July 12, 1938. H. LOBEL ET AL 2,123,511

PENCIL SHARPENING DEVICE

Filed July 30, 1935 2 Sheets-Sheet 1

FIG. 1.

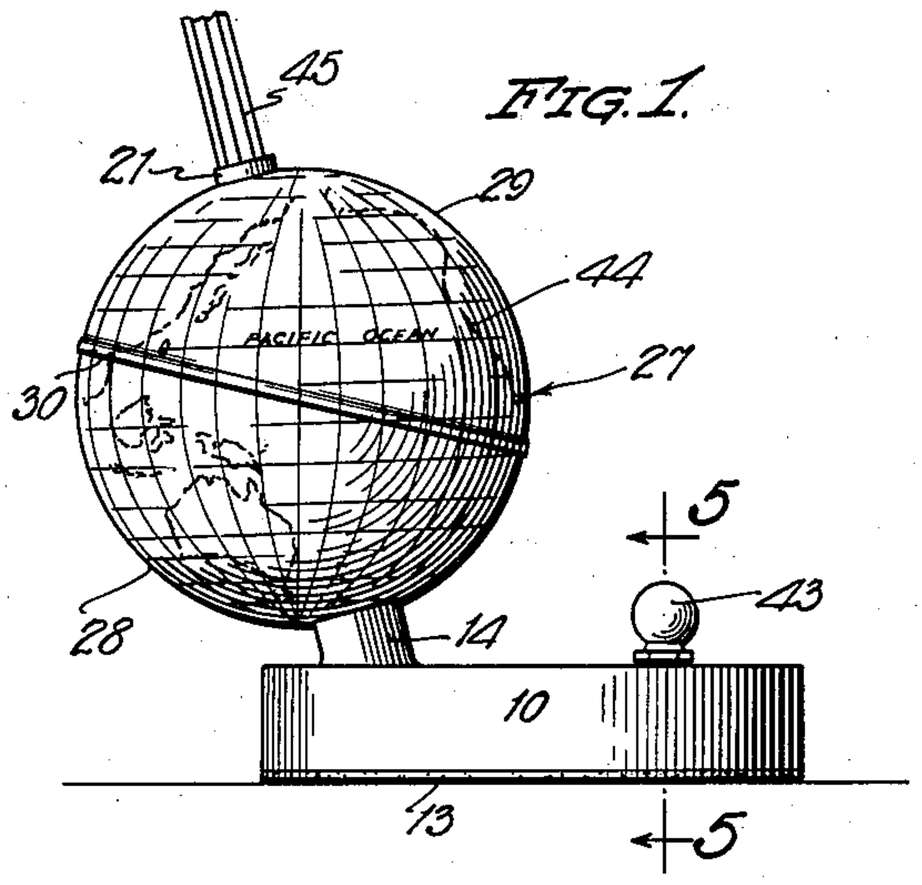

FIG. 2.

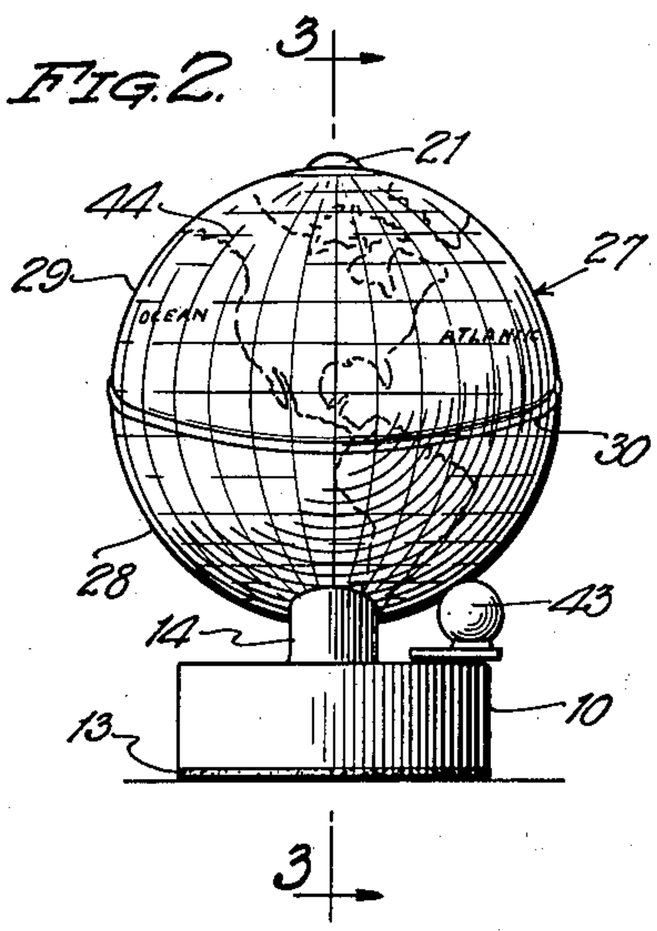

FIG. 3.

