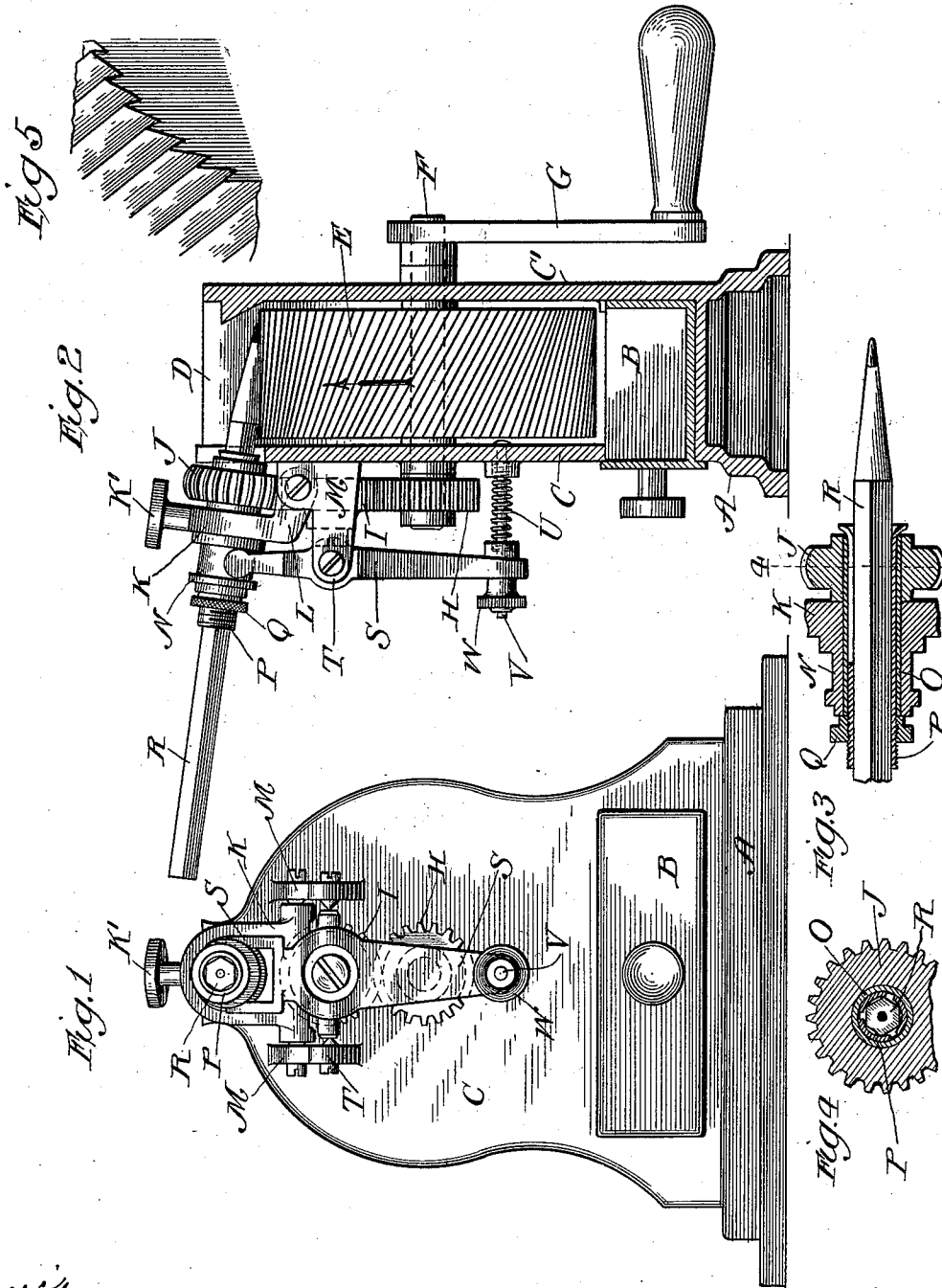


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PENCIL POINTER.
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1,008,949.

Patented Nov. 14, 1911.



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UNITED STATES PATENT OFFICE.

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PENCIL-POINTER.

