Feb. 6, 1951 T. ITANO 2,540,528

PENCIL LEAD POINTING OR SHARPENING DEVICE

Filed Nov. 29, 1949

FIG. 1.

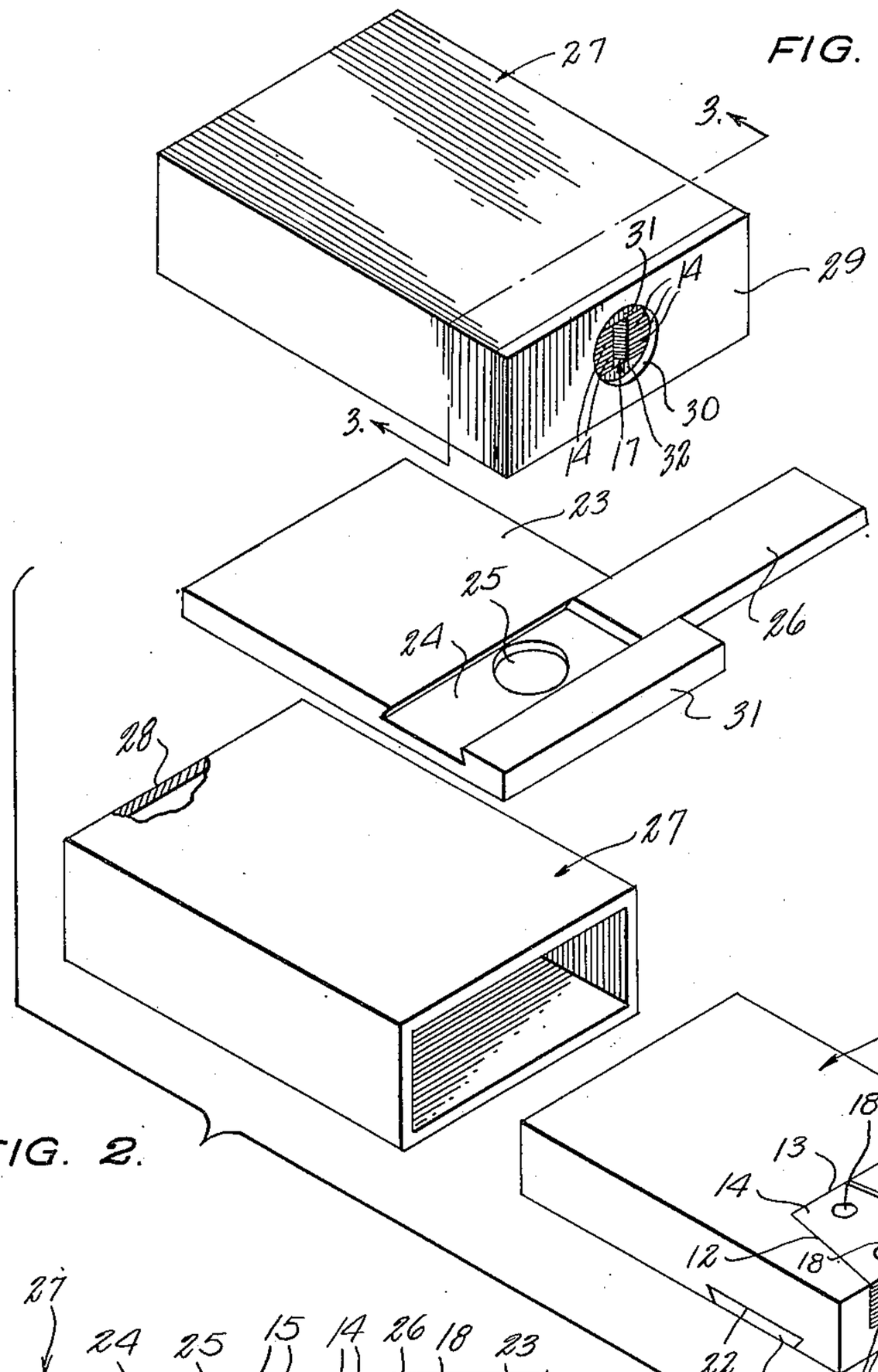

FIG. 2.

