C. NASH.

PENCIL SHARPENER.

APPLICATION FILED SEPT. 13, 1911.

1,043,130.

Patented Nov. 5, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

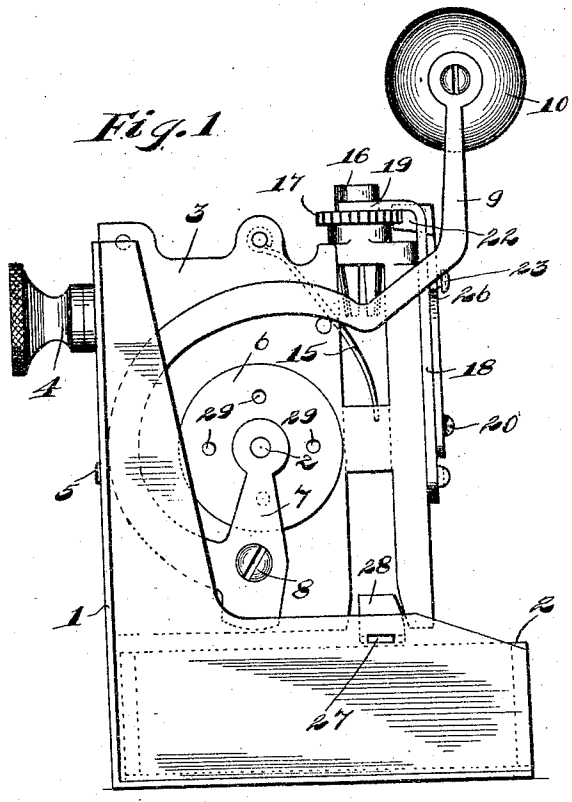
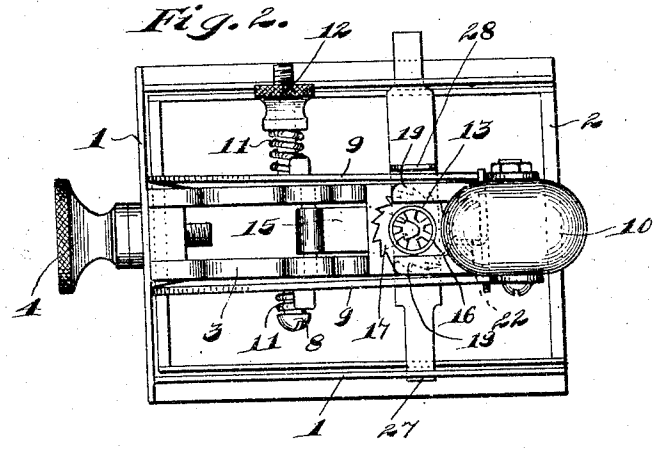


Fig. 2.



Witnesses:

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A. A. Olson.

Inventor:

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2 SHEETS—SHEET 2.

Fig. 3.

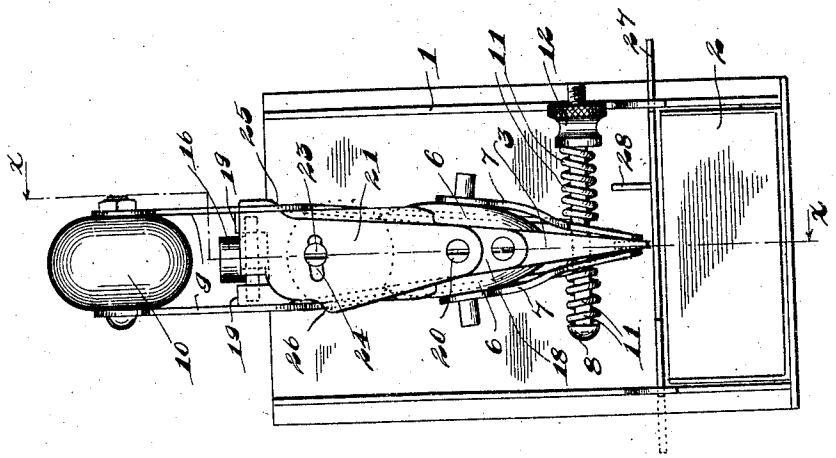


Fig. 4.