1,008,949.

Specification of Letters Patent. Patented Nov. 14, 1911.

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To all whom it may concern:

Be it known that I, FREDERICK B. CANODE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencil-Pointers, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to that class of machines or devices, commonly known as pencil pointers, in which the ends of lead pencils are pointed by the operation of a rotary cutter driven by hand or power, and it has for its object the production of a machine of this character which shall be simpler, cheaper and more efficient than those heretofore used.

In the accompanying drawings Figure 1 is an elevation of the machine, looking at the side of the machine at which the pencil to be pointed is inserted; Fig. 2 is a side elevation, partly in section, at right angles to the view in Fig. 1; Fig. 3 is a sectional detail of the rotary pencil holder and its supporting bearing; Fig. 4 a cross-section through said holder and its supporting bearing, such section being taken on line 4, of Fig. 3; and Fig. 5 a detail of the rotary cutter.

The same letters of reference are used to indicate like or corresponding parts in the several views.

The supporting frame of the machine consists of a base A, by which it may be secured to a table or other support, two vertical end plates C C', and suitably shaped side plates D to form, with the end plates C C', an inclosing casing for the rotary cutter E which is fixed upon a shaft F having its bearings in the end plates C C', and in the present instance provided with a crank G for turning it by hand. This cutter consists of a cylindrical wheel whose periphery is parallel with its axis and of suitable width to accommodate pencil points of varying lengths. Its periphery is formed of hardened steel and provided with diagonal cutting serrations or knives inclined rearward from left to right, having reference to the direction of rotation of the cutter indicated by the arrow, for a purpose hereinafter explained.

Fixed upon the end of the shaft F opposite the handle G is a gear wheel H which meshes with a second gear wheel I mounted above it upon a suitable support projecting from the end plate C of the casing, and in turn meshing with a third gear wheel J located above it and carried in a rocking frame K pivoted at L between supporting brackets M M projecting from the end plate C of the casing, Fig. 1, and provided with a thumb-piece K' for swinging it on its pivot. This rocking frame K is in the form of a yoke, Fig. 1, and has formed integral with it a tubular extension or hub portion N, Figs. 2 and 3, in which fits and turns a sleeve O, having secured upon its right hand or inner end the gear J before referred to. Fitting within the sleeve O is a second sleeve P whose left hand or outer end is exteriorly threaded to receive a thumb nut Q. The right hand portion of this sleeve P is split or longitudinally slitted, as indicated in Figs. 3 and 4, (being preferably provided with three equidistant longitudinal slits) so as to permit the separated portions of its right hand or inner end to be pressed inward toward each other to grip the pencil R when the latter has been inserted in the sleeve from its left hand or outer end. The right hand or inner end of the sleeve is flared outwardly as shown in Fig. 3, with the result that when the sleeve is drawn to the left within the outer sleeve O which carries the gear J the portions of its split end will be forced inward toward each other and caused to grip the pencil. The thumb nut Q upon the threaded left hand end of the sleeve P bears against the outer end of the tubular bearing N, so that when said nut is tightened up the sleeve P will be drawn to the left, with the result just described, and the pencil be thereby tightly held within the sleeves P and O and gear J, so as to turn with the latter.

A lever S, fulcrumed between ears T projecting from the brackets M, Figs. 1 and 2, is forked at its upper end to engage a circumferential groove formed on the tubular bearing N. When the lower end of this lever is pressed inward, to the right in Fig. 2, the rocking support K of the pencil holder will be swung outward and the axial line of the pencil holder brought to approxi-

mately horizontal position. A coiled spring U surrounding a rod V projecting outward from the end plate C of the casing bears against the lower end of the lever S and tends to force the latter to position to present the pencil at an angle to the periphery of the cutter, as in Fig. 2. A nut W screwed upon the outer end of the rod V serves to limit the movement of the parts in this direction. The end plate C of the casing is cut away opposite the inner end of the pencil holder, as shown, to permit the pencil to project within the casing into contact with the cutter.