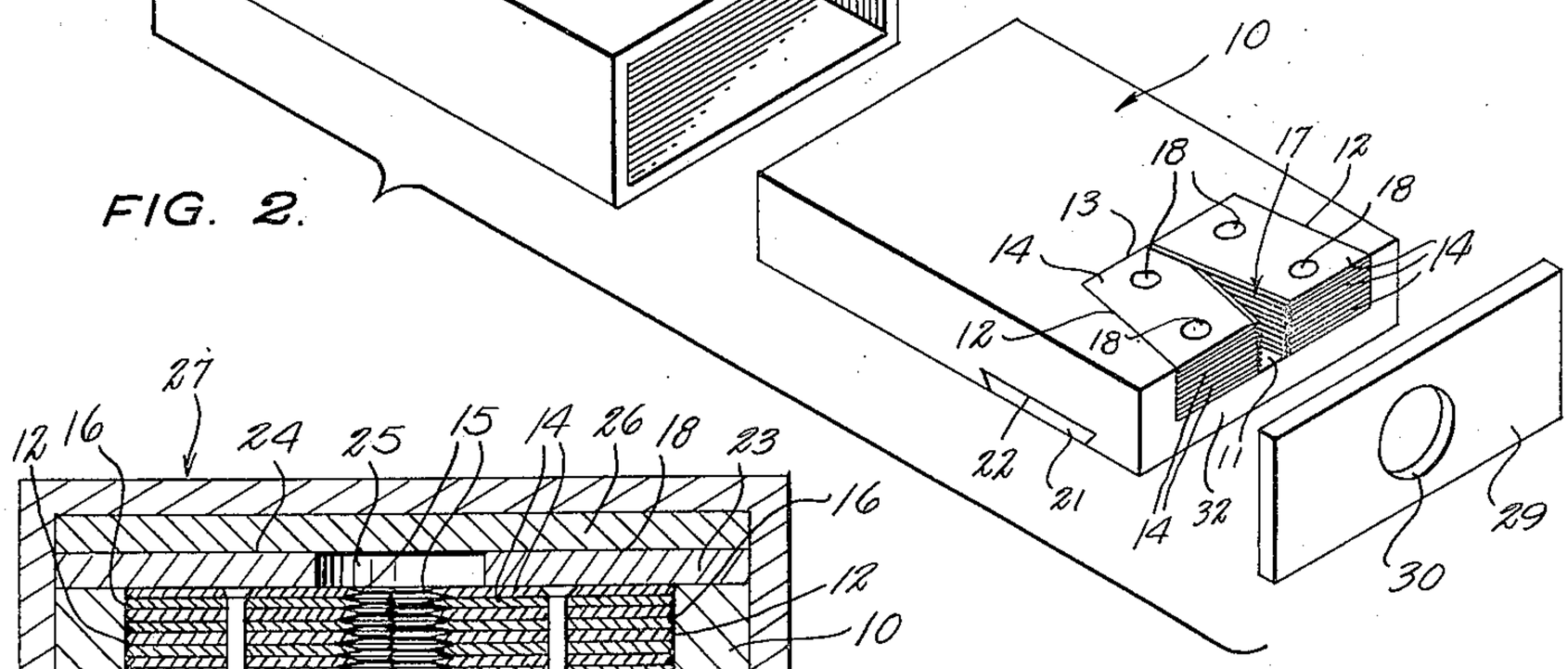

FIG. 3.

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Patented Feb. 6, 1951 2,540,528

UNITED STATES PATENT OFFICE

2,540,528

PENCIL LEAD POINTING OR SHARPENING DEVICE

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Application November 29, 1949, Serial No. 129,973

2 Claims. (Cl. 120—92)

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My invention relates to pencil sharpeners or pointers.

