No. 818,433. PATENTED APR. 24, 1906.

P. GARST.

PENCIL SHARPENER.

APPLICATION FILED MAY 31, 1905.

2 SHEETS—SHEET 1

Fig. 1.

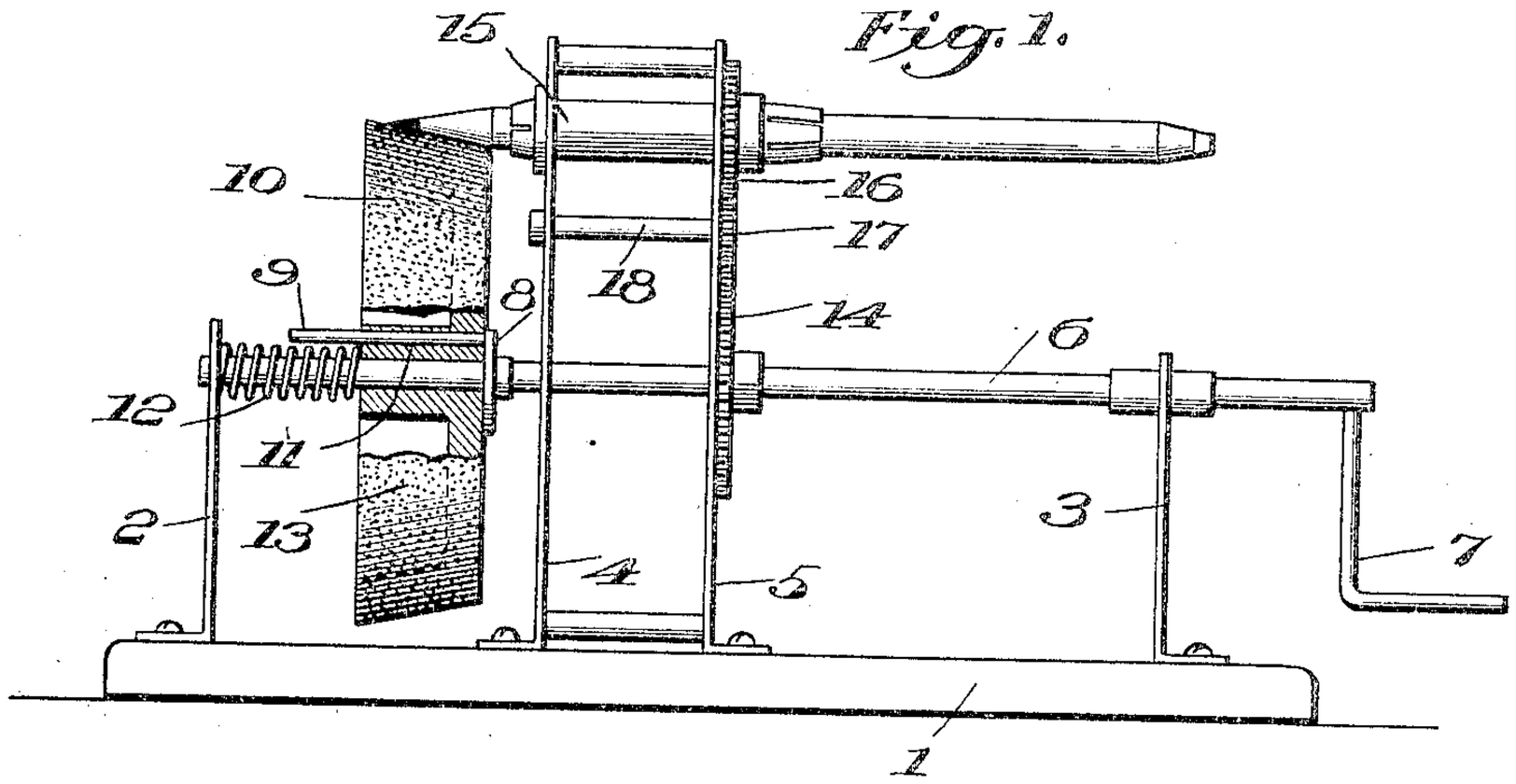


Fig. 2.

