(No Model.) 2 Sheets—Sheet 1.

J. S. MOSELEY.

PENCIL SHARPENER.

No. 547,151. Patented Oct. 1, 1895.

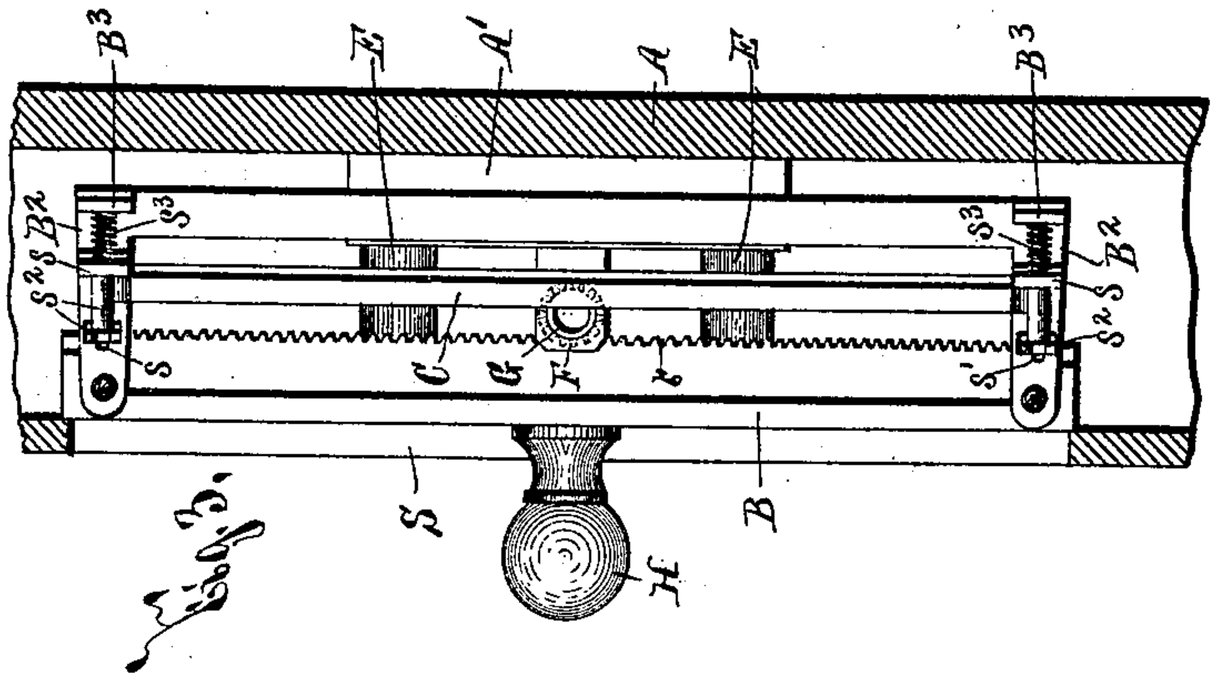

Fig. 3.

