No. 832,054. PATENTED OCT. 2, 1906.

E. N. GILFILLAN.

PENCIL SHARPENER.

APPLICATION FILED SEPT. 30, 1905.

Fig. 1.

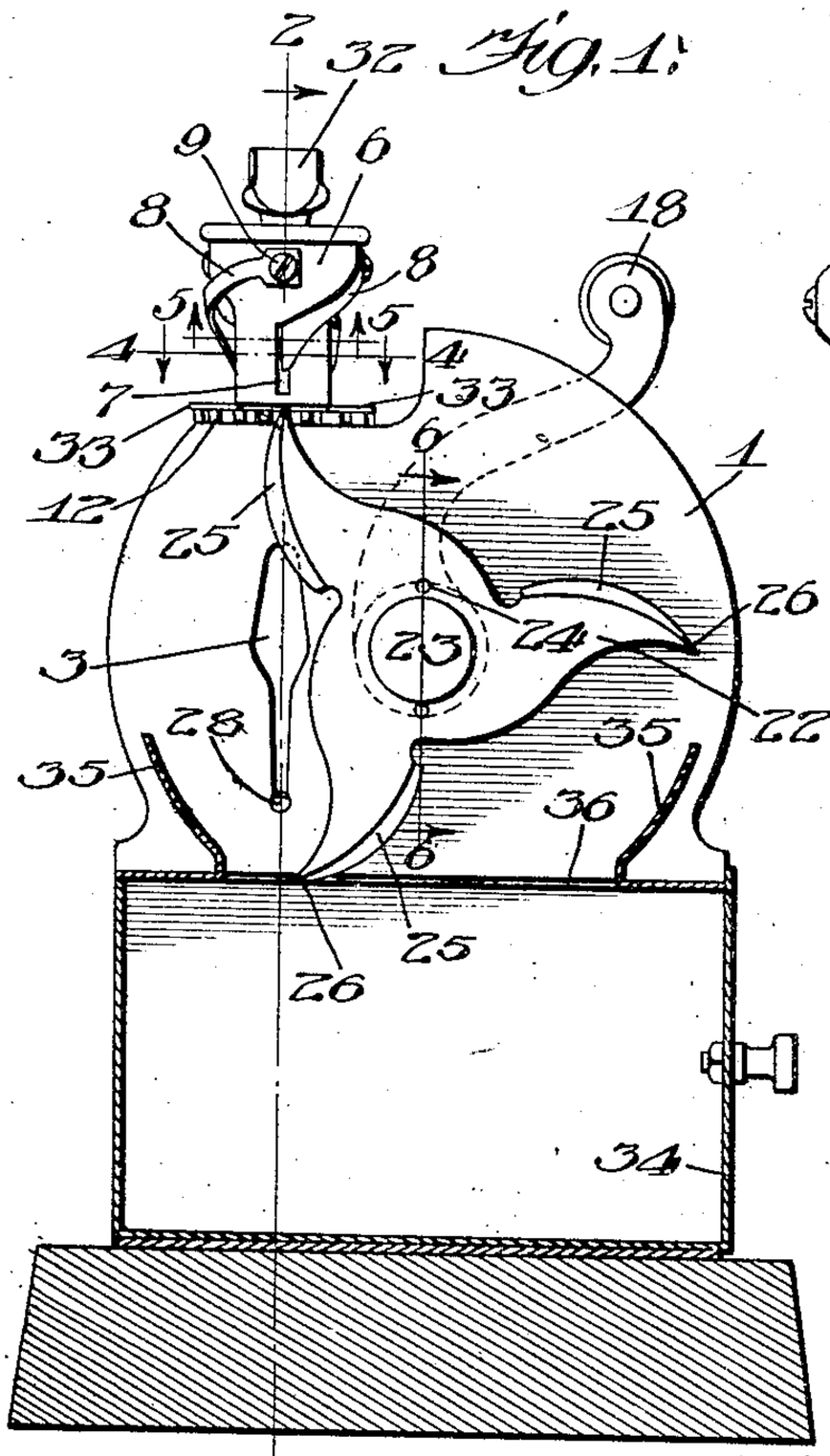


Fig. 2.

