(No Model.)

R. H. FRANKLIN.

LEAD PENCIL.

No. 449,040. Patented Mar. 24, 1891.

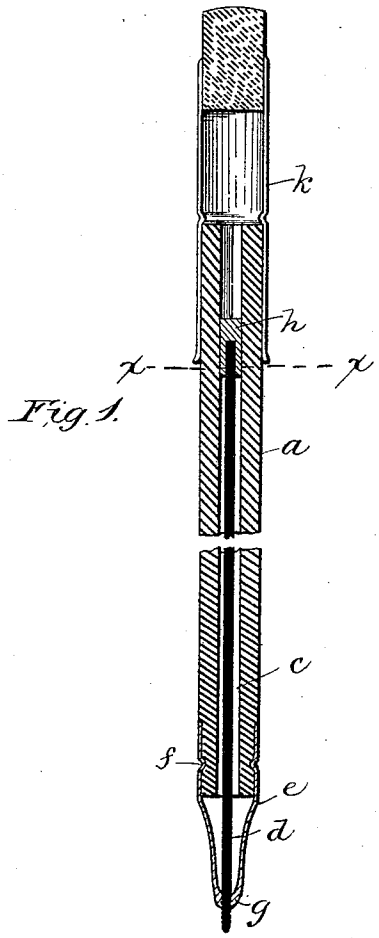


Fig. 1.

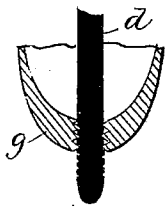


Fig. 5.

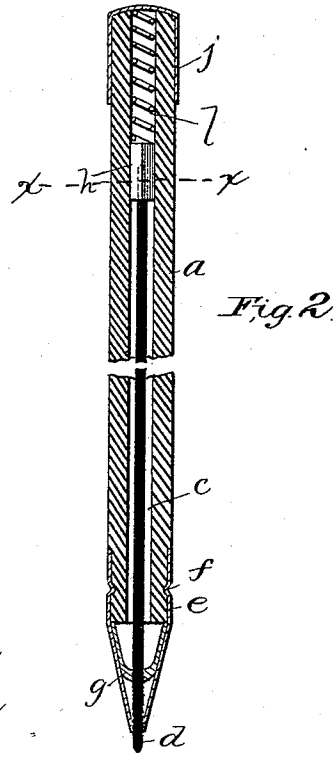
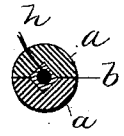


Fig. 2.

Fig. 3



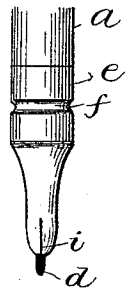


Fig. 4.

WITNESSES:

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RHODOLPH H. FRANKLIN, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES C. CUMMINGS, OF SAME PLACE.

LEAD-PENCIL.

SPECIFICATION forming part of Letters Patent No. 449,040, dated March 24, 1891.

Application filed May 14, 1888. Serial No. 273,884. (No model.)

To all whom it may concern:

Be it known that I, RHODOLPH H. FRANKLIN, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Lead-Pencils, of which the following is a specification.

My invention consists of a simple, cheap, and efficient contrivance of lead-pencils, whereby the lead of a pencil substantially like and but little more expensive than the common pencils, consisting of a wood shaft or stock and lead core, may be shifted along the stock from time to time to extend the projecting part instead of whittling off the stock, and the lead core may be replaced by another when worn out, all as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improved pencil as I prefer to construct it. Fig. 2 is a sectional elevation with modifications. Fig. 3 is a transverse section on line *x x*, Figs. 1 and 2; and Fig. 4 is a side elevation of a portion of the same. Fig. 5 is a detail of the chuck on an enlarged scale, showing the screw-threads of the feeder more clearly.

