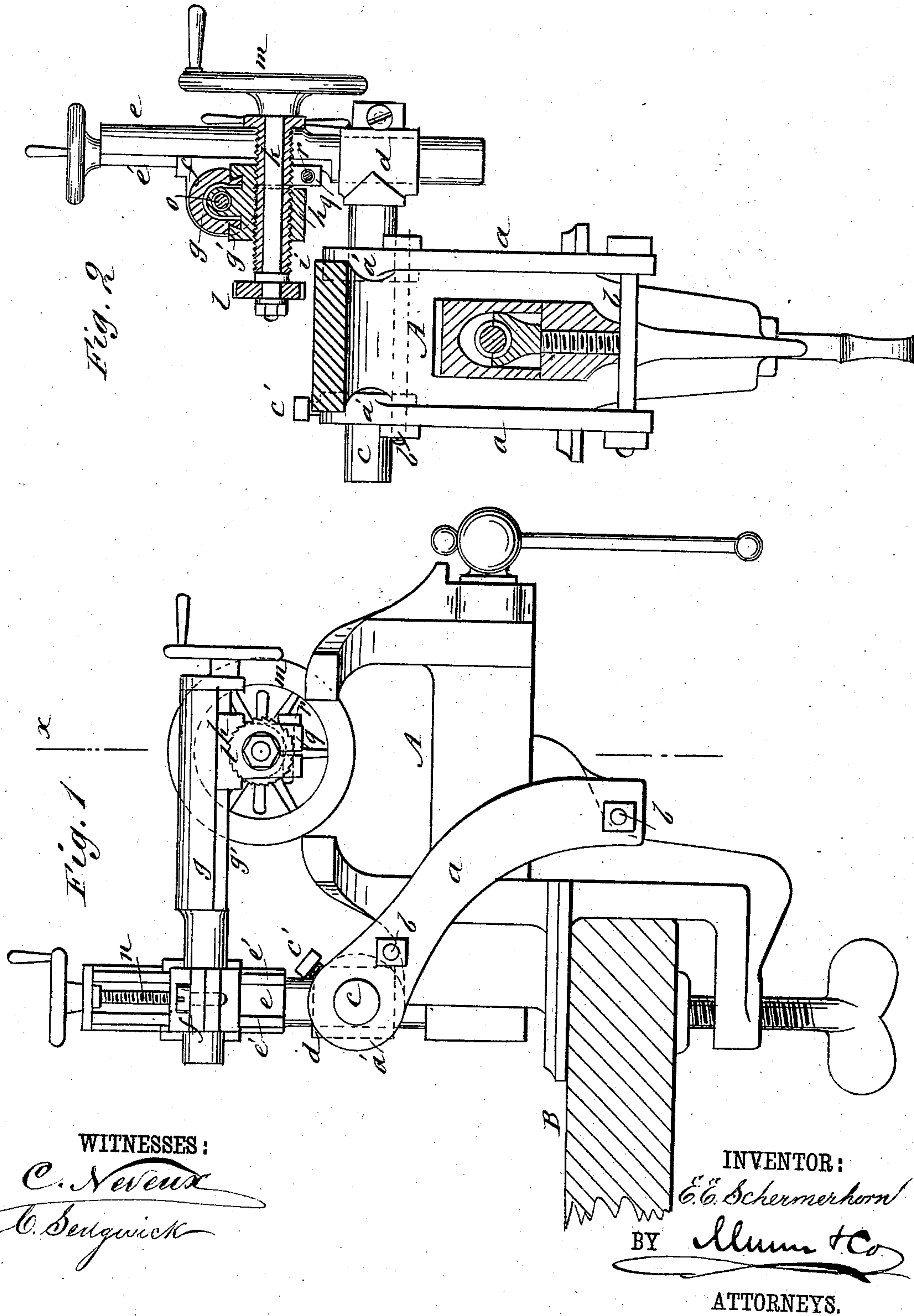


(No Model.)

E. E. SCHERMERHORN.
MILLING ATTACHMENT FOR VISES.

No. 254,704.

Patented Mar. 7, 1882.



