F. LIVINGSTON.

Machine for Sharpening Pencils.

No. 203,550. Patented May 14, 1878.

FIG. 1.

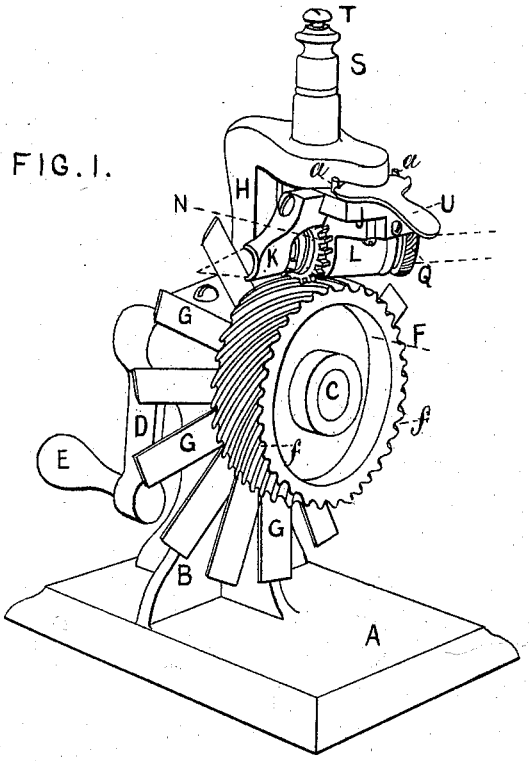


FIG. 2.

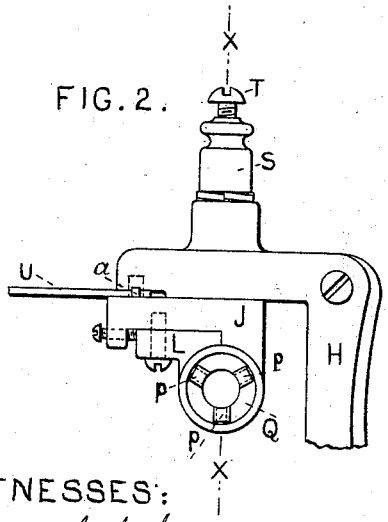
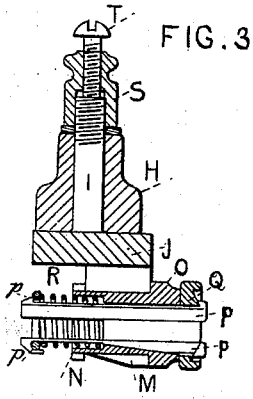


FIG. 3.



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IMPROVEMENT IN MACHINES FOR SHARPENING PENCILS.

Specification forming part of Letters Patent No. **203,550**, dated May 14, 1878; application filed October 15, 1877.

To all whom it may concern:

Be it known that I, FRANCIS LIVINGSTON, of Newark, Essex county, New Jersey, have invented, made, and applied to use Improvements in the Construction of Machines for Sharpening Lead and Slate Pencils; and that the following is a full, clear, and correct description of my invention, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon, in which—

Figure 1 is a perspective view of my invention. Fig. 2 is an elevation of the pencil holding and operating device. Fig. 3 is a section at line *x x* of Fig. 2.

In the drawings like parts of the invention are pointed out by the same letters of reference.

The nature of the present invention consists in improvements, as more fully hereinafter set forth, in the construction of machines for sharpening lead and slate pencils, the object of the invention being the production of a machine for the purpose intended which shall perform its work efficiently and rapidly.

To enable those skilled in the arts to make and use my invention, I will describe its construction and operation.

A shows a base-plate, provided with a standard, B, for supporting the operative parts of the machine. Within the upper end of the standard B is received a shaft, C, free to revolve, having attached upon one end the crank-arm D, to which is secured the handle E, while upon the opposite end of the shaft is keyed the knife head or support F, to which, upon its face and near its outer edge, are attached a series of knives, G. The outer surface of the knife-head is provided with a series of grooves, *f*, running from one side of the knife-head to its opposite side, and partially curved, the object of which will be more fully hereinafter set forth.