A primary object of my invention is to provide a device particularly well adapted for use by draftsmen for forming new and accurate points upon the leads of their pencils.

A further object of the invention is to provide a pencil sharpening device which is highly simplified, compact, sturdy and relatively cheap to manufacture.

A further object is to provide a device of the above-mentioned character including novel means to facilitate cleaning the device, and for keeping shaved graphite from collecting between the cutting blades of the device.

A still further object of the invention is to provide a device of the above-mentioned character which is very easy to use and time saving.

Other objects and advantages of my invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a perspective view of a pencil sharpener or pointer embodying my invention;

Figure 2 is an exploded perspective view of the same; and

Figure 3 is a transverse vertical section taken on line 3—3 of Figure 1, and drawn on an enlarged scale.

In the drawings, where, for the purpose of illustration, is shown a preferred embodiment of my invention, the numeral 10 designates an inner rectangular body portion or block, which is generally flat, low and somewhat elongated, as shown. The block 10 is provided in its top face and in one end with a wide recess 11, the recess having longitudinally converging, vertical sides 12, and an inner, vertical end 13. Rigidly mounted within the recess 11 are opposed stacks of cutting blades 14, the blades in the stacks having inner, opposed, beveled cutting edges 15 arranged in vertical alignment, as shown in Figure 3. The outer, longitudinal edges of the blades 14 are preferably bonded together by soldering or the like, as shown at 16. The blades 14 are flat and rectangular, as shown, and the outer, longitudinal sides of the opposed stacks of blades engage the converging sides 12 of the recess 11, so that the cutting edges 15 of the blades in the stacks converge longitudinally to form a wedge-shaped or longitudinal channel 17 extending inwardly from said one end of said block for embracingly receiving the pencil point therein. The inner ends of the blades in the stacks may overlap and interfit, throughout a small portion of their length, as shown clearly in Figure 2. The blades 14 in the stacks are further rigidly secured together, and the stacks are rigidly secured within the recess 11 by means of longitudinally spaced pairs of vertical dowels or pins 18 having reduced screw-threaded extensions 19 engaging within the block 10 at the bottom of the recess 11. The pins 18 have their tops flush with the top faces of the uppermost blades 14, Figure 3. The top surfaces of the uppermost blades 14 are disposed flush with the top of the block 10, as shown. Likewise, the outer ends of the blades 14 do not project beyond the adjacent end of the block 10 provided with the recess 11.

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A large, circular opening 20 is formed in the bottom of the block 10 beneath the wedge-shaped opening or passage 17, and this opening 20 leads into the bottom of the recess 11. The opening 20 constitutes a chamber for shaved graphite at one open side of the wedge-shaped opening 17. A bottom, transverse, horizontal slide or plate 21 slidably engages in a transverse, dovetailed groove 22 formed in the bottom of the block 10 adjacent to the opening 20 and extending for the entire width of the block. The slide 21 is shiftable longitudinally within the dovetailed groove 22 for uncovering the opening 20 to remove the graphite shavings contained therein.

Rigidly mounted upon the top face of the block 10 by means of suitable cement or the like is a relatively thin, flat, rectangular cover plate 23, and this cover plate 23 is of the same length and width as the block 10 and completely covers the top of the block in assembly and closes the adjacent portion of channel 17. The plate 23 is provided in its top face and directly above and in alignment with the dovetailed groove 22 with a similar transverse, dovetailed groove 24 extending for the full width of the plate 23, as shown. At the transverse center of the plate 23, the same is provided with a large, circular opening 25 of the same size as the opening 20 and disposed in alignment with the opening 20 upon the opposite open side of the wedge-shaped passage or opening 17. The opening 25 leads into the bottom of the dovetailed groove 24, as shown. An upper, transverse slide or plate 26 is slidably mounted within the dovetailed groove 24 for covering the opening 25 which forms a chamber for the graphite shavings adjacent to the top open side of the passage 17.