WITNESSES:

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MILLING ATTACHMENT FOR VISES.

SPECIFICATION forming part of Letters Patent No. 254,704, dated March 7, 1882.

Application filed November 16, 1881. (No model.)

To all whom it may concern :

Be it known that I, EDWARD E. SCHERMERHORN, of the city, county, and State of New York, have invented a new and Improved Milling Attachment for Vises, of which the following is a full, clear, and exact description.

The object of my invention is to furnish a handy, efficient, and labor-saving tool for the shop, for doing the work by hand that is usually done with files.

It consists in a milling-tool carried by adjustable devices, by which it may be attached to a vise or directly to the work, as herein-after described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a side elevation of the milling attachment as applied to a vise. Fig. 2 is a vertical section of the same on line *xx* of Fig. 1.

A is a vise, of ordinary character, attached to bench B.

a a are curved bars connected by screw-bolts *b b*, by which the bars are clamped to the vise, so that they form a yoke for carrying the tool.

c is a shaft sustained in bearings *a'*, formed in the upper ends of bars *a* and clamped by a set-screw, *c'*.

d is a clamping-box fixed on one end of shaft *c*.

e is a vertical post sustained in box *d*, and formed at one side with dovetail flanges *e' e'*, that carry a slide-box, *f*.

g is a horizontal arm clamped in the box *f*, and formed at its under side with dovetail flanges *g' g'*, that carry a slide-box, *h*.

i is a tubular screw in the box *h*, containing an arbor, *k*, on one end of which is fixed the milling-tool *l*, while on its other end is attached a hand-wheel, *m*, by which the arbor and tool are to be turned. The box *h* is formed with a divided portion, *q*, and fitted with a screw, *r*, that serves to tighten the box on the sleeve *i*, whereby it is prevented from turning with the arbor.

The post *e* is hollow in its upper portion, and contains a screw, *n*, that engages the box *f*, so as to sustain the box and allow of its ver-

tical adjustment. The arm *g* is hollow also, and contains a similar screw, *o*, for horizontal adjustment of the box *h*.

By this construction the parts can be set at any angle required by the work clamped in the vise, and the cutter has a screw-feed in three directions—viz., a cross-feed by the screw-sleeve *i* endwise of the arbor, a feed at right angles to the arbor by the screw *o*, and on the post *e* by screw *n*.

The screw-sleeve *i* can be set to hold the cutter at any desired angle without interfering with the free revolution of the arbor. By tightening the screw *r* the sleeve is held stationary.

The cutter, after being adjusted to the work, is to be operated by the hand-wheel *m*, and, if desired, gearing may be added to vary the speed or to make it self-feeding in its operation.

This attachment is convenient and labor-saving, especially in shops where steam-power is not available.

It is evident that the milling-cutter is superior to a file, for the reason that it can be resharpened as required, and that there is no loss of time in a return-stroke. The adjustments render the attachment universal in its application, and by removing the cutter and substituting a drill-chuck it can be used to do work in drilling that cannot be done by ordinary means.

I do not limit or confine myself to the precise form of devices or mode herein described for attaching the milling-instrument to the vise, as such devices or mode may be varied as desired by the constructor without departing from my invention.

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

1. The milling attachment consisting of clamping-bars *a*, shaft *c*, having clamping-box *d*, post *e*, slide *f*, arm *g*, box *h*, and tool-arbor *k*, substantially as shown and described, combined for operation as set forth.

2. In milling attachments, the combination of post *e*, adjustable box *f*, arm *g*, and adjustable box *h*, carrying the tool-arbor, substantially as shown and described.

3. In milling attachments, the combination of adjustable arm *g*, slide-box *h*, feed-screw *o*, and tool-arbor *k*, substantially as shown and described.
- 5 4. In milling attachments, the combination of adjustable box *h*, screw-sleeve *i*, and tool-arbor *k*, substantially as shown and described.
5. In milling attachments, the clamping-

box *h* and screw *r*, combined with the screw-sleeve *i* and tool-arbor *k*, substantially as and to for the purposes set forth.

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Witnesses:

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