

(No Model.)

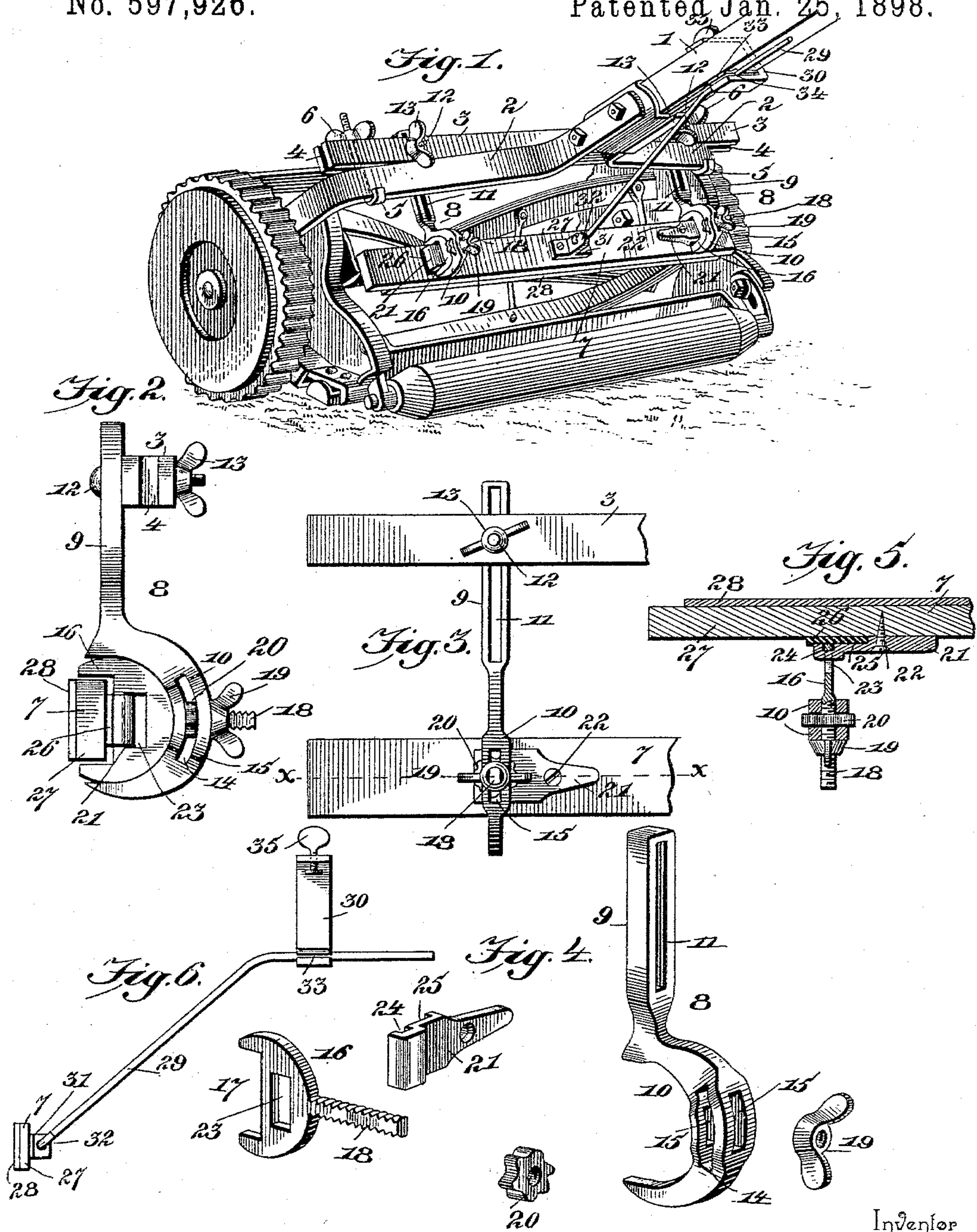
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SHARPENER FOR LAWN MOWER KNIVES.

No. 597,926.

Patented Jan. 25, 1898.



Inventor

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Witnesses

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UNITED STATES PATENT OFFICE.

ALBERT G. WILBER, OF AURORA, ILLINOIS; JULIA I. WILBER ADMINISTRATRIX OF SAID ALBERT G. WILBER, DECEASED.

SHARPENER FOR LAWN-MOWER KNIVES.

SPECIFICATION forming part of Letters Patent No. 597,926, dated January 25, 1898.