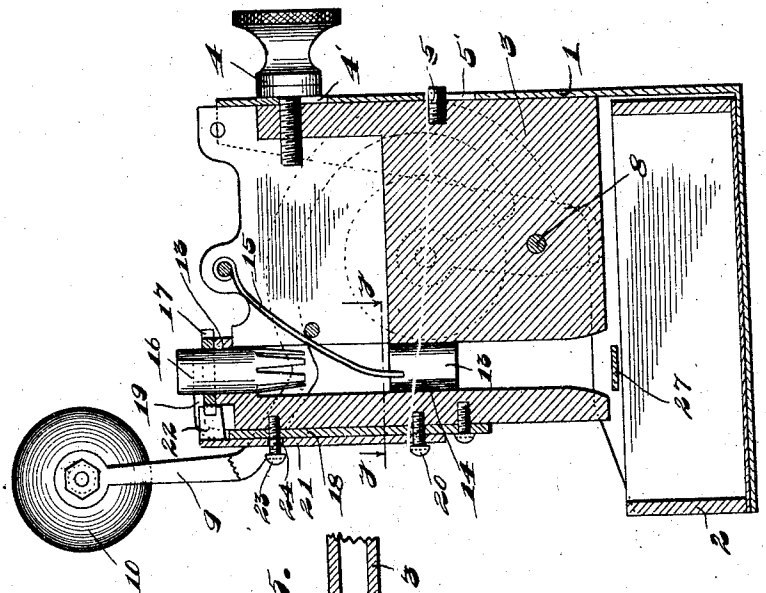
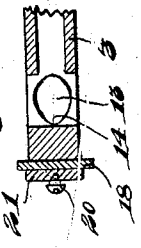


Fig. 5.



Witnesses:

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BEST AVAILABLE COPY

UNITED STATES PATENT OFFICE.

CHESTER NASH, OF OREGON, ILLINOIS.

PENCIL-SHARPENER.

1,043,130. Specification of Letters Patent. Patented Nov. 5, 1912.

Application filed September 13, 1911. Serial No. 649,116.

To all whom it may concern:

Be it known that I, CHESTER NASH, a citizen of the United States, residing at Oregon, in the county of Ogle and State of Illinois, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is specification.

My invention relates to improvements in pencil sharpeners and has for its object the production of a device of this character through the medium of which a pencil may be sharpened with ease and expedition.

A further object is the production of a pencil sharpener which will be of durable and economical construction and efficient in operation.

Other objects will appear hereinafter.

With these objects in view, my invention consists in the combinations and arrangements of parts hereinafter described and claimed.

My invention will be best understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is a side elevation of a pencil sharpener embodying my invention, Fig. 2 is a top plan view thereof, Fig. 3 is a front elevation of the pencil sharpener, Fig. 4 is a vertical section taken on substantially line *x*—*x* of Fig. 3, and Fig. 5 is a fragmentary detail section taken on substantially line *y*—*y* of Fig. 4.

The preferred form of construction as illustrated in the drawings comprises a frame 1 preferably formed of metal. Arranged in the bottom of the member 1 is a sliding receptacle or drawer 2 for the reception of the shavings and dust removed from the pencil when the device is in operation. Arranged upon the front side of the vertically disposed back wall of the frame 1 is a vertically disposed block 3, secured in position by means of thumb screw 4, the latter engaging an elongated slot 4′ provided in the frame 1 so as to permit of vertical adjustment of the member 3. A screw stud 5 projecting rearwardly from the member 3 into engagement with an elongated slot 5′ in the frame 1 serves as a means of maintaining the lower end of the member 3 in proper position, preventing transverse movement thereof.

The member 3 is wedge shape in cross section, as clearly shown in Fig. 3. Arranged upon the opposite downwardly convergent sides of said member 3 are circular cutters 6 carried at the outer ends of the arms 7 which are fulcrumed upon the respective ends of the transversely extending screw bolt 8 secured in block 3. Formed integral with the arms 7 at the fulcrum points thereof are operating levers 9 which project upwardly and forwardly as shown, the outer extremities thereof being operatively connected by means of the knob or handle piece 10. The arrangement is such, as will be observed, that oscillatory movement of the levers 9 will impart sliding orbital movement to the cutters 6 upon the opposite inclined surfaces of the member 3. The cutters 6 are yieldingly held against said surfaces of the member 3 through the medium of compression springs 11 which are interposed between the outer sides of the arms 7 and the head of the bolt 8 in one instance and the thumb screw 12 threaded upon said bolt in the other instance; the arrangement being such as will be observed that adjustment of the nut 12 upon said bolt effecting adjustment of the tension of said springs. The lower ends of the arms 7 rest against the opposite sides of the member 3 so that the springs 11 engaging against the medial portions of said arms serve to force the cutters 6 against the opposite sides of said member, adjustment of the tension of said springs as above mentioned effecting the adjustment of the force exerted by said springs upon said cutters.

