

EDWIN ROBERT McCALL.

Improvement in Harvester Cutter Grinders.

No. 120,205.

Patented Oct. 24, 1871.

Fig. 1.

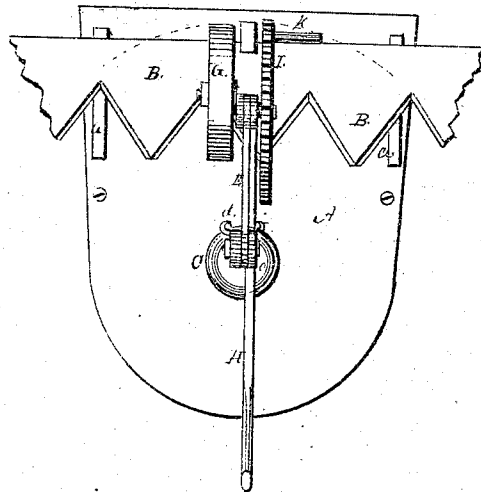


Fig. 2.

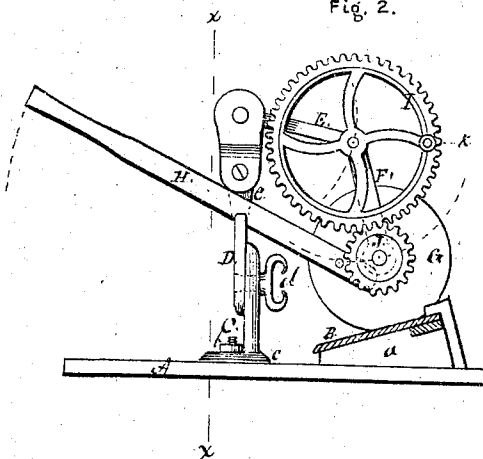
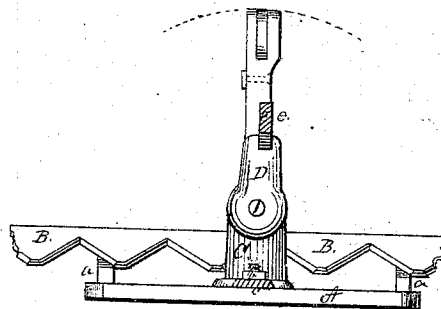


Fig. 3.



Witnesses.

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UNITED STATES PATENT OFFICE.

EDWIN ROBERT McCALL, OF SIMCOE, CANADA.

IMPROVEMENT IN HARVESTER-CUTTER GRINDERS.

Specification forming part of Letters Patent No. 120,205, dated October 24, 1871.

To all whom it may concern:

Be it known that I, EDWIN ROBERT McCALL, of the town of Simcoe, in the county of Norfolk and province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Machinery for Grinding and Sharpening the Cutter-Blades for Mowing and Reaping-Machines and for other purposes; and the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents a plan or top view of the grinding apparatus as secured to a portable base, on which the bar and series of cutter-blades are supported, and adjusted in such a manner that they may be reversed to admit of a square-faced right-angled guiding-wheel or grindstone to be brought to bear upon the cutters to grind and sharpen the cutting-edges at any desired bevel. Fig. 2 is a vertical side elevation of the grinding apparatus, showing the treble-jointed post or standard, the double-jointed arm, and gear-wheels as attached for driving the grindstone or wheel, and the lever or hand-bar for operating and bringing the grinding-wheel in a proper position to sharpen the blades. Fig. 3 shows a scallop-sickle or cutter-bar on the base and supports for grinding, and a rear view of the jointed post or standard.

The nature and object of my invention are a simple, cheap, and portable apparatus for grinding and sharpening the blades or cutters for mowing and reaping-machines, taken to the harvest-field and operated by one man, only requiring the sickle-bar to be taken from the machine and placed in a proper position on the supports to be ground and sharpened truly. My invention consists in the construction, arrangement, and combination of the mechanism hereinafter more fully described.

The base or platform A, on which a series of beveled or tapering blocks, *a a*, is placed for holding the sickle or cutters E E in position to be ground, may be made of hard-wood plank or other suitable material, and of such form and size as is most convenient to support the post or

standard C, which is provided with a broad foot, *c*, and is secured to the base A by a screw or bolt, *b*, so that the post will turn in either direction. To the elevated portion C is pivoted and held by a thumb-nut, *d*, another part of the standard D, to the top of which is hinged the jointed arm E, and to it is hinged another arm, F, in the extreme end of which is the journal-box for the shaft of the grinding-wheel G. The arm F has also a projection underneath the journal, to which a hand-bar or lever, H, is attached, and which extends back by the post *c* and rests, and slides in a recess, *e*, made for it in the standard D, so that, by the lever H, the grindstone or wheel G is moved on the blade B to sharpen it, while the blade is stationary on the blocks *a a*. The grinding-wheel G may be rotated at any required speed by spur-gear wheel I and pinion J, or it may be driven by friction-wheels or a belt.

The advantages of my mode of constructing and arranging the swivel-post and jointed standard and the double-jointed arm to which the grinding-mechanism is attached are, that a square-edge or right-angle-face grindstone or grinding-wheel may be made to conform to the bevel of the cutter-blades, and any degree of a bevel may be ground by adjusting the face of the stone to it and securing the angle by the thumb-nut or screw *d*.

For sharpening the blades or angular cutters of reapers or mowing-machines, which require to be done quite frequently during their use in order to have them work easy and do good work, the operation by my improved apparatus is as follows: The machine being light and portable and easily carried by one man, it is taken into the harvest-field or meadow, the sickle-bar is taken out of the fingers and placed on the tapering blocks *a a*; the grinding-wheel G is then adjusted to the bevel of the cutter on one side, when it is rotated by the crank-handle *k* on the driving-wheel I and moved laterally on the blade by the lever H; the sickle-bar B is shifted endwise until one side or edge of each cutter is sharpened; then it is reversed, and the same process and manipulation is proceeded with to sharpen the other edges of the cutter.

In some of the mowers, where the fingers on the bar are wide apart, my machine, constructed as above described, can be so placed in relation to the cutters as to grind and sharpen them without removing the sickle-bar from the mower, and thus the cutters can be whetted often and kept sharp with but little loss of time.

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

The adjustable standard C and D, the jointed

arms or frame E and F, and the hand-lever H, as arranged, in combination with the grinding-wheel G and the driving mechanism I and J or their equivalents for sharpening cutter-blades for mowers and reapers, as shown and described.

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Witnesses:

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