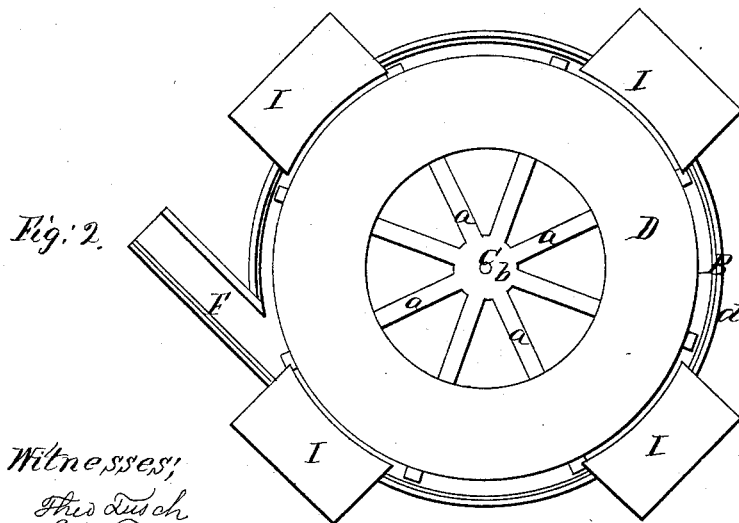
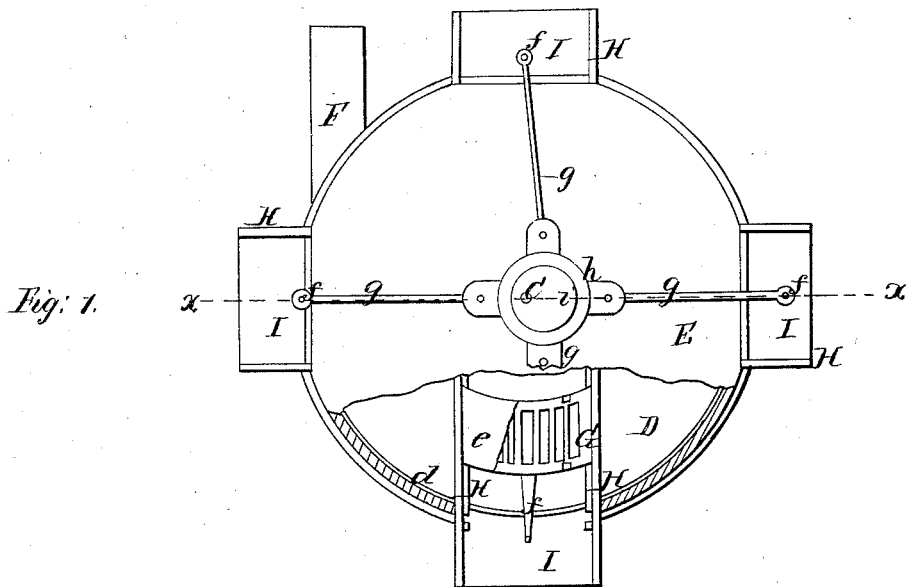


P. Schrag,
Making Lead Pencils.
N^o 45,679. Patented Dec. 27, 1864.



Witnesses;
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Philip Schrag

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Fig. 3.

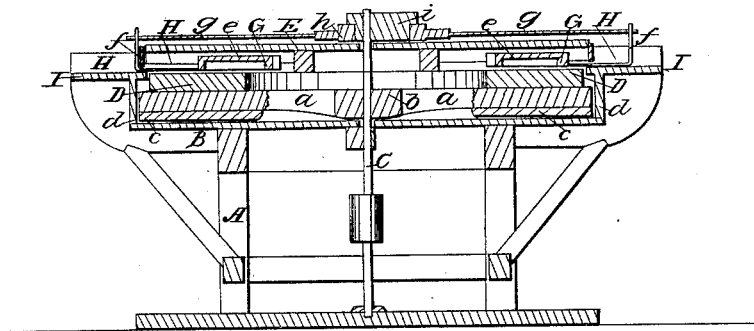


Fig. 4.

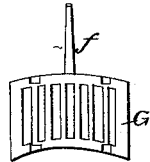


Fig. 6.

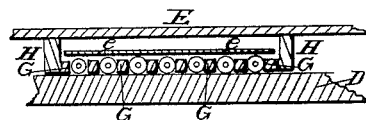


Fig. 5.

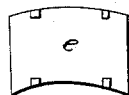
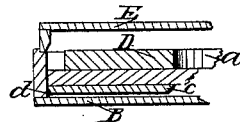


Fig. 7.



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UNITED STATES PATENT OFFICE.

PHILIP SCHRAG, OF NEW YORK, ASSIGNOR TO EBERHARD FABER, OF
NEW YORK, N. Y.

IMPROVEMENT IN MACHINES FOR SANDPAPERING PENCILS.

Specification forming part of Letters Patent No. 45,679, dated December 27, 1864.

To all whom it may concern:

Be it known that I, PHILIP SCHRAG, of the city, county, and State of New York, have invented a new and Improved Machine for Sandpapering Pencils, &c.; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of this machine, a portion of the top being broken away to expose the working parts. Fig. 2 is a similar view of the same, the cover and all its attachments having been removed to expose the grinding-disk. Fig. 3 is a vertical central section of the same, the line *x x*, Fig. 1, indicating the plane of section. Fig. 4 is a detached plan or top view of the slotted reciprocating rack intended to hold the pencils. Fig. 5 is a similar view of the plate which holds the pencils down upon the grinding-disk. Fig. 6 is a transverse vertical section of a portion of the grinding-disk and one of the slotted reciprocating racks. Fig. 7 is a part sectional view of the grinding-plate, with arm and wing.