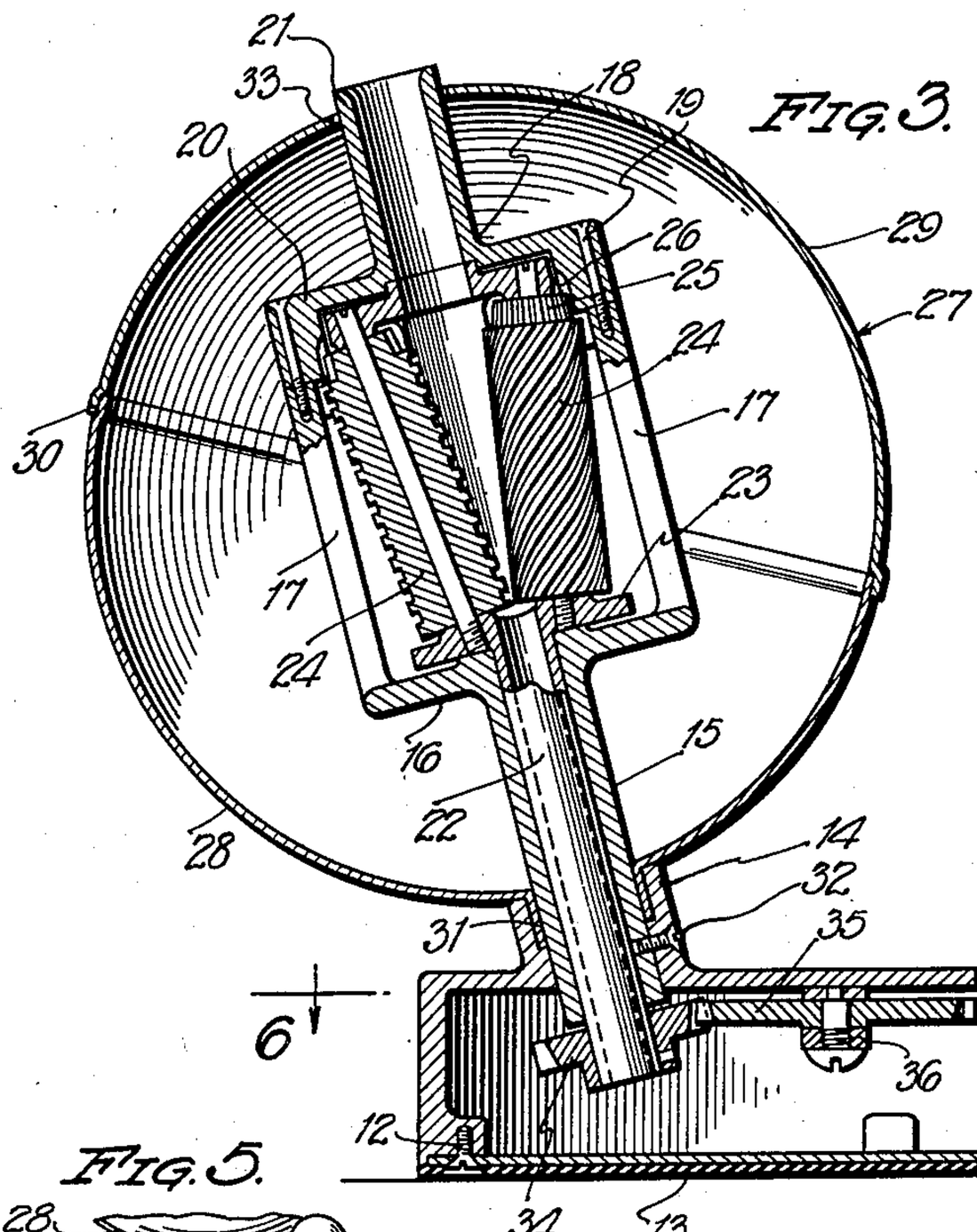

FIG. 4.

