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PENCIL POINTER

[illegible]

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This invention relates to a pencil pointer in which the angle and the length of the point may be substantially varied to meet the views or requirements of the particular user.

The main objects of this invention are:

First, to provide a device for pointing leads of pencils to meet the requirements or views of the particular user, for example, draftsmen, artists and the like.

Second, to provide a pencil pointer which will form an accurate sharp conical point and which may be operated without likelihood of breaking the lead.

Third, to provide a pencil pointer in which the abrasive element is provided with an internal annular conically tapered abrasive surface supported for spring loaded frictional sliding movement and maintaining a uniform thrust against the pencil point throughout each cycle of operation.

Fourth, to provide a pencil pointer with a holder which may be quickly adjusted to present the pencil to the abrasive element to produce the point desired.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

FIG. 1 is a vertical transverse sectional view on a line corresponding to line 1-1 of FIGS. 2 and 4 of a pencil pointer embodying my invention, the pencil being illustrated in operative relation in the pencil holder and the abrasive element.

FIG. 2 is a horizontal sectional view on a line corresponding to line 2-2 of FIG. 1.

FIG. 3 is a fragmentary view partially in vertical section corresponding to that of FIG. 1 with the pencil holder adjusted to present the pencil at a different angle than that shown in FIG. 1.

FIG. 4 is a plan view.

FIG. 5 is an enlarged side elevational view of the pencil holder.

My present invention is an improvement upon an adaptation of the pencil pointer of my Patent No. 2,540,320 issued February 6, 1951.

In the embodiment of my invention illustrated the body member 1 has an upwardly opening chamber 2 therein. The body member 1 is desirably formed of a casting as it is desirable that it should have sufficient weight so that it is stabilized when placed upon a desk, drawing board or other surface permitting the operation of the pointer with one hand as will be herein-after pointed out. The body member is desirably provided with an annular supported engaging member 3.

The post 4 is mounted on the body centrally of the chamber 2 and is adapted to rotatably receive the cover 5 which constitutes a pencil holder carrier. The bottom is provided with a bearing member 6 preferably formed of a stamping and having a flanged opening 7 therein receiving the post.

The bearing member provides a smooth bearing surface for the abrasive member 8 which is also desirably formed as a stamping and has an abrasive lining 9 on its side walls. This abrasive member is conically tapered. The bottom 10 of the abrasive member has a central opening therein surrounded by the upwardly projecting flange 11. The annular friction member 12 is secured

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to the bottom of the abrasive member and is in sliding supported engagement with the bearing member 6.

The coil spring 13 is seated upon the bottom of the abrasive member and has a lug 131 engaging a hole in the bottom member. The upper end of the spring is in thrust engagement with the thrust member 14 mounted on the post, the spring having a lug 15 engaging the thrust member 14. The spring is under predetermined tension so that the abrasive member is supported for radial sliding movement and is subject to a predetermined frictional resistance.

The cover member 5 is provided with a hub 16 rotatable on the post above and supported by the thrust member 14. The upper end of the post is threaded to receive the nut 17 which rotatably retains the cover member so that the structure may be handled as a unit. The cover member constitutes a carrier for a pencil holder and has a cylindrical recess 18 therein spaced radially relative to the axis of the cover member. The recess has a concave pencil seat 19 at the bottom thereof.

The pencil seat 19 has a central opening 20 adapted to receive the lead 21 of a pencil 22. The pencil illustrated is a mechanical pencil and the pencil pointer is particularly well adapted for such pencils but is adapted for the leads of wood pencils.

The pencil holder 23 has a split portion 24 at its lower end which is a springable rotative fit within the recess 18. The socket 25 of the holder 23 is disposed at an angle to the axis of rotation of the pencil holder so that the pencil may be presented to the abrasive element at varying angles, as illustrated in FIGS. 1 and 3, in fact at any desired angle within its scope of adjustment.

