June 9, 1931. H. T. COLDWELL 1,809,810

STATIONARY KNIFE FOR LAWN MOWERS

Filed Jan. 7, 1929

FIG. I.

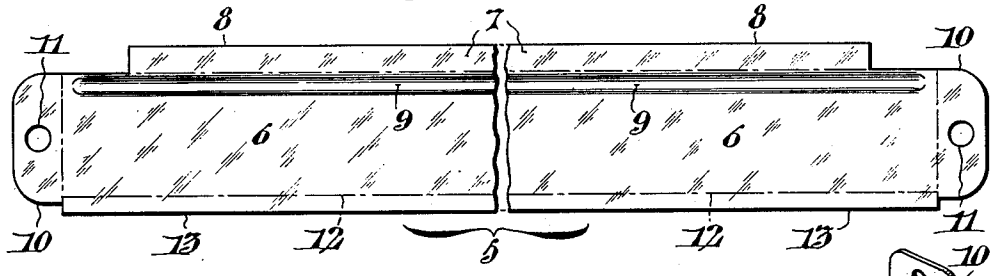


FIG. II

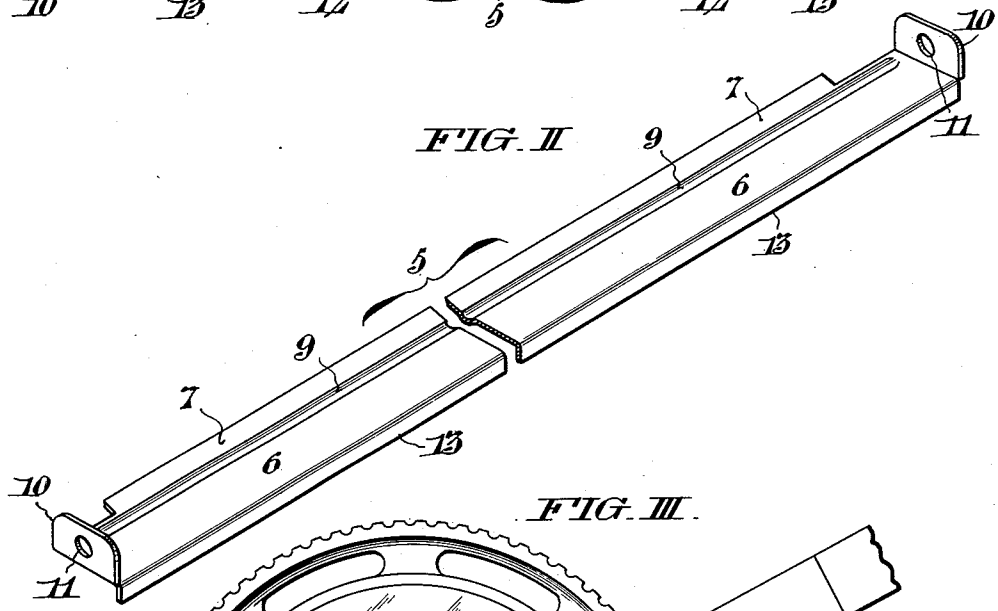
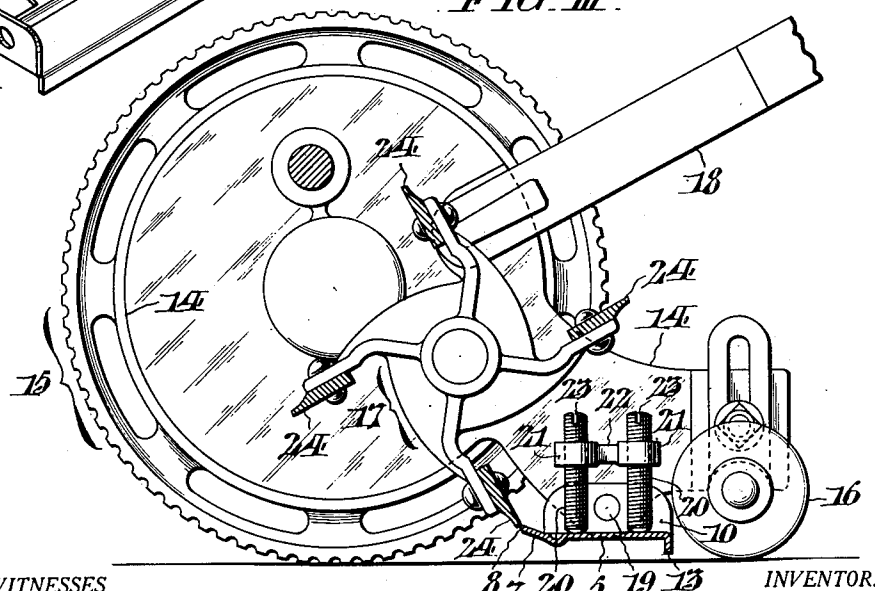


