

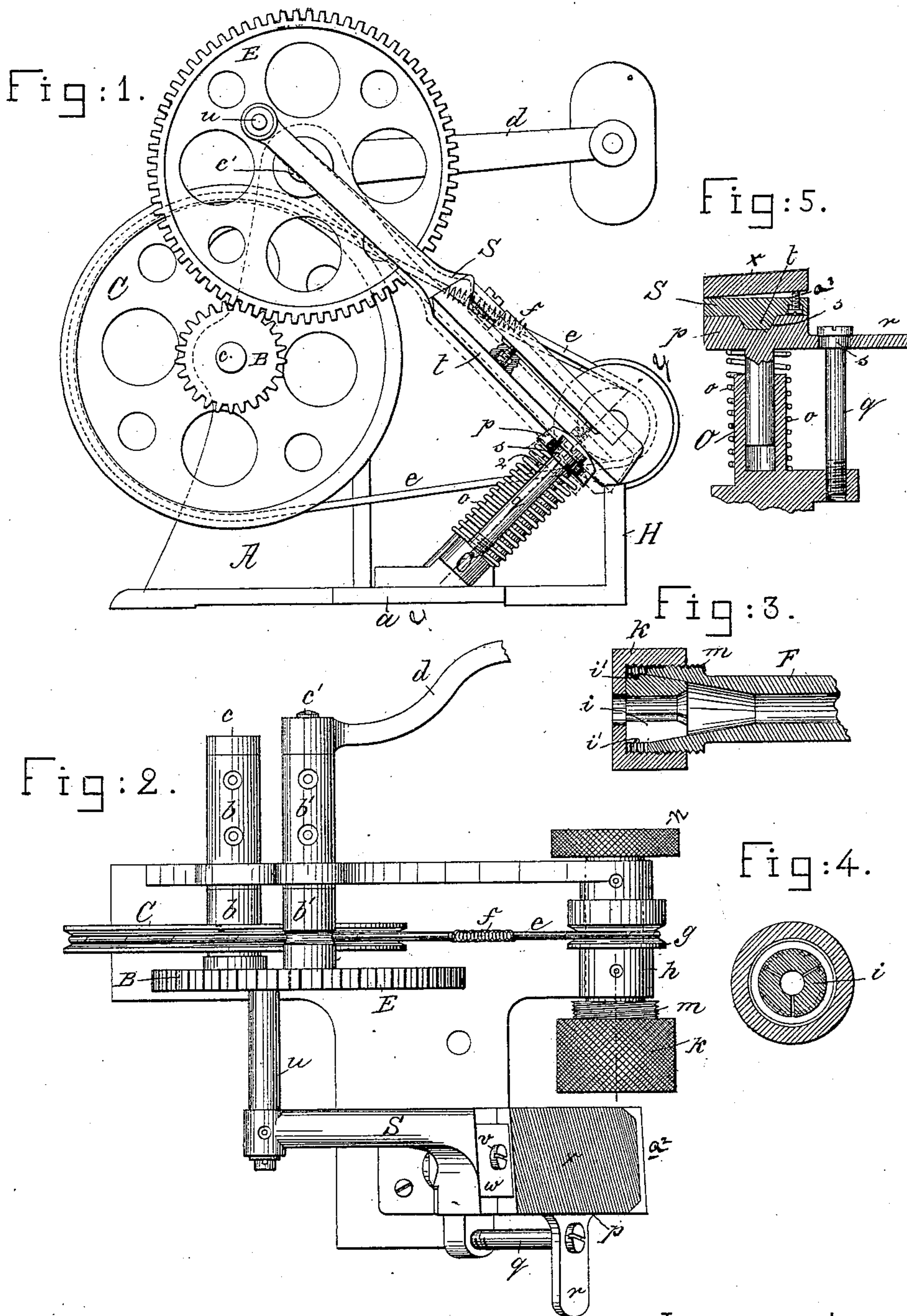
(No Model.)

E. S. STIMPSON.

PENCIL SHARPENER.

No. 304,371.

Patented Sept. 2, 1884.



Witnesses.

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UNITED STATES PATENT OFFICE.

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PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 304,371, dated September 2, 1884.

Application filed June 30, 1884. (No model.)