With the cover plate 23 mounted upon the

block 10, a flat, rectangular end cover or plate 29 is then rigidly secured to the end surfaces 31 and 32 by means of suitable cement or the like. This cover 29 engages over the adjacent ends of the stacks of blades 14 and is provided at its transverse center with a large, circular opening 30, exposing the wedge-shaped passage 17 between the stacks of blades, as well as the inner portions of the blades themselves, Figure 1. The block 10, cover plate 23, and cover 29 are now introduced as a unit into an outer rectangular casing 27, having one end open, and including an opposite end 28. The casing 27 is of the proper length for maintaining the end of the block 10 having the recess 11 flush with the open end of the casing 27 when the opposite or inner end of the block 10 contacts the end 28, and the end cover 29 simultaneously contacts the open end of the casing 27. The elements within the casing 27 have a snug fit therein, but are readily removable therefrom by grasping the end cover 29 for withdrawing the block 10 and associated elements from the casing as a unit.

With the parts thus assembled, and the slides 21 and 26 covering the openings 20 and 25, the point of a lead pencil to be sharpened is inserted through the opening 30 into the wedge-shaped passage 17 between the blades 14. To sharpen the point of the pencil, it is merely necessary to rotate the pencil a few turns in either direction upon its longitudinal axis, while the point of the pencil is held in engagement with the converged beveled cutting edges 15 of the blades. This operation will rapidly form an accurate sharp point upon the lead of the pencil.

The graphite shavings formed by the sharpening of the pencil are collected in the chambers formed by the openings 20 and 25. In order to dump the graphite shavings, it is merely necessary to open one or both of the slides 21 and 26 for uncovering the openings 20 and 25. The openings 20 and 25 tend to accumulate the graphite shavings as they are formed, and tend to prevent them from remaining between the cutting edges 15 of the blades and within the passage 17. When the device is handled and otherwise shifted about, the loose graphite shavings which may be adhering within the passage 17 will tend to be jarred into the chambers formed by the openings 20 and 25, depending upon which side of the casing 27 the device is resting.

The various parts of the device, with the exception of the blades 14 and pins 18, may be formed of wood, plastics, or any other suitable strong and light material desired.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In a pencil sharpener, a casing having one end open, a block positioned within said casing and having one end adjacent the open end of said casing, a pair of stacks of cutting blades arranged in opposed spaced relation positioned longitudinally of and in said block adjacent to and inwardly of said one end thereof and fixedly secured to said block, each of said stacks embodying a plurality of cutting blades superimposed upon each other and secured together, said stacks having the end remote from said one end of said block abutting each other and diverging toward said one end of said block to thereby form a longitudinal channel extending inwardly from said one end of said block for embracingly receiving an end of a pencil to be sharpened, and a cover of a conformation to close the open end of said casing positioned in abutting relation to said one end of said block and fixedly secured thereto, said cover being provided with an opening in registry with said channel.

2. In a pencil sharpener, a casing having one end open, a block positioned within said casing and having one end adjacent the open end of said casing, a pair of stacks of cutting blades arranged in opposed spaced relation positioned longitudinally of and in said block adjacent to and inwardly of said one end thereof and fixedly secured to said block, each of said stacks embodying a plurality of cutting blades superimposed upon each other and secured together, said stacks having the end remote from said one end of said block abutting each other and diverging toward said one end of said block to thereby form a longitudinal channel extending inwardly from said one end of said block for embracingly receiving an end of a pencil to be sharpened, a cover of a conformation to close the open end of said casing positioned in abutting relation to said one end of said block and fixedly secured thereto, said cover being provided with an opening in registry with said channel, and a plate superimposed upon said block for closing the adjacent portion of said channel.

TAKEO ITANO.

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