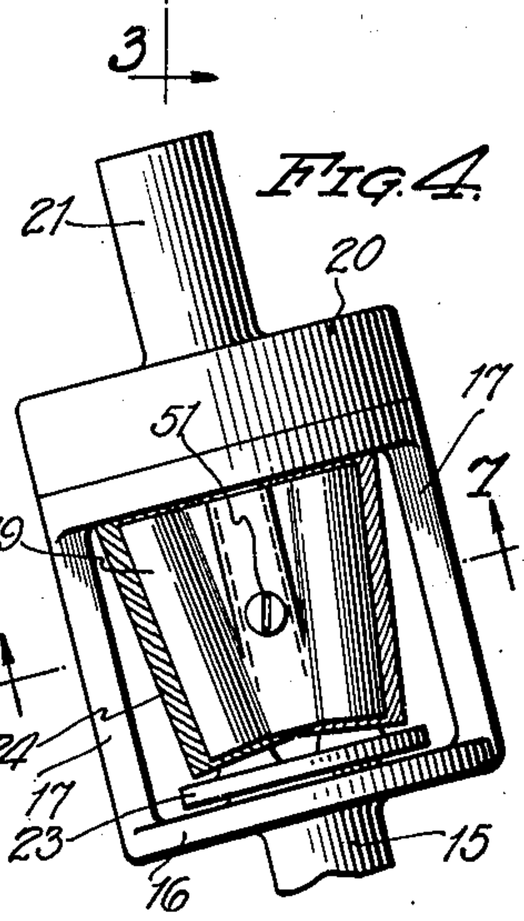

FIG. 5.

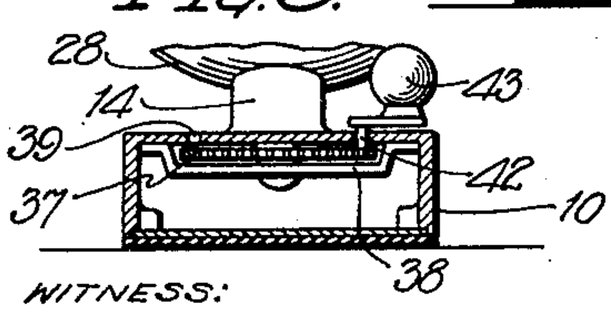

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FIG. 6.

