June 23, 1936. H. L. WINTER 2,045,430

HAND SHARPENER

Filed Oct. 18, 1933

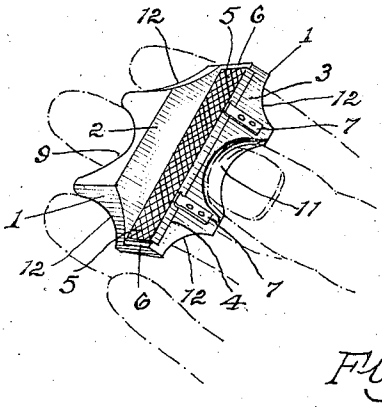


Fig. 1.

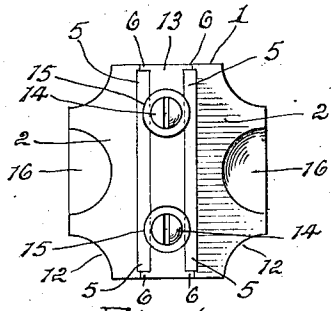


Fig. 6

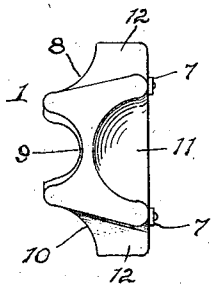


Fig. 2

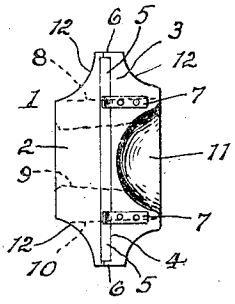


Fig. 3

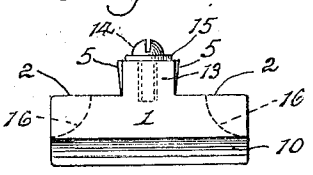


Fig. 7.

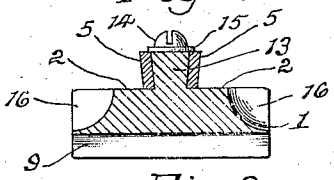


Fig. 8

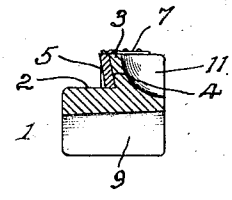


Fig. 4

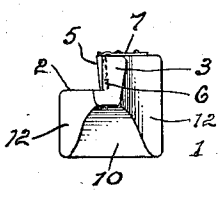


Fig. 5.

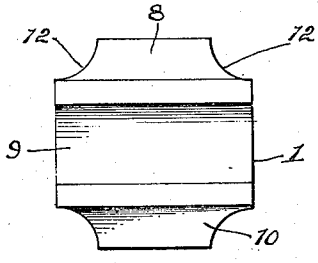


Fig. 9.

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Patented June 23, 1936 2,045,430

UNITED STATES PATENT OFFICE

2,045,430

HAND SHARPENER

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Application October 18, 1933, Serial No. 694,069

3 Claims. (Cl. 76—82.2)

This invention relates to a hand operated sharpening device for sharpening blades, such as lawn mower blades and shears and an object of the invention is to provide a device of simple and cheap construction which is so formed as to provide a firm grip in the hand of the operator. A further object is to provide a guiding seat for the blade to be sharpened and a sharpening strip detachably held in proper relation to the guiding surface to form an edge on the blade at the proper angle to the side surface resting upon the guide face. It is also an object to provide simple and efficient means for yieldingly holding the sharpening strip in position whereby it may be readily removed or restored, it being held firmly against longitudinal movement by means of ribs engaging its ends.

Further objects of the present invention will more fully appear upon reference to the accompanying drawing, wherein

Figure 1 is a perspective view of a device illustrative of an embodiment of the present invention and showing the manner in which it is held by the operator;

Fig. 2 is a side elevation of Fig. 3 looking toward the right hand side of Fig. 3;

Fig. 3 is a plan view;

Fig. 4 is a transverse section of the device;

Fig. 5 is an end elevation of the same;

Fig. 6 is a plan view showing a modified construction;

Fig. 7 is an end elevation of Fig. 6;

Fig. 8 is a central transverse section, and

Fig. 9 is an inverted plan view.

As shown in Figs. 1 to 5 inclusive, the device consists of a metal block indicated as a whole by the numeral 1 and at its upper side this block is formed with a longitudinally extending face or surface 2 upon which the side surface of the blade being sharpened rests, and at one side of the block and extending parallel with the surface 2 is a ledge 3 formed with a side surface 4 meeting the surface 2 at an angle of less than ninety degrees thereto, and this surface 4 is adapted to form a seat for a sharpening or cutting strip 5 which is of extended length and rectangular form in cross section, it being thin and when in position against the surface 4 rests at its lower edge upon the surface 2 between ribs 6 formed on the ledge 3 at the ends thereof and projecting laterally therefrom to engage the ends of the strip 5.