In the embodiment illustrated the pencil holder has an eccentric pencil receiving opening or socket 25. The internal shoulder 26 serves to steady the pencil when its lead to be pointed is inserted in through the opening in the seat. The pencil is firmly supported so it may be used to rotate the cover or holder carrier 5. The holder is provided with a knurled surface 27 facilitating accurate adjustment on the carrier. With the parts thus arranged they may be adjusted to produce a wide range of lengths and angles of pencil points.

I have illustrated and described my invention in a highly practical commercial embodiment thereof. I have not attempted to illustrate or describe other embodiments or adaptations which I contemplate as it is believed this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described the invention, what is claimed as new and is desired to be secured by Letters Patent is:

1. A pencil pointer comprising a body member, a post on said body member, an abrasive element having an interior annular conically tapered abrasive surface and having a frictionally slidably supported bottom portion in frictional slidably supported relation to said body member, an abutment member on said post in vertically spaced relation to the bottom of said abrasive element, a coil spring seated on the bottom of said abrasive element, the upper end of said spring being in seated thrust engagement with said abutment member, a pencil support member rotatably mounted on said post and having an upright pencil holder seat with a pencil lead opening therein radially spaced from the axis of rotation of the support member and adapted to receive and support the tip of a pencil in upwardly extending relation to the abrasive member, and a pencil holder mounted to rotate about an upright axis passed through said opening relative to said seat member and having a pencil socket disposed at an angle to the axis of its rotation, whereby the angle at which the pencil is presented to the abrasive element may be varied.

2. A pencil pointer comprising a body member, an

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abrasive element mounted on said body member for lateral sliding movement, said abrasive element having an interior annular conically tapered abrasive surface, a pencil holder carrier mounted on said body member for movement in a circular path and having a concaved seat provided at a central opening adapted to receive the tip of a pencil and a pencil holder mounted on said carrier member for rotative adjustment on an upright axis central of said seat and having a pencil socket disposed at an angle to its axis of adjustment, whereby the angle at which the pencil is presented to the abrasive element may be varied.

3. A pencil pointer comprising a body member, an abrasive element mounted on said body member for frictionally resisted radial sliding movement, said abrasive element having an interior annular conically tapered abrasive surface, and a pencil holder carrier rotatably mounted on said body and provided with a pencil seat with a pencil lead opening therein traveling in a circular path when the carrier member is rotated on its axis, and a pencil holder on said pencil seat adjustable about an upright axis through said opening and having a pencil socket disposed at an angle to its axis of adjustment, whereby the angle at which a pencil is presented to the abrasive element may be varied.

4. A pencil pointer comprising a body member, an abrasive element mounted on said body member for lateral sliding movement, said abrasive element having an interior annular conically tapered abrasive surface, a pencil holder carrier mounted on said body member for movement in a circular path and having an opening adapted to receive the tip of a pencil and a pencil holder mounted on said carrier for rotative adjustment about an upright axis and having a pencil socket disposed at an angle to its axis of adjustment, whereby the angle at

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which the pencil is presented to the abrasive element may be varied.

5. A pencil pointer comprising a body member, and an abrasive element having an interior annular conically tapered abrasive surface mounted on said body member for yieldably resisted radial movement, a pencil carrier rotatably mounted on said body member and provided with a concaved pencil seat having a central opening adapted to receive the tip of a pencil, and a pencil holder mounted on said carrier for rotative adjustment on an upright axis positioned centrally of said seat and having a pencil socket disposed at an angle to its axis whereby the angle at which the tip of a pencil disposed in said socket is presented to the abrasive element may be varied.

6. A pencil pointer comprising a body member, and an abrasive element having an interior annular tapered abrasive surface mounted on said body member for yieldably resisted radial movement, a pencil carrier rotatably mounted on said body member and provided with a pencil seat having a central opening, and a pencil holder mounted on said carrier for rotative adjustment relative to said seat about an upright axis and having a pencil socket disposed at an angle to its axis, whereby the angle at which the tip of a pencil is disposed in said socket is presented to the abrasive element may be varied.

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