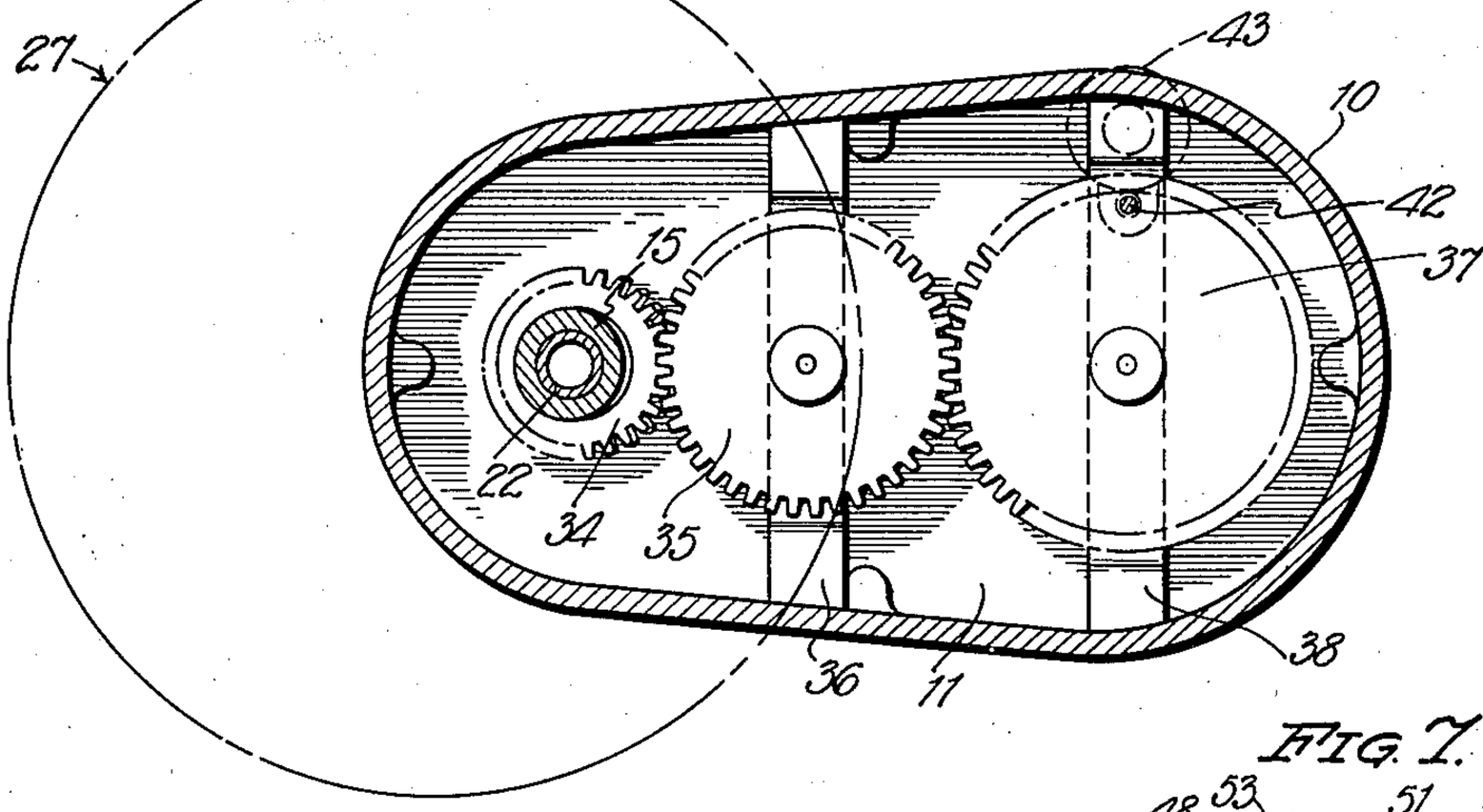


FIG. 7.

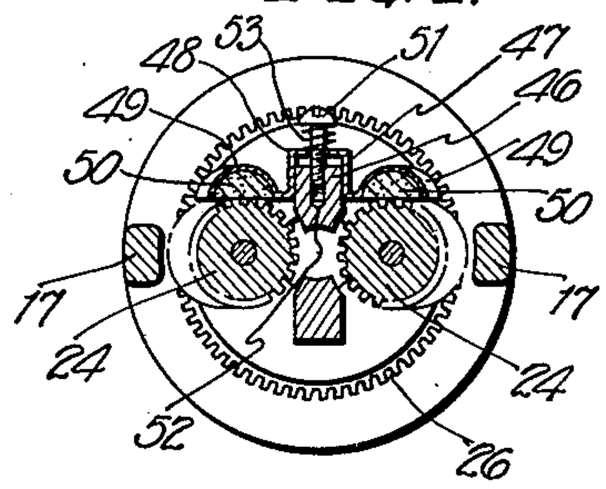
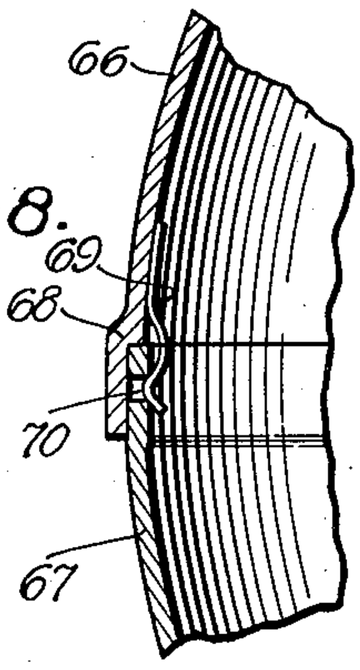


FIG. 8.



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UNITED STATES PATENT OFFICE

2,123,511

PENCIL SHARPENING DEVICE

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Application July 30, 1935, Serial No. 33,818

2 Claims. (Cl. 120—96)

This invention relates to improvements in pencil sharpening devices.

One of the several objects of the invention resides in a pencil sharpening device wherein the parts are constructed and arranged so as to enable the casing for the accumulation of the shavings, to be designed in the shape of the globe of the world, thus embodying an educational geographic feature in the device.

Another feature of the invention is to provide a portable hand operated pencil sharpener which may be placed upon a desk or other flat surface and held firmly in one hand during a pencil sharpening operation with the other hand.

A further feature of the invention is the provision of a pencil sharpener in which the axis of the pencil holder forms the axis of the globular casing, while on the exterior of the globular casing appears the map of the world thus imparting the appearance of an ordinary geographical globe of the world.

