(No Model.)

R. D. CODY.

PENCIL SHARPENER.

No. 530,018. Patented Nov. 27, 1894.

Fig. 2.

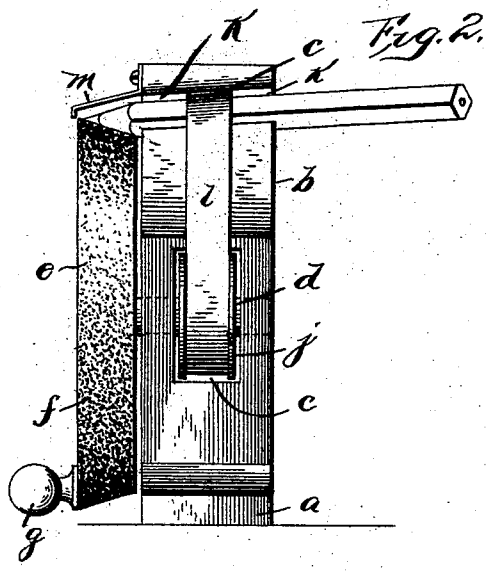


Fig. 4.

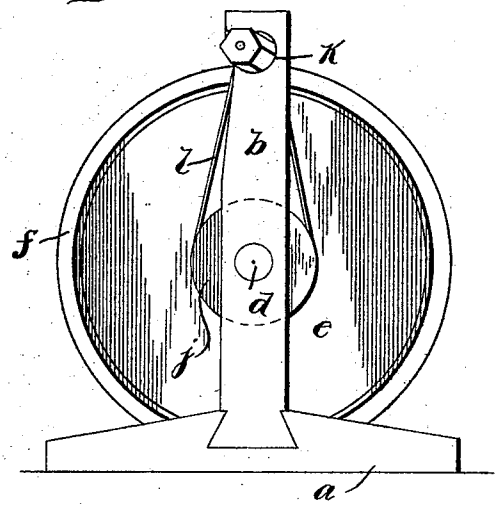


Fig. 3.

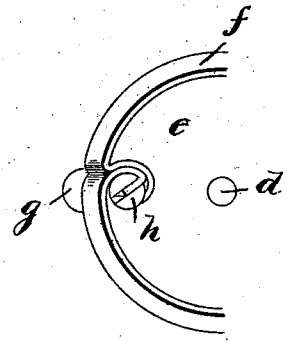
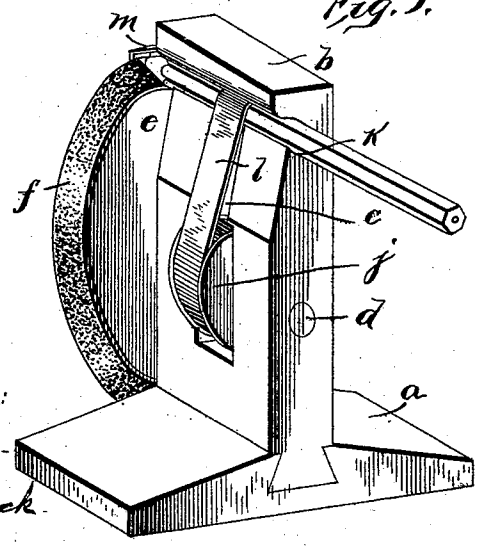


Fig. 1.



WITNESSES:

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RICHARD D. CODY, OF WINONA, MINNESOTA.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 530,018, dated November 27, 1894.

Application filed February 27, 1894. Serial No. 501,673. (No model.)

To all whom it may concern:

Be it known that I, RICHARD D. CODY, of Winona, in the county of Winona and State of Minnesota, have invented certain new and useful Improvements in Pencil-Sharpeners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in pencil sharpeners.

The object of the invention is to provide an improved pencil sharpening machine, simple, durable, and economical in construction, composed of a minimum number of parts, and wherein the pencil operated upon is rotated against the grinding or sharpening disk and at the same time is automatically moved longitudinally against the same.

The invention consists in certain novel features of construction, and in combinations of parts more fully and particularly pointed out hereinafter and specified in the claims.

Referring to the accompanying drawings—Figure 1 is a perspective view of the sharpening machine. Fig. 2 is an edge view thereof. Fig. 3 is a detail elevation of the grinding disk. Fig. 4 is a side elevation of the machine.

In the drawings the reference letter *a*, indicates a suitable base having the vertical frame *b*, strongly constructed and extending up therefrom. This frame has the vertical elongated slot or opening *c*, between its vertical sides.

d, is a horizontal rotary shaft transversely mounted in the lower part of said frame and extending across said slot and at one end at one side of the frame having the vertical disk *e*, rigid thereon and constituting the grinding or cutting disk. The edge or periphery of this disk is preferably beveled laterally and inwardly as shown.

