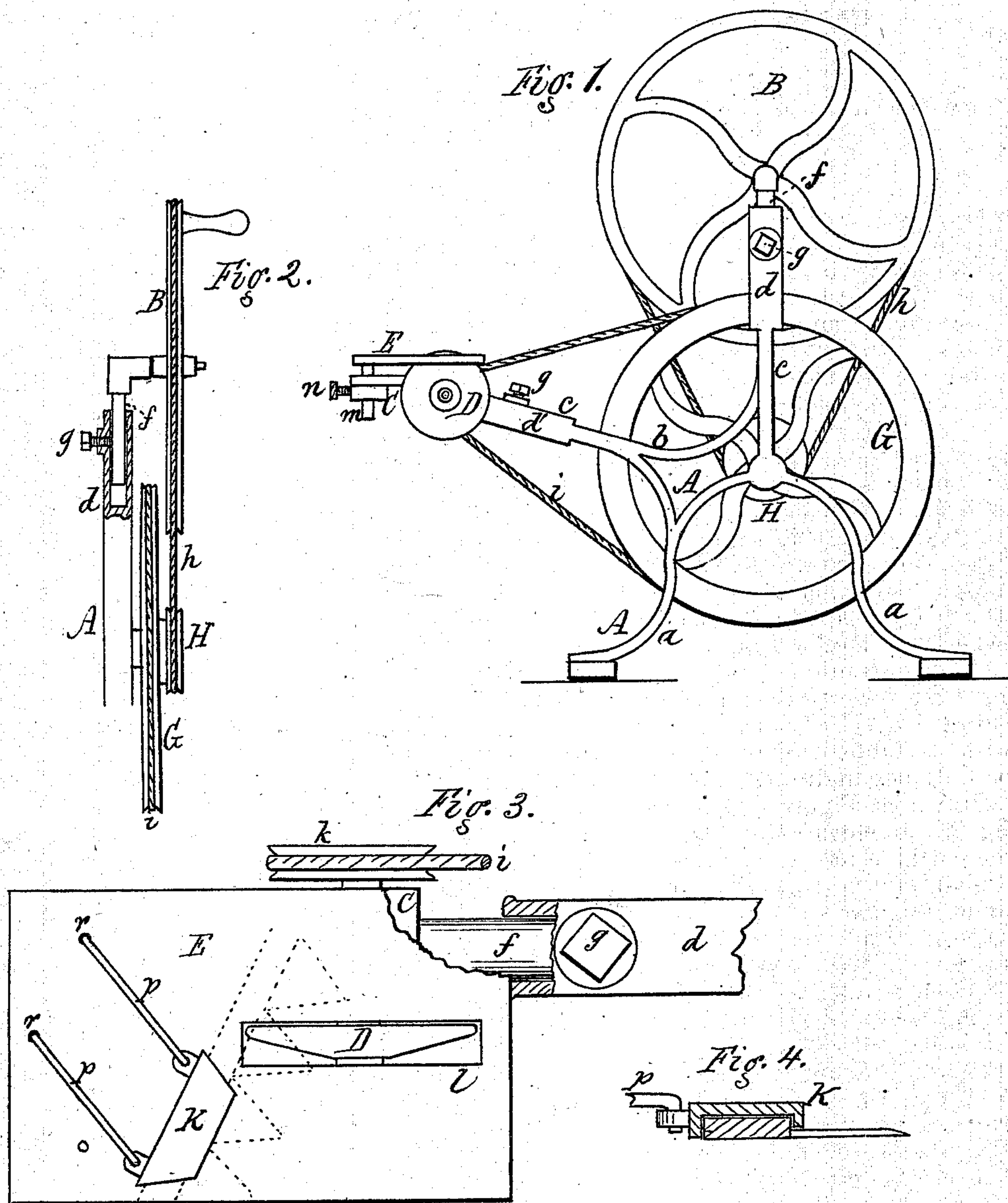


J. H. CURRAN.
Sharpening-Machines.

No. 146,050.

Patented Dec. 30, 1873.



Witnesses.
 Geo Devenport
 Channing Nash

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UNITED STATES PATENT OFFICE.

JAMES H. CURRAN, OF ROCHESTER, ASSIGNOR OF ONE-HALF OF HIS RIGHT
TO TRUMAN B. JOHNSON, OF SENECA FALLS, NEW YORK.

IMPROVEMENT IN SHARPENING-MACHINES.

Specification forming part of Letters Patent No. **146,050**, dated December 30, 1873; application filed
September 19, 1873.

To all whom it may concern:

Be it known that I, JAMES H. CURRAN, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Sharpening-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same.

