(No Model.)

E. E. MONROE.

LEAD PENCIL.

No. 567,991. Patented Sept. 22, 1896.

Fig. 1.

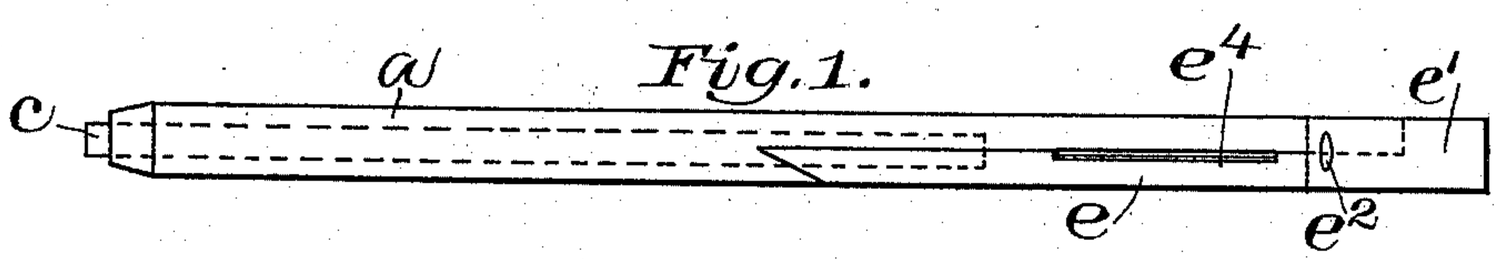


Fig. 2.

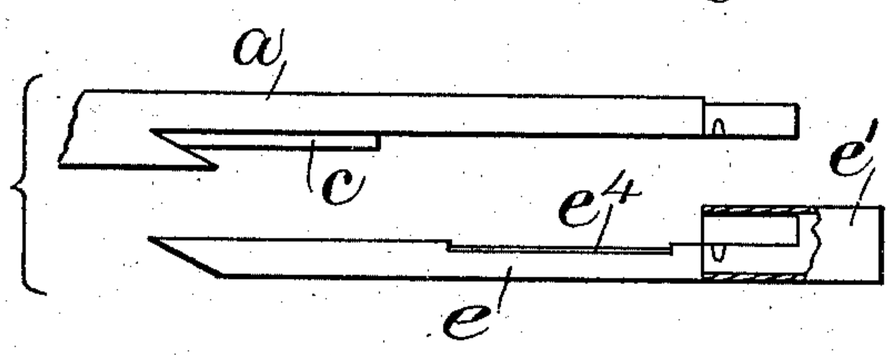


Fig. 3.

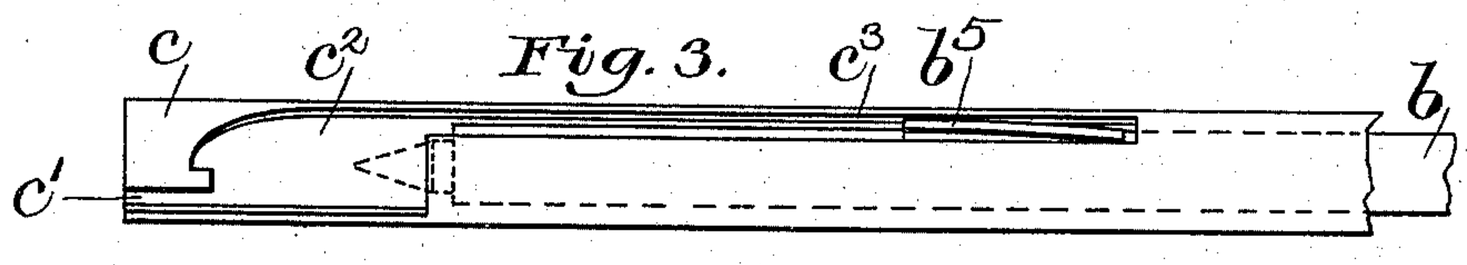


Fig. 4.

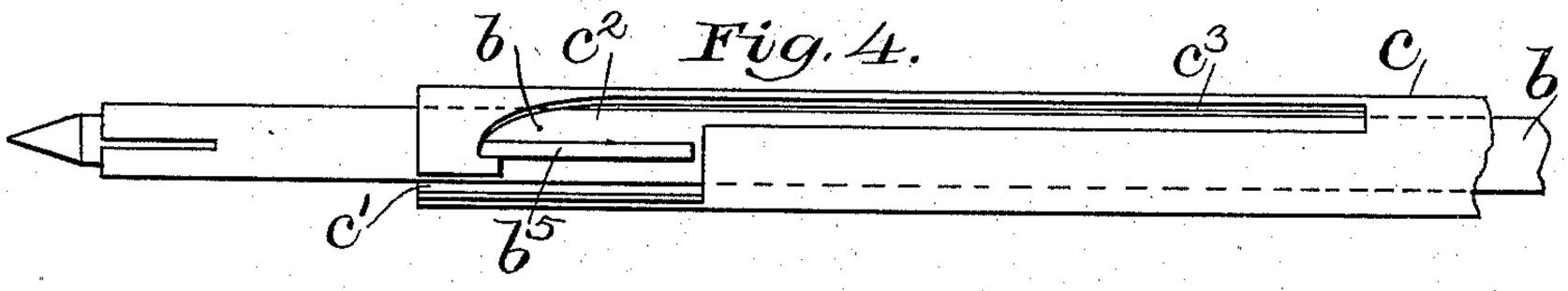


Fig. 5.