The beveled periphery of the disk can be provided with any suitable abrading, grinding or cutting material, suitable for grinding away the sheath of the pencil and the graphite to a point. The disk is preferably provided on its exterior with a removable strip of sand or emery paper *f*, or the like provided with means for securing and tightening it on the disk. This end is preferably accomplished by forming a transverse round socket or hole in the disk near the periphery thereof, so that one side thereof is open through the periphery of the disk. The shank *h*, of the handle *g*, by which the disk is revolved, is fitted in said socket so that it can be turned therein when desired. One end of the strip of sand paper is removably secured to said shank preferably by insertion in a slot therein, while the opposite end of the strip is inserted between the wall of the socket and the shank. Thus when the shank is turned in one direction, the opposite ends of the strip of abrading material will be drawn toward each other and into the socket and the strip will be tightened on the periphery of the disk. When the shank is turned in the opposite direction the ends of the strip will be moved out of the socket and the strip can be removed and a new strip placed on the disk.

j, is a pulley rigid on said shaft and located in the vertical opening of the frame. This pulley is preferably provided with the side flanges or edges.

k, are pencil holding means so arranged as to hold the pencil inclined downwardly toward the upper side of the edge of the grinding disk. This pencil holding device can consist of the two inclined transverse notches in the sides of the frame open at the sides and formed to receive the pencil and hold it in an inclined position extending across the opening in the supporting frame and with its end to be sharpened resting against the grinding edge of the disk. Suitable means are provided to hold the pencil down against the grinding surface of the disk and to revolve the pencil in a direction opposite to the direction of rotation of the disk. This means preferably consists of an endless belt *l*, (preferably elastic) around said pulley and through which the pencil is passed before being placed in its holding means. As the grinding disk is revolved the pulley revolves the pencil through the medium of said belt, and as the pencil is held at an angle to the axis of the pulley and inclined toward the edge of the grinding disk, the belt constantly

moves the pencil longitudinally and holds the end of the same being sharpened yieldingly against the grinding surface. A feed is thus provided automatic in action and can be determined by the angle of the inclination of the pencil.

m, indicates a gage or guard extending from the upright over the grinding disk with a downturned end arranged to limit the outward movement of the pencil while being rotated on the disk and so as to prevent the pencil moving too far over the disk. It should also be observed that the notches *k*, on pencil holder are so arranged that the pencil will be held inclined laterally from a vertical plane as well as from a horizontal plane. Hence the pencil engages the grinding edge at an angle to the axis of rotation and the grinding surface acts on the pencil with a drawing cut or grind.

The device can be so constructed that the shaft can be slipped out when it is desired to renew or replace the belt.

It is evident that various changes might be made in the forms, constructions and arrangements of the parts described without departing from the spirit and scope of this invention, hence I do not wish to limit myself to the exact constructions and arrangements shown and set forth.

What I claim is—

1. A pencil sharpening machine having a pencil holder, rotary grinding or sharpening means, and a pulley driven therefrom having an elastic belt to surround the pencil and rotate and move the same longitudinally, the axes of the pulley and the pencil being in different planes substantially as described.

2. A pencil sharpener comprising the upright, the rotary disk having the beveled grinding edge, the upright having an inclined pencil holder opposite the edge of the disk, and a pulley driven from the disk, and having an endless elastic belt arranged to surround the pencil and yieldingly hold the same against said grinding edge and rotate and feed the same longitudinally, the axes of the pulley and pencil being in different planes substantially as described.

3. A pencil sharpener comprising a grinding means, the inclined stationary pencil holder arranged to support the pencil in an inclined position against the grinding means and to permit the pencil to freely rotate and move longitudinally therein, a rotary pulley, and an elastic belt driven thereby and arranged to directly surround and rotate and feed the pencil longitudinally, the axes of the pencil and pulley being in different planes, substantially as described.

4. The combination of the vertical upright having a support and the vertical opening, the transverse shaft in said upright having a pulley in said opening, a disk on the shaft having the beveled grinding edge, said upright having the pencil holding notches in its side opposite said beveled grinding edge so that the pencil rests and rotates therein, and the endless elastic band in said opening and passing around said pulley and arranged to directly surround and rotate the pencil the notches being inclined so that the axes of the pencil and shaft are in different planes, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

RICHARD D. CODY.

Witnesses:
JOHN MARTINGER,
JOHN J. TRIPPE.