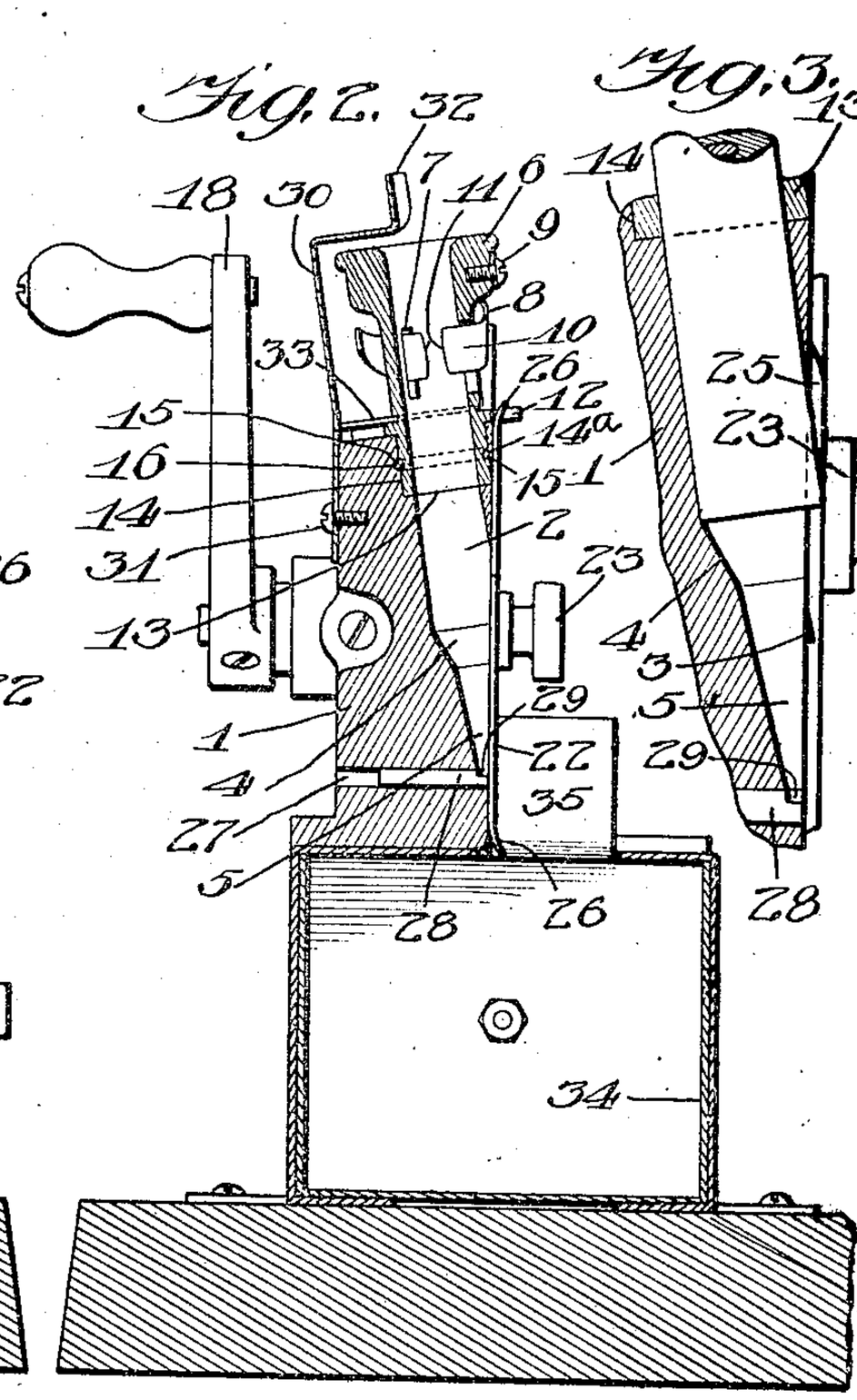


Fig. 3.