Mounted upon the standard B, and secured to the same, is the device for holding the pencil to be sharpened. This consists of a frame-work, H, the upper portion of which is placed at right angles to the upright portion of the same, and is provided with an opening, through which is passed the upright I attached upon the upper side of the block J, upon the forward end of which is attached the lipped support K, for the end of the pencil to be sharpened. Upon the under side of the block J is secured a box, L, in which is received the holding device for holding the pencil to be sharpened, the end of which has been received within the lipped support K. This consists of a hollow shaft, M, having upon its forward end a pinion, N, and upon its rear end the cap O. Passed through the hollow shaft M are a series of bars, P, the forward ends of which form hooks *p*, while their rear ends are headed and received within the slotted portions of the button Q. Between the hooks *p* and a shoulder upon the shaft M is placed a spiral spring, R.

The pencil-holding device, when placed in position in the frame-work H, is held by means of a cap, S, passed over the threaded end of the upright I, and a headed screw, T, entering into and engaging with the cap S, and occupies a position directly in front of the knives G, the pinion N engaging with the grooves *f* upon the knife-head F.

Upon the upper surface of the block J, near the ends of the same, are placed the pins or stops *a*, between which is placed a cam-shaped lever, U. By turning this lever U either to the right hand or left hand the position of the block J may be varied, varying the position of the lipped support K and of the holding device relatively to the knives G.

Such being the construction, the operation may be thus described: The machine should be firmly secured upon a proper support for it, and the button Q is drawn out and back, and the pencil to be sharpened is inserted within the hollow shaft and passed through the same until its forward end is received within the lipped support K. As the button is drawn back the spring is contracted, and as the button is released the spring R expands and the bars P close around the body of the pencil to be sharpened, and thus the holding device accommodates itself to pencils differing in diameter. The pencil having been thus placed in the holding device, the hand of the operator turns the handle E, by which the shaft C, having secured upon it the knife-head F, is caused to revolve, and the knives G secured upon the same are brought successively into

contact with the portion of the pencil received within the lipped support K, first cutting away the wood and then the lead of the pencil.

As the shaft is revolved the pinion N, having cogs placed at right angles to the grooves *f* upon the outer surface of the knife-head F, and engaging with the same, revolves and carries with it the pencil-holding device, so that a rotary movement is imparted to the pencil received between the bars P, and thus the whole body of the pencil is, in turn, presented to the knives as they revolve.

As the forward end of the pencil is cut away by the knives G the same is gradually brought nearer to the knives by turning the cam-shaped lever U, and thus varying the position of the holding device relatively to the knives, the cam-shaped lever turning freely upon a pin secured in the forward end of the frame B, and passed through it, and being placed, as already stated, between the pins or stops *a* secured upon the upper side of the block J.

When the pencil has been properly sharpened, the block J is moved away from the knives G by moving the cam-lever U in the opposite direction, or toward the right hand, the button Q is drawn back, carrying with it the bars P, and the pencil may be withdrawn from the holding device, and, a second pencil to be sharpened having been inserted in the holding device, the operation already set forth may be repeated.

For use in banks or offices where many pencils need to be sharpened, my machine is more particularly intended, and will be found to fully answer the purpose for which it is intended.

Having now set forth my invention, what I claim as new is—

1. In a machine for sharpening pencils, the combination of a revolving knife-head, carrying a series of knives, with a revolving pencil-holding device and a lipped support for the forward end of the pencil, substantially as and for the purposes set forth.

2. In a machine for sharpening pencils, the combination of a revolving knife-head, carrying a series of knives, with a revolving pencil-holding device and a lipped support for the forward end of the pencil, which may be gradually advanced to the knives by means substantially as described, and for the purposes set forth.

3. In a machine for sharpening pencils, the combination of the following elements: a frame, A B, for supporting the shaft C, the knife-head F, and the knives G, with a pencil-holding device composed of a frame, H, upright I, block J, shaft M, pinion N, bars P, button Q, and spring R, constructed and operating substantially as and for the purposes set forth.

4. In a machine for sharpening pencils, the combination of the following elements: a frame, A B, for supporting the shaft C, the knife-head F, and the knives G, with a pencil-holding device composed of a frame, H, upright I, block J, shaft M, pinion N, button Q, and spring R, and the lipped support K and cam-lever U and stops *a*, constructed and operating substantially as and for the purposes set forth.

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