To all whom it may concern:

Be it known that I, EDWARD S. STIMPSON, of Hopedale, county of Worcester, and State of Massachusetts, have invented an Improvement in Pencil-Sharpeners, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the construction of a machine for sharpening pencils, wherein the file or cutter-carrier has an elliptical or reciprocating movement upon and over preferably a yielding or spring-actuated support placed with such relation to a rotating pencil-holder or chuck that the file or cutter has a cutting or sharpening action upon the pencil chiefly during the movement of the file in one direction of its stroke, the file in the opposite direction of its stroke merely being carried back into position to again act on the pencil upon the movement of the file-carrier in the opposite direction, so that in effect the pencil is subjected to a rasping or filing action in like manner that it would have if the filing were done by hand. The yielding or spring-actuated support which holds the reciprocating file-carrier or cutter up to its work is provided with a convexed or rounded bearing, upon which the movable file-carrier slides and rocks or oscillates in its elliptical and reciprocating movement with relation to the chuck or pencil-holder. The spring-actuated support for the file-holder is provided with means for lowering and retaining it in lowered position, to permit adjustment in the pencil-holder or chuck of the pencil to be sharpened. The nature of the invention is fully disclosed in the following description, and particularly pointed out in the claims.

Figure 1 is a side elevation of a machine for sharpening pencils embodying this invention; Fig. 2, a plan thereof with a part of the crank or handle broken away. Figs. 3 and 4 are sectional details of the chuck or pencil-holder to be referred to, and Fig. 5 is a section of the spring-actuated support and hollow post in line *yy*, Fig. 1.

A standard or upright, *A*, is fixed to a suitable base, *a*, and is provided with bearing-hubs *b b'* to receive shafts *c c'*, the shaft *c* having secured thereto the grooved belt-pulley *C* and spur-pinion *B*, and the shaft *c'* the crank or handle *d* and spur-gear *E*, which latter,

upon the rotation of its shaft *c'* by means of the handle, communicates motion to the shaft *c* through its spur-pinion *B*. A belt, *e*, having a coiled spring, *f*, therein to take up slack, runs over the grooved pulley *C* and over a second grooved pulley, *g*, formed or secured on the pencil-holder or chuck *F*, composed of a sleeve, *m*, adapted to rotate in the bearings *h*, supported by the vertical standard *H*, a sectional clamp, *i*, loosely held together by a wire annulus or band, *i'*, (see Fig. 3,) and placed within the tapered or conical end of the sleeve and of a threaded nut, *k*, screwed upon the said sleeve and adapted to be forced backward thereon to force the clamp *i'* into the sleeve, the movement of the nut *k* on the threaded part of the sleeve causing the said chuck to firmly grasp or clamp the pencil to be sharpened, causing the same to be rotated with the chuck. The opposite end of the chuck may be provided with a thumb-nut, *n*, to more readily permit the chuck to be prevented from rotating when it is desired to unscrew the nut *k* to loosen the hold of the clamp on the pencil and permit the latter to be removed from or readjusted in the chuck.

A hollow post, *O*, secured in inclined position to the base *a*, receives about its periphery a coiled spring, *o*, whose upper end is connected with a support or plate, *p*, for the file-carrier, said support or plate *p* working on the headed guide-rod *q*, and having a thumb-piece, *r*, to permit it to be depressed, and a depending pin, *2*, working in the hollow post, as shown. The coiled spring extends above the end of the inclined post *O* to permit play of the support *p*, the end of the said post limiting the downward movement thereof, while the head of the rod *q* limits its upward movement. The body of the rod is of less diameter than the orifice in the supporting-plate *p*, through which it projects, and it is provided with a small annulus or projection, *s*, below its head, the purpose of which annulus is to engage and hold the plate *p* in lowered position when the latter is passed below the said stud and moved laterally for a short distance. The upper face of the support or plate *p* is rounded or convexed, (see Fig. 1,) and is provided at or about its center with a transverse groove, *3*, which receives a rib or guide, *t*, formed on the under side of the file-carrier *S*, to prevent lateral play of the same on the sup-

port *p*, while the rounded face of said support readily permits the file-carrier to rock or oscillate thereon in its elliptical reciprocating movement, induced by the rotation of the spur-gear *E*, to which the file-carrier is connected by means of the crank on wrist-pin *u*, as clearly indicated in the drawings, or it might be an eccentric. The file-carrier is provided with any suitable file, rasp, or other abrading or cutting device, *x*, which will serve to sharpen or point a pencil held in the rotating chuck. The file-carrier, or that portion which receives the file, is provided with a retaining-screw, *v*, and plate *w*, to lock the file in position, while said table is transversely inclined or beveled toward the mouth of the chuck or pencil-holder, the side or edge of the table farthest removed from the chuck being in higher position than the side next the said chuck, whereby the pencil is held in the chuck in a substantially horizontal plane, and, acted upon by the file, is reduced or pointed by the latter to the required taper while the file-carrier is being reciprocated, as described.

