usually rigidly, but it is my purpose to secure the blade, yieldingly, so that, if the blade strikes an unyielding obstruction, it can stop and, thus, not put a strain on the motor.

The drawing annexed hereto and forming a part hereof shows an elevational view with parts broken away and shown in section of the blade and its connection, the same being a yielding connection for the blade. In this drawing is represented a blade 1, a lower spindle 2, a sleeve 3, and a spring 4. The upper end of the spring 4 bears against a shoulder or abutment 15 within the sleeve 3, and its lower end extends downwardly out of the lower end of the lower enlarged portion of the sleeve 3. The lower spindle 2 has an approximately flat head 5 which engages a washer 6, which is preferably of steel, and this engages and presses against a washer 6a. This washer preferably is of brass, but it could be of rubber, fiber, plastic, or other suitable material. On the opposite side of the blade is another pair of washers 7a and 7. The lower end of the spring 4 bears against the uppermost washer 7. Primarily, the washers 6, 6a, 7 and 7a serve as a slip clutch to drive the blade and, at the same time, provide for some slipping of the blade in a horizontal plane, whenever said blade may encounter some obstruction. This tends to reduce danger of damage to engine crank-shaft by reducing the impact of such forces. Further, by providing a means of friction drive with a more or less controlled and/or suitable amount of slip, a reduction in stalling of the engine is accomplished.

The spring 4 exerts sufficient pressure on the washers 6 and 7 and the blade 1 so that a driving force is exerted on the blade but yields sufficiently to furnish a safety factor for the blade.

The sleeve 3 is enlarged at its lower portion to surround and to act not only as a container for the spring but also to act at its lower edge as a control for limiting the angular deflection of the blade. Such deflection will cause washer 7, at the upper side of the blade, to contact the lower edge of the sleeve 3, thereby limiting the angular movement of the blade 1. Varying the space 11, as during manufacture, will vary the amount of deflection of the blade.

The lower spindle 2 has a reduced end 8 which is screwed into the lower end of the upper spindle or power transmitting unit 9 of the mower, by which power is transmitted to the blade 1. The drive power is transmitted through the upper spindle 9 and the lower spindle 2 to the blade 1. The sleeve 3 has an internal flange 15 which is

2

clamped between the lower spindle 2 and the upper spindle 9. The hole 12 furnishes access for a tool to tighten the bolt 2. The downwardly extending portion 10 of the sleeve 3 surrounds the spring 4. The upper end of the spring 4 bears against the shoulder or abutment 16 formed in the sleeve 3 below the flange 15. The lower end of the upper spindle 9 is recessed and threaded, as at 17, to receive the reduced and screw-threaded upper end 8 of the lower spindle 2.

It will of course be understood that variations may be made from the specific structure shown without departing from the spirit of this invention as disclosed in this specification and as defined by the appended claims.

Having now described by invention, I claim:

1. A driving unit for a rotary lawn mower, comprising a power transmitting upper spindle, a lower spindle having a reduced end which may be screwed into the lower end of said upper spindle, a sleeve surrounding the lower end of said upper spindle and the major portion of the lower spindle, said sleeve having means clamped between said upper and lower spindles, said sleeve being spaced from the lower spindle at its lower end, a spring within the lower end of the sleeve, said lower spindle having a head at its lower end, a blade on the lower end portion of the lower spindle between the head and the spring, a plurality of washers between said blade and said spring and the blade and the spindle head, whereby the spring may yieldingly compress the washers, and the blade may be allowed to tilt on the lower spindle.

2. In a lawn mower, a cutting unit comprising an upper spindle having a lower threaded recessed portion, a sleeve coaxial with said spindle and encircling the latter at the lower end of said spindle, an internal flange on said sleeve abutting the lower end of said spindle, a lower spindle having a reduced screw-threaded end screwed into said threaded recessed portion of said upper spindle, said flange on the sleeve being clamped between said spindles, means on said sleeve forming an abutment and the lower portion of the sleeve being enlarged and surrounding the lower spindle, a cutting blade mounted on the lower portion of said lower spindle, a head on the lower end of said lower spindle, a washer between said head and the lower side of said blade, a second washer on the lower portion of said lower spindle and engaging the upper side of said blade, and a spring located around the lower spindle and bearing at its upper end against said abutment and at its lower end against said second washer.

3. The invention defined by claim 2, further characterized by the lower edge of the enlarged portion of said sleeve being extended downwardly to a point adjacent the upper or second washer, whereby the lower edge of said sleeve serves as means limiting the tilting of the blade relative to said lower spindle.

References Cited in the file of this patent

UNITED STATES PATENTS

1,463,078	Gilmore et al.	July 24, 1923
2,471,367	Canvaness	May 24, 1949
2,502,696	Barnes	Apr. 4, 1950
2,539,619	Goodall	Jan. 30, 1951
2,685,160	Kuhary et al.	Aug. 3, 1954

FOREIGN PATENTS

317,062	Germany	1919
---------	---------------	------