D. F. Welsh,

Grinding Harvester Knives.

No. 109162. Patented Nov. 8. 1870.

Fig. 1

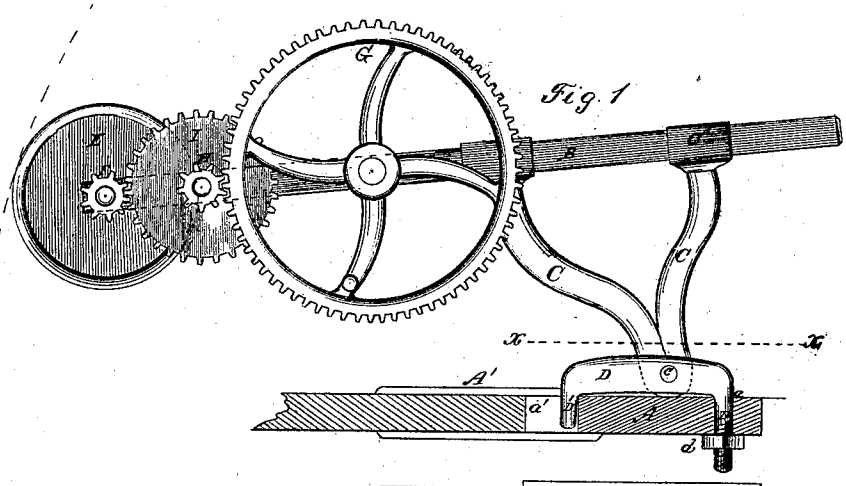


Fig. 2.

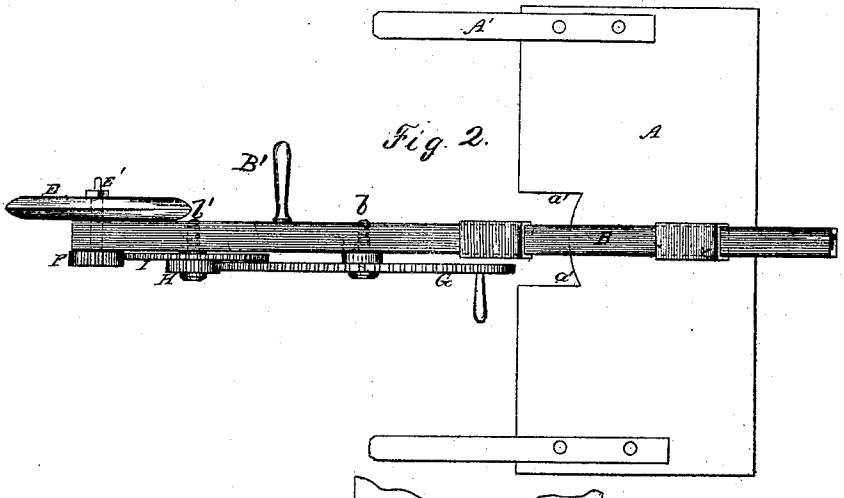
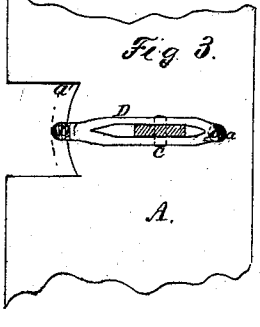


Fig. 3.



Witnesses
C. F. Clausen.
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United States Patent Office.

DWIGHT F. WELSH, OF NEVADA, OHIO.

Letters Patent No. 109,162, dated November 8, 1870.

IMPROVEMENT IN APPARATUS FOR GRINDING THE KNIVES OF MOWING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, DWIGHT F. WELSH, of Nevada, in the county of Wyandot and State of Ohio, have invented a certain Improvement in Apparatus for Grinding the Knives of Mowing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the annexed drawing making part of this specification, in which—

Figure 1 is a sectional elevation of my improved apparatus.

Figure 2 is a plan view.

Figure 3 is a horizontal section, on line *x x* of fig. 1.

The same letters are used in all the figures in the designation of identical parts.

The nature of this invention consists in providing a simple and efficient apparatus, by which the knives of mowing-machines may be ground without detaching the cutter-bar from the machine, consisting of a bed-plate with two pairs of jaws, by which it is attached to the back of the cutter-bar, and a slide-bar, arranged in a swiveling-rest mounted upon the bed-plate, and carrying upon a shaft, at its forward end, an emery-wheel or grindstone, which is revolved by means of a train of gearing on such slide-bar.

To enable those skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

In the annexed drawing—

A represents the bed-plate, which is made of suitable length, and a thickness about equal to that of the back of common cutter-bars of mowing-machines.

It is provided with a pair of jaws, A′, near each end, to embrace the back of the cutter-bar in applying the apparatus, and set-screws may be used to firmly secure it thereto at any desired point.

The slide-bar B is supported in a bifurcated rest, C, the forks of which terminate at the upper end in suitable sleeves C′, for the reception of the slide-bar.

The rest is pivoted at *c*, to an oscillating arm, D, which is arranged transversely upon the bed-plate, and provided with a downwardly-projecting stud, D′, at each end.

One of these studs enters a bearing in the bed-plate at *a*, and is secured thereto by means of a nut, *d*; the other enters a notch, *a′*, cut in the forward edge of the bed-plate, and limits the oscillations of the arm.

The above-described arrangement of the rest and arm permits of a limited oscillation of the slide-bar in both horizontal and vertical planes, sufficient to bring the beveled face of the emery-wheel or grindstone E in line with the cutting-edges of two adjacent knives in a cutter-bar.

The wheel E, which has a double-beveled face to adapt it to the beveled cutting-edges of the knives, is hung upon a short shaft, E′, arranged in bearings in the forward end of the slide-bar.

The shaft projects through the slide-bar to receive a pinion, F, which, in using the apparatus, is revolved at a high velocity by the driving-wheel G, through the intermediate pinion H and wheel I.

Studs *b* and *b′* are secured in the side of the slide-bar to serve as axis, the former for the driving-wheel, and the latter for the pinion H and wheel I, which are secured together.

The slide-bar carrying the grinding-wheel and driving mechanism is of sufficient length to permit of such a longitudinal movement in the rest as is necessary to bring the wheel in contact successively with all the points of a knife.

It is provided with a handle, B′, toward its forward end, by which the operator may take hold with one hand to adjust it so as to bring the face of the grinding-wheel to bear upon the cutting-edge of a knife, and also to exert the required pressure, while he moves the train of wheels with the other hand.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the bed-plate A, slide-bar B, adjustably attached thereto by intermediate mechanism, grinding-wheel or stone E, and a train of wheels for driving the latter, substantially as set forth.

2. The combination of the bed-plate A, oscillating arm D, rest C, slide-bar B, grinding-wheel E, and train of wheels F G H I, substantially as set forth.

In testimony whereof, I have signed my name to the foregoing specification in the presence of two subscribing witnesses.

DWIGHT F. WELSH.

Witnesses:
J. J. FISHER,
D. J. MINICH.