W. S. INGRAHAM.

Sickle-Grinder.

No. 198,114. Patented Dec. 11, 1877.

Fig. 1.

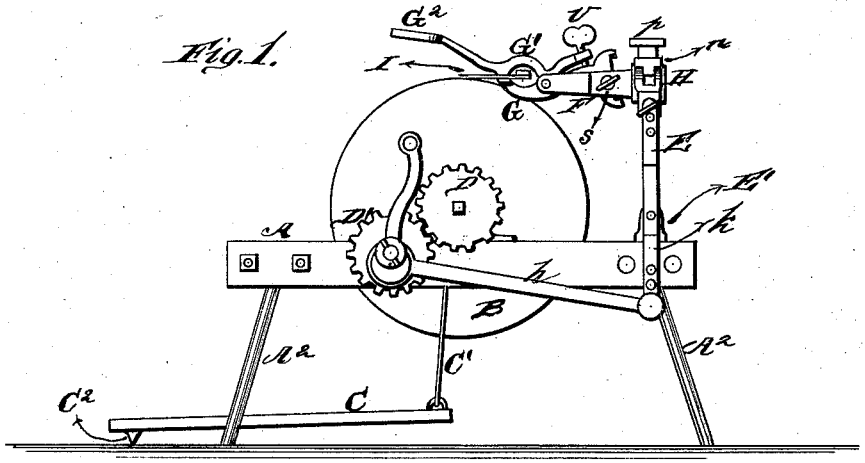


Fig. 2.

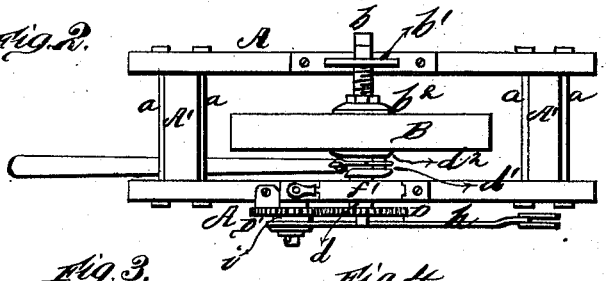


Fig. 3.

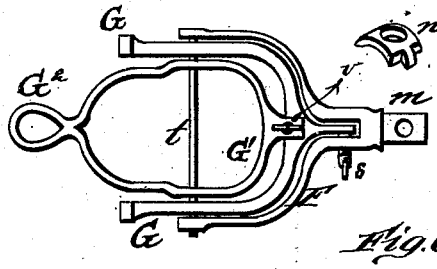


Fig. 4.

Fig. 5.

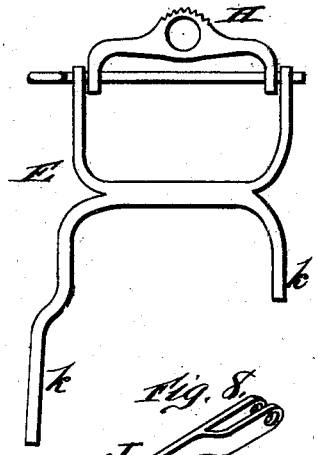


Fig. 6.

Fig. 7.

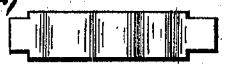
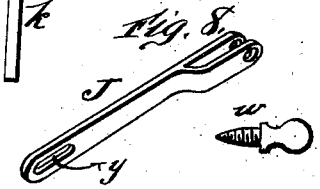


Fig. 8.



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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. **198,114**, dated December 11, 1877; application filed September 29, 1877.

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 a new and valuable Improvement in Sickle-Grinders; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a side view of my sickle-grinder. Fig. 2 is a plan view. Figs. 3, 4, 5, 6, 7, and 8 are detail views thereof.

The nature of my invention consists in the construction and arrangement of a machine for grinding harvester-knives, as will be hereinafter more fully set forth.

The annexed drawings, to which reference is made, fully illustrate my invention.