Under this construction and arrangement of the parts the use and operation of the machine are as follows: The thumb nut Q on the split sleeve P being unscrewed sufficiently to permit the split end of the sleeve to spring outward to normal position, the end of the pencil to be pointed is inserted through said sleeve until its right hand end projects a proper distance beyond the sleeve, such insertion of the pencil requiring the parts carried by the rocking support K to be swung to approximately horizontal position, by means of the thumb piece K', in order that the unpointed end of the pencil may pass over the top of the cutter E. Upon releasing the parts the action of the spring U will at once throw them toward the position shown in Fig. 2 as far as the contact of the unpointed end of the pencil with the top of the cutter E will permit, and yieldingly press the end of the pencil against the end of the cutter. The thumb screw Q is then tightened up, to firmly grip the pencil in the rotary holder. Upon then turning the cutter E by means of the handle G the pencil will be turned, through the medium of the gears H, I, J, in the same direction as the cutter E, and the adjacent surfaces of the top of the cutter and the under side of the pencil be therefore caused to turn in opposite directions while the pencil is yieldingly pressed against the cutter by the action of the spring U as before described. The diagonal cutting serrations or knives upon the cutter E will then, as the cutter and pencil are revolved, cut away and properly taper and point the end of the pencil, whereupon the lower end of the lever S will come into contact with the stop nut W upon the outer end of the rod V and prevent any further downward movement of the pointed end of the pencil, so that after the pencil has been properly pointed further rotation of the cutter will not affect it. By adjusting the stop nut W to different positions, and by projecting the inner end of the pencil to a greater or less extent over the cutter E, the pencils may be pointed with any desired taper within the limits of the machine. After the pencil has

been pointed the thumb nut Q will be loosened to release the pencil from the grip of the rotary holder, and the pencil be withdrawn, and another one inserted and the operation repeated. The shavings from the pencil point fall to the bottom of the casing and are caught in a drawer B which may be removed to empty them from time to time.

It will be noted that, owing to the diagonal arrangement of the cutting serrations or knives upon the cutter E, they engage the pencil with a shearing cut, and each serration or knife engages first with the portion of the pencil remote from its extreme end or point, so that the material is removed from the pencil with a shearing cut traveling outward toward the point of the pencil, instead of a cut traveling inward from the point toward the body of the pencil as would be the case if the diagonal arrangement of the cutters were reversed. The particular arrangement of the cutters shown in the drawings therefore not only causes them to act upon the pencil with a shearing cut, but by causing said cut to travel outward from the body of the pencil toward its point the operation is much more efficient and the liability of breaking the point of the pencil is materially lessened.

The teeth upon the uppermost gear J of the three gears are rounded or crowned as shown to accommodate its movement upon the middle gear I in the rocking of the frame K carrying the pencil holder.

Having thus fully described my invention, I claim:

1. In a pencil-pointer, the combination of a cutter mounted in a suitable frame or support, a rocking pencil-holder operatively associated with said frame or support, a pivoted lever separate from but engaging the holder, means for forcing the lever in one direction, and means limiting the movement of the lever, substantially as described.

2. In a pencil-pointer, the combination of a cutter, a pencil-holder, a lever for forcing the holder toward or from the cutter, a pin passing through said lever, a spring on said pin abutting one edge of the lever, and an adjustable stop engaging the pin and abutting the opposite edge of the lever, substantially as described.

3. In a pencil-pointer, the combination of a cutter, a support therefor, a pencil holder pivoted on said support and operatively associated with the cutter, a lever engaging said holder pivoted to said support and movable laterally relatively to the cutter, and a spring interposed between a portion of the support and said lever for moving the pencil holder toward the cutter, substantially as and for the purpose described.

4. In a pencil pointer, a rotary cylindrical

cutter, a rotary pencil-holder arranged to present the pencil at an angle to the periphery of the cutter, and a spring controlled lever movable laterally relatively to the cutter operating to yieldingly press the pencil toward the cutter at right angles to the plane of movement of the latter, substantially as described.

5. In a pencil pointer, a frame or support, a rotary cutter of cylindrical form having its periphery provided with diagonal cutting serrations arranged to operate upon the pencil with a shearing cut traveling outward from the body of the pencil toward its point, in combination with a rotary pencil-holder pivotally mounted on the support and arranged to present the pencil at an angle to the periphery of the rotary cutter, and a spring controlled lever operating to yieldingly press the holder toward the cutter; substantially as described.