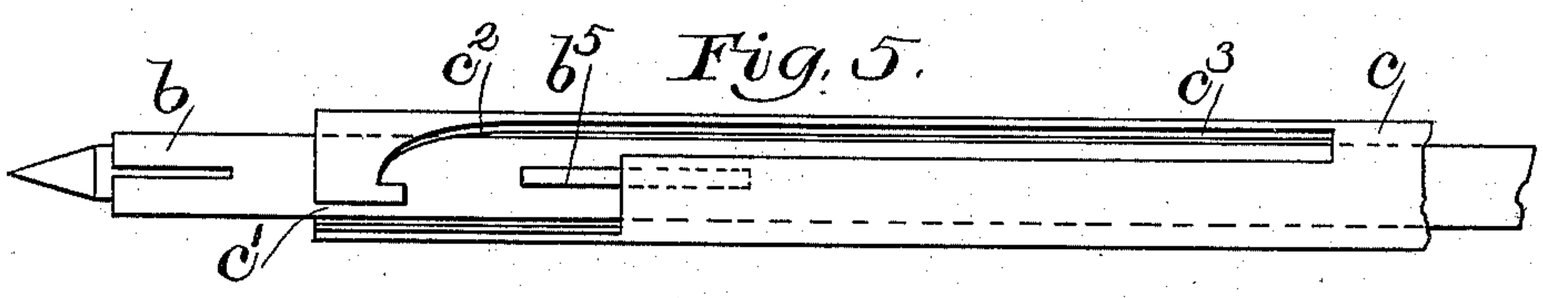


Fig. 6.

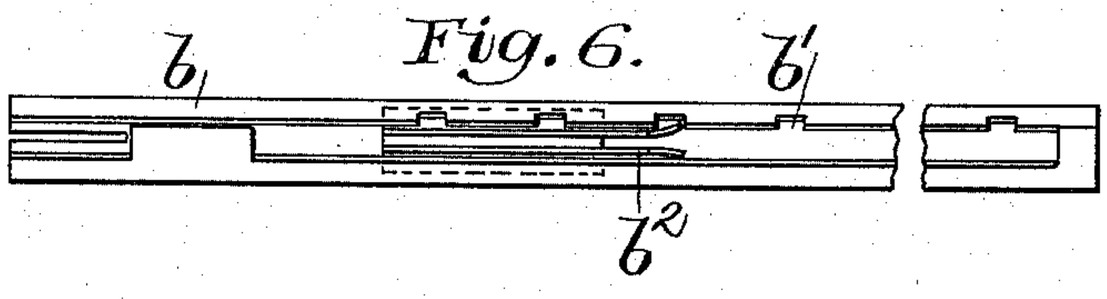


Fig. 7.

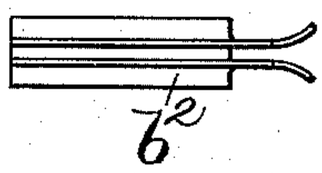
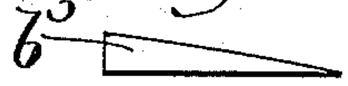


Fig. 8.



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UNITED STATES PATENT OFFICE.

ELMER E. MONROE, OF BOSTON, MASSACHUSETTS.

LEAD-PENCIL.

SPECIFICATION forming part of Letters Patent No. 567,991, dated September 22, 1896.

Application filed January 6, 1896. Serial No. 574,485. (No model.)

To all whom it may concern:

Be it known that I, ELMER E. MONROE, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Pencils, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention is intended as an improvement upon the pencil shown in United States Patent No. 536,289, granted to me on March 26, 1895; and it consists in certain improvements in the construction of the means employed for connecting the lead-holding and file-carrying sections; also in certain improvements in the lead-advancing contrivance, and also in a novel form or construction of holder for the lead, whereby the lead when not in use is concealed within and protected by the case, and when in use projects a good and sufficient distance beyond the end of the case. This improved lead-holder consists, essentially, of a lead-receiving tube and a sheath containing it, the latter being made of a size which permits the lead-receiving tube to freely move in and out, and said sheath is fitted into and held by the cylindrical or pencil-form case. The lead-receiving tube and its sheath are so constructed and arranged that by turning the pencil point downward the lead-receiving tube will fall by gravity out of the sheath until its movement in such direction is checked by a suitable stop, and then by pressing the point against a stationary object or against the finger the lead-receiving tube is pushed inward a very short distance and becomes locked. The lead-receiving tube when so locked is released or disengaged by hand, and returned by sliding it into its sheath.

