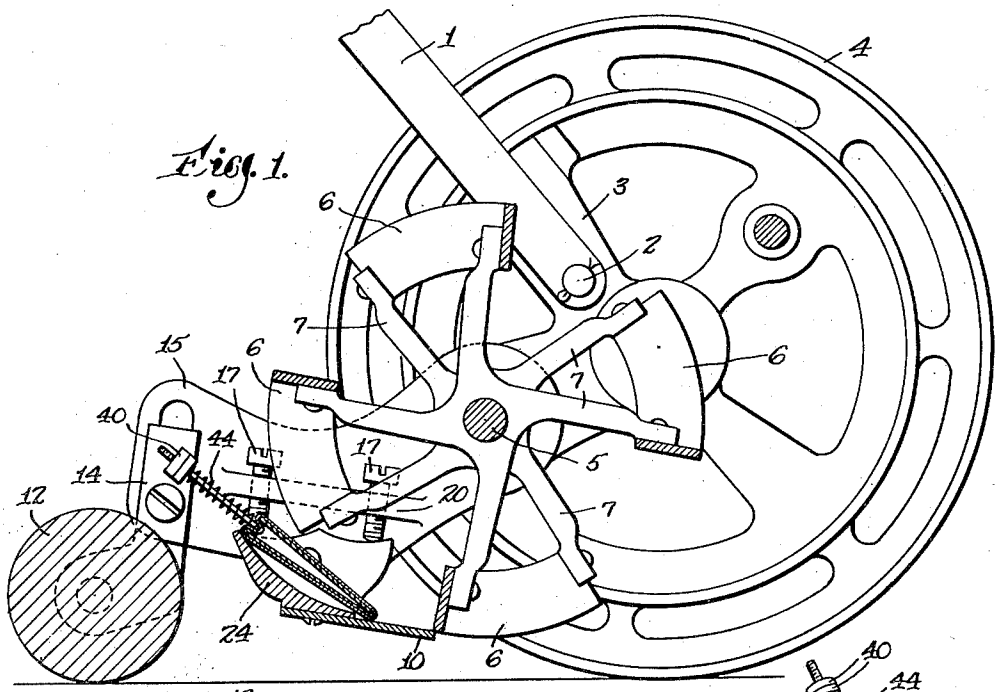
April 6, 1937. W. B. WHITE 2,076,311

AUTOMATIC SHARPENING DEVICE FOR LAWN MOWERS

Filed July 11, 1935

Fig. 1.



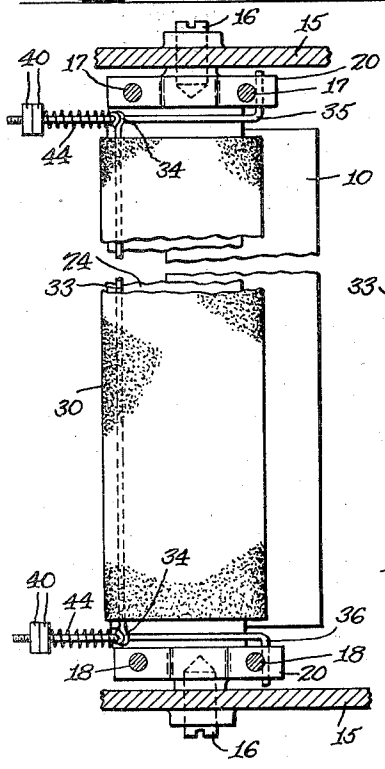


Fig. 2.

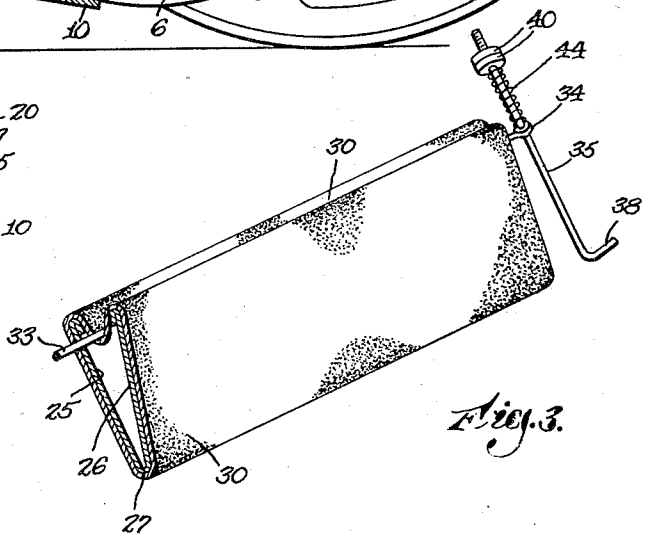


Fig. 3.

Inventor
Warren B. White
by James R. Hodder
Attorney

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AUTOMATIC SHARPENING DEVICE FOR LAWNMOWERS

Warren B. White, North Abington, Mass.

Application July 11, 1935, Serial No. 30,864

1 Claim. (Cl. 51—250)

My present invention is a novel and improved sharpening instrumentality for automatically sharpening the rotating blades of lawnmowers, or the like.

The object of this invention is to improve and perfect devices of this kind, particularly as shown in my prior U. S. Letters Patent No. 1,945,582, dated February 6, 1934, and my prior pending application Ser. No. 20,590.