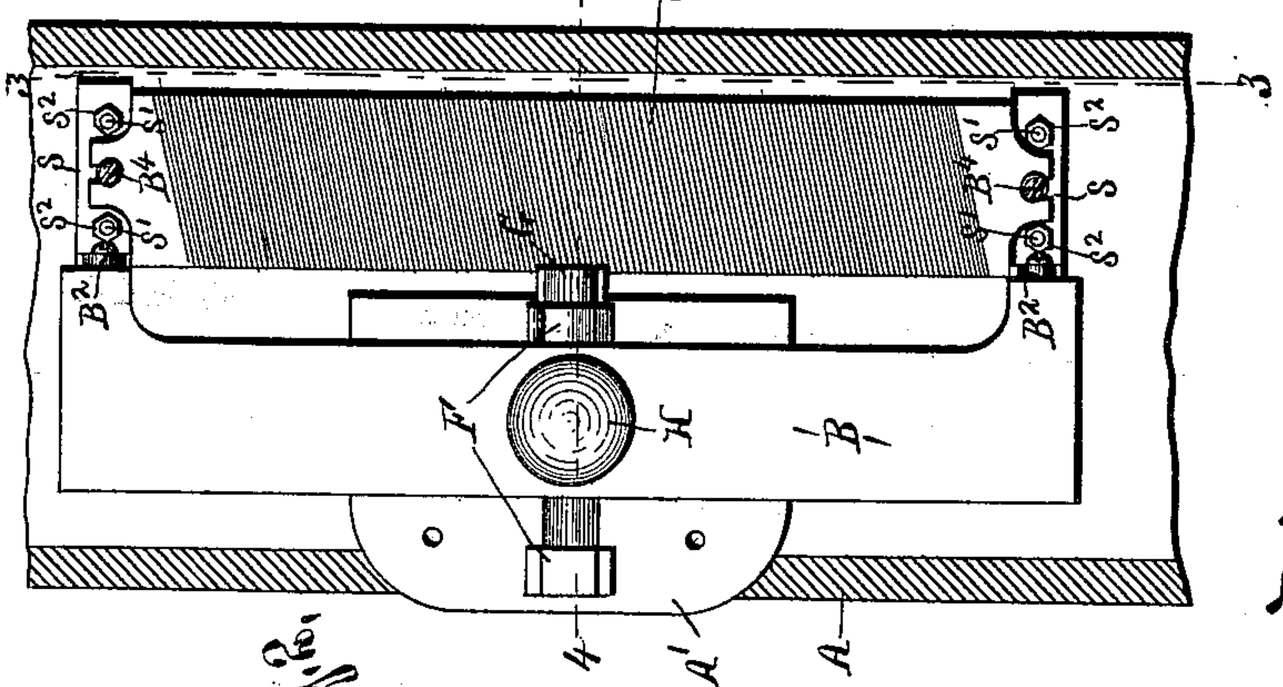

Fig. 4.

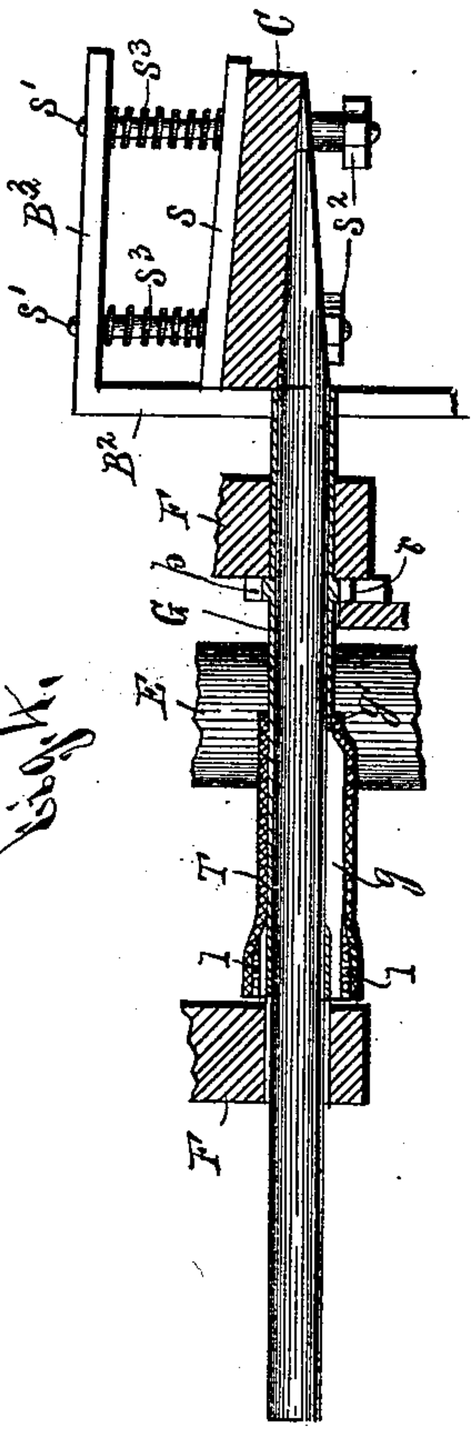

Fig. 1.