FIG. III.



WITNESSES

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UNITED STATES PATENT OFFICE

HARRY T. COLDWELL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PHILADELPHIA LAWN MOWER COMPANY INC., OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA

STATIONARY KNIFE FOR LAWN MOWERS

Application filed January 7, 1929. Serial No. 330,777.

This invention relates to lawn mowers of the type comprising a stationary knife and a rotary cutting-reel, and it has more particular reference to the provision of a novel type of combination knife back and cutter blade formed as an integral unit.

Heretofore, the bottom or stationary knife of lawn mowers has been universally made with a cast iron back to which is screwed or riveted a flat piece of steel that provides the cutter blade. Such method necessarily involved that the cast back be machined up at the ends and across the lower surface to ensure an even surface for attachment of the steel cutter blade. In addition to such machining operation it has been generally necessary to drill a hole at each end of the cast back to accommodate pivot elements on which said back might be rocked to adjust the cutter blade relative to the rotary cutting-reel. It has also been requisite that several holes be drilled through the face of the cast back for reception of rivets, or that such holes be tapped to accommodate screws, whereby the blade was made fast to said cast back.

Primarily I aim to eliminate all of the operations noted in the preceding paragraph by forming the stationary knife with an integral back and end wings or flanges whereby it can be pivotally mounted between the side plates of a lawn mower.

Another object of my present invention is to form a stationary knife—of the typified class—as a unitary sheet steel stamping.

A further object is to provide a one-piece combination knife bar and cutter blade of sheet steel which is characterized by great strength, rigidity and durability.

In order that this invention may be readily understood, I have disclosed a preferred embodiment thereof in the accompanying sheet of drawings, while the subjoined claims serve to specifically define those features asserted as novel in the art.

In the drawings:

Fig. I is a broken top plan view of my novel stationary knife for lawn mowers as initially formed from sheet steel.

Fig. II is a broken perspective view of the same after the end wings or flanges have been bent-up and the back longitudinal edge bent-down, or, as in finished form; and,

Fig. III is a transverse sectional-view through a standard type of lawn mower with my novel type of stationary knife in service application.

Referring more in detail firstly to Figs. I and II of the drawings my novel combination stationary knife bar and cutter blade is comprehensively designated by the numeral 5, the same being suitably stamped or otherwise blanked out from sheet steel to provide a body or bar portion 6. This body or bar portion 6 is formed along one of its longitudinal edges—the front in use—with a stepped projection 7, which is bent upwardly or inclined to the horizontal at an angle of approximately twenty (20) degrees relative to the plane of the bar portion; said projection constituting the cutter blade, and to this end the frontal edge 8 thereof is suitably ground or sharpened. Proximate or closely adjoining the cutter blade 7, the bar portion 6 is provided with a longitudinal depression or bead 9 for the purpose of stiffening such blade, while said bar is also formed with end extensions 10 having apertures 11, for a purpose later on explained.