A still further object of the invention is to provide a hand operated pencil sharpener which is novel and attractive in appearance, and inexpensive of manufacture.

With these and other objects in view which will appear in the following specification when read in conjunction with the accompanying drawings,

Figure 1 represents a side elevational view of the invention.

Figure 2 is an end elevational view.

Figure 3 is an enlarged vertical transverse sectional view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary side elevational view of the cutter unit per se.

Figure 5 is a fragmentary vertical transverse sectional view on the line 5—5 of Figure 1.

Figure 6 is a horizontal sectional view on the line 6—6 of Figure 3.

Figure 7 is a transverse sectional view on the line 7—7 of Figure 4.

Figure 8 is a detail vertical sectional view illustrating a modified form of means for releasably securing the two separable globular casing sections together.

Referring to the drawings by reference characters, and more particularly to the form of the invention shown in Figures 1 to 7 inclusive, the numeral 10 designates a substantially flat hollow elongated base provided with an open bottom which is closed by a removable plate 11 held in position by fastening screws 12 which pass through the plate and thread into threaded recesses provided in the base 10. The plate 11 is preferably covered with a layer of friction material such as rubber 13, although felt or other substances may be employed.

Rising upwardly from the top of the casing 10 adjacent one end thereof is an annular collar 14, the axis of which is disposed upwardly and outwardly. Mounted in the collar 14 and extending upwardly and outwardly at an angle is a sleeve bearing 15, the inner end of which extends into the hollow base 10 while the upper end is provided with a flat head 16 from which opposed posts 17 extend. Supported by the upper ends of the posts 17 is a pencil guide and holder 18, the same being held in position by screws 19 passing through the inner head 20 of the holder and threaded into the posts 17. In addition to the head 20, the pencil holder and guide includes a tubular sleeve 21, the axis of which is in alinement with the axis of the sleeve bearing 15.

Journaled in the sleeve bearing 15 and extending beyond opposite ends thereof, is a tubular shaft 22, the upper end of which supports a carrier head 23 in which a pair of cutting rollers 24 are journaled. The rollers 24 are disposed in downwardly converging relation with respect to each other in order to provide a V-shaped crotch therebetween for the end of the pencil to be sharpened. The upper ends of the rollers 24 are provided with beveled gears 25 which are in constant mesh with an internal ring gear 26 provided on the head 20 of the pencil guide and holder 18. The pencil guide and holder is held in a fixed position whereas rotation imparted to the carrier head 23 by rotation to the tubular shaft 22 will impart individual rotation to the cutting rollers 24.

Enclosing the pencil sharpening mechanism is a globular casing 27 comprising a lower hemispherical section 28 and an upper hemispherical section 29, the open sides of which frictionally telescope each other as at 30. The lower casing section 28 includes an outwardly extending collar 31 which fits between the bearing collar 14 and the sleeve bearing 15, thus the globular casing may be rotated about the axis of the sleeve bearing 15 and pencil receiving sleeve 21. The sleeve bearing 15 is held fixed to the collar 14 by a screw 32. The upper casing section 29 is provided with an opening 33 for the passage of the upper end of the pencil guide sleeve 21. It is therefore possible to remove the upper casing section 29 when it is desired to reach the pencil sharpening mechanism or to empty the accumulation of shavings which are received by the lower casing section 28.

The lower end of the tubular shaft 22 extends into the hollow base 10 and carries a bevel gear 34 which is in constant mesh with an idler gear 35 supported by a bracket 36 extending transversely within the hollow base 10 and which bracket is suspended from the top wall of the base. Constantly meshing with the idler gear 35, is a driving gear 37, the said gear being supported by bracket 38 extending transversely of the base and supported from the top wall thereof. The

top wall of the base 10 is provided with an annular slot 39, the axis of which is in alinement with the axis of the gear 37 and the disk 40 which is formed in the top wall of the base by the formation of the annular slot 39, is supported by the bracket 38 and disposed in spaced relation with respect to the gear 37 by a washer 41. Rising upwardly from the gear 37 and passing through the slot 39 is a pin 42 to which a crank handle or knob 43 is fixedly connected. It will therefore be seen that by imparting a turning movement to the gear 37 by the actuation of the handle 43, that power will be transmitted to the rotary tubular shaft 22 through the gears 35 and 34.

The exterior of the globular casing 27 is provided with the map of the world 44 whereby to impart to the casing the appearance of the globe of the world.