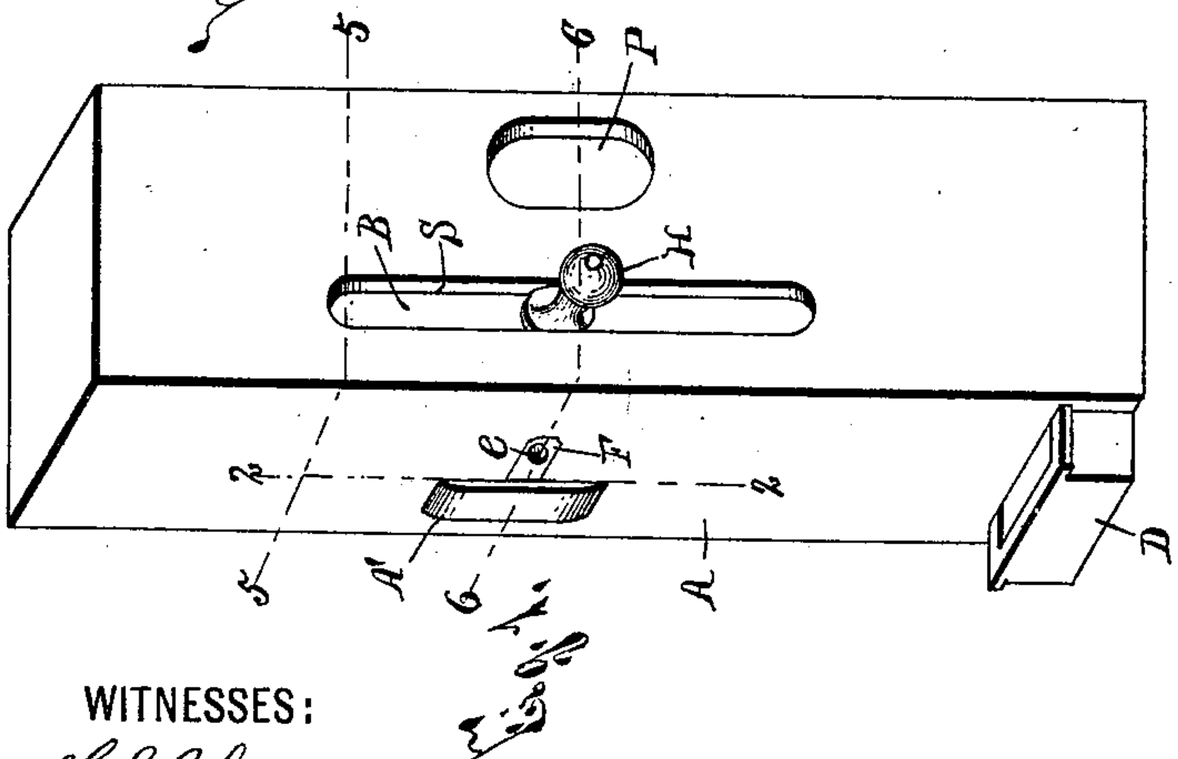

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 5.