My invention relates to certain improvements in machines for grinding harvester-knives; and it consists, among other things, in combining, with an adjustable frame, a grinding-wheel and an independent vertically-slotted table, said parts being constructed so as to be attached to the frame supporting the driving wheels or mechanism, as hereinafter set forth. The invention further consists in combining, with a vertically-adjustable table and grinding-wheel, a swinging guide connected with the table by pivoted parallel bars, as will be fully hereinafter described.

In the drawings, Figure 1 is a side elevation. Fig. 2 is an elevation of the upper portion of the machine at right angles to Fig. 1. Fig. 3 is a plan, on an enlarged scale, of the table and its connecting parts, and showing in dotted lines a harvester-knife being ground thereon. Fig. 4 is an enlarged sectional view of the gage.

This machine is intended more particularly for grinding harvester-knives, but is well adapted to other purposes.

A is the frame, having two legs, *a a*, a central body, *b*, and two arms, *c c*. At the ends of the arms are two sockets, *d d*, in which fit bearings *f f*, that are fixed in any desired position by set-screws *g g*. The upper bearing supports the crank-wheel B, while the other bearing supports a frame, C. In this frame is hung the grinding-wheel D and an adjustable table, E. In the center of the main frame A is hung a band-wheel, G, on the outer side of which is a pulley, H. The pulley is first cast separate, and then placed in the mold and cast into the wheel G. A band, *h*, connects the crank-wheel B with the pulley H, and a band, *i*, connects the band-wheel G with a pulley, *k*, on the shaft of the grinding-wheel D. These bands are preferably made of covered rubber, so as to have a degree of elasticity that keeps them

straight. The frame C, which carries the grinding-wheel and adjustable table, has an end adjustment, and also an axial or turning adjustment by reason of its bearing *f*, which rests in the socket *g*, as before described. By means of the axial adjustment the grinding-wheel and the table may be turned to any angle. The grinding-wheel is made of emery, with a thin edge, and rests in a slot, *l*, of the table. The table is simply a horizontal plate, and it has a vertical arm or bearing, *m*, which passes through a socket in the frame C, and is fixed at any height by a set-screw, *n*. On the table is a swinging gage, K, which is grooved on its under side to receive the cutter-bar of a harvester, and allow it to slide endwise. To this gage are jointed two parallel arms, *p p*, the opposite ends of which are jointed in holes *r r* of the table. Two sets of these holes are used, one set on each side, the object being to allow the gage to be used on either side of the grinding-wheel, as will presently be described.

The operation of the machine is as follows: The crank-wheel B and frame C are drawn outward, and the set-screws *g g* set against them, by which means the bands are tightened up to any desired degree in the simplest and most effective manner. The frame C is also set either horizontally or at any desired angle by the axial turning of bearing *f*. The table is adjusted vertically, so as to bring its upper surface in proper relative line with the upper surface of the grinding-wheel, and is fixed in the desired position by the set-screw *n*. The cutter-bar of the harvester is then placed in the groove on the under side of the guide K, which stands at such an angle as to present the angular edge of one side of the knives in proper position to the grinding-wheel to be ground, as shown by the dotted lines in Fig. 3. As the guide is moved up toward the wheel it maintains its position, owing to the parallel swinging arms *p p*, and thus presents the edge of the knife in a straight line to the grinder. As fast as the edges of the knives standing in one direction are ground, the cutter-bar is slid endwise in the guide to bring them successively in place. When all the knives are ground on one edge, the swinging arms *p p* are removed to the other set of holes on the other side of

the table, which brings the guide to the opposite angle, and the other edges of the knives are then ground in the same manner.

It will be understood that the degree of bevel of grinding may be varied more or less by adjusting the table higher or lower, and also by setting the cutting-edge of the knives at a different angle relatively to the grinding-wheel. The edges, therefore, may be ground thick or thin, at pleasure. Harvester-knives and other articles can also be well ground without using the guide K, being held by hand in the usual way.

If desired, the outer ends of the arms *p p* may be connected with a bar or plate parallel with K, the two thus forming a device similar to an ordinary parallel rule. In such case the outer bar may have a screw in the center of its under side, which passes through a hole in the table, and is secured by a nut. This enables the guide to be set at any angle without difficulty, as the outer bar has only to be swung around and then tightened in place by the nut.

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

1. In combination with the adjustable frame C, the grinding-wheel D and the independent vertically-slotted table E, when said parts are made attachments of the frame, substantially as described, for the purpose specified.

2. In combination with the vertically-adjustable table E and grinding-wheel D, the swinging guide K and parallel arms *p p*, when arranged to operate in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES HENRY CURRAN.

Witnesses:

R. F. OSGOOD,
JAMES L. NORRIS.