In operation, a pencil 45 to be sharpened is inserted into the sleeve 21 of the pencil guide and holder 18 and the end of the pencil to be sharpened is brought into engagement with the rotary cutting rollers 24. By pushing downwardly upon the pencil 45 and due to the angularity of the pencil sharpening mechanism with respect to the flat base, it will be seen that the pressure imparted to the pencil tends to act against the rotary force imparted to the driving gear 37 by the rotation of the actuating handle 43. This counteracting of the forces together with the friction surface on the bottom of the base tends to hold the device rigid during a pencil sharpening operation. It will therefore be appreciated that the device may remain portable and placed upon the top of the flat desk or table for convenient use as and when desired, thus eliminating the usual practice of fixedly securing the sharpening device to a wall or other like support.

The shavings from the pencil may accumulate within the lower casing section 28, but by reason of the tubular shaft 22, it is possible in some constructions of our invention to feed the shavings from the pencil down through the tubular shaft and into the hollow base 10 from where they may be removed by the removal of the closure plate 11.

For the purpose of maintaining the cutting edges of the rotary cutters 24 in sharpened condition at all times, we provide a sharpening attachment which is supported upon one of a pair of posts 46 formed integral with the carrier head 23. The sharpening device includes a holder 47 formed of a single blank of metal, the intermediate portion of which is bent into U-shape as at 48, and the legs of the U-shaped portion straddle opposite sides of the post 46. The holder 47 extends the length of the rotary cutters and is formed with cup shaped wings 49 in which abrasive elements 50 are carried. The wings 49 are substantially cup-shaped in cross section as shown in Figure 7 and extend downwardly in converging relation in accordance with the angularity of the cutting rollers as best seen in Figure 4 of the drawings. A screw 51 freely passes through the U-portion 48 of the holder and threads into a recess 52 provided in the post 46 while a spring 53 is interposed between the U-portion and the head of the screw for yieldably holding the holder member 47 in a direction toward the sharpening rollers 24. The sharpening rollers 24 are provided with spiral cutting teeth and the said teeth constantly wipe against the abrasive elements 50 to maintain them in sharpened condition, the spring 52 serving to take up for any wear between the abrasive elements and the cutting rollers. Although the sharpening device rotates with the carrier head 23, it will be understood that the sharpening rollers 24 rotate in opposite direction and with respect to the carrier head.

In Figure 8 of the drawings, we have illustrated a modified form of means for releasably securing the hemispherical sections of the globular casing together. The casing sections are designated 66 and 67 respectively and have their open sides telescoping each other, the telescoping wall of the casing section 66 being outwardly offset as at 68. The casing sections 66 and 67 are securely held against accidental separation by means of a spring catch 69 carried by the casing section 66 and which catch has its free end seated in a recess or opening 70 provided in the telescoping offset wall of the other casing section 67. The casing sections may be easily separated when access to the interior of the casing is desired.

While we have shown and described what we consider to be the most practical embodiments of our invention, it will be understood that such changes and modifications may be resorted to as come within the scope of the appended claims.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent of the United States, is:—

1. A pencil sharpening device comprising a flat hollow base, a pencil holder fixed to said base and extending upwardly and outwardly, a rotary pencil sharpening mechanism journaled in said pencil holder, an actuating crank handle turnably mounted in the top of said hollow base, driving mechanism housed within said hollow base and operatively connecting said actuating crank handle and said rotary pencil sharpening mechanism, whereby the downward and inward pressure imparted to a pencil when inserted within said holder will act against the horizontal rotary force manually imparted to said actuating crank handle to maintain the device relatively immovable during a pencil sharpening operation, and a removable housing carried by said pencil holder and enclosing said rotary pencil sharpening mechanism.

2. A pencil sharpening device comprising a relatively flat hollow base, a sleeve bearing rising upwardly from said base, a tubular shaft journaled in said sleeve bearing and having its lower end opening into said hollow base, a carrier head at the top of said tubular shaft, a pair of rotary cutters journaled in said carrier head in spaced downwardly converging relation, a tubular pencil guide supported by said sleeve bearing and disposed beyond said carrier head and in axial alinement with said tubular shaft, means on said base for imparting rotary movement to said shaft to rotate said carrier head, and means operatively connecting said carrier head and rotary cutters for imparting individual rotation to said rotary cutters as said carrier head rotates, whereby a pencil inserted into said pencil guide may be brought into contact with said rotary cutters and the shavings therefrom pass down through said tubular shaft into said hollow base.

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