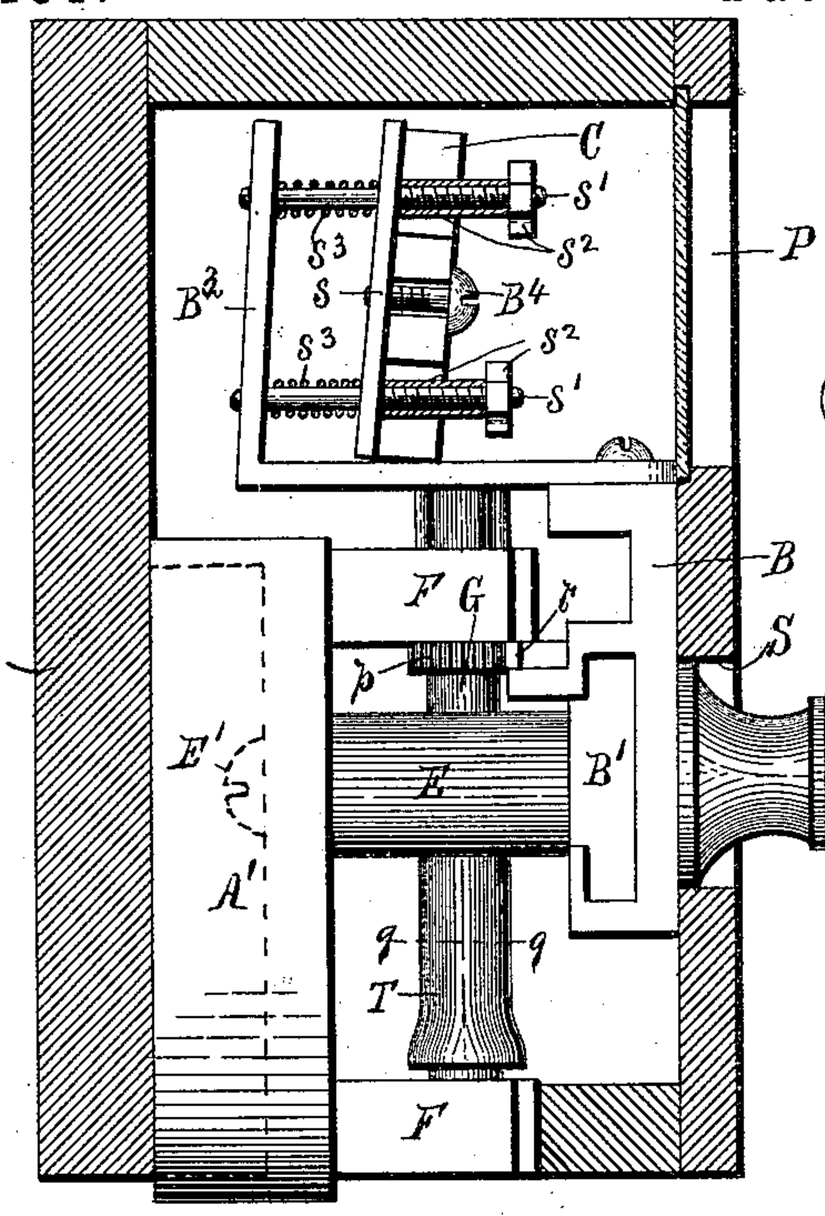


Fig. 7.

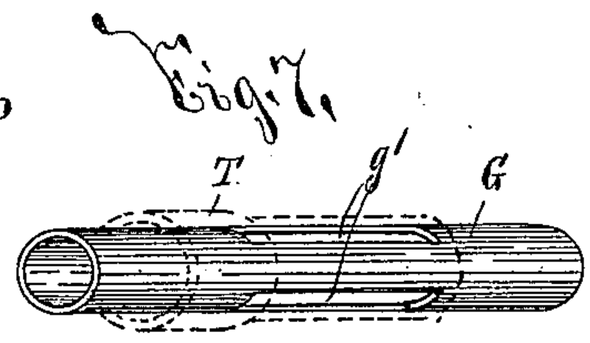


Fig. 8.

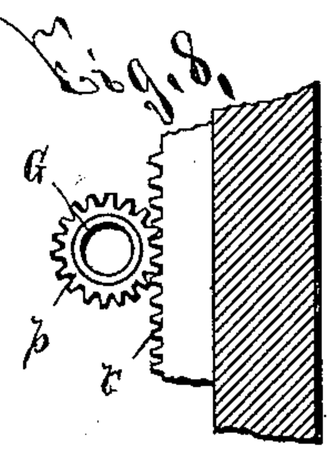


Fig. 6.