To hold the strip 5 seated against the surface 4, suitable spring clips or members 7 are secured to the upper side of the ledge 3 with their yielding ends in contact with the upper edge of said strip 5. These spring clips thus serve to hold the sharpening strip in place against the surface 4 of the rib and between the end ribs 6 which prevent longitudinal movement of the strip in use.

The lower or bottom side of the block is preferably formed with three parallel grooves or depressions extending transversely of the block, these grooves being curved in transverse section to conform to the shape of the fingers of the hand, one end groove 8 being provided to receive the first finger of the operator's hand, the central groove 9, to receive the second finger and the other end groove 10 to receive the third finger. At the upper side of the block, the ledge 3 is formed with a depression 11 to receive the end of the thumb of the operator's hand. With this arrangement a firm grip upon the block is afforded by the three fingers and thumb and the proper positioning of the block in the hand of the operator is assured by the grooves at the lower side thereof and the depression at the upper side.

For the purpose of lightening the block and thus decreasing its cost of manufacture, the four corners of the block are preferably chamfered or cut away along a curve as at 12 so that the block will present a better appearance and its weight will be decreased.

As shown in Figs. 6 to 9 inclusive, a double sharpener is shown wherein the block 1 is formed with an upwardly projecting central longitudinal rib 13 which rib provides side seats or surfaces for a pair of sharpening strips 5 which are seated thereagainst between the ribs 6 at the ends of the rib 13. A guiding surface similar to the surface 2 is provided at each side of the rib 13 to guide the blade to be sharpened, in contact with the sharpening strips 5 which are securely held in position against the side surfaces of this rib, by means of screws 14 extending into screw-threaded openings in the upper side of the rib, with washers 15 provided beneath the screw heads to engage over the upper edges of the two sharpening strips 5.

The lower or bottom side of this block is formed with three transverse grooves or channels similar to the grooves 8, 9, and 10 of the construction shown in Fig. 1, these grooves being also provided to receive the three fingers of the operator's hands and the sides of the block, within the surfaces 2, are cut away slightly to form recesses 16 for the thumb of the operator's hand.

With this arrangement the sharpening strips 5 may be of different materials or one made be a coarse file and the other a thin file, or one may be a file and the other a sharpening stone so that the

blade to be sharpened may be first roughly ground by means of one of these strips and then the block reversed and the strip of a lesser cutting quality applied to the partly sharpened blade to give it a fine cutting edge.

Obviously other changes in the specific form and construction of the block and other parts may be provided without departing from the spirit of the invention, and I do not therefore wish to limit myself to the particular construction shown.

Having thus fully described my invention what I claim is:

1. A sharpener comprising a block formed with a blade contacting and guiding surface at its upper side and with an upwardly extending ledge at one side of said surface forming a side seat with end ribs at the ends of said seat, a cutting strip of rectangular form in cross section seated against the side surface of said ledge, and means on said ledge for detachably holding said strip seated at its lower edge and laterally against said seat, said block being formed at its lower side with transverse finger engaging grooves, one for each of the first, second and third fingers of the operator's hand and prevent slipping of the fingers upon said block and a cavity in the upper side of said block adjacent said ledge.

2. A sharpener for the purpose described comprising a metal block formed at its lower side with a plurality of transverse finger grooves curved in cross section to receive the fingers of the operator's hand and at its upper side with a flat blade contacting and guiding surface and with an upwardly extending ledge at one side of said surface and with a thumb cavity at the upper side thereof adjacent which said ledge is located to receive the thumb of the operator's hand, whereby said grooves and cavity serve to properly position the block and prevent it from slipping in the operator's hand, a thin cutting member of rectangular form in cross section seated against one side of said ledge with its lower side edge resting upon said guiding surface adjacent said ledge, said ledge being formed with ribs to engage the ends of said member, and yieldable means on said ledge for detachably and yieldingly engaging the upper edge of said member to hold the same seated at its lower edge upon said guiding surface and at one side against said ledge.

3. A sharpener for the purpose described comprising a metal block formed at its lower side with a plurality of transverse finger grooves and at its upper side with a central longitudinal upstanding rib extending the full length of the block and providing side surfaces forming seats, said block being also formed at its upper side at each side edge thereof with a depression to receive the thumb of the operator's hand, cutting strips seated against the opposite sides of said central rib and means on said rib for holding said strips seated thereagainst.

HARRY L. WINTER.