Fig. 4.

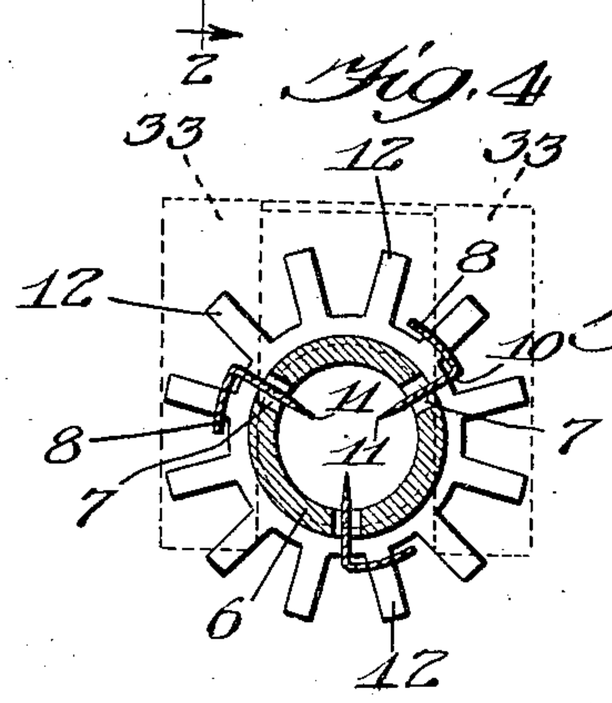


Fig. 7.

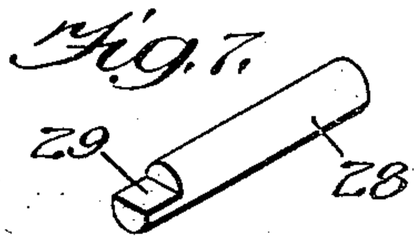


Fig. 5.

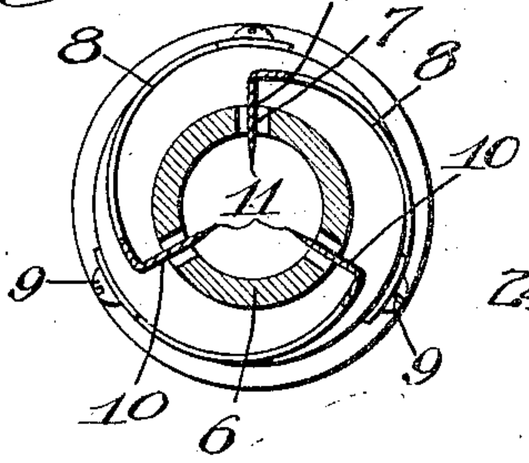
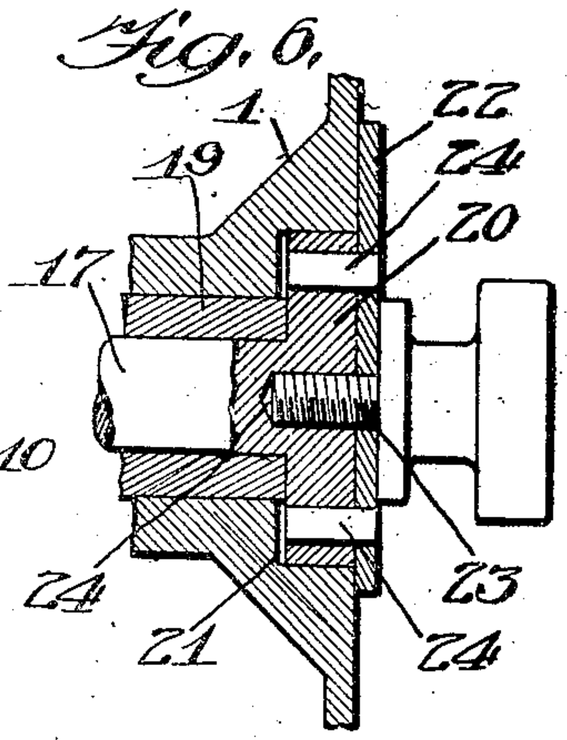


Fig. 6.