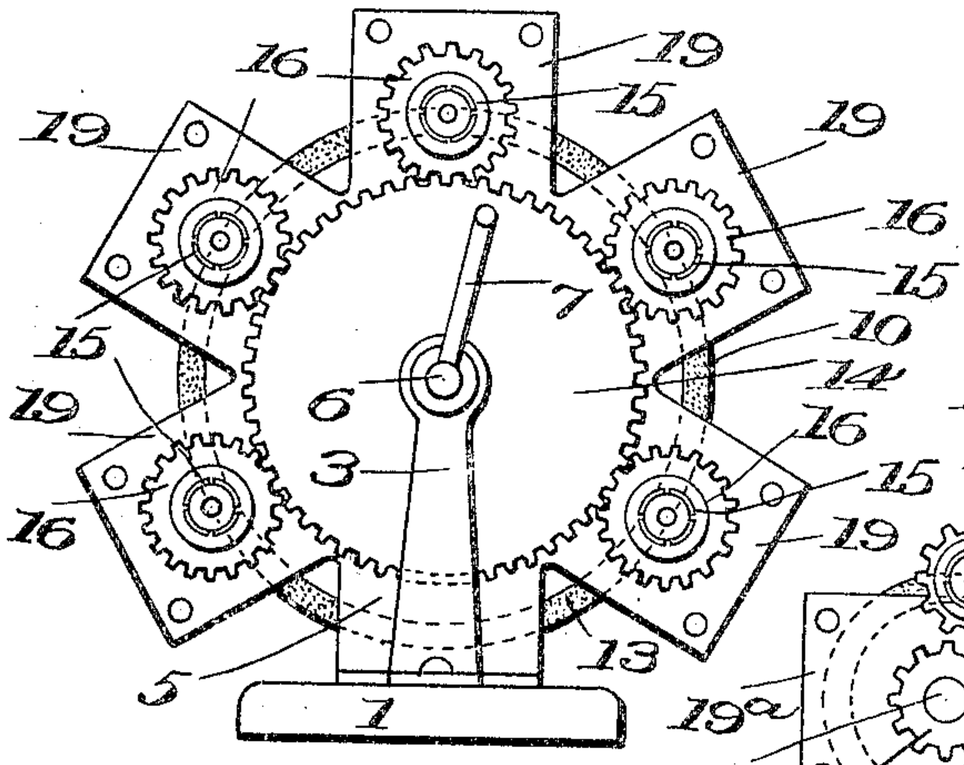
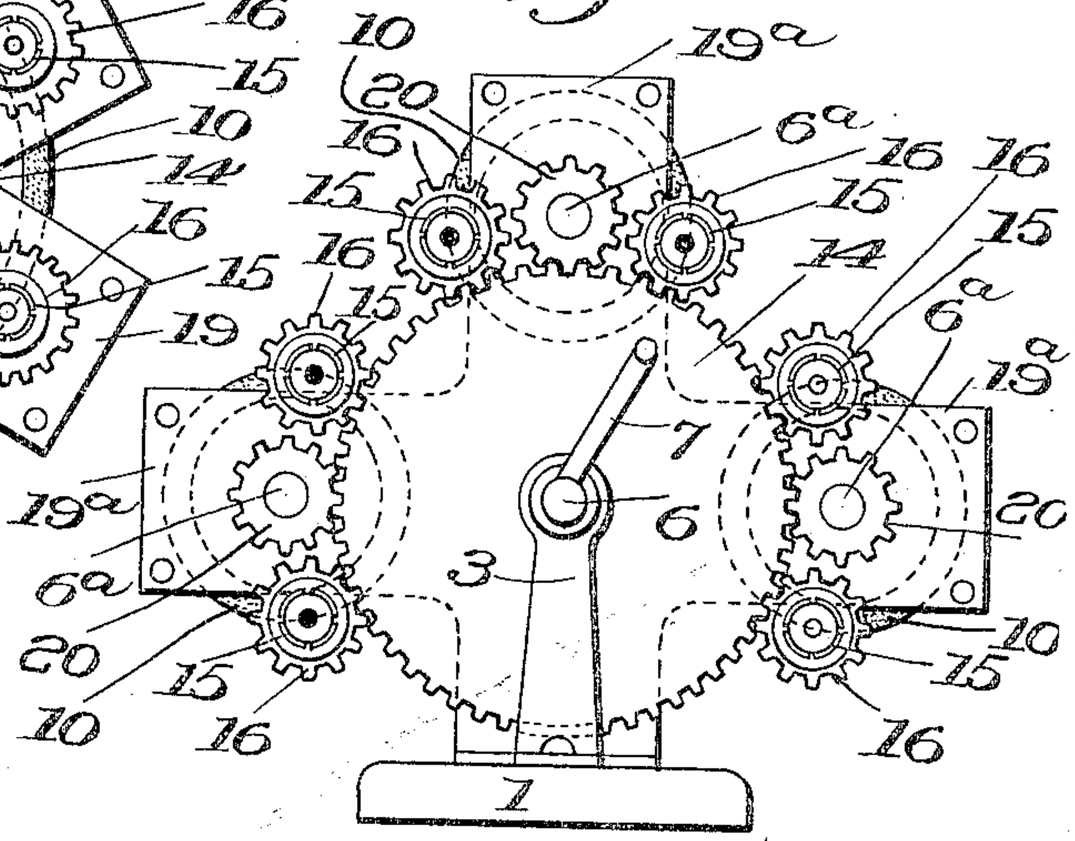