Formed in the member 3 adjacent the outer end thereof is a vertically extending opening 13 adapted to receive a pencil. The lower end portion of the opening 13 is preferably elongated transversely as shown in Fig. 5 so that upon insertion of a pencil therein a leaf spring 15 which is adapted to engage against the back side of the pencil will force the latter toward the forward portion 14 of said opening, wedging the same between the opposite acutely converging sides of said portion 14 of said opening to maintain the pencil securely in position during the whittling or sharpening operation, as will be hereinafter described. The upper end portion of the member 3 is preferably recessed or cut away as clearly shown in Fig. 4 for the reception of the spring 15 and also in order to reduce the weight of the device to a minimum. Rotatably mounted in the cylindrically formed upper end portion of the opening 13 is a sleeve 16 adapted

to serve in the capacity of a pencil holder or support, the lower end of said sleeve being split longitudinally and contracted so that upon insertion of a pencil thereinto the fingers formed at said end of said sleeve will securely grasp the pencil and thereby lock the same to said sleeve, and so that when said sleeve is rotated the pencil arranged therein will be rotated accordingly. Formed upon the sleeve 16 adjacent the upper end thereof is a series of ratchet teeth 17. A plate 18 secured upon the front side of the member 3 projects upwardly above the upper end thereof and has its upper end bifurcated, the ends or branches 19 at said end engaging over the projecting teeth 17 to serve as a means of locking the sleeve 16 in position, preventing vertical movement thereof but permitting of rotary movement. Fulcrumed at 20 upon the plate 18 is an arm 21 formed at its upper end with a pawl 22 adapted to engage the rachet teeth 17 for imparting rotary movement to the sleeve 16. Oscillatory movement of the arm 21 is limited by the screw 23 which engages an elongated arcuate slot 24 provided in said arm, the connections of the arm 18 with the screw 23 and at the fulcrum point thereof being loose, as shown in Fig. 4, so as to permit of slight forward tilting thereof so as to allow the pawl 22 being drawn rearwardly over the rachet teeth 17. The opposite edges of the arm 21 are provided with projecting inclined edge portions 25 and 26, the former being positioned for engagement by one of the levers 9 during upward movement thereof and the other of said edge portions for engagement with the other of said levers during the downwardly movement thereof. The arrangement is such as will be observed that engagement of the inclined surface 25 during upward movement of the levers 9 will effect rocking of the arm 21 toward the left or in a direction such that the pawl 22 thereof will engage the teeth 17 and rotate the sleeve 16. Engagement of the surface 26 during downward movement of the levers 9 from their upper terminals of movement effects rocking of the arm 21 to initial position and consequently the drawing of the pawl 22 back over the teeth 17 for a fresh grip thereof. The portion of the levers 9 engaging with the surfaces 25 and 26 are so disposed as will be observed that engagement thereof with the arm 21 during the upward movement will tend to force said arm against the plate 18 and hence the pawl 22 toward operative position against the teeth 17; engagement of said portion of said levers with the arm 21 during downward movement tending to force said arm outwardly and hence to effect disengagement of the pawl 22 with the ratchet teeth. With the construction set forth then, it will be observed that oscillatory movement of the levers 9 in addition to imparting a slidable orbital movement to the cutters 6 will automatically effect intermittent rotary movement of the pencil supporting mechanism and hence of the pencil arranged therein.

Arranged directly below the lower terminal of the opening 13 is a transversely extending bar 27 the ends of which are slidably mounted in the opposite sides of the frame 1. The bar 27 serves as a stop for the pencil in insertion thereof into the opening 13, limiting the downward movement of the pencil.

In the operation of the construction above set forth the pencil to be sharpened is first inserted into the sleeve 16 and downwardly through the lower end of the opening 13 until the lower end of said pencil contacts the bar 27. When thus positioned the opposite sides of the lower end portion of the pencil will project beyond the opposite convergent surfaces of the member 3 and so that upon oscillation of the levers 9 the cutters 6 will engage said projecting sides of the pencil, whittling the same flush with the surfaces upon which said cutters are mounted. Upon oscillation of the levers 9 the pencil arranged in the device will be intermittently rotated as above mentioned so as to present new portions of the same for whittling by the blades or cutters 6 in their downward movement. By the provision of the two cutters 6 it is apparent that the cutting or sharpening of the pencil will be effected with great expedition, it being clear that with this provision it is only required to reciprocate the levers 9 until the pencil has been turned through a half revolution or one hundred eighty degrees, it being understood that were but one cutter employed it would be necessary to move the pencil to a complete revolution or three hunderd sixty degrees to complete the sharpening thereof. Provided upon the bar 27 is a post 28 adapted to be moved to register axially with the opening 13, as shown in dotted lines in Fig. 3. The post 28 is provided for use in the initial sharpening of a pencil. With this provision, upon the insertion of a pencil into the device the post 28 will serve to position the lower end of the pencil higher in the block 3 so that the cutters upon oscillation of the levers 9 will not at first remove cuts of too great thickness from the pencil. After the removal of the first cut from the pencil, the bar 27 will be moved to permit of the pencil being lowered and so that when then engaged by the cutters the same will be sharpened for use. The post 28 is disposed transversely of the bar 27 and is comparatively thin as shown so that when positioned for use centrally of the pencil opening the cutters when lowered will not contact said post but will be permitted to move beyond

