(No Model.)

# C. A. NEUERT.

## MACHINE FOR SHARPENING PENCILS.

No. 303,314. Patented Aug. 12, 1884.

Fig. 3.

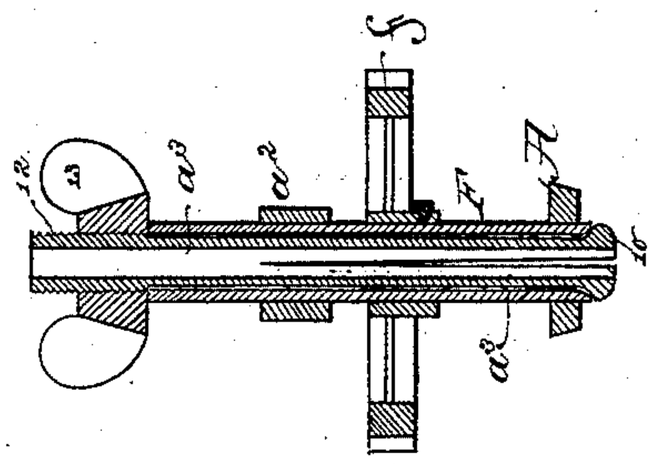



Fig. 2.

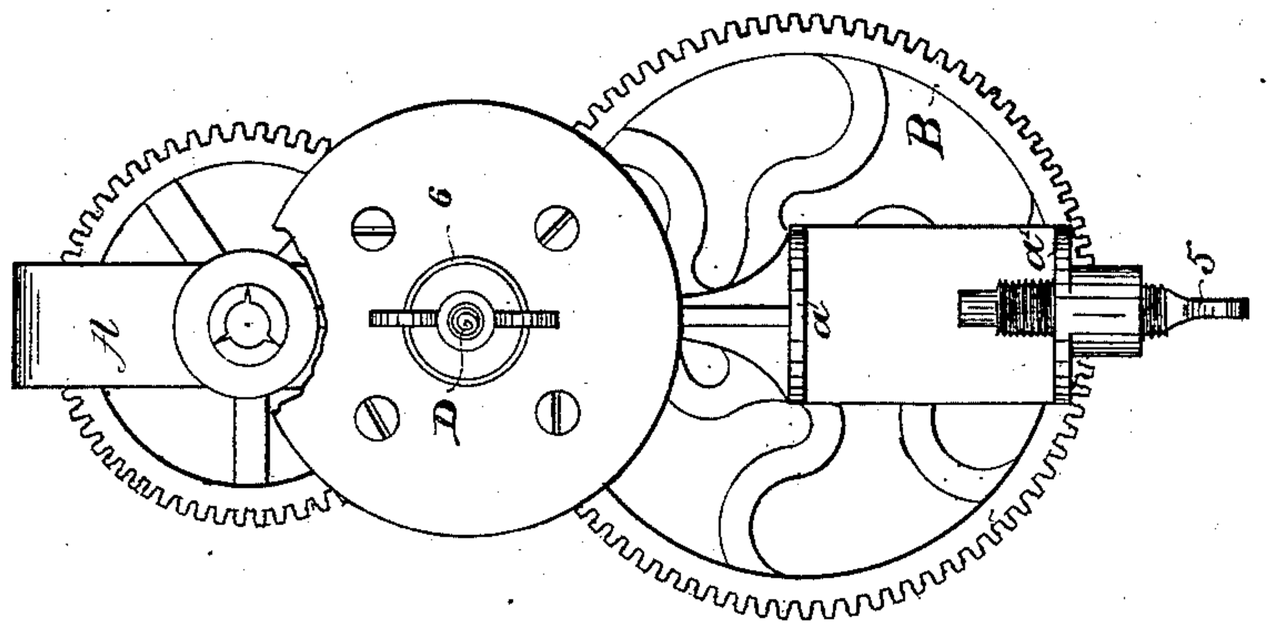
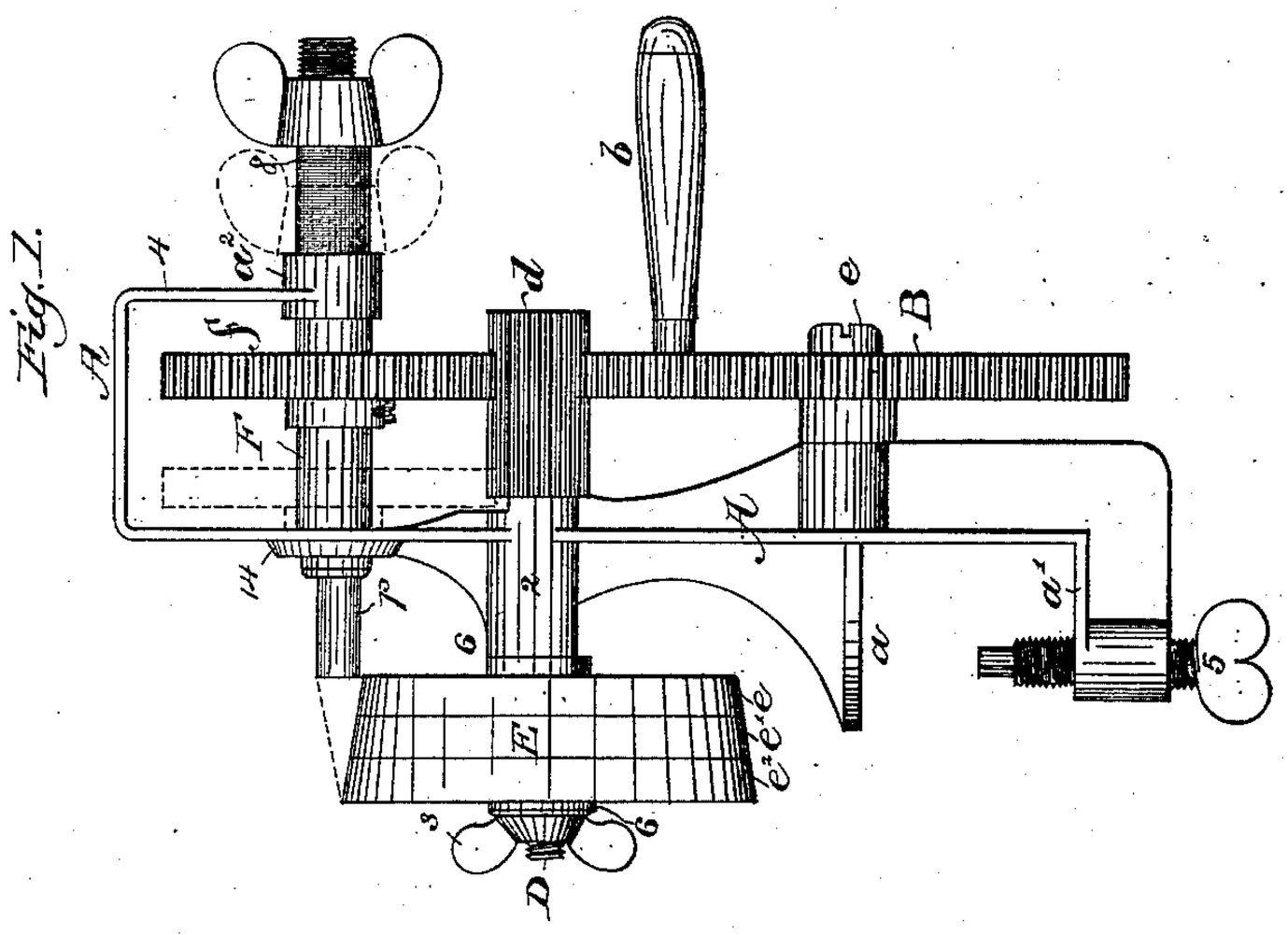



Fig. 1.

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# UNITED STATES PATENT OFFICE.

CHARLES A. NEUERT, OF BOSTON, MASSACHUSETTS.

## MACHINE FOR SHARPENING PENCILS.

SPECIFICATION forming part of Letters Patent No. 303,314, dated August 12, 1884.

Application filed June 23, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. NEUERT, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Pencil-Sharpening Machines, of which the following description, in connection with the accompanying drawings is a specification, like letters on the drawings representing like parts.

The machine herein described as embodying my improvements contains a graduated grinding-wheel which cuts away the wood or other material of the pencil more rapidly during the early part of the formation of the point than when the point is being completed, and the said machine also contains a longitudinally-movable rotating pencil-holding chuck which feeds the pencil forward to the grinding-wheel.

My invention consists, primarily, in a rotating pencil holding and feeding chuck, combined with a grinding-wheel, the surface of which is divided into sections which are adapted to reduce or cut away the material of the pencil at different rates of speed, the section of the greatest reducing power being arranged nearest to the chuck, while the section having the least power of reduction is located farthest from the chuck.