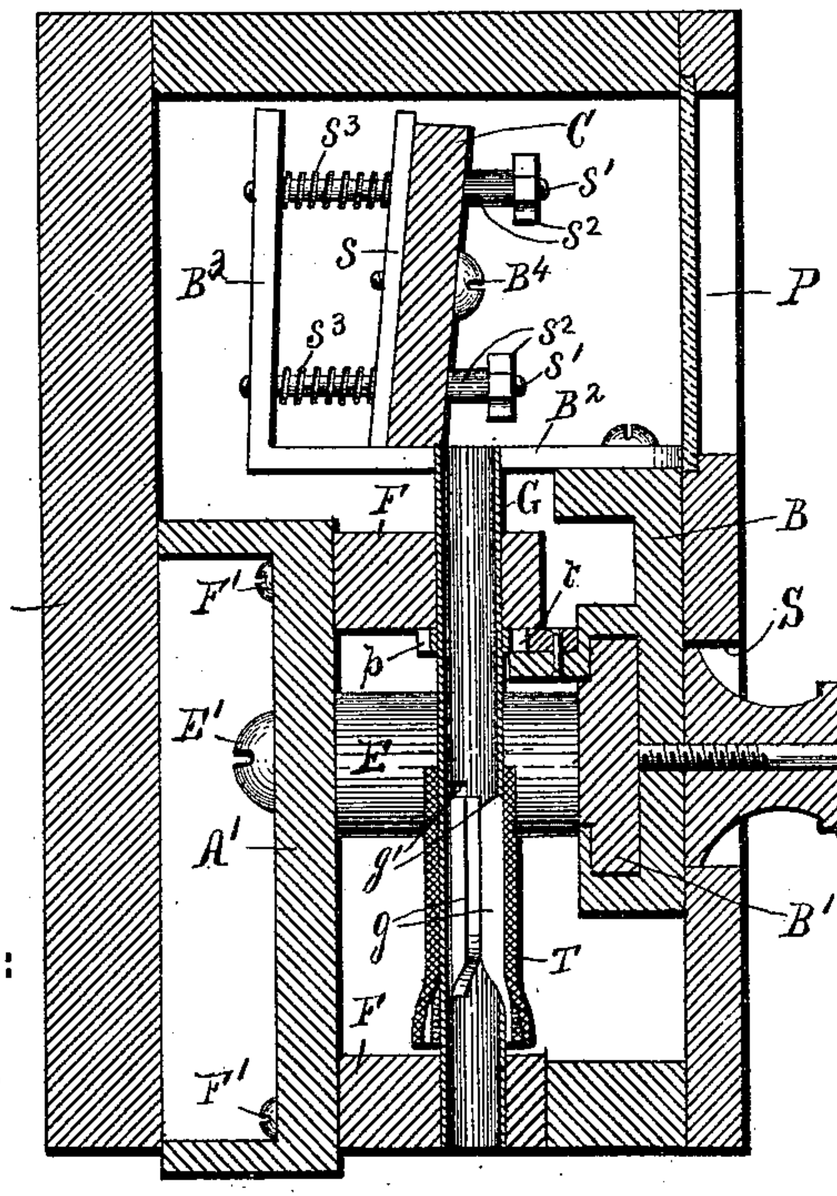
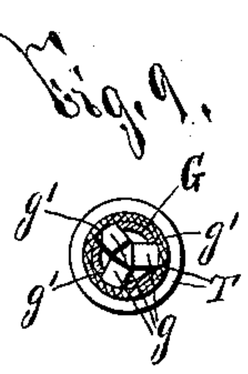


Fig. 9.



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UNITED STATES PATENT OFFICE.

JEROME S. MOSELEY, OF SYRACUSE, NEW YORK, ASSIGNOR TO CHARLES W. BARDEEN, OF SAME PLACE.

PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 547,151, dated October 1, 1895.

Application filed July 19, 1894. Serial No. 517,980. (No model.)