The blank 5 of the preceding paragraph also has the rear longitudinal edge downwardly-bent, conveniently at right angles, along an imaginary line or creasing 12, paralleling the bead 9, to form a stiffener flange 13, whereby great rigidity is given the finished structure. The end extensions 10 aforesaid are, simultaneously or subsequently, also bent upwardly at right angles to the bar portion 6, thereby forming attachment flanges or lugs for pivotal connection to the side plates of the lawn mower.

Referring now to Fig. III one of the customary side plates of a standard type of lawn mower is comprehensively designated 14, while the reference numerals 15, 16 respectively distinguish the ground wheel and back roller; whereas 17 is the rotary cutting-reel, and 18 a fragmentary portion of the customary handle-bar end-fork: all of said parts forming no features of the instant invention.

In practice my novel combination bar and

cutter blade or stationary knife 5 is rockably supported by the usual pivot means 19 engaging in the apertures 11 of the end extensions 10, said means being afforded bearing in the side plates 14; while adjustment of the knife 5 angularly to or away from the rotary cutting-reel 17 is effected by means of two stop screws 20, adapted to contact the bar portion 6 of the knife 5, disposed at opposite sides of its pivot axis. These stop or adjuster screws 20 engage correspondingly threaded spaced apertures 21, provided for their reception in a lateral projection or bracket 22 attached to or made integral with the side plate 14, in a manner well known to those conversant with the art. Thus it will be readily understood that by manipulating the stop or adjuster screws 20 by aid of a screw-driver, for example, applied to the notches 23 in the upper ends thereof, the stationary knife cutter blade 7 can be moved toward or away from the blades 24 of the rotary cutting-reel 17.

From the foregoing it is thought my invention will be clearly appreciated, while its labor saving and economical advantages are self-evident without further elaboration herein. Finally I hereby reserve the right to make such minor detail changes, or other adaptations of my invention, as fairly lie within the scope of the appended claims.

Having thus described my invention, what I claim is:—

1. A stationary knife for lawn mowers integrally formed from sheet metal with a cutting edge and pivot sections at opposite ends, and a co-extensive longitudinal stiffening adjacent its cutting edge.

2. A stationary knife for lawn mowers integrally formed from sheet metal with a cutting edge and angled pivot sections at opposite ends, and a co-extensive longitudinal stiffening adjacent the cutting edge and along the paralleling back edge.

3. A stationary knife for lawn mowers integrally formed from sheet metal with a cutting edge and having up-turned pivot sections at opposite ends, with a co-extensive longitudinal downwardly-depressed stiffening bead adjacent the cutter edge.

4. A stationary knife for lawn mowers integrally formed from sheet metal with a longitudinal cutting edge and having upturned pivot sections at opposite ends, with a co-extensive longitudinal downwardly-depressed stiffening bead adjacent the cutter edge and a down-turned reinforce flange opposite said cutter edge.

5. A stationary knife for lawn mowers integrally formed from sheet metal having a longitudinal cutter section inclined upwardly relative to the body portion and vertically directed pivot sections at opposite ends, with a co-extensive longitudinal depressed stiffener bead adjoining the cutter section and the paralleling back edge downwardly bent at right angles to the body portion as a rigid reinforce.

6. A stationary knife for lawn mowers consisting of an integral unit of sheet steel blanked out to provide a body portion with pivot extensions, said unit having one of its longitudinal edges angled and chamfered to provide the cutting edge and the other reversely bent as a stiffening flange.

7. A stationary knife for lawn mowers consisting of an integral unit of sheet steel blanked out to provide a body portion with pivot extensions, said unit having one of the longitudinal edges upwardly angled and chamfered to provide the cutting edge with a paralleling bead reinforce in the body portion, and the opposed longitudinal edge downwardly bent as a stiffener flange.

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 19th day of December, 1928.

HARRY T. COLDWELL.