I make the shaft or stock of two pieces of wood *a*, grooved or channeled along the middle and glued together on the grooved sides, as represented at *b* in Fig. 3, same as the wood stocks of ordinary pencils are made, except that I make the grooved space *c* somewhat larger than the lead *d* and of angular cross-section, preferring the square form, and on one end of the stock I fit a thin sheet-metal sleeve *e*, so as to turn freely around the stock, and being retained thereon by any approved means allowing it to so turn, but preventing its escape, as a slight internal annular rib *f* of the sleeve pressed into a corresponding groove previously made in the stock by indenting the exterior surface of the sleeve, as in the way of the metal-spinning process, or a series of internal protrusions of the metal made by a center punch upon the exterior surface, which sleeve projects a suitable distance from the end of the stock to which it is affixed and is tapered to a rather blunt point, somewhat larger than the lead, and has a screw-threaded die *g* in the end coincident with the hollow or grooved center of the stock, but only as large in diameter as is suited for using the die as a feeder for the lead by screwing the lead in it to be shifted by the effect of the spiral threads of the die, which, acting directly on the lead, cut or crease the lead sufficiently for so feeding it and for holding it against the back-thrusts of the pressure on the lead in writing, said sleeve thus constituting a chuck to shift and hold the lead. For turning the lead in the chuck for so feeding it, I make a head *h* to the upper end of the lead of corresponding angular form as that of the passage for the lead and such size as will insure the turning of the lead with the stock or will hold it for the turning of the chuck on it, but sufficiently slack to allow the lead to shift lengthwise along the stock freely, and having so fitted the lead and placed it in the stock from the upper end I hold the chuck by one hand and turn the stock by the other, first keeping the pencil in an upright position, so that the lead will gravitate into the die, which then screws the lead out of the end of the chuck suitably for using the point, and thereafter repeat the screwing from time to time as the lead wears away. To shift the lead backward into the stock the stock or chuck is turned reversely.

The head may consist of a block of wood or other material of suitable nature that may be readily applied, or it may be an enlargement of the lead itself.

The die is made by running a screw-tap into the hole in the end of the chuck, and thereby cutting the required screw-threads, which being thus fitted serve the desired purpose.

It is preferred to make the metal of the chuck a little thicker at the tip than elsewhere, so that the die will comprise two or three threads, as represented in Figs. 1, 2, and 5, and the tip of the chuck may be split for a short distance, as represented at *i*, to make slightly-elastic jaws for adapting the chuck for leads of different sizes, and also to make clearance-spaces for the cuttings. The die may be located farther back in the chuck, as in Fig. 2, which will be a little better for screwing the lead back into the chuck for

protection when carrying the pencil in the pocket. The upper end of the pencil will preferably be covered with a cap *j*, or with a rubber eraser-tube *k*, and a coiled spring *l* may be used in the bore of the stock under the cap to press the leads into the die in case they are a little shorter than the stock and drop below the upper end; but they may be a little longer, so as to be pressed into the die by the finger to begin with and will be protected by the eraser-tube. Thus I have an extensible pencil-lead in a holder but slightly more expensive than the common lead-pencils in the first instance, and a holder in which other properly-prepared leads may be successively used.

The lead may have a screw-thread previously made on it to facilitate the feeding by the screw-die if so hard as to interfere with the threads of the die taking effect sufficiently without such a thread.

While I have described the stock and represented it in the drawings as made of wood in the form of the ordinary wood pencil-stocks, it is to be understood that my invention is alike available with stocks made of rubber or other composition, and I may use such material when desired.

I am aware of the Patent No. 291,998, in which there is a screw-threaded feeding-chuck attached to the lower end of the sheet-metal stock for feeding the lead; but this is a more expensive construction, intended more especially for permanent use, and comprises an inner sheet-metal tube of angular form and having a head at each end forming the lead-holding way or channel in addition to the staff and chuck, whereas my improved pencil only consists of the wood or equivalent stock and the chuck, and the chuck which I employ is a light sheet-metal "struck-up" or stamped device having a socket which slips on over the end of the stock for connection therewith in a simpler and less expensive contrivance than the arrangement of the said patent; and it is on these essential features of difference that I base my claim.

What I claim, and desire to secure by Letters Patent, is—

1. The improved lead-pencil stock consisting of these elements only, in combination: a wood shaft having the angular channel for the lead larger than said lead, and the revoluble screw-threaded lead-feeding chuck fitted on one end of said shaft, substantially as described.

2. The improved lead-pencil consisting of these elements only, in combination: a wood shaft having the angular channel for the lead larger than said lead, the revoluble screw-threaded lead-feeding chuck fitted on one end of said shaft, and the lead having the angular head movable along but not revoluble in the channel, substantially as described.

3. The combination, in a lead-pencil, of the hollow stock for the lead, the lead-feeding chuck attached to the stock and having a screw-die adapted for feeding the lead by the running of the die-threads directly on the lead, the cap on the upper end of the stock, and the lead-pressing spring in the hollow of the stock, substantially as described.

Signed at New York city, in the county and State of New York, this 9th day of May, A. D. 1888.

RHODOLPH H. FRANKLIN.

Witnesses:
GEO. F. SAGEMAN,
W. J. MORGAN.