To all whom it may concern:

Be it known that I, JEROME S. MOSELEY, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Pencil-Sharpeners, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to improvements in pencil-sharpeners for the use of architects, draftsmen, &c., and has for its object the production of a sharpener in which the pencil is automatically rotated in contact with an adjustable reciprocating cutter, whereby the pencil is automatically tapered and brought to a point with a minimum amount of attention and labor, thus providing a most efficient and simple device for sharpening pencils; and to this end the invention consists, essentially, in a revoluble pencil-holder, a reciprocating cutter for engaging the pencil, and means for simultaneously rotating the holder and moving the cutter; and it furthermore consists in the details of construction, all as hereinafter fully described, and pointed out in the claims.

In specifying my invention reference is had to the accompanying drawings, in which like letters indicate corresponding parts in all the views.

Figure 1 is an isometric view of the pencil-sharpener, the drawer or receptacle for the cuttings being shown partially open. Fig. 2 is an enlarged longitudinal section taken on line 2 2, Fig. 1, showing the relative location and arrangement of the revoluble pencil-holder and the elongated cutter, a portion of the case being broken away. Fig. 3 is a longitudinal section taken on line 3 3, Fig. 2, showing the mechanism for moving the cutter and rotating the holder and the supports for the cutter. Fig. 4 is a detail inverted section of the holder, the cutter, and the supports for the cutter, taken on line 4 4, Fig. 2, showing the pencil inserted in position. Figs. 5 and 6 are enlarged cross-sections taken, respectively, on lines 5 5 and 6 6, Fig. 1. Fig. 7 is an enlarged detached detail view of the pencil-holder, the grippers being removed and the encircling rubber tube being shown by dotted lines. Fig. 8 is an enlarged detached detail, partly in section, of the means for rotating the holder and moving the cutter; and Fig. 9 is a cross-section taken on line 9 9, Fig. 5, showing the pencil-holder in section and the grippers within the same as in their normal position before the pencil is inserted.

A represents the inclosing-case of my improved pencil-sharpener, the same being preferably formed of any suitable material to make it ornamental and substantial. The inclosing-case is provided with a slot or opening S, through which an operating-handle H projects, and an observation-port P, which I provide with a glass plate for enabling the operator to observe the action of the sharpener on the pencil. An aperture *e*, Fig. 1, is provided in the side of the inclosing-case, through which the pencil-holder is accessible for the insertion of the pencil, and a drawer or other receptacle D is provided to receive the cuttings and lead-dust as the pencil is sharpened.

The mechanism of the sharpener is mounted on a suitable stationary frame consisting of a base or pedestal A′, secured to the case A, as best shown at Fig. 3, and standards E E, which are secured to the base A′ by bolts E′ and support a fixed T-shaped guide B′. (Shown at Figs. 5 and 6.) A carriage B is movable lengthwise of the guide B′ and is provided with flanged extensions or shoulders, which fit over the projecting ways of the guide B′ and confine the carriage in operative position. The base A′ also supports stationary bearings F, which are secured thereto by screws F′ and are provided with journal bearings for the pencil-holder G, presently explained. The reciprocating carriage B is provided with separated hangers B^2, firmly secured thereto by screws 2, the said hangers serving to support an elongated serrated cutter C.

The cutter C is adjustably supported on the angle-pieces or lateral arms B^3 of the hangers B^2 and is provided at its opposite ends with supports *s*, movable lengthwise of bolts or guide-rods *s′*, carried by the angle-pieces or arms B^3. The supports *s* are preferably removably secured to the opposite extremities of the cutter by suitable clamps or screws B^4, and as I preferably provide each angle-piece or lateral arm B^3 with a pair of bolts or guide-

rods s' said supports are formed at their opposite ends with separated apertures for receiving said guide-rods. If desired, the supports s may be omitted, and the opposite ends of the cutter C may be each provided with a pair of apertures therein for receiving the corresponding pair of bolts or guide-rods s. Adjustable shoulders s^2, movable lengthwise of the bolts or guide-rods s' limit the upward movement of the supports s, and spirals s^3, interposed between the supports s and the angle-pieces or arms B^3, force said supports upwardly into engagement with the shoulders s^2. A yielding cushion for the cutter is thus provided, which holds it against the pencil, when arranged within the holder, in position to be operated upon.

