

W. S. Ingraham,
Sharpening Harv. Cutters.
No. 106,167. Patented Aug. 9, 1870.

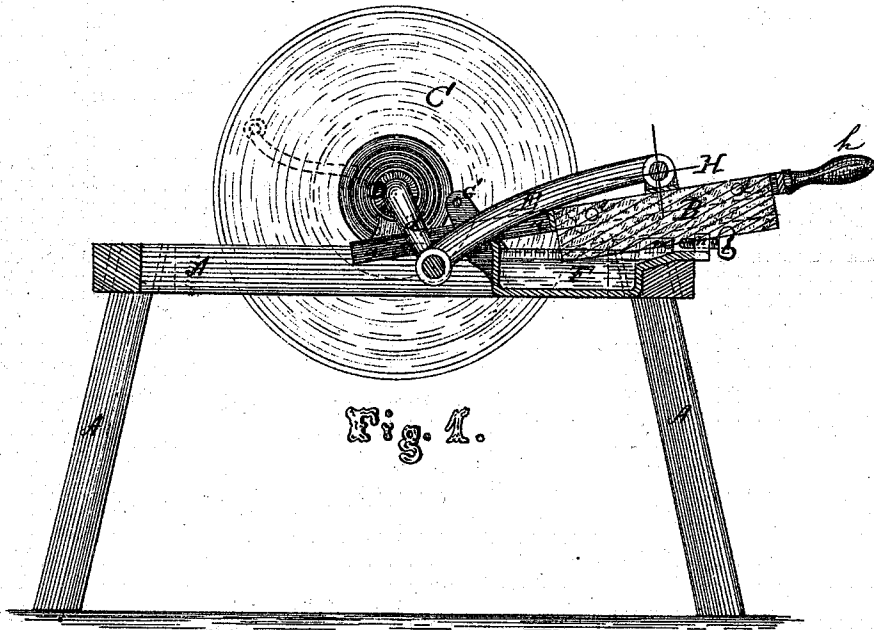


Fig. 1.

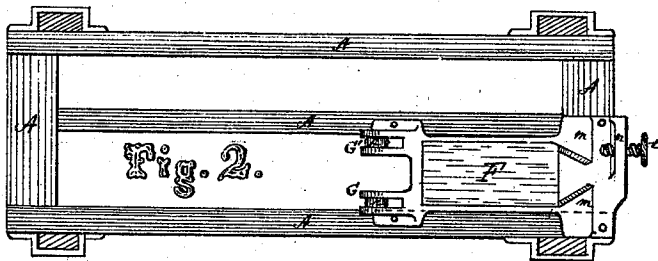


Fig. 2.

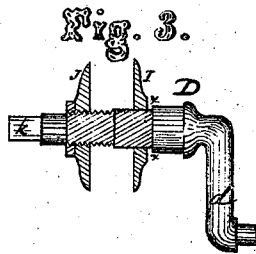


Fig. 3.

WITNESSES.

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UNITED STATES PATENT OFFICE.

WILLIAM S. INGRAHAM, OF EVANSTON, ILLINOIS.

IMPROVEMENT IN MACHINE FOR SHARPENING HARVESTER-CUTTERS.

Specification forming part of Letters Patent No. 106,167, dated August 9, 1870.

To all whom it may concern:

Be it known that I, WILLIAM S. INGRAHAM, of Evanston, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Machines for Sharpening Harvester-Cutters; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a longitudinal vertical section. Fig. 2 is a top view of the machine, the stones, cranks, shaft, and holder being removed. Fig. 3 is a detached view of the crank-shaft, and the means employed to confine the circular stone thereon.

Similar letters of reference indicate like parts.

The object of this invention is to provide an improved device for sharpening the cutters of mowing and harvesting machines while they are attached to the cutter-bar.

The invention is an improvement upon that class of machines for a similar purpose in which an angular-faced reciprocating stone is employed, arranged to work over a transverse bed, having the cutter-bar supported in such a position that the stone, working in the angle between the cutters, will bear fairly upon the edges of the cutters forming the angle, and sharpen them both at the same time.

In the drawing, A indicates the frame; B, the block stone; C, the circular stone; D, the main shaft; H, the reciprocating block-stone holder; E, a pitman, connecting the holder to a crank, *d*, on shaft D; and F, a tank of water, supported by frame A, and so arranged as to wet the stone B, either directly or by means of a sponge, wick, or other similar device.

First. The tank, which may be made of any suitable material, is provided at its inner end with two parallel bifurcated or mortised standards, G G', inclined somewhat toward the main shaft, and supporting friction-rollers *r r* at their upper end. The holder H is provided with two nearly-horizontal parallel arms, *a a*, which run under these rollers, working in the mortise of the standards. The pitman works between the two standards, its end being simply slipped upon the crank-pin. While the

parts are in the relative position shown in Fig. 1, the pitman and crank cannot be disconnected, by reason of the standards G G', which operate as guides on each side of the pitman, preventing any lateral movement thereof; but, by taking hold of the handle *h*, raising the holder, and drawing the arms *a a* out of the mortises, the parts are brought to such a position that the standards no longer bear against the sides of the pitman, and the latter can be at once disconnected from the crank. The whole is but the work of a moment, and it will be observed that no nut, pin, or other fastening device is employed in the operation.

Second. The holder H is constructed in the shape of an oblong rectangular frame, having the arms *a a* projecting from one end, and the handle *h* from the other. The block stone is confined in the holder by means of lateral or terminal set-screws *s s*, which extend through the frame and bear against the edge of the stone. When secured in this way the stone can be adjusted to give any bevel required. It can be moved longitudinally, laterally, or vertically, and one edge may be depressed, while, at the same time, another is raised, if necessary for its adjustment.

Third. The upper side of the tank, near its rear end, is cast or formed with a bed, to receive the cutter-bar, or, in other words, is cast with a shoulder, *m*, and a flange, *n*, parallel with the shoulder. The cutter-bar rests in the bed or groove between the shoulder and the flange, and is secured there by means of a set-screw, *t*, which passes through the flange and bears against the rear edge of the bar, the cutters attached to bar lying upon the shoulder *m*, in the proper position for the stone to act upon them. Instead of a single shoulder, *m*, extending the whole width of the stone, a series of raised tables or beds, to support the several cutters, may be cast upon the tank, or formed at its rear edge, with depressions between them, to allow the stone to operate without coming in contact with anything except the cutters. The devices are regarded as substantially equivalent. By the arrangement here described, the cutter-bar can be adjusted so as to bring the stone to bear upon any of the cutters that may need grinding, and it may be changed from one position to another merely

by a turn of the set-screw and sliding the bar along in the groove or bed.

Fourth. For the purpose of securely holding the circular stone upon its shaft, and at the same time permitting its easy removal and replacement, the shaft is constructed as shown in Fig. 3. One bearing is about one-quarter of an inch larger than the other, and the stone is held between the plates I J, the former of which bears against a shoulder, *x x*, at the end of the larger bearing, the latter screwing upon the shaft. To prevent the stone from slipping, the shaft is made square between the two plates. A hand-crank is attached to the shaft at *k*.

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

1. The combination of a holder, having a guide arm or arms, *a a*, with a tank or bed, having a guide standard or standards, G G', and a pitman and crank, E *d*, when constructed to operate substantially as and for the purposes specified.

2. In a machine for grinding harvester-cutters, the described construction of the shoulder *m* and flange *n* formed upon the tank F, when arranged to operate together and in combination with the set-screw *t*, as and for the purpose specified.

WILLIAM S. INGRAHAM.

Witnesses:

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MUCT JEFFERSON.