W. S. INGRAHAM.

SICKLE-GRINDER.

No. 188,639. Patented March 20, 1877.

Fig. 1

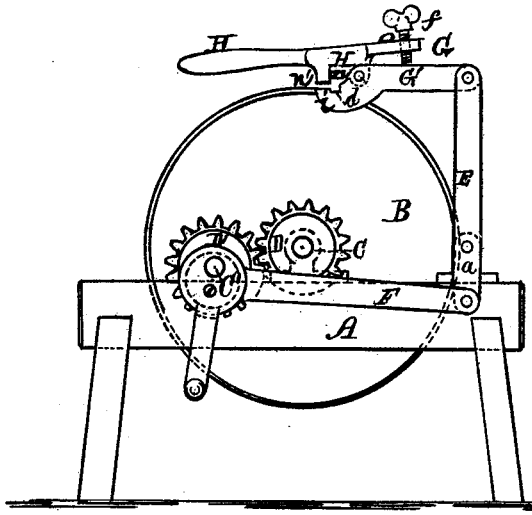


Fig. 2

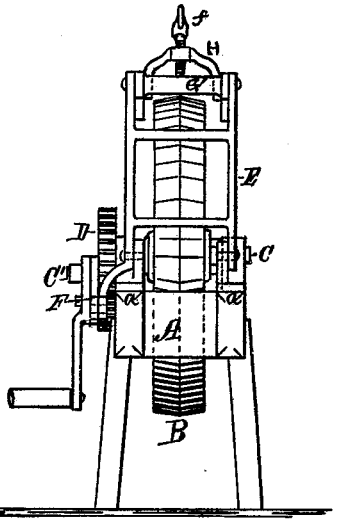
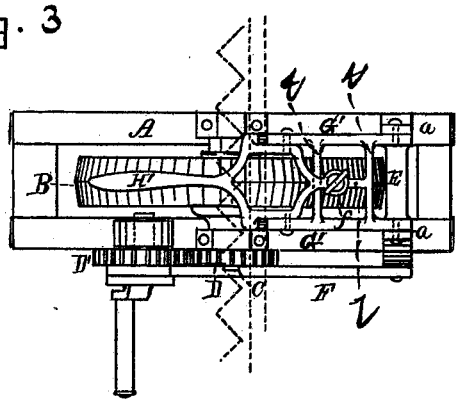


Fig. 3



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UNITED STATES PATENT OFFICE.

WILLIAM S. INGRAHAM, OF WAUKEGAN, ILLINOIS.

IMPROVEMENT IN SICKLE-GRINDERS.

Specification forming part of Letters Patent No. 188,539, dated March 20, 1877; application filed December 8, 1876.

To all whom it may concern:

Be it known that I, WILLIAM S. INGRAHAM, of Waukegan, in the county of Lake and State of Illinois, have invented new and useful Improvements in Sickle-Grinders; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 represents a side elevation of a sickle-grinding machine embodying my invention. Fig. 2 represents an end view, and Fig. 3 represents a general plan or top view, of the same.

Like letters of reference indicate like parts.

My invention relates to that class of machines employed in grinding scalloped sickles used in reaping and mowing machines; and the object of my invention is to provide a means for holding the sickle in contact with the face of the stone, and to impart a reciprocating movement to the sickle in a line with the rotation of the stone, and in contact with the grinding-surface of the latter. To that end my invention consists in the combination of the several parts, as hereinafter described and claimed.

In the drawing, A represents the frame, which is constructed of wood, and in any suitable form that will receive and support the operating parts of the machine. B is the grinding-stone, which is mounted on the shaft C, journaled to the frame A, so as to freely revolve. D is a gear-wheel, mounted on the shaft C, and is adjusted to engage with the gear-wheel D′, on a crank-shaft, C′, journaled to the frame A, by which means a rotary motion is imparted to the stone by the rotation of the crank-shaft.

E is an upright frame-work, fulcrumed, at a point near its lower end, to or upon suitable bearings *a a*, permanently attached to the frame A. F is a connecting-rod, which is pivoted at one end to the lower end of the frame E, and eccentrically connected at its opposite end to the crank-shaft C′, by which means an oscillating movement is imparted to the frame E by the rotary movement of the crank-shaft.

The sickle-holder G is composed of a lower and an upper frame, between which the sickle-bar to be ground is held. The lower frame consists of two horizontal arms, G′, pivoted to the upper end of the oscillating frame E, and extending forward over the grindstone, as shown in Fig. 1 of the drawings, and said arms G′ are provided, on their upper surfaces and forward ends, with transverse grooves *d*, which receive the heads of the rivets which fasten sickles or cutters to the cutter-bar, the lower faces of two of the cutters resting on the upper faces of the lugs *i*. The pivoted arms G′ are connected together by the transverse cross-bars *t*, which are again connected together at their middle parts by the piece *l*, which latter serves the double purpose of bracing the cross-bars *t*, and affording a bearing for the set-screw *f*, for the purpose hereinafter set forth.

The letter H represents an open clamping-frame, pivoted to the side arms G′, and provided with a handle, H′, and rear projection *o*, having a perforation to receive a thumb-screw, *f*, the lower end of which bears against the upper surface of the piece *l*, in the lower frame, whereby the clamping-frame can be adjusted, as described.

The clamping-frame H is provided with recesses *n* in its lower face, for the reception of the cutter-bar, which recess lies directly over the grooves *d* in the lower frame G. The letters *n′* are lugs or extensions, projecting sidewise and beyond the frame, and abut against the front face of the cutter-bar when placed in position to be ground.

By this construction the sickle-holder is rendered light, and the sickle is securely held in place in the recesses *d* and *n*, and by the extensions *n′*, the bearing-surfaces of the lugs *i* preventing any rocking motion of the sickle during the grinding of the same.

The grinding-face of the stone is beveled from its center laterally, so as to approximate the angle of the sickle-sections, when the latter are in position for being ground, by which means the adjacent edges of two sections of the sickle can be ground at the same time.

In using my said sickle-grinder, the sickle is secured in position, as hereinbefore described, so that the faces of the stone fit

between two adjacent sections of the sickle, when motion is imparted to the stone, the operator applying a sufficient amount of force to the outer end of the lever to produce the necessary friction of the sickle upon the stone, as the sickle, at the same time, is caused to reciprocate against the face of the stone by the oscillating movement of the frame E, thereby causing the sickle-sections to be cut away by their frictional contact with the stone, and producing a true and perfect cutting-edge.

It will be observed that in my construction none of the mechanism projects below the frame A, thus offering no obstruction to the mechanism.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The pivoted arms G′, connected together by the pieces *t t l*, and provided with the grooves *d* and lugs *i*, in combination with the clamping-frame H, having recesses *n*, lugs *n′*, handle H′, perforated projection *o*, and set-screw *f*, substantially as and for the purpose set forth.

WILLIAM S. INGRAHAM.

Witnesses:
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