As clearly seen at Figs. 4, 5, and 6, the upper face of the cutter C is preferably inclined transversely, and as is obvious the amount of the transverse inclination of the upper face of the cutter may be more or less varied by suitable adjustment of the shoulders s^2. It will thus be observed that the cutter C is capable of vertical and transverse adjustment. The object of thus adjustably supporting the cutter is two-fold. First, the cutter is adjusted in an inclined plane, so that the taper of the pencil may be regulated, and, second, the springs assert an upward pressure, holding the cutter up to its work with a rising movement as the wood and lead of the pencil are cut away, thus securing an automatic regulation of the cut and a true taper to the pencil.

The cutter C preferably consists of an elongated flat bar provided with serrations on its upper surface and is similar in all respects to a file-blade. The serrations may be varied, so that the cutter presents on its inner side, next to the pencil-holder, presently described, coarse or widened serrations and upon its outer edge fine serrations, or the serrations may all be of the same width, as may be desired. The cutter is arranged in proximity to the pencil-holder, so that when the pencil is inserted in the holder the cutter is in proper position, as best shown in Fig. 4, to operate upon the pencil for the purpose of sharpening and pointing the same.

The pencil-holder G consists, preferably, of a tube journaled in the stationary bearings F, secured to the base-piece A', and is provided with a pinion p, which meshes with a rack r, secured to a downwardly-extending rib or projection of the carriage B. Motion is communicated to the carriage B through the medium of the handle H, previously mentioned, which is secured to the carriage B by a screw-bolt H' and projects through the slot or opening S in the case A. The office of the rack r and pinion p is to revolve the pencil-holder and to simultaneously move the cutter C, supported by the carriage B. It will be observed that as the holder is journaled in stationary bearings and is provided with a pinion meshing with the rack r on the carriage carrying the cutter I secure the effect of simultaneously rotating the holder and moving the cutter. Thus the pencil is rotated in contact with the elongated cutter while the cutter is being reciprocated to and fro, and consequently the operation of the cutter on the pencil is greatly facilitated and a smooth fine cut thereby secured. It will be evident, however, to one skilled in the art that the cutter may be adjustably mounted on a fixed support, and the revoluble pencil-holder may be reciprocally movable lengthwise of the cutter. It is also evident that instead of utilizing springs for forcing the cutter adjustably toward a fixed pencil-holder they may be used to force an adjustable holder against a cutter.

In order to hold the pencil securely within the holder during the operation of sharpening the pencil, said holder is provided with lengthwise apertures or slots g' g' g', preferably arranged equidistant, as best seen at Fig. 7. Corresponding ends of grippers g g g, consisting of strips of leather, rubber, or any other suitable flexible material, are arranged upon the outside of the holder G and are secured thereto by a suitable lashing l, and the opposite ends of said grippers protrude into the interior of the holder, as best shown at Fig. 9. A rubber tube T, Figs. 6 and 7, surrounds the holder and the grippers and serves to impart the necessary tension to the grippers for pressing them into contact with the pencil when within the holder.

It will be observed upon reference to Figs. 6 and 9 of the drawings that the grippers project into the bore of the holder and, being yieldingly supported, are displaced when the pencil is inserted into the holder; but, owing to the tension of the outer tube T, the grippers exert a firm grip upon the pencil and hold it securely, so that when the holder is rotated the pencil is carried with it and is not independently revoluble. It is evident, however, that any suitable spring may be used for tensioning the grippers instead of the rubber tube T.

The operation of my invention will be readily understood from a consideration of the foregoing description and upon reference to the drawings, and it will be observed that the pencil, which is preferably first tapered, is inserted in the holder G through the aperture e in the outer case of the device, and the cutter is reciprocated by moving the handle H to and fro. The port P in the inclosing-case enables the operator to observe the action of the cutter on the pencil and to ascertain when the sharpening is completed. By the adjustable support of the cutter and its location in relation to the pencil-holder sharpening of architects' and mechanical draftsmen's pencils is readily accomplished automatically without breaking the leads, and a

degree of fineness is obtained heretofore impossible with a pencil-sharpener. The device is simple in construction, compact, durable, and unusually effective for producing the desired result.