Similar letters of reference indicate corresponding parts.

This invention consists in the employment or use of one or more racks provided with slots, each capable to receive a pencil or other similar article to be sandpapered, in combination with a revolving-disk, the surface of which is covered with sand, emery, or other suitable polishing material, in such a manner that by the rack or racks the pencils or other articles are held in the proper position while they are whirled round by the motion of the polishing-disk and their surfaces exposed to the action of the polishing material. For the purpose of keeping the pencils or other articles down upon the polishing-surface with a uniform and yielding pressure, the racks are provided with covering-plates resting loosely on the articles to be sandpapered. Furthermore, by imparting to the racks a reciprocating motion the operation of sandpapering is executed with superior uniformity. A cover placed over the racks and the polishing-disk prevents the escape of dust, except through

the spout, through which it is expelled by the action of fans or wings at the under sides of the arms supporting the polishing-disk, and which conducts the same off and prevents it producing an injurious influence on the health of the operative or operatives.

A represents a frame made of wood or any other suitable material, of sufficient size and strength for the occasion. This frame supports a circular platform, B, and it forms the bearings for the vertical central shaft, C, to which the polishing disk D is firmly keyed. This disk is made of iron or any other suitable material (though we use iron by preference) and its surface is turned off perfectly true and even. It is secured to arms *a*, which extend from a central hub, *b*, as clearly shown in Fig. 2 of the drawings, and from the under sides of these arms project wings *c*, as shown in Figs. 3 and 7. These wings serve to create sufficient draft to expel the dust formed during the operation of the machine, and in order to prevent this dust escaping into the room a flange, *d*, rises from the edge of the platform B to a level with the surface of the disk D, and by fitting to this flange a suitable cover, E, a case is formed which effectually protects the operatives from the injurious influence of the dust. A spout, F, leading from this case to the open atmosphere, or to any suitable room or space, serves to carry off the dust.

The pencils or other articles to be polished or sandpapered are placed in slotted racks G, which fit into V-shaped guideways H, on the under surface of the cover E. Four (more or less) such racks are applied simultaneously, and each rack is capable to hold ten (more or less) pencils. The V-shaped guide ways on the cover E are so situated that the racks do not come in contact with the surface of the disk D, and the slots in the racks are sufficiently large to allow the pencils or other articles free play. Said pencils therefore will sink down and bear on the surface of the disk by reason of their inherent gravity, and in order to press them down upon the surface of the disk with the requisite power, plates *e*, are placed loosely on the racks, and said racks are made of a thickness somewhat less than the diameter of the pencils, so that when the same are filled with pencils and the plates *e*

are put on, said plates will rest on the pencils and not on the racks; (as shown in Fig. 6,) where the pencils are shown in red outlines.

The guideways H extend beyond the circumference of the cover E, and to facilitate the operation of charging and discharging the racks, tables I extend from the circumference of the flange *d*, and on a level with the upper edge of the same, and with the upper surface of the disk D. These tables are situated under the extensions of the guideways H, and when the racks are drawn out over said tables they can be readily charged with pencils. For the purpose of discharging said racks they have to be drawn out clear of the tables and the pencils will drop down in a basket or other receptacle. The apertures through which the racks are drawn in and out are closed by suitable gates to prevent the escape of dust.

The operation of polishing or sandpapering the pencils is materially facilitated by imparting to the racks a reciprocating motion, and in order to do this automatically each rack is provided with a shank, *f*, the outer end of which is turned up at right angles and catches in the end of a rod, *g*, that connects to an eccentric ring, *h*. This ring is fitted over an eccentric disk, *i*, which is firmly keyed to the upper end of the shaft C, and as this shaft rotates a reciprocating motion is imparted to the several racks. It is obvious that instead of using one eccentric ring for the several racks a separate ring might be used for each rack; or the desired reciprocating motion might be produced by cranks or other equivalent means, and we do not wish to confine our-

selves to the precise arrangement of parts represented in the drawings.

The operation of this machine requires no further explanation. The disk D is covered with suitable cement and sand or emery, and the racks are charged with pencils and pushed in over the disks. By the action of the disk the pencils are whirled round rapidly and the entire surface of each pencil is exposed to the action of the polishing material. The effect of this material on the pencils is materially increased by imparting to the racks a reciprocating motion, and by the combined rotary and reciprocating motion imparted to each pencil the surface of the same is rendered cylindrical and smooth.

The machine is easily understood, it requires no particular attention, and by its aid a very large quantity of pencils can be sandpapered or polished in a comparatively short time, and it is obvious that other articles of a cylindrical form besides pencils can be polished in the same or a similar machine.

I claim as new and desire to secure by Letters Patent—

1. The employment or use of one or more slotted racks, substantially such as herein described, to operate in combination with a revolving polishing-disk, in the manner and for the purpose substantially as set forth.

2. Imparting to the slotted racks an automatic reciprocating motion, substantially as and for the purpose described.

PHILIP SCHRAG.

Witnesses:

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WM. TREURN.