

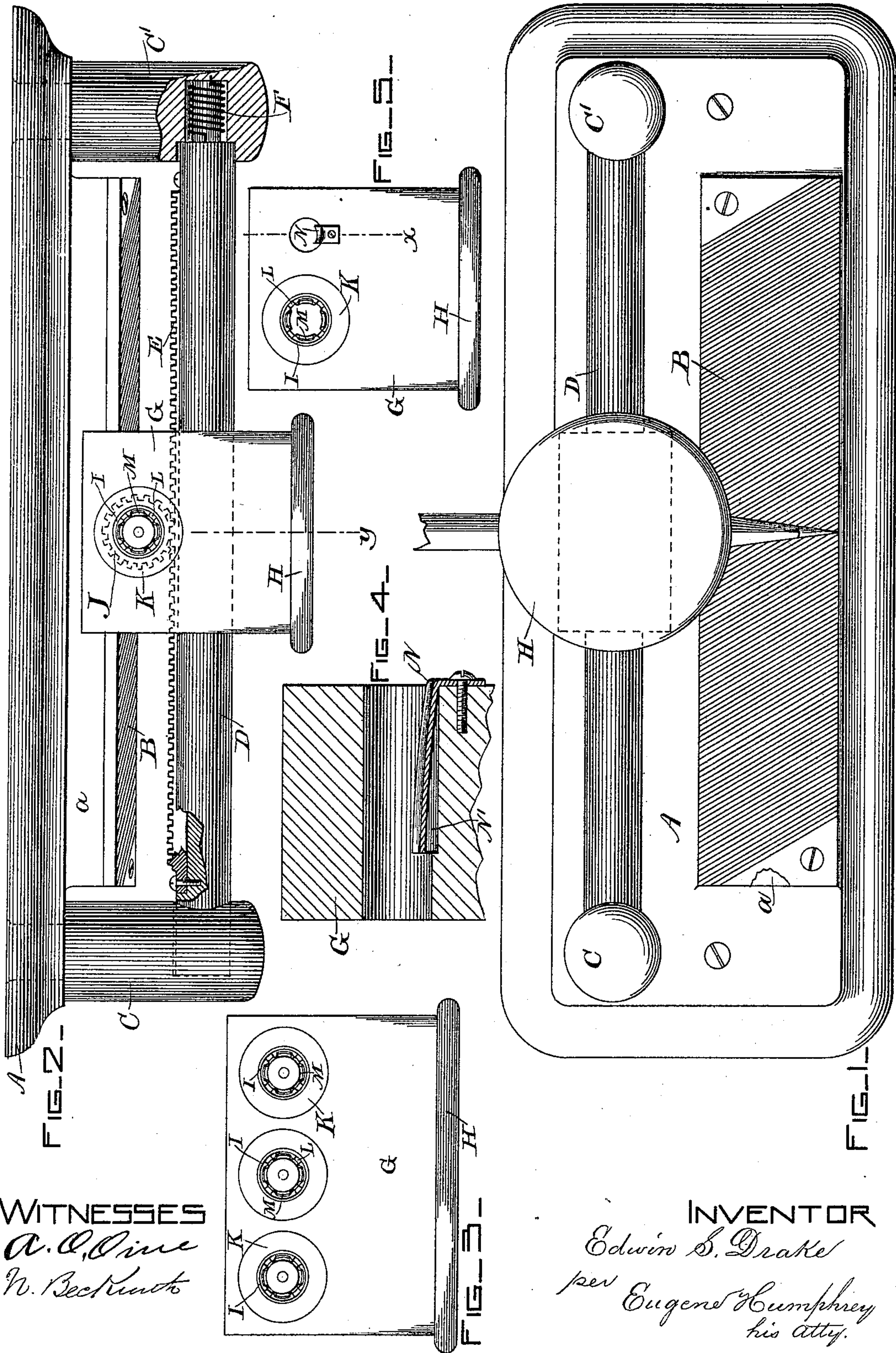
(No Model.)

2 Sheets—Sheet 1.

E. S. DRAKE.  
PENCIL SHARPENER.

No. 426,716.

Patented Apr. 29, 1890.



WITNESSES  
*A. Q. Oline*  
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INVENTOR  
*Edwin S. Drake*  
per *Eugene Humphrey*  
his atty.