The stand for my grindstone consists of two parallel side beams, A A, with two end pieces, A^1 A^1, securely fastened together by four bolts, *a a*, and supported upon four legs, A^2 A^2. B represents the grindstone, provided on one side with a journal, *b*, resting in a box, b^1, secured on one side of the frame. This journal *b* is screwed into a head-piece, b^2, secured in the eye of the grindstone on that side. In the other side of the grindstone is secured another head-piece, d^2, from which projects the journal, said journal being at its inner end, next to the grindstone, formed with a crank, d^1. The outer end of the journal is formed with a V-shaped circumferential groove, *x*, and rests upon V-shaped rollers E E, working in said groove, said rollers being mounted in a box, *f*, secured on that side of the frame, and the whole covered by a cap, f^1, held in place by a pivoted button, f^2. These rollers prevent any lateral motion of the stone.

The crank inside of the frame, formed by a continuation of the journal at right angles, avoids the jumping of the opposite journal, and consequent shaking of the stand, as when the crank is applied on the outside of the stand. The crank d^1 is, by a pitman, C^1, connected with a treadle, C, for operating the grindstone, said treadle being, at its end, provided with V-shaped projections C^2 on its under side, to prevent the treadle from slipping while being worked.

On the end of the journal *d* is secured a cog-wheel, D, which meshes with a similar wheel, D′, mounted on a stud on the side of the frame. On the hub of this latter cog-wheel is formed an eccentric, *i*, which is, by a pitman, *h*, connected with an arm, *k*, projecting downward from one side of a frame, E, said frame being pivoted to a bracket, E′, fastened at one end of the main frame. The frame E thus, when the grindstone rotates, obtains a rocking motion, the extent of which is regulated by changing the point of connection between the pitman *h* and arm *k*.

In the upper end of the rocking frame E is pivoted a curved bar, H, which may be adjusted up and down in the frame by changing the pivoting-rod in different holes in the frame. In the center of the curved bar H is formed a circular, or rather tubular, bearing for a shank, *m*, projecting from the center of a fork, F. This tubular bearing is slotted across the top, and on both sides of the slot the bearing is toothed or otherwise roughened. A cap, *n*, is fitted over the same, and a set-screw, *p*, passed through the cap and screwed into the shank *m*. By this means the fork F can be turned to either side, and held at any angle desired by screwing up the set-screw *p*. In the arms of the fork F is pivoted one part, G, of a clamp, which is also somewhat in the shape of a fork, and the ends thereof project beyond the ends of the fork F. This part G of the clamp can be adjusted up and down on its pivot, and held by a set-screw, *s*.

t is the rod that pivots the part G of the clamp, and on this rod is also pivoted the other part, G^1, of the clamp. I represents the sickle to be ground, which is placed between the two parts of the clamp, at the front end, and fastened by means of a thumb-screw, *v*, which screws through the rear end of the part G^1, and bears against the part G, as shown.

The part G^1 of the clamp is extended forward, forming a handle or lever, G^2, for the operator to press the knife down onto the grindstone. The above devices form an adjustable knuckle, by which the sickle-knife can

be placed on either a bevel or flat stone, and combining a stationary, rocking, oscillating, or lateral motion.

By the double joint in the sickle-holder a rocking motion is obtained, either by hand or eccentric power, bringing the bevel edge of the knife in contact with the stone from heel to point, and applicable to either a bevel or flat stone.

When it is desired to have the sickle stationary while being ground—that is, without any forward and backward motion—the pitman *h* is disconnected from the arm *k*, and an arm, J, connected to said arm. The other end of the arm J has a slot, *y*, and is fastened to the main frame by a set-screw, *w*. By loosening this set-screw, the forward and backward motion can be imparted to the sickle by hand.

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

1. The rocking frame E, provided with adjusting-holes at its upper end, in combination with the curved pivoted bar H, perforated at its ends, and provided with a tubular bearing slotted across its top, and roughened, serrated cap *n*, set-screw *p*, and the fork F, having bearing *m*, substantially as described, and for the purpose set forth.

2. The curved, pivoted, and vertically-adjustable bar H, slotted at its top and roughened, in combination with the serrated cap *n*, set-screw *p*, pivoted forks F and G, and set-screw *s*, substantially as described, and for the purpose set forth.

3. The curved, pivoted, and vertically-adjustable bar H, constructed as set forth, in combination with the serrated cap *n*, set-screws *p s v*, and pivoted forks F G G^1, substantially as described, and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WILLIAM SIDNEY INGRAHAM.

Witnesses:
A. S. WATERMAN,
ED. T. WATERMAN.