Application filed January 18, 1897. Serial No. 619,852. (No model.)

To all whom it may concern:

Be it known that I, ALBERT G. WILBER, a citizen of the United States, residing at Aurora, in the county of Kane and State of Illinois, have invented a new and useful Sharpener for Lawn-Mower Knives, of which the following is a specification.

This invention relates to sharpeners for lawn-mower knives, and has for its object the attachment to a lawn-mower of a sharpening device which may be so adjusted as to sharpen the knife at any desired bevel and which may also be adjusted toward the knife as it becomes worn and also vertically adjusted to accommodate it to lawn-mowers irrespective of the diameter of their ground-wheels.

With these objects in view the invention consists in certain novel features and details of construction and arrangement of parts, as hereinafter fully described, illustrated in the drawings, and pointed out in the claims hereto appended.

In the accompanying drawings, Figure 1 is a perspective view of a lawn-mower with the sharpening device attached thereto. Fig. 2 is an end view of the sharpening device detached. Fig. 3 is a rear view of one of the hangers which support the emery-block. Fig. 4 is a perspective view of the several parts of the hangers separated from each other. Fig. 5 is a section on the line *x x* of Fig. 3. Fig. 6 is a side elevation of the brace and the devices to connect it to the grinding-block and the handle of the machine.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

1 represents the handle of an ordinary lawn-mower, and 2 the handle-braces.

3 represents a bar, which may be of wood or metal, as desired, and of sufficient length to be supported at its ends upon the handle-braces. The bar 3 is provided at each end with a vertical slot 4, extending into the bar to a depth of three or four inches. The bar 3 is firmly secured to the braces by means of hooks 5, which fit under the braces 2 and the shanks of which extend up through the slot 4 and have their upper ends threaded for the reception of a thumb-nut 6.

7 represents an emery-block which is sup-

ported in two hangers 8. These hangers are supported by the bar 3, one near each end thereof, and as these hangers are exact duplicates of each other it will be necessary only to describe one. The hanger consists of the upper shank portion 9 and the lower semicircular portion 10. The shank 9 is slotted for nearly its entire length, and through this slot 11 a bolt 12 passes into and through the bar 3 and is threaded at its end for the reception of a thumb-nut 13. It will be seen, therefore, that the hanger may be vertically adjusted on the bar 3, this adjustment being necessary to enable the emery-block to be brought into proper position to be engaged by the knives irrespective of the diameter of the ground-wheels and to present a new grinding-surface whenever necessary. The semicircular portion of the hanger is provided with a semicircular slot 14, extending through it transversely, and is also provided with an intersecting slot 15, extending through it from front to rear.

16 represents a jaw to hold the emery-block. As shown, the jaw is semicircular in outline and fits within the semicircular portion 10 of the hanger and is provided in its front portion with a recess 17 for the reception of the emery-block, and from its rear a shank 18 extends through the slot 15. This shank is flattened on opposite sides to work snugly in the slot 15 and to prevent its turning therein. The upper and lower faces of the shank are screw-threaded for the reception of the nuts 19 and 20, the latter working in the slot 14 and the former on the outer portion of the shank. By means of this construction it will be seen that the jaw 16 may be adjusted forwardly of the hanger, and also that it may be partially turned therein to throw the emery-block to any desired angle to adjust it to the bevel of the knife to be sharpened and be securely clamped in position.

The emery-block is firmly held in position by means of lugs 21, extending laterally from the jaw and through which a screw 22 passes into the back of the emery-block. The lug 21 may be integral with the jaw or may be separable therefrom. As shown in the drawings, the jaw is provided with a slot 23, and the lug has a hooked end 24, which extends

through the slot 23 and fits over the metal between the slot 23 and recess 17. The lug is also provided with a recess 25 in its lower face for the reception of a rubber cushion 26, against which the back of the emery-block will rest and which will permit the emery-block to adjust itself to any uneven place in the knife. It will also serve to equalize the pressure of the emery-block against the knife while being ground.

The emery-block 7 consists of the hard-wood or metal backing 27, to which the emery strip or other abrading material 28 is secured in any suitable manner.