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UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN, OF CHICAGO, ILLINOIS.

PENCIL-SHARPENER.

No. 832,054. Specification of Letters Patent. Patented Oct. 2, 1906.

Application filed September 30, 1905. Serial No. 280,771.

To all whom it may concern:

Be it known that I, ESSINGTON N. GILFILLAN, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pencil-Sharpeners, of which the following is a specification.

This invention relates to machines for sharpening or pointing pencils and the like; and the object of the same is to produce an improved machine of this character in which the cutter serves as a means for rotating and feeding the pencil to its proper position to be cut.

To this end and the accomplishment of other new and useful objects, as will appear, the invention consists in certain features of novelty in the construction, combination, and arrangement of parts hereinafter set forth and claimed, and shown in the accompanying drawings, illustrating an example of my invention, in which—

Figure 1 is an end elevation of my improved machine. Fig. 2 is a longitudinal section on line 2 2 of Fig. 1. Fig. 3 is an enlarged detail section of the end of the pencil-socket, showing the end of a pencil in position to be sharpened. Fig. 4 is a transverse section on line 4 4 of Fig. 1. Fig. 5 is a section on line 5 5 of Fig. 1. Fig. 6 is an enlarged detail section on line 6 6 of Fig. 1, and Fig. 7 is a detail perspective view of the point rest or support.

Referring to the drawings, the numeral 1 designates the body of the machine, which may be of any desired shape and material, but is preferably formed of metal cast into the desired shape and is provided with a socket or cavity 2, which is adapted to receive the end of a pencil. Said socket extends from the periphery of the body in an inclined position to and through the side of the body, thus forming a slot 3. The socket is provided with a reduced portion near its lower end to form an inclined wall or portion 4, and the extremity of the socket is tapered or conical, as at 5. With this construction of socket the slot 3, formed in the side of the body, will be in the shape of a keyhole-slot, as shown, the particular advantage for which will be set forth.

The numeral 6 designates a ferrule or sleeve, which is provided with a plurality of slots 7. A plurality of springs 8 are secured, preferably at their upper ends, to the sleeve or ferrule by means of bolts or screws 9, and said springs are curved around the outside of the sleeve or ferrule. The ends thereof are bent at a substantially right angle to the body portion, as at 10, and said bent portion is adapted to extend through the slots and into the ferrule or sleeve 6, the extremities of the bent portions being formed into an extended knife-edge 11 for the purpose of gripping a pencil to permit a longitudinal movement thereof through the ferrule or sleeve and to force it to rotate with the sleeve or ferrule when the latter is rotated. Said sleeve or ferrule is also provided with a plurality of radially-projecting and spaced fingers 12, located, preferably, intermediate the base of the slots 7 and the end 13 thereof. The upper portion of the socket 2 is slightly enlarged, as at 14, and is adapted to loosely receive the lower end 13 of the sleeve or ferrule 6. This enlarged portion is of such a depth that when the extremity 13 of the sleeve or ferrule 6 is mounted therein the radially-projecting fingers 12 will rest upon the top of the body portion 1 and project beyond the side thereon in which is provided the slot 3.

In order to prevent accidental displacement of the sleeve or ferrule 6, I provide the same with a circumferential groove 14^a, which is adapted to register with a notch 15 in the body, and into the registering groove and notch I insert a pin 16, which will permit said sleeve or collar to rotate, but will hold it against displacement.

Mounted within the body 1 and transversely thereof is an axle or shaft 17, to one end of which I secure a crank 18 in any desired manner, and 19 designates a bushing in which the axle rotates. The free end of the shaft or axle 17 adjacent the face of the body 1, which is provided with the slot 3, is preferably enlarged, as at 20, and 21 is a recess in the body 1, within which said enlarged portion is adapted to stand, so that the outer face thereof is flush with the face of the body.