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

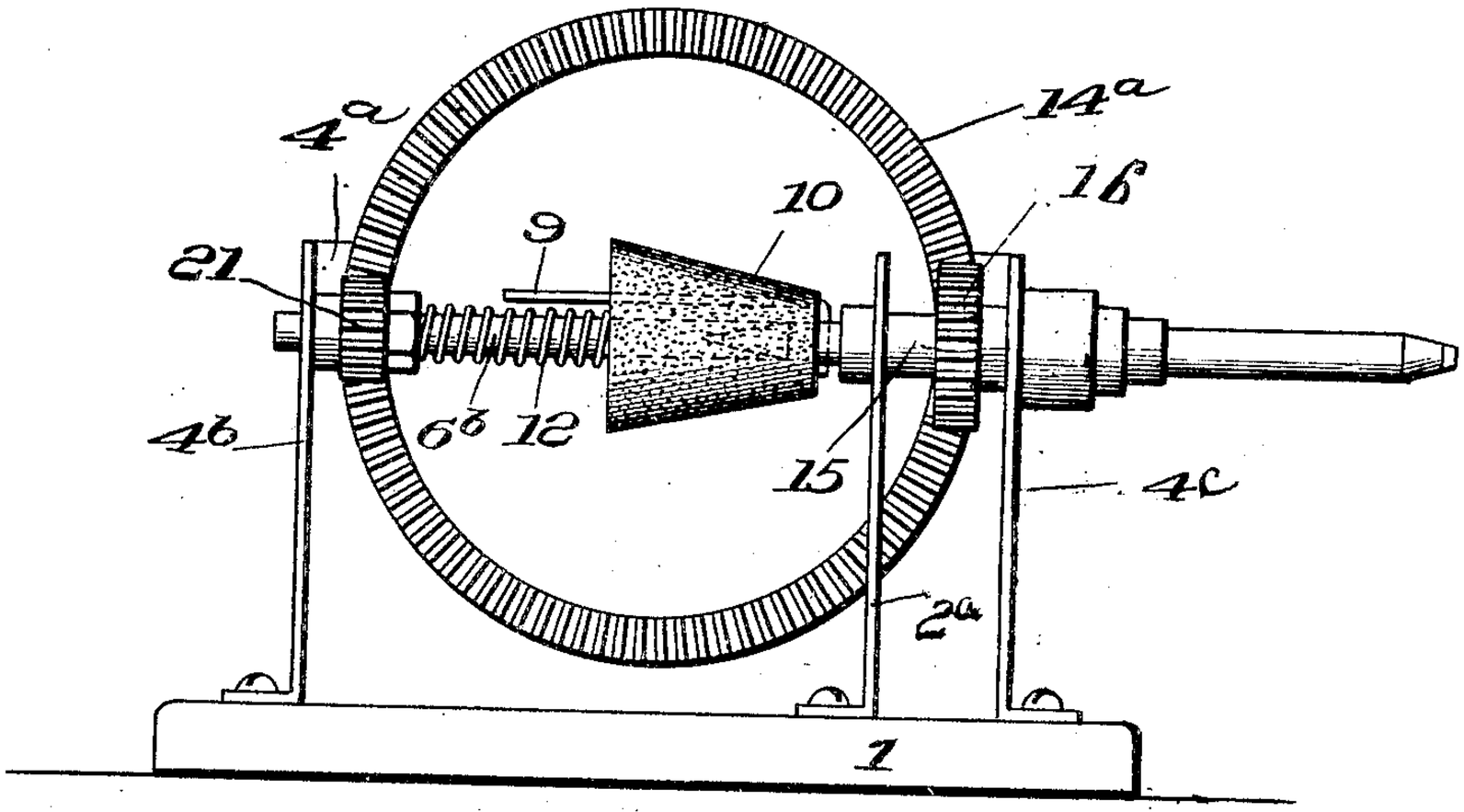
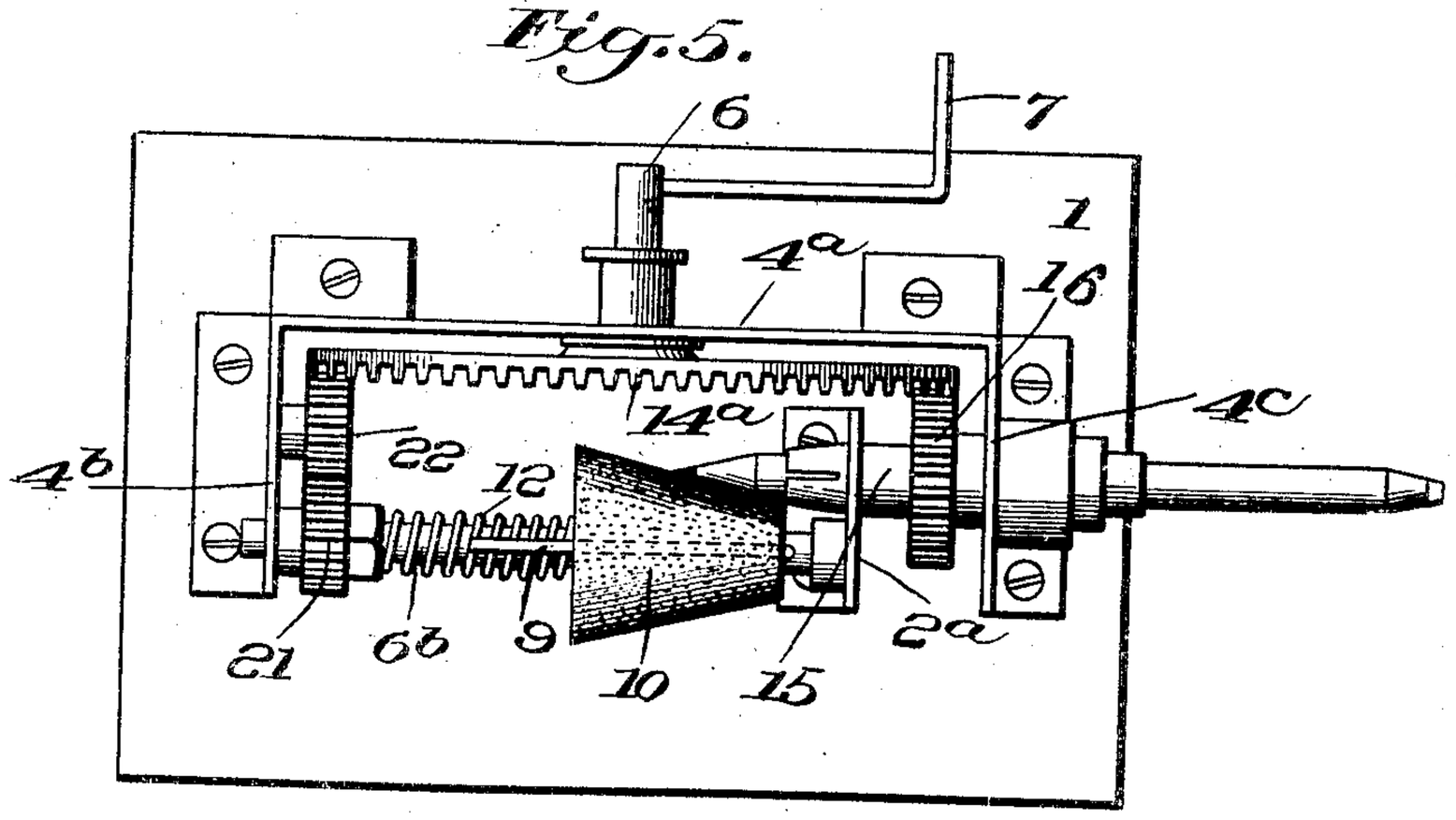