29 represents a hanger or brace adjustably connected at its rear end to the handle of the machine by means of a clip 30 and at its forward end to the back 27 of the emery-block by means of a plate 31, having a hinged connection with the hanger 29, as indicated at 32. The lower lip of the clip 30 is split, as indicated at 33, and provided with an opening 34 for the reception of the hanger, and its upper lip is provided with a set-screw 35, by means of which the clip is clamped on the handle and which also serves to force the split sections of the lower lip together to clamp the hanger therein. This hanger serves to prevent any springing of the emery-block at its middle portion and thus insures a uniform contact with the knife throughout its length.

In practice it is intended to make the grinding-surface of the emery-block sixteen inches long, which block can then be used on a machine with knives of any length, from twelve to sixteen inches, for it will be readily seen that by means of the slots 4 in the ends of the bar 3 the device can be attached to machines of different widths, it being of course understood that the bar 3 will be of sufficient length to adapt it to the widest machines. It is also to be understood that for machines of a larger size—say those having blades from eighteen to twenty-four inches in length—the grinding-surface of the emery-block will be twenty-four inches in length and the bar 3 of sufficient length for the widest machines.

In order to grind the blades, the emery-block is adjusted at the desired angle, so as to enable the blade to rub against it, when by pushing the lawn-mower over the ground in its usual working position the blades will be quickly sharpened. Another way to effect the sharpening is to lower the handle of the machine until the driving or ground wheels are out of contact with the ground, when they can be turned by hand to rotate the blades against the emery-block, as the ground-wheels of nearly all lawn-mowers are now made with a pin-hole in them for the reception of a crank.

It will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new is—

1. The combination with a mowing-machine, of hangers adjustably suspended from the frame of the machine, jaws adjustably attached to the lower portions of the hangers, and a grinding-block secured in said jaws, substantially as described.

2. In a mowing-machine, the combination with the handle-braces, of a bar adjustably secured thereon, hangers supported by said bar to have vertical adjustment relative to the bar, the lower end of each hanger being semicircular and provided with a slot extending through it from front to rear, a jaw having a semicircular outline to fit within the lower end of the hanger, a shank extending from the jaw through the slot in the hanger, said shank being screw-threaded, and a nut on the shank to lock the jaw in position, and a block having a grinding-surface attached to said jaws, substantially as described.

3. A hanger to support an emery-block on a mowing-machine, consisting of an upper shank provided with a longitudinal slot and a lower semicircular portion integral with the shank, said lower portion having a transverse semicircular slot and an intersecting slot extending through it from front to rear, combined with a jaw in which the emery-block is carried, said jaw having a shank extending through the intersecting slot in the hanger, said shank being screw-threaded, a nut working on the shank in the transverse slot of the handle and a nut on the outer end of the shank, substantially as and for the purposes specified.

4. The combination with a mowing-machine, of hangers adjustably suspended from the frame of the machine, jaws carried on the lower end of said hangers, a block having a grinding-surface secured in the jaws, and means substantially as described to adjust the jaws toward or away from the knives and to adjust the grinding-block to any desired angle to be engaged by the knives, substantially as described.

5. In a grinding device for the blades of lawn-mowers, the combination with hangers depending from the frame of the machine, a jaw adjustably supported in each of said hangers, a lug extending laterally from the jaw and provided with a recess in its lower face, an elastic cushion seated in said recess, and a grinding-block secured to said lug and bearing against the elastic cushion, substantially as described.

6. The combination with the handle-braces of a mowing-machine, of a bar supported on said braces and having vertical longitudinal slots at each end thereof, hooks fitting under said braces with their shanks extending up through the slots in the bar, said shanks being threaded and provided with a clamping-nut, hangers supported by said bar and carrying at their lower ends a block having a grinding-surface, and means substantially as described to adjust the grinding-surface vertically and horizontally and to change its

angle of inclination relative to the knives of the machine, substantially as and for the purpose specified.

7. In a mowing-machine, the combination
5 of a grinding-block supported at each end from the frame of the machine, to be engaged by the blades as they are rotated, and a brace pivotally connected at one end to the grinding-block intermediate its end supports, and
10 detachably and adjustably connected at its other end to a part of the frame of the machine, substantially as and for the purpose specified.

8. The combination with a mowing-machine,
15 of hangers adjustably suspended from

the frame of the machine, jaws adjustably attached to the lower portions of the hangers, a grinding-block secured in said jaws, and a brace connected at one end to the grinding-block intermediate the jaws, and adjustably
20 connected at its other end to a fixed part of the machine-frame, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
25 the presence of two witnesses.

ALBERT G. WILBER.

Witnesses:

NICK SCHILTZ,
FREDERICK BROWN.