6. In a pencil pointer, a rotary cutter of cylindrical form having its periphery provided with diagonal cutting serrations arranged to operate upon the pencil with a shearing cut traveling outward from the body of the pencil toward its point, a rotary pencil holder arranged to present the pencil at an angle to the periphery of the cutter, a spring controlled lever movable laterally relatively to the cutter operating to yieldingly press the holder toward the cutter, and an adjustable stop for limiting the movement of the holder toward the cutter under the action of said spring; substantially as described.

7. In a pencil-pointer, the combination of the rotary cutter E mounted in the fixed frame or support, the rocking frame K pivoted on said support, the rotary pencil-holder journaled in said rocking frame, the gears H I J intermediate the cutter and holder, the lever S engaging the rocking frame K at its upper end, and the pin V, spring U and stop nut W coöperating with the lower end of said lever; substantially as described.

8. In a pencil-pointer, a rotary cutter of cylindrical form having its periphery provided with diagonal cutting serrations arranged to operate upon the pencil with a shearing cut traveling outward from the body of the pencil toward its point, a rotary pencil-holder arranged to present the pencil at an angle to the periphery of the cutter, a pivoted lever engaging said holder, a coiled spring engaging said lever and operating to yieldingly press the holder toward the cutter, and an adjustable stop opposite the spring for limiting the movement of the holder toward the cutter under the action of the said spring, substantially as described.

9. In a pencil pointer, a rotary cutter of

cylindrical form having its periphery parallel to the axis of rotation and provided with diagonal cutting serrations arranged to operate upon the pencil with a shearing cut traveling upwardly from the body of the pencil toward its point, a rotary pencil holder arranged to present the pencil at an angle to the periphery of the cutter, and means whereby the holder may be moved toward the cutter in a plane at right angles to the plane of rotation of said cutter and the pencil forced with yielding pressure against the periphery of the cutter, substantially as described.

10. In a pencil pointer, the combination of a cutter arranged to be mounted in a suitable frame or support, a pencil-holder operatively associated with said frame or support and pivotally mounted on the frame, and a spring-pressed member also mounted on the frame, said member being separate from the pencil holder but arranged to bear against the holder and thereby hold the latter with a yielding pressure toward the cutter; substantially as described.

11. In a pencil pointer, the combination of a cutter arranged to be mounted in a suitable frame or support, a pencil-holder operatively associated with said frame or support and comprising a rocking frame pivoted to the support and provided with a hub, a rotatable sleeve arranged within the hub, means within the sleeve for clamping a pencil, means for simultaneously rotating the sleeve and the cutter, and a spring-pressed member mounted on the frame and arranged to bear against said hub and thereby force the pencil-holder toward the cutter with a yielding pressure; substantially as described.

12. In a pencil pointer, the combination of a cutter arranged to be mounted in a suitable frame or support, a pencil-holder operatively associated with said frame or support and comprising a rocking frame pivoted to the support and provided with a hub, an outer rotatable sleeve arranged within the hub and provided at one end with a gear, an interior sleeve to receive the pencil and screw threaded at one end, a thumb nut screwing upon the threaded end of the inner sleeve and coöperating with the outer sleeve to cause the latter to clamp the pencil, means for forcing the pencil-holder toward the cutter with a yielding pressure, and means for driving the cutter and the said gear; substantially as described.

13. In a pencil pointer, the combination of a cutter arranged to be mounted in a suitable frame or support and having a periphery provided with cutting knives, a pencil-holder operatively associated with said frame or support and comprising a rocking frame pivoted to the support at a point near

the periphery of the cutter and provided
with a hub arranged in a plane above the
pivotal point of the yoke, a rotatable sleeve
in said hub, means in the sleeve for clamp-
5 ing the pencil, means for rotating the sleeve
and the cutter, and means coöperating with
the hub for forcing the latter toward the

cutter with a yielding pressure; substan-
tially as described.

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Washington, D. C."