It will be obvious that the outer case may be dispensed with and that the construction of the various parts of the pencil-sharpener may be readily changed without departing from the spirit of my invention. I therefore do not limit myself to the specific construction of any of the parts.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A pencil sharpener consisting of a pencil holder mounted on a base and adapted to be revolved, a rack bar also mounted on said base to revolve said holder, and a cutter mounted on said rack bar and adapted to be moved thereby, substantially as and for the purpose set forth.

2. A pencil sharpener consisting of a revoluble holder for the pencil and a reciprocating transversely inclining cutter for engaging the pencil having its longitudinal edges automatically movable independent of each other toward and away from the axis of the holder for varying the inclination of the cutter, substantially as and for the purpose described.

3. A pencil sharpener consisting of a revoluble holder for the pencil, a reciprocating carriage restrained from movement toward and away from the axis of the holder, a cutter supported by the carriage, separate springs at one side of the opposite ends of each longitudinal side of the cutter for independently forcing the opposite ends thereof toward and away from the axis of the cutter, whereby the cutter is automatically adjustable transversely and longitudinally, and adjustable shoulders at the opposite side of the opposite ends of each longitudinal side of the cutter for limiting the movement of said cutter toward the axis of the holder, substantially as and for the purpose specified.

4. The combination of a pencil holder provided with a pinion, a stationary or fixed bearing for the holder, a reciprocating carriage provided with lateral arms, and a rack meshing with said pinion, a cutter supported by said arms of the carriage and movable therewith, adjustable shoulders for varying the transverse inclination of the face of the cutter, and springs for yieldingly forcing the cutter toward said shoulders, substantially as and for the purpose specified.

5. The combination with a revoluble pencil holder; of a carriage provided with separated guides, shoulders movable lengthwise of the guides, a cutter having its opposite ends movable lengthwise of the guides toward the shoulders, springs for forcing the cutter toward said shoulders, a rack and pinion connecting the pencil holder and carriage, and means for reciprocating the carriage, substantially as and for the purpose specified.

6. The combination of a tubular pencil holder provided with a lengthwise aperture or slot, a gripper having one end arranged at the outside of the holder and lashed thereto and its opposite end projecting within the bore of the holder, and a cutter for engaging the pencil, substantially as described.

7. The combination of a revoluble tubular pencil holder provided with a lengthwise aperture or slot, a gripper having one end arranged at the outside of the holder and lashed thereto and its opposite end projecting within the bore of the holder, a cutter for engaging the pencil, a carriage for reciprocating the cutter, and a rack and pinion for connecting the holder and carriage, and means for reciprocating the carriage, substantially as described.

8. The combination of a tubular pencil holder provided with a series of equidistant lengthwise apertures, a series of grippers having corresponding ends arranged at the outside of the holder and secured thereto and their opposite ends projecting within the apertures or slots and formed with flexibly engaging faces, means for forcing the latter ends of the grippers within the apertures or slots in the holder, and a cutter for engaging the pencil, substantially as specified.

9. The combination of a tubular pencil holder provided with a series of equidistant lengthwise apertures, a series of grippers having corresponding ends arranged at the outside of the holder and secured thereto and their opposite ends projecting within the apertures or slots and formed with flexibly engaging faces, a rubber tube encircling the holder and the latter ends of the grippers for forcing the same within the holders, a cutter for engaging the pencil, a carriage for reciprocating the cutter, and a rack and pinion for connecting the holder and carriage, and means for reciprocating the carriage, substantially as set forth.

10. The herein described pencil sharpener consisting of a revoluble holder, a reciprocating cutter, an inclosing case provided with a slot or opening, an aperture through which the pencil is inserted, a port for observing the action of the cutter on the pencil, a drawer or receptacle for receiving the cuttings, &c., and an operating handle movable in said slot or opening in the case, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 14th day of July, 1894.

JEROME S. MOSELEY.

Witnesses:
CLARK H. NORTON,
K. H. THEOBALD.