A cutter 22 is secured to the end of the shaft 17 by means of the screw 23 passing therethrough and into a threaded seat in the end of the shaft 17, and 24 represents a plurality of pins passing through the cutter and into the end of the shaft to hold the cutter firmly to the shaft to cause the same to rotate therewith. The cutter rests against the face of the body 1 and is provided with any desired number of blades or arms, each of which is provided with a cutting edge 25. The extrem-

ity of each arm is bent, as at 26, slightly out of the plane of the body portion, and said arms are of such a length that the bent portion 26 thereof will engage the radial projecting fingers 12 when the crank 18 rotates the shaft 17.

Removably seated in a transverse aperture 27 in the body 1 and at the base of the socket 2 is a pin or support 28, which has a portion thereof cut away, as at 29, to form a shoulder therein and upon which the lead of the pencil will rest. This rest or support is adapted to be rotated so that the point of the pencil will rest upon the cut-away portion or the periphery thereof, according to the size of the point desired.

The ferrule or sleeve 6 is of such a size as to receive an ordinary or extra large pencil, and in order to accommodate the sharpener to a smaller pencil and to hold and guide the same when in position I provide a spring-support 30, which is secured, as at 31, to the body 1. The upper end thereof is bent over the end of the sleeve or ferrule 6, with the grooved end 32 normally standing approximately over the diametric center of the opening in the sleeve or ferrule 6. Said spring 30 is preferably provided with a bifurcated portion or arms 33, adapted to stand astride of the sleeve or ferrule 6 and rest upon the upper face of the fingers or projections 12, which will assist in holding said ferrule in position and also permit of the easy movement of said spring.

A box or drawer 34 is mounted in the base of the machine to catch the shavings, and 35 represents guides to direct them into the box or drawer through the opening 36.

The operation of my machine is as follows: The support or rest 28 is first placed into the desired position according to the size of point desired, which may be done by pushing said support out of the aperture 27 from the face of the machine adjacent the cutter. The pencil is then inserted until its end rests upon the seat formed by the reduced portion of the ferrule or sleeve and so that a portion of the pencil will extend through the enlarged portion of the slot and into the path of the movement of the cutting edges of the cutter-arms, as shown in Fig. 3. The knife-edges 11 of the springs 8 will grip the pencil and cause the same to be held in position. The shaft 17 is then rotated, causing one of the blades to cut off the projecting portion of the pencil, the pencil being prevented from longitudinal movement by means of the reduced diameter of the sleeve or ferrule. Upon the completion of this cutting movement the bent end 26 of the next arm will engage one of the projecting fingers 12 and rotate the sleeve 6 and the pencil therein, thus bringing a new portion of the pencil through the slot to be cut. This operation will continue until the last portion of the pencil which projects through the upper part of the slot has been cut. The completion of this last cut will serve to draw the pencil through the springs 8 and down the inclined portion 4 of the socket, causing more of the pencil to protrude through the upper or enlarged portion of the slot, while the already cut portion will enter the conical portion 5 and extend through the smaller portion of the slot lower down. When the pencil has been cut, as before, the cutter making the last cut will draw the pencil still farther into the socket until the lead or point thereof rests upon the support 28 and the crank rotated until the blades cease cutting or until all of the protruding portion of the pencil has been cut off, at which time the pencil will have been completely sharpened. The pencil can then be withdrawn from the sleeve or ferrule 6, the springs 8 permitting its easy removal.

The springs 8 are of such a strength to firmly hold the pencil and cause the same to rotate with the sleeve or ferrule 6, yet they permit of an easy adjustment without materially scratching or cutting the same.

Having thus fully described my invention, I desire it understood that I do not wish to be limited to the exact size, construction, and arrangement of the several parts, as numerous changes may be made without departing from the spirit of my invention.

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

1. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to feed the pencil, and means whereby the cutter will cause a rotary movement of the pencil.

2. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to transmit a longitudinal movement to the pencil by engagement therewith, and means for rotating the pencil.

3. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to rotate and intermittently advance the pencil.

4. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to rotate the pencil and cut and advance the same in a direct longitudinal line.

5. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to rotate the pencil and feed the same through the holder by a direct engagement therewith.

6. A device of the class described, comprising a pencil-holder and a cutter, said cutter being adapted to intermittently rotate the pencil and to intermittently feed the same through the holder.

7. A device of the class described, comprising a pencil-holder and a cutter, said cut-

ter being adapted to engage the holder for rotating the same and to feed the pencil through the holder by a direct engagement therewith.

8. A device of the class described, comprising a pencil-holder, provided with a plurality of peripheral radial projections, means carried by the holder to permit a longitudinal movement of the pencil but prevent an independent rotation thereof, and a cutter, said cutter being adapted to move the pencil in a longitudinal direction in relation to the holder, the ends of the cutter being adapted to engage the projections to rotate the holder.

9. A device of the class described, comprising a pencil-holder, said holder being provided with an irregular opening therein, forming a plurality of seats, means for holding a pencil therein, and a cutter, said cutter being adapted to cause the pencil to successively engage the seats.

10. A device of the class described, comprising a pencil-holder, said holder being provided with an irregular opening therein, forming a plurality of pencil-seats, a cutter, adapted to engage the pencil to cause the same to successively engage the seats.

11. A device of the class described, comprising a pencil-holder, said holder being provided with an irregular opening therein, forming a plurality of pencil-seats, a cutter, adapted to rotate the pencil and engage the same to cause said pencil to successively engage the seats.

12. In a device of the class described, the combination of a pencil-holder, provided with a plurality of radial projections extending from the periphery thereof, a cutter, said cutter comprising a plurality of arms provided with cutting edges, the extremity of each of said arms being bent out of the plane of the body thereof to engage the projections for rotating the holder and means for rotating said cutter.

13. In a device of the class described, the combination of a body provided with a pencil-seat, a rotary cutter comprising a plurality of arms, means for rotating the cutter, a pencil-holder mounted in the seat, and projections carried by the holder, said projections being adapted to stand within the path of the movement of and be engaged by the cutter-arms for rotating the holder.

14. In a device of the class described, the combination of a pencil-holder, a cutter, means for operating the cutter and rotating the holder, and a spring normally standing adjacent the diametric center of the holder and adapted to engage a pencil seated in the holder.

15. A device of the class described, comprising a rotary supported pencil-holder, means for preventing longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the holder and engage the pencil for cutting and advancing the same through the holder.

16. A device of the class described, comprising a rotary supported pencil-holder, means for preventing longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the holder, and engage the pencil to cut and advance the same in a direct longitudinal line and through the holder.

17. A device of the class described, comprising a rotary supported pencil-holder, means for preventing longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the holder and to intermittently feed the pencil through the holder by a direct engagement therewith.

18. In a device of the class described, the combination of a support provided with an irregular opening therein to form a plurality of pencil-seats, a rotary pencil-holder supported thereby and in line with the opening therein, means for preventing a longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the holder and to cause the pencil to successively engage the seats.

19. In a device of the class described, the combination of a support provided with an irregular opening therein, forming a plurality of pencil-seats, a rotary pencil-holder supported thereby and in line with the opening therein, means for preventing longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the pencil and engage the same to cause said pencil to successively engage the seats.

20. In a device of the class described, the combination of a support provided with an irregular opening therein, forming a plurality of pencil-seats, a rotary pencil-holder supported thereby and in line with the opening therein, means for preventing a longitudinal movement of the holder, and a cutter, said cutter being adapted to rotate the holder, and engage the pencil and advance the same in a direct longitudinal line through the holder for causing the pencil to successively engage the seats.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 28th day of September, A. D. 1905.

E. N. GILFILLAN.

Witnesses:
FRANCIS A. HOPKINS,
CHAS. H. SEEM.