J. MARKEL.

SHARPENING-MACHINE.

No. 184,401. Patented Nov. 14, 1876.

Fig 1.

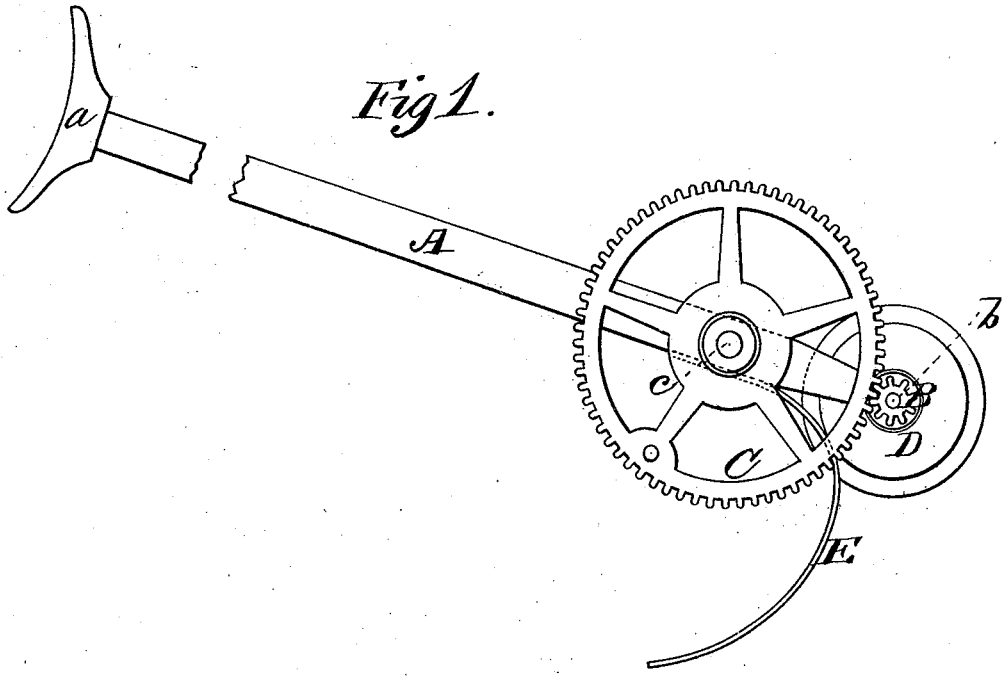
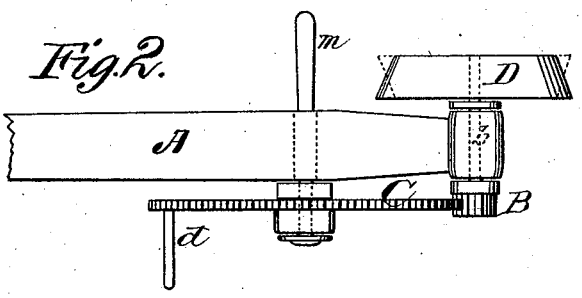


Fig 2.



WITNESSES

Villette Anderson

Walter C. Hase

INVENTOR

Jno. Markel.

E. W. Anderson,

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN MARKEL, OF MONTICELLO, ILLINOIS.

IMPROVEMENT IN SHARPENING-MACHINES.

Specification forming part of Letters Patent No. **184,401**, dated November 14, 1876; application filed March 11, 1876.

To all whom it may concern:

Be it known that I, JOHN MARKEL, of Monticello, in the county of Piatt and State of Illinois, have invented a new and valuable Improvement in Scythe-Sharpeners; 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 representation of a side view of my improved sickle-sharpener, and Fig. 2 is a plan view thereof.

This invention has relation to improvements in devices for sharpening the sickles of mowing and reaping machines; and it consists in an equalizing-spring, secured at one end to a bar in which a grinding-wheel and its operative mechanism is mounted, adapted to be placed on the sickle-bar, and to yield to pressure, thereby allowing the stone to be pressed against the sickle-plate with a regular strain, and in a degree proportionate to the effect required, as will be hereinafter more fully explained and claimed.

In the annexed drawings, the letter A designates a preferably straight wooden or metallic bar, of suitable length, having on one end a shoulder or clutch-piece, *a*, and mounted in suitable bearings at the other a transverse shaft, *b*. This shaft is provided at one end with a pinion, B, meshing with a drive-wheel, C, rotating freely on a shaft, *c*, passing through or mounted in bearings on bar A, and extending beyond bar A to form a handle, *m*, and at the other end with a grinding-wheel, D, having its periphery beveled to fit into the serrations or teeth of the sickle-sections. This grinding-wheel is readily detachable from the shaft, and is capable of being reversed, so that after the teeth of one section have been ground, the same, when being reversed, may be made to sharpen those of the other.

Motion is imparted to the grinding-wheel through the medium of pinion B, by the actuation of gear-wheel C, which is operated by means of an arm, *d*; or, in lieu of pinion B and wheel C, by means of an endless belt passing over pulleys upon the adjacent ends of shafts *b c*, in a position tangential to, or with, the convexity of its curvature toward the work.

E represents a metallic spring, preferably of steel, and of curved form, which spring is rigidly secured to the under side of bar A at its end, carrying the grinding-wheel. This spring is designed to be set upon or against the sickle-bar, and the clutch-piece *a* having been placed against the left shoulder, the operator, by bearing against the spring E, forces the wheel against the knives, and causes it to be rapidly rotated by turning wheel C. The yielding of the spring will be proportionate to the force used by the operator. He is consequently enabled to regulate the force with which the said wheel acts, according to the effect desired to be produced on the sickle, and, the yielding of the spring being regular, the force thus produced will be equal at all times, thus preventing the wheel from becoming eccentric or uneven from the irregular action or effect of the sickle thereon.

In practice grind-wheel D will be of emery, with a wood, iron, or hard-rubber core, and will be of small diameter, to secure the proper rapidity of revolution.

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

The hand sickle-grinder, having the shank A terminating in an eye carrying the common shaft of the grinding-wheel, and pinion B, arranged on opposite sides of said shank, and having secured to its under side the curved feed-spring E, bent in convex form toward or tangent to the work, substantially as specified.

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

JOHN MARKEL.

Witnesses:

WILLIAM M. HOLMES,

JOSEPH P. VAN GUNDY.