Fig. 5.



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UNITED STATES PATENT OFFICE.

PERRY GARST, OF PORTSMOUTH, NEW HAMPSHIRE.

PENCIL-SHARPENER.

No. 818,433. Specification of Letters Patent. Patented April 24, 1906.

Application filed May 31, 1905. Serial No. 262,996.

To all whom it may concern:

Be it known that I, PERRY GARST, residing at Portsmouth, New Hampshire, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a machine of simple construction which will rapidly and efficiently sharpen and point pencils.

Certain forms of my invention are embodied in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation of one form of my machine, showing only one pencil-holder. Fig. 2 is rear view of another form, showing a plurality of pencil-holders. Fig. 3 is still another form showing a plurality of grinding-drums and pencil-holders. Fig. 4 is a front elevation of another embodiment of my invention. Fig. 5 is a plan view of the same.

The same reference characters indicate the same parts in the several views.

The part marked 1 represents the base of the machine. 2 and 3 are standards, and 4 and 5 frames secured to the base and in which the working parts of the apparatus are mounted.

6 is a shaft rotatably mounted in the standards and frame, and 7 is a crank or handle for rotating the shaft.

8 is a collar secured to the shaft, which has a pin or rod 9 projecting from one of the faces thereof.

10 is a drum frusto-conical in shape, which is loosely mounted on the shaft 6 and has a longitudinal sliding movement thereon.

11 is a hole through the hub of the drum, through which the rod 9 passes, the said rod being of such length that the drum may be movable longitudinally of the shaft a considerable distance without being disengaged from the rod. As the rod and the hole through which it passes are eccentric to the shaft 6, the drum will be rotated by the rod upon the rotation of the shaft.

12 is a spiral spring surrounding the shaft 6, one end of which bears against the inner face of the standard 2 and the other against the hub of the drum. The spring forces the drum toward the pencil-holder and applies pressure to a pencil being sharpened in a line with the axis thereof and automatically feeds and keeps the cutting-drum to its work. The periphery of this drum may be covered with grinding or abrasing material 13, such as sandpaper, or the drum itself may be made of emery or steel having a cutting-surface.