As shown in my said prior inventions, I have devised a self-sharpening lawnmower and abrasive means therefor to cooperate with the rotating action of the spiral cutters to effect a sharpening of the cutters during use. In my said prior devices I utilize means as a part of or adjacent to the fixed shearing blade to carry an abrasive surface, but in my present application I have improved the abrasive-carrying means and also provide mechanism which will permit the ready removal, replacement, and renewal of abrasive material as the sharpening element.

Furthermore, I have provided in my present improved construction means to carry the renewable and replaceable abrading element, such as emery paper, sandpaper, or the like in a constantly yielding tension toward the rotary cutting blades, which tension may be still further adjusted to any desired degree.

An important feature and advantage of my present improvement is that the self-sharpening element may be varied from a coarse or rough sharpening action to a fine or finishing sharpening action, depending upon the grade of emery paper, or the like, employed and readily interchangeable by the mere slipping off and on of the emery paper.

A further important feature is that my present improvement enables me to supply a considerable quantity of emery paper, or the like, and in varying degrees of coarseness and fineness, if desired, in tubular form to readily slip on the holder, and the same will be held in place in any desired or convenient manner.

Preferably, I employ spring-acting means which will hold the emery paper when supplied to a supporting element under a yielding tension, and which may still further be utilized as yielding tension to hold the entire sharpening element into contact with the rotary blades.

Further details, important advantages, and novel combinations will be hereinafter more fully pointed out and claimed.

Referring to the drawing illustrating a preferred embodiment of the present invention,

Fig. 1 is a vertical view partly in cross-section illustrating the application of my present invention to a conventional type of lawnmower;

Fig. 2 is a plan view partly in cross-section and partly broken away illustrating the sharpening element; and

Fig. 3 is a view in perspective of the sharpening element and holder.

I have illustrated in the drawing a typical or standard type of hand-operated lawnmower, although it will be appreciated that my invention is equally applicable to power-driven or horse-drawn lawnmowers and of any size, capacity, or style so long as rotary blades are utilized.

As shown in the drawing, the bracket **1** extends to the usual push bar of the machine, being pivoted at **2** to the framework **3**, one of the wheels **4** being shown, which rotates and drives through suitable gears (not shown) the axle **5** on which the rotary cutters **6**, **6**, **6** are mounted on spokes **7**, **7**, and which cutters are preferably of spiral contour operating against a fixed shearing blade **10**. The rear supporting roller **12** is illustrated, as usual, extending across the width of the machine and adjustably mounted in sliding brackets **14** secured to the rear extensions **15** of the framework **3**. The fixed cutting bar **10** is pivotally secured to the rear extensions **15** by pivot **16—16**, see Fig. 2, and is adjustable on said pivots by pairs of thrusting screws **17—17** and **18—18** threaded through tubed recesses in an extending lug **20** on the extensions **15**, also of the usual construction.

Secured to the fixed cutting blade **10** is a rearward brace **24** on which my improved sharpening holder and abrasive element rest, as shown in Figs. 1 and 2. This holder as herein illustrated comprises a metallic V-shaped member comprising arms **25** and **26**, meeting in a V or angle portion **27** and, preferably, stamped out of a sheet of metal and preferably, also, of spring metal.

However, such holder may be formed of rubber, fibre, wood, or any suitable and desired composition. I form the abrasive material **30** in the shape of a tube or sleeve adapted to slide over the holder illustrated in the drawing consisting of the spring arms **25** and **26**, which naturally spread and thus retain the tubular abrasive **30** under tension. As a further means of holding the abrasive **30** under smooth tension on the arms **25** and **26**, I provide a locking rod **33** adapted to engage the abrasive tube or sleeve **30** between the open ends of the V formed by the arms **25** and **26**, preferably depressing the tubular portion therebetween, as shown in the drawing and

thus retaining the same in assembled and yielding position.

Furthermore, I prefer to utilize the locking arm **33** to hold or press the entire sharpening element into yielding contact with the surfaces of the rotary cutters **6**, these cutters being spiral, serving to engage the outer surface of the material **30** and tend to force the same rearwardly of the machine or against the locking bar **33**. To retain the locking bar **33** in yielding position and also to hold the entire element in yielding engagement with the cutter **6**, I provide a pair of rods **35** and **36**, which are adapted to pass through the eyes or loops **34** at each end of the locking bar **33**, as clearly shown in Figs. 2 and 3.

One end of these rods **35** and **36** is hooked at **38** to engage in recesses in any fixed part of the machine, such as the lug **20**, and with the opposite end portion threaded to receive adjusting nuts **40** which bear upon a coiled spring **44—44** encircling the rods **35** and **36** respectively, and bearing between the locking nuts **40** on each rod and the loop **34** of the locking bar **33**.

This construction permits a quick attachment and detachment of the rods **35** and **36**, releasing the abrasive tube or sleeve **30** from the holder, permitting quick renewal of a new abrasive tube and replacement of the entire self-sharpening element on the machine.

By my novel tube or sleeve adapted to fit over the holding element, I have provided an automatically adjustable yielding and renewable self-sharpening feature for lawnmowers or the like, and I wish to claim the same herein broadly, and also the tubular abrasive element.

I claim:

A sharpening attachment for the rotary cutter blades of lawnmowers, comprising a V-shaped resilient member of substantially the same length as that of the rotary cutter blades to be sharpened, a tubular sheet of abrasive material adapted to be loosely fitted over said V member, a cross-bar engaging the abrasive material at the open portion of the V-member holding said abrasive under yielding tension on said member, and yielding means operable on said cross-bar to hold the abrasive material in position and to press the same yieldingly toward the rotary blades to effect a sharpening action.

WARREN B. WHITE.