My invention further consists in a pencil grinding or reducing wheel and a chuck or pencil-holder having a screw-thread on its exterior, combined with an interiorly-threaded stationary support or bearing for the threaded part of the chuck, and with mechanism for rotating the chuck, as will be hereinafter described.

Figure 1 is a front elevation of a pencil-sharpening machine embodying my invention; Fig. 2, a side elevation thereof looking in the direction of the arrow, Fig. 1; and Fig. 3 a sectional detail of the chuck or pencil-holder.

The frame A, which may be of any suitable construction to support the operating parts, is preferably provided with the lips *a a'*, and thumb-screw 5, passing through the lower lip, *a'*, to permit the frame to be clamped or held to a bench, table, or other support.

The driving-wheel B, having the handle or crank *b* to enable it to be rotated, is secured on the stud *c*, attached to the lower part of the frame, and meshes with the long intermediate gear *d*, firmly secured to the shaft D, supported in the bearing 2 of the frame A, and receiving the grinding-wheel E at its other end, said wheel being held thereon by means of the thumb-nut 3 engaging the screw-threaded end of the shaft D. The grinding-wheel is made up of two or more sections or disks, *e e' e²*—in the present instance three—which are each of different reducing power to the other—that is to say, the periphery of the disk, *e*, nearest the pencil-holder, (to be presently described,) is rough or provided with a coarse and sharp cutting material, such as sand or coarse emery, while the face of the next disk *e'* is provided with a medium grade of sand or emery, and the face of the last disk, *e²*, has the finest cutting or reducing material of the three, so that the first disk has the greatest reducing action to rapidly cut away or reduce the wood of the pencil as the latter is fed to the grinding-wheel, while, as the pencil becomes in a measure roughly pointed, the last disk, *e²*, or that one farthest removed from the pencil-holder and which has the least power of reduction, acts upon the thin or tapered end of the pencil to properly point the same without breaking the thin or reduced end. By this construction, the grinding-wheel has variable or different powers of reduction across its face. The grinding-wheel will preferably be made up of disks of wood arranged on a metal hub, 6, and having their faces coated with different grades of sand or emery, and secured together with screws, as shown in Fig. 2.

The pencil-holding chuck is composed of an inner split jaw-like sleeve, *a³*, extended through another sleeve, F, provided externally with a fine screw-thread, 8, the inner split part, *a³*, of the chuck being provided with inclines 10 and with a threaded portion, 12, to receive a nut, 13, which, abutting against the rear end of the sleeve F, may be turned to cause the chuck to grasp the pencil or to release the same. The finely-threaded portion 8 of the sleeve is made to enter and engage a finely-threaded hub, *a²*, of a bent-over part of the frame A, but the plain end of the said sleeve is free to slide in a suitable bearing, 14, of the frame A.

The normal condition of the parts with a

pencil, *p*, in the chuck, is as in full lines, Fig. 1. The sleeve F has fastened to it the toothed gear *f*, which engages the long intermediate gear, *d*, and as the latter is rotated by the toothed wheel B, the sleeve F and chuck are rotated, and at such time because of the fine threads S the chuck is moved forward slowly with the pencil, presenting the same to the grinding-wheel, which cuts away the material of the pencil and forms a conical point for it, as represented by the dotted lines. While the chuck is so moved forward, the wheel *f* is made to travel longitudinally in engagement with the long gear *d*. The face of the grinding-wheel is beveled toward the chuck, as shown, to reduce or sharpen the pencil at the proper angle.

It is obvious, instead of the grinding-wheel made up of sections, that I may use a wheel the grinding-surface of which is uniform.

I claim—

1. The combination, with a rotating pencil-holder or chuck, of a grinding-wheel the face of which is divided into sections the surfaces of which are adapted to reduce or cut away the material of the pencil at different rates of speed, the section of the greatest reducing power being arranged nearest to the chuck, while the section having the least power of reduction is farthest removed from the chuck, substantially as set forth.

2. The grinding-wheel and rotating pencil-holder or chuck, provided on its periphery with a fine screw-thread combined with a stationary bearing having at its interior a screw-thread to be engaged by the thread on the chuck, whereby the pencil is carried forward automatically as its point is being sharpened, substantially as set forth.

3. The rotating grinding-wheel, the long gear on its shaft, the external-threaded chuck or pencil-holder, and toothed gear *f*, secured thereto, and engaging the long gear *d*, combined with a threaded hub, $a^2$, and with means, substantially as described, for rotating the long gear and grinding-wheel, to operate as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES A. NEUERT.

Witnesses:

G. W. GREGORY,

B. J. NOYES.