

(No Model.)

M. L. BUSH.
DIE SHARPENING MACHINE.

No. 473,249.

Patented Apr. 19. 1892.

Fig. 1.

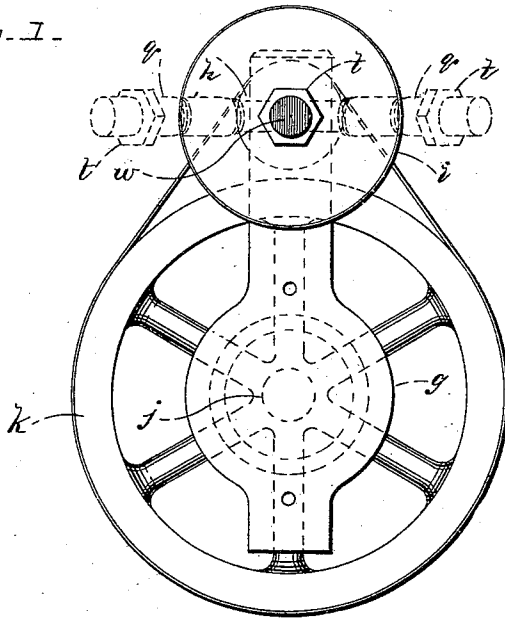


Fig. 2.

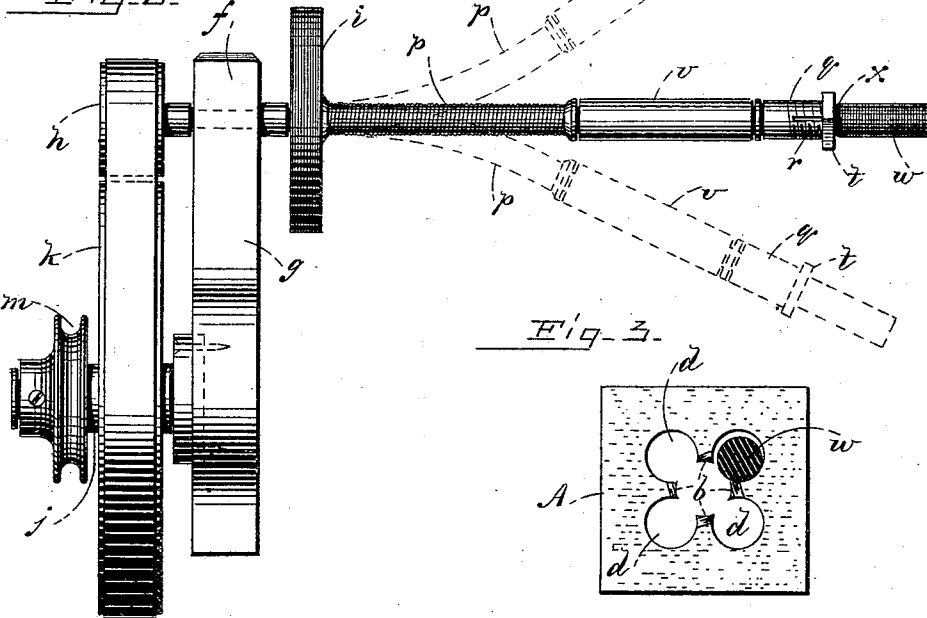
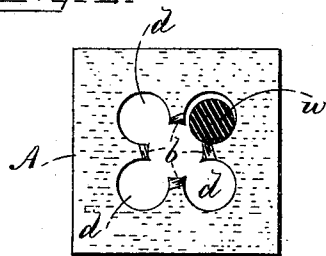


Fig. 3.



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MARTIN L. BUSH, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR OF ONE-HALF
TO ALBERT S. LANG, OF SAME PLACE.

DIE-SHARPENING MACHINE.

SPECIFICATION forming part of Letters Patent No. 473,249, dated April 19, 1892.

Application filed March 31, 1891. Serial No. 387,173. (No model.)

To all whom it may concern:

Be it known that I, MARTIN L. BUSH, of Lawrence, in the county of Essex, State of Massachusetts, have invented certain new and useful Improvements in Die-Sharpener Machines, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an end elevation of my improved machine; Fig. 2, a side elevation of the same; and Fig. 3, a face view of the die, the grinder being shown in position therein.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to a grinding-machine for sharpening thread-cutting dies for pipes; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents an ordinary form of pipe-die, which comprises a rectangular steel plate provided with thread-cutting faces *b*, separated by cylindrical openings *d*. It is usually the custom to sharpen the cutting-edges of the faces *b*, to draw the temper therefrom, reduce said edges by means of a file, and then retemper the same. This is expensive and the material of the die is greatly weakened thereby.

My invention is designed to avoid the necessity of drawing the temper from the die and sharpening the same by the direct action of a grinding-tool.

A stub-shaft *f* is mounted in a standard *g*, attachable to a bench or other suitable position. Said stub-shaft is provided at one end with a small pulley *h* and at the opposite end with an emery-wheel *i*. A stub-shaft *j* is mounted in the standard *g* below the shaft *f* and bears a drive-wheel *k*. On said shaft *j* a grooved pulley *m* is also mounted, which may be belted to a treadle or other source of power.

A flexible shaft *p* is secured to the stub-shaft *f* and bears at its outer end a chuck *q*, which comprises a longitudinally-split tube exteriorly screw-threaded at *r*. A nut *t* is turned onto said chuck. A loose sleeve or handle *v* is mounted on the shaft *p*, whereby said shaft may be manipulated. The grinder *w* consists of a solid circular rod of emery of a shape suitable to enter the openings *d* in the die A. The inner end of said grinder is reduced at *x* to enter the chuck *q*, in which it is jammed by the nut *t*.

In the use of my improvement the die is held by the operator and the grinder *w* inserted in an opening *d* thereof, the shaft *p* being readily manipulated while rotating by means of the loose sleeve *v*. The edges of the faces *b* of the die may thus be quickly and readily reduced by the revolving grinder in a manner which will be readily understood by all conversant with such matters without a more explicit description.

The use of a flexible shaft enables the grinder to be disposed at any desired angle and prevents the same from cracking or breaking when in use, as frequently happens when an emery-grinder is attached to a rigid shaft, the material of said grinder being exceedingly brittle. The wheel *i* may be employed for grinding tools of other descriptions.

The machine as described, being portable, is especially applicable for use by pipe-fitters, plumbers, and others engaged in similar occupations.

Instead of pulleys, the shaft *f* may be driven by a series of gears and speeded to any desired rate.

Having thus explained my invention, what I claim is—

In a die-sharpening machine, the combination of a rotary stub-shaft, driving mechanism mounted thereon, a flexible shaft secured to said stub-shaft, having a loose handle, a split chuck mounted on said flexible shaft, said chuck being exteriorly screw-threaded, a solid cylindrical grinder having a reduced portion at its inner end fitted into said chuck, and a nut turning on said chuck-threads.

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Witnesses:

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