14 is a gear-wheel secured to the shaft 6.

15 is the pencil-holder or chuck mounted in the frame 4 5.

16 is a pinion secured to the holder.

In the embodiment of my invention, as shown in Fig. 1, only one pencil-holder is illustrated; but it is apparent that a plurality of holders may be employed. 17 is an idle pinion secured to the end of the shaft or stud 18, mounted in the frame 4 5. Upon turning the crank 7 motion is transmitted to the pencil holder or holders by the gears 14 and pinions 17 and 16, and rotary motion is transmitted to the grinding-drum by the rod 9. With the pencil in the holder both the grinding-drum and the pencil will be rotated upon rotating the shaft 6, and the end of the pencil will be ground down to give it a proper point. The spiral spring 12, acting to press the grinding-drum against the pencil in line with the axis thereof, will more efficiently and accurately grind and point the pencil than if pressure were applied in any other direction.

In the form of machine shown in Fig. 2 the gear 14 meshes directly with the pinion 16 on the pencil-holder, and in this embodiment there is a series of holders, five in number, so that five pencils may be sharpened at the same time. I construct the frames 4 and 5 with radiating arms 19 to accommodate these different holders.

In the embodiment of my invention shown in Fig. 3 I provide a series of grinding-drums and mount each of these drums on a separate shaft 6^a, the frame being provided with the arms 19^a, in which the said shafts 6^a are mounted, there being two pencil-holders, one on each side of each of these grinding-drums. Secured to the shafts 6^a are the driving-pinions 20. These pinions, as well as the pinions 16, which drive the pencil-holder, mesh directly with the driving-gear 14. Upon rotating the driving-shaft 6 rotary motion is transmitted simultaneously to all of the pencil-holders and to the grinding-drum.

In the embodiment of my invention shown in Figs. 4 and 5 I secure to the base 1 a frame consisting of the side piece 4^a, which has two arms 4^b and 4^c projecting at right angles

therefrom. In the part lettered 4^a I mount the driving-shaft 6 and secure to the inner end thereof the driving-gear 14^a. I also secure to the base the standard 2^a. Journaled in this standard 2^a and the arm 4^c is the pencil-holder 15. The pinion 16 of the holder meshes with the driving-gear 14^a. The grinding-drum 10 is carried on the shaft 6^b, one end of which is journaled in the standard 2^a and the other in the arm 4^b of the frame. Secured to this shaft is the pinion 21, which meshes with the idler 22, said idler being in engagement with the driving-gear 14^a. The grinding-drum is mounted on this shaft 6^b. In this case the rod 9 is secured directly to the shaft instead of to a collar secured to the shaft.

The bevel of the grinding-drum may be varied so as to give different lengths of points to the pencils, and my apparatus may be provided with grinding-drums having different bevels for this purpose. By providing a plurality of pencil-holders not only may a number of pencils be ground at the same time, but pencils of different kinds and sizes may also be sharpened and pointed with long or short points during the same operation.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. I desire it also to be understood that the language used in the following claims is intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which as a matter of language might be said to fall therebetween.

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

1. In a pencil-pointer, a base, a grinding-drum, a shaft on which the drum is journaled, a rotating pencil-holder, means for simultaneously rotating the drum and holder, and means for yieldingly holding the drum in a direction in the axis of the pencil-holder.

2. In a pencil-pointer, a shaft, a drum journaled on the shaft, a pencil-holder located parallel to the said shaft and adapted to hold a pencil to be sharpened, means for simultaneously rotating the pencil and drum, and means for yieldingly pressing the drum toward the pencil in a line parallel to the axis of the pencil.

3. In a pencil-pointer, a shaft, a drum mounted on the shaft and adapted to move longitudinally thereof but to turn therewith, a pencil-holder having its axis parallel with the axis of the shaft, means for rotating the drum and pencil-holder simultaneously, and means for yieldingly pressing the drum toward the holder and in the line of the axis thereof.