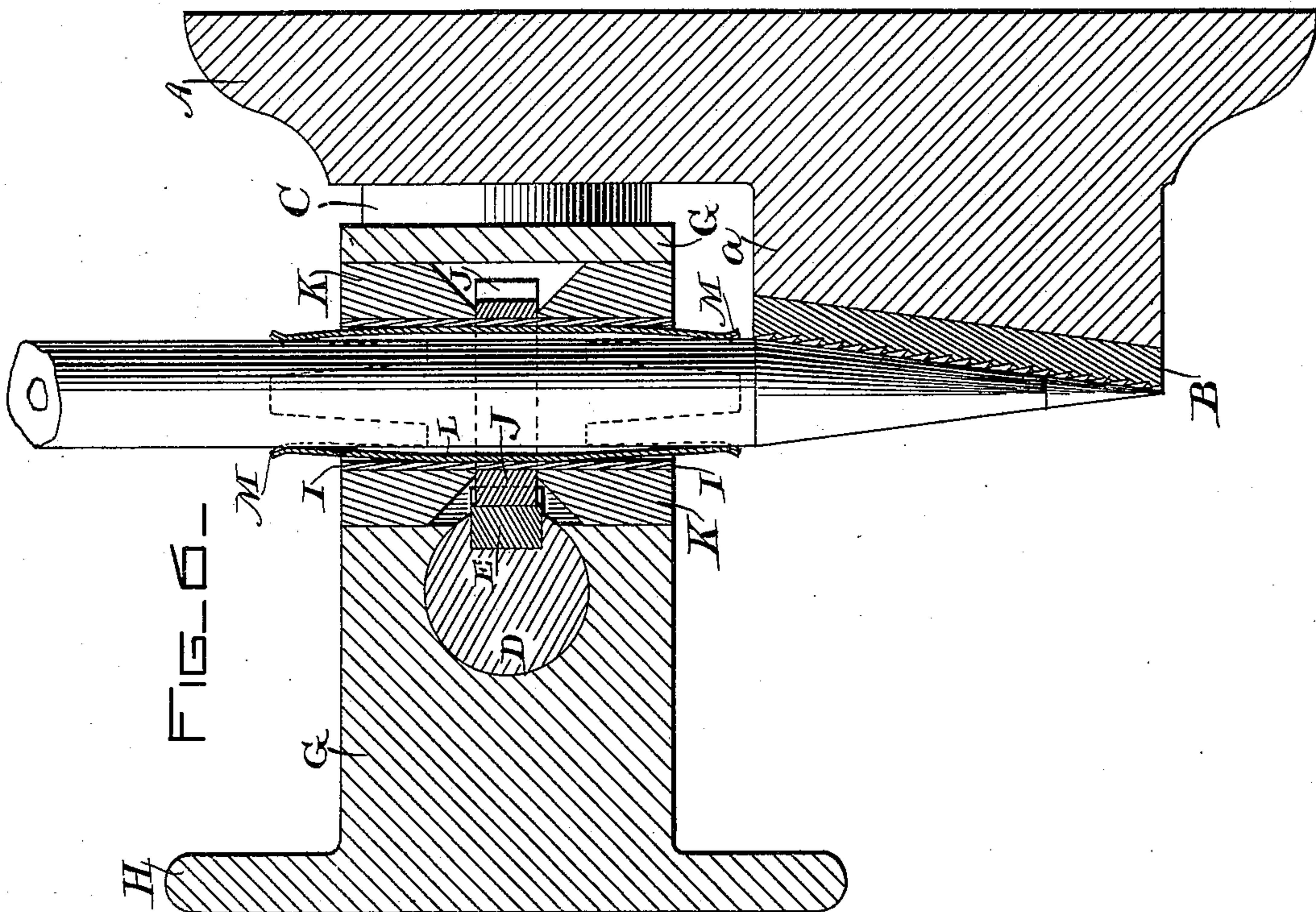
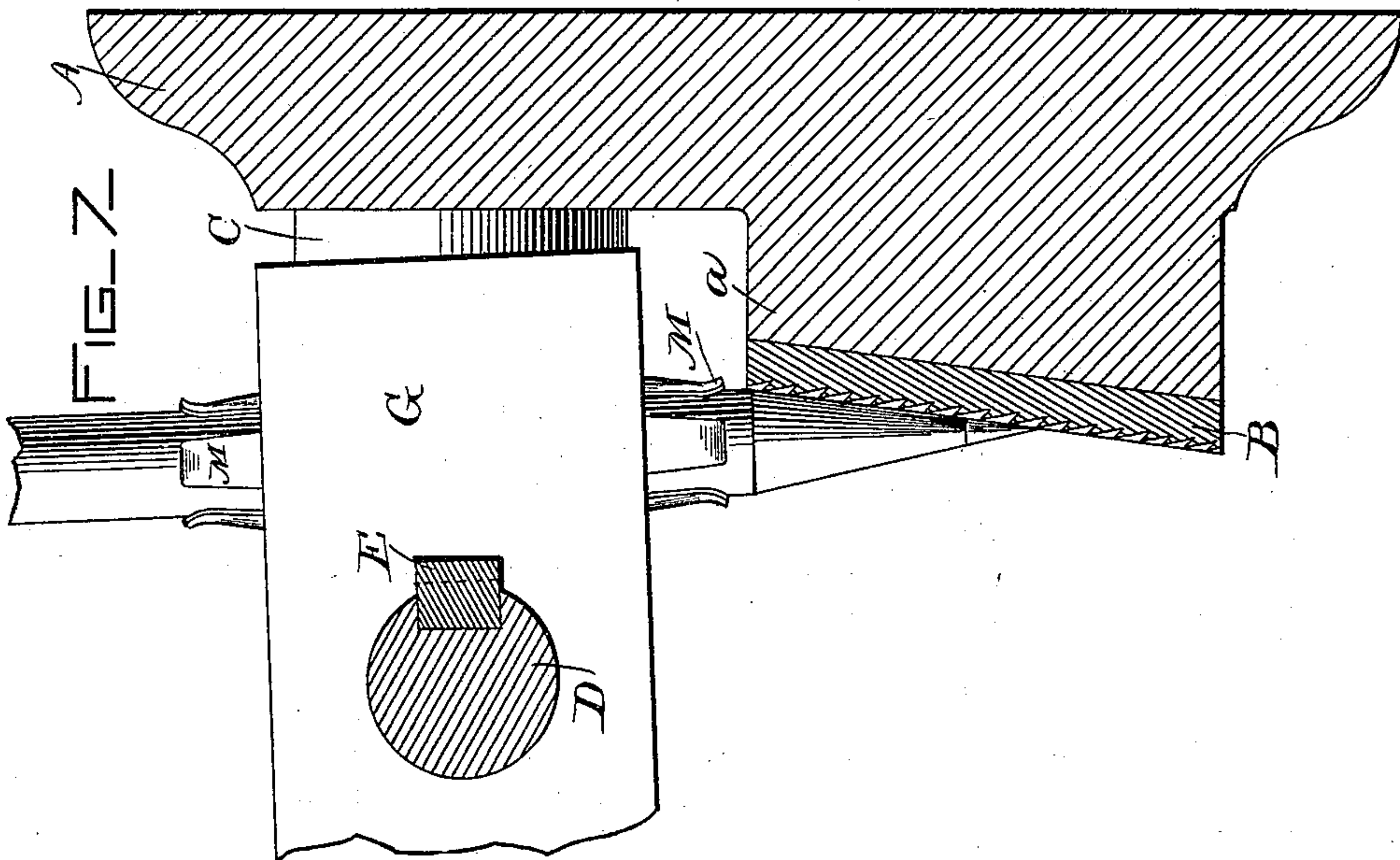
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# UNITED STATES PATENT OFFICE.