The extreme end of the file-carrier *S* is provided with an abutment, *a*², fashioned to receive the conversely-shaped end of the file *x* and prevent lateral movement of the file on the said carriers. The two ends of the file are unlike in shape, and shaping the abutment of the cutter so as to hold but one of the ends of the file insures the placing of the file in the cutter right end first, so that the file will operate correctly upon the pencil.

The degree of the bevel of the point of the pencil depends upon the inclination of the file from edge to edge, and I have therefore made provision to adjust the file with relation to the carrier *S*. As herein shown, I have provided the carrier with an adjusting-screw, *a*³, against which rests the under side of the file near its outer edge, the adjustment of the said screw prior to securing the file in place by the plate *w* and screw *v* determining the inclination of the file from edge to edge. The screw *a*³ constitutes an adjusting device for the file.

The file herein described is moved slowly, and the dust and cuttings drop from the file and pencil directly into a suitable box or pan set below the file, and the said cuttings and dirt are not thrown about the room as when a rotary wheel or endless belt is employed.

I claim—

1. The combination, with a rotating chuck or pencil-holder, of a reciprocating file-carrier or cutter, a yielding or spring-actuated support for the reciprocating file-carrier, and mechanism to operate the file-carrier, substantially as set forth.
2. The combination, with a rotating chuck or pencil-holder, of a reciprocating file-carrier or cutter, a support for the reciprocating file-carrier, and mechanism to operate the file-carrier, substantially as set forth.
3. A rotating pencil-holding chuck, a file-carrier, a file, and a support for the file-carrier, combined with a crank to impart a recip-

rocating and rocking movement to the said file, substantially as described.

4. The combination, with a rotating chuck or pencil-holder, of a file-carrier having a reciprocating elliptical movement, a support for the file-carrier provided with a convexed or rounded face, and mechanism to operate the file-carrier, substantially as and for the purpose set forth.

5. A rotating pencil-holder, and a file-carrier having a reciprocating elliptical movement, and operating mechanism, substantially as specified, combined with a spring-actuated movable support for the file-carrier, having a convexed face, to operate substantially as described.

6. The hollow post provided with a coiled spring which extends above said post, and the movable support having the depending pin, and provided with an orifice, combined with the headed pin or guide engaging the support, substantially as described.

7. The hollow post provided with a coiled spring, and the movable support for the file-carrier, having the depending pin and an orifice, as specified, combined with the headed guide-rod, the body of which is of less diameter than the orifice in the support which it enters, and provided with an ear or stud below the head and adapted to pass through the orifice, to operate substantially as described.

8. The combination, with a file-carrier having a reciprocating elliptical movement, and provided with a rib on its under side, and mechanism, substantially as specified, to operate the file-carrier, of a spring-actuated support for the file-carrier, having a convexed face, and provided with a transverse groove therein to receive the rib of the file-carrier, substantially as and for the purpose specified.

9. The hollow post having the coiled spring, the movable file-carrier support having the depending pin entering the hollow post, and the thumb-piece having the orifice, as shown, combined with the headed guide-rod provided with an ear or stud below its head, substantially as and for the purpose specified.

10. A rotating chuck or pencil-holder and a file or cutter, combined with the file or cutter carrier, having at one end an abutment shaped to receive and hold one end of the file and obviate its misplacement on the said carrier, and also its lateral movement thereon, substantially as described.

11. The rotating chuck or pencil-holder and the reciprocating file or cutter carrier and file or cutter thereon, combined with an adjusting device, substantially as described, to adjust the angular position of the file upon the said carrier to determine the bevel of the point of the pencil, substantially as described.

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

Witnesses: EDWARD S. STIMPSON,
F. J. DUTCHER,
WM. J. WOODS.