4. In a pencil-pointer, a shaft, a drum loosely mounted on the shaft and movable longitudinally thereof, means to cause the drum to rotate with the shaft, a pencil-holder lying parallel to the shaft, means for simultaneously driving the drum and pencil-holder, and a spring adapted to yieldingly hold the drum toward the holder and in the line of the axis thereof.

5. In a pencil-pointer, a shaft, a drum slidingly mounted on the shaft and adapted to turn therewith, a pencil-holder parallel to the axis of the shaft, means for simultaneously rotating the pencil-holder and drum, and means for yieldingly holding the drum against and applying pressure to the pencil in line parallel with the axis thereof.

6. In a pencil-pointer, a shaft, an abrasing or grinding drum mounted on the shaft and adapted to move longitudinally thereof, said drum having a hole through the axis thereof, a rod connected to the shaft and passing through the opening in the drum to cause the drum to rotate upon turning the shaft, a pencil-holder located parallel to the shaft and adapted to hold a pencil, means for simultaneously rotating the shaft and the holder so as to cause the pencil and the drum to rotate, and means for yieldingly holding the drum against the pencil and applying pressure in line with the axis of the pencil.

7. In a pencil-pointer, a shaft, an abrasing or grinding drum mounted on the shaft and adapted to move longitudinally thereof, said drum having an opening eccentric to the shaft, a rod connected to the shaft and passing through the opening in the drum to cause the drum to rotate with the shaft, a pencil-holder located parallel to the shaft and adapted to hold a pencil, means for simultaneously rotating the shaft and the holder so as to cause the pencil and drum to rotate, and a spring for yieldingly holding the drum against the pencil and applying pressure in line with the axis of the pencil.

8. In a pencil-pointer, a frame consisting of a side plate, two arms projecting therefrom, a standard, a shaft mounted in the plate, a pencil-holder mounted in one of the arms and in the standard, a shaft mounted in the other arm and in the standard, a grinding-drum mounted on the second shaft and adapted to move longitudinally thereof and to rotate therewith, means for forcing the drum toward the pencil-holder and in line with the axis thereof, and means for simultaneously rotating the pencil-holder and the shaft carrying the drum upon the rotation of the first shaft.

9. In a pencil-pointer, a frame consisting of a side plate, two arms and a standard, a shaft mounted in the frame having a gear se-

cured thereto, a pencil-holder mounted in the standard and in one of the arms, a shaft mounted in the standard and in the other arm, a grinding-drum secured to the second shaft and adapted to move longitudinally thereof and rotate therewith, means for yieldingly holding the drum in a direction in line with the axis of the pencil-holder, and pinions on the pencil-holder and the drum-shaft connecting with the gear whereby upon the rotation of the shaft the pencil-holder and the drum will be rotated simultaneously.

10. In a pencil-pointer, a frame having a side plate and two arms projecting therefrom, a standard, a shaft mounted in the side plate, a gear connected to the said shaft, a pencil-holder adapted to receive a pencil mounted in one arm of the frame and in the standard, a gear secured to each of the pencil-holders and meshing with the first-mentioned gear, a shaft mounted in the standard and in the other arm of the frame, a drum loosely mounted on the second shaft and adapted to move longitudinally thereof, said drum having an opening through the hub thereof, a rod connected to the shaft and passing through said opening, whereby upon the rotation of the shaft the drum will be rotated, a spring bearing against the drum and adapted to yieldingly hold it against a pencil in the holder and to apply pressure in line with the axis of the pencil, and a gear connected to the last-mentioned shaft and also connected with the gear on the first-mentioned shaft as and for the purpose set forth.

In witness whereof I have hereunto set my hand, at the city of Portsmouth, county of Rockingham, State of New Hampshire, this 22d day of May, 1905.

PERRY GARST.

In presence of—
GUY W. C. HARTT,
AARON H. BRACKETT.