EDWIN S. DRAKE, OF CAMBRIDGE, MASSACHUSETTS.

## PENCIL-SHARPENER.

SPECIFICATION forming part of Letters Patent No. 426,716, dated April 29, 1890.

Application filed March 2, 1889. Serial No. 301,810. (No model.)

*To all whom it may concern:*

Be it known that I, EDWIN S. DRAKE, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Mechanism for Pointing or Sharpening Pencils, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

10 In the accompanying drawings, Figure 1 is a top view of the machine embodying my invention. Fig. 2 is a front side view of the same. Fig. 3 is a detached view of the pencil-carrier as when constructed and adapted  
15 to carry a plurality of pencils to be sharpened at the same time. Fig. 4 is a section taken on line  $x x$ , Fig. 5. Fig. 5 is a detached view of the pencil-carrier as when constructed to carry a plurality of pencils, one  
20 of which being automatically rotative to form a round point and the other non-rotative to form a flat point. Fig. 6 is an enlarged section taken on line  $y y$ , Fig. 2, and showing a pencil in place as when sharpened in the  
25 machine. Fig. 7 is an enlarged detached view similar to Fig. 6, partly in section, showing a pencil of smaller diameter in the holder and having a shorter point formed thereon.

A is a wooden back adapted to be held in  
30 the hand or secured to a desk, table, standard, or wall, and having an abrasive surface formed upon or secured thereto, preferably a suitable file B, set transversely at the proper angle thereto to give the requisite taper or  
35 bevel to the pencil-point when rubbed thereon, as will be described. Secured to back A are two posts C and C', in the outer ends of which is mounted a rock-shaft D. In a longitudinal groove in this rock-shaft D is se-  
40 cured a rack E, as clearly shown in Fig. 2. A spiral spring F, coiled about the shaft and secured at one end to the shaft and at the other to post C', serves to hold the shaft and the carrier G mounted thereon in the required posi-  
45 tion when idle to keep the pencil away from file B. The carrier is preferably provided with a cap H for convenience in manipulating the same. Through the body of the carrier an opening is made, through which shaft  
50 D extends, as shown, and transversely another opening is made through the same, in

which a tube I, with a pinion J mounted thereon, is held by means of circular blocks K K, whose inner ends abut against the pinion and are tapered to give room for the rack E, while  
55 they are centrally bored to serve as bearings for the ends of tube I, as shown in Fig. 6. Within tube I is secured an expanding sleeve or pencil-holder L, which has formed thereon elastic arms M M, properly curved to securely  
60 hold the pencils of various sizes which may be pushed into the same, as shown in Figs. 6 and 7. When the pencil is thus pushed into and through the sleeve, so as to project over the abrasive surface to the extent required,  
65 according to the length of point desired, the elastic force of the arms M will secure the same, so as to insure its rotation with the sleeve, and then by taking the back A (when not fastened to a desk, table, standard, or  
70 wall) in one hand and the carrier in the other, and rocking the shaft D against the elastic force of spring F, so as to bring the pencil into contact with the abrasive face of file B and keeping up such contact while moving  
75 the carrier G back and forth on shaft D, the pencil will be rapidly reduced to proper form in a very convenient and perfect manner, the reaction of the torsion-spring F assisting in relieving the cut as the pressure of the hand  
80 is lightened.

A plurality of pencils may be sharpened in the same manner and at the same time by duplicating the pencil-holders and pinions in the same carrier, as shown in Fig. 3, and a  
85 flat or chisel point may be made by placing the pencil in a pencil-holder in the carrier not made to rotate like the holder L, the pencil being held in this holder by means of a spring N, as shown in Figs. 4 and 5, formed  
90 with a concaved face and arranged to be pressed by the pencil into recess N' in the body of the carrier, as shown in Fig. 4. Thus the pencil is held in the carrier G, rocked with the shaft D, and caused to rotate for a round  
95 point by the engagement of the rack and pinion, while the carrier is moved back and forth on the shaft with the end of the pencil pressed firmly into contact with the abrasive surface B.

In producing the flat point when one side  
100 of the pencil is brought to the proper taper by rubbing without rotating, as stated, then



it is turned half around in the holder by the operator and the other side reduced in the same manner and to a like extent.

It is obvious that the carrier G may be  
5 rocked upon the shaft D instead of with it, provided the teeth of the rack and pinion are suitably formed on the arc of a circle, so as to maintain their proper engagement when the carriage is so moved along the shaft and  
10 rocked thereon; but the rocking of the shaft is deemed to be a preferable construction.

I claim—

1. In a pencil-sharpener, the combination  
of a shaft, a rocking carrier traveling there-  
15 on and carrying a pencil-holder, and a file arranged transversely to the length of the pencil, substantially as described.

2. In a pencil-sharpener, the combination  
of a rock-shaft, a carrier traveling thereon  
20 and carrying a pencil-holder, and a file arranged transversely to the length of the pencil, substantially as described.

3. In a pencil-sharpener, the combination  
of a rock-shaft, a carrier sliding to and fro

thereon and carrying a pencil-holder rotated 25  
by contact with said shaft, and a file arranged transversely to the length of the pencil, substantially as described.

4. In a pencil-sharpener, the combination  
of a rock-shaft having a rack thereon, a carrier 30  
sliding to and fro on said shaft and carrying a pencil-holder having teeth or cogs to engage the rack on the shaft, and a file arranged at right angles to the length of the pencil, substantially as described. 35

5. A pencil-sharpener consisting of a back  
or stand, a rock-shaft suitably mounted there-  
on and having a rack, a carrier sliding to and  
fro on said rock-shaft and carrying a pencil-  
holder having a gear-connection with the rack 40  
on the shaft, and a file arranged on said stand parallel with the rock-shaft, but in a position transverse to that of the pencil, substantially as described.

EDWIN S. DRAKE.

Witnesses:

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RALPH W. E. HOPPER.