the upper extremity of said post into contact with the bar 27 in the usual manner. The provision of two cutters engaging opposite sides of the pencil is of great advantage in that with this provision the action of one cutter upon one side of the pencil will be counteracted by the action of the other cutter upon the opposite side of the pencil; this equalizing or counter action evidently lessening the possibility of breakage of the lead during the sharpening operation. The orbital sliding movement imparted to the cutters by oscillation of the levers 9 is of great advantage since when so moved the cut thereof into the pencil will be of a sliding or oblique nature, preventing ripping or splitting of the wood such as frequently occurs where the cut is longitudinal or transverse. Through vertical adjustment of the block 3 as permitted by the screw 4, provision is made for effecting regulation of the sharpness of the point to which the lead of the pencil will be whittled in the operation of the device; it being clear that when said block is at its uppermost position the lead of the pencil will be whittled to a needle point, since the cutters 6 will more closely approach each other before being brought into contact with the bar 27, lowering of said member 3 increasing the bluntness of the point to which the lead will be sharpened. The bar 27 is formed of a soft metal such as brass so that contact of the cutters 6, which are formed of a harder metal such as tool steel, will not dull the latter. Provided in the cutters 6 are perforations 29 providing means for rotating the same to present a fresh portion when one portion of the periphery has been dulled through usage, said perforations being adapted to be engaged by a pointed tool for effecting this adjustment.

While I have illustrated and described the preferred construction for carrying my invention into effect, the same is capable of variation or modification without departing from the spirit of the invention. I therefore do not wish to be limited to the exact details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a pencil sharpener, the combination of a wedge shaped block having a pencil opening extending therethrough and intersecting the wedge surfaces; a pivoted lever mounted at each side of said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; and a stop for the end of said pencil, substantially as described.

2. In a pencil sharpener, the combination of a wedge-shaped block having a pencil opening extending therethrough and intersecting the wedge surfaces; a pivoted lever mounted at each side of said block; yieldable means for pressing said levers toward said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; and a stop for the end of said pencil, substantially as described.

3. In a pencil sharpener, the combination of a wedge-shaped block having an elongated pencil opening extending therethrough and intersecting the wedge surfaces; yieldable means for pressing a pencil against one side of said opening; a pivoted lever mounted at each side of said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; and a stop for the end of said pencil, substantially as described.

4. In a pencil sharpener, the combination of a wedge-shaped block having an elongated pencil opening extending therethrough and intersecting the wedge surfaces; yieldable means for pressing a pencil against one side of said opening; a pivoted lever mounted at each side of said block; yieldable means for pressing said levers toward said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; and a stop for the end of said pencil, substantially as described.

5. In a pencil sharpener, the combination of a wedge-shaped block having a pencil opening extending therethrough and inter-

secting the wedge surfaces; a pivoted lever mounted at each side of said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; a slidable pencil stop arranged adjacent said block; and a post on said stop adapted to be placed in alinement with said opening, substantially as described.

6. In a pencil sharpener, the combination of a wedge-shaped block having a pencil opening extending therethrough and intersecting the wedge surfaces; a pivoted lever mounted at each side of said block; yieldable means for pressing said levers toward said block; a cutter carried by each of said levers and sliding upon the corresponding wedge surface of said block; a pencil holder rotatably mounted in said pencil opening; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said arm adapted to engage said ratchet teeth; a slidable pencil stop arranged adjacent said block; and a post on said stop adapted to be placed in alinement with said opening, substantially as described.

7. In a pencil sharpener, the combination with a rotatable pencil holder, of two pivoted levers arranged at opposite sides thereof; ratchet teeth on said holder; an oscillatory arm pivoted between said levers and provided with inclined surfaces adapted to be engaged by said levers to cause oscillations of said arm; a pawl on said oscillatory arm arranged to coöperate with said ratchet teeth to rotate said holder; and cutters carried by said levers and adapted to sharpen a pencil in said holder, substantially as described.

8. In a pencil sharpener, the combination of a member having a vertical opening therein for the reception of the pencil, said opening being transversely elongated; resilient means adapted to engage the pencil inserted into said opening to force the same against one side of said opening; a movably mounted cutting element; and means for operating said cutting element.

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

CHESTER NASH.

Witnesses:
BERT S. DUZAN,
FRANK R. ROBINSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."