Figure 1 shows in side elevation a combined pencil and sharpener embodying this invention; Fig. 2, a detail of the locking device for locking the file-carrying and lead-holding sections together; Fig. 3, a detail of the lead-holder, showing the lead-receiving tube concealed in its sheath; Fig. 4, a detail of the lead-holder, showing the lead-receiving tube drawn out of its sheath preparatory to being pushed in and locked; Fig. 5, a similar detail showing the lead-receiving tube pushed into its sheath and locked; Fig. 6, a detail of the lead-receiving tube removed to show the lead-advancing device; Fig. 7, a detail of the spring-clip; Fig. 8, a detail of the fin.

The lead-holding section of the pencil consists of a cylindrical section or case *a*, having a more or less conical or pointed end with a hole or bore made through it axially. The upper end portion of this cylindrical body *a* is split diametrically, and a half-section *e* thus removed for a short distance. This latter section constitutes the file-carrying section and is formed with one end beveled to enter a corresponding undercut in the portion *a*. This half-section *e* supports or bears at its outer end a ferrule *e'*, which is rotatable thereon, and said ferrule embraces the outer end of the pencil *a* when the parts are placed together with the beveled end of the section *e* in the undercut portion provided for it. The ferrule *e'* has one or more inwardly-formed projections e^2, and the parts which it embraces have corresponding notches or recesses adapted to receive said projections.

When the parts are placed together and the ferrule turned one way, its projections enter the notches in the part *a*, and thereby lock the parts together, and when said ferrule is turned in the opposite way said projections disengage said notches and enter the notches in the part *e*, and with the ferrule in such position the file-carrying sections may be removed. The inner or abutting face of the file-carrying section *e* is cut away to receive the file e^4, which may be made as a strip of emery-cloth or as a metallic file. When it is desired to sharpen the point of the pencil, this file-carrying section is removed and the file used for this purpose.

The part or section *a*, which is bored axially, contains within it the lead-holder, which consists of a lead-receiving tube *b* and a sheath *c*, containing it. The sheath *c* is secured within the bore of the part *a*.

The lead-receiving tube *b* is made as a split tube to form a clamp for the lead, being slightly contracted at the end for this purpose. The longitudinal opening in said tube has formed upon one side of it a series of notches *b'*, and a spring-clip b^2 is placed within said tube, having a projection which slightly protrudes from the side opening to

be engaged by the finger-nail, to be moved along and thereby advance the lead. This projection is slightly turned or bent laterally, so as to engage the notches, and by them the clip is positively held against movement in the opposite direction. The lead is thereby held from dropping out by the contracted clamp-like end, and the spring-clip engaging the notches prevents the lead from being pushed in while using it. The sheath *c* is made large enough for the lead-receiving tube to slide freely therein longitudinally. The sheath has a slit at *c'*, opening into a cut-away portion c^2 at one side thereof, and a slit c^3, leading from the opposite end of said cut-away portion and at the opposite side thereof, extending to or toward the opposite end, and the lead-receiving tube has a fin b^5, made sufficiently narrow to pass freely along said slits *c'* and c^3. As the lead-receiving tube moves in and out it will be partially rotated as the fin passes along or through the cut-away portion c^2. This rotary movement is provided for the purpose of enabling the parts to be easily locked together. Herein it will be seen that the upper edge of the cut-away portion c^2 is made straight from side to side, and the fin b^5 is made more or less tapering, and as the lead-receiving tube is withdrawn by gravity or otherwise the rotary movement given to it brings the fin b^5 into proper position below the straight edge of said cut-away portion, so that by pressing the point of the lead against a stationary object said tapering fin will be pushed beneath and into contact with said straight edge of said cut-away portion, its tapering edge acting like a wedge to securely hold the parts together by friction.

To give the lead-receiving tube a partial rotary movement automatically as it passes out of its sheath, I have formed one side of the cut-away portion with a cam-surface, against which said fin b^5 bears, to be turned by it into proper position directly below the straight wall or side of said cut-away portion. This lead-holder may be used separately from the sharpening contrivance above described.

I do not desire to limit my invention to the particular construction shown in carrying out all parts of my invention or to the employment of both the lead controlling and operating devices and the sharpener.

I claim—

1. In a pencil, a sheath having a cut-away portion, a lead-receiving tube freely movable therein having a fin projecting from it, adapted to be pushed beneath the edge of said cut-away portion to thereby lock the parts together, substantially as described.

2. In a pencil, a sheath having a cut-away portion, a lead-receiving tube freely movable therein having a fin projecting from it, adapted to be pushed beneath the edge of said cut-away portion to thereby lock the parts together, one of said parts having axial rotation with relation to the other to bring the fin opposite the edge of said cut-away portion, substantially as described.

3. In a pencil, a sheath having a cut-away portion, a lead-receiving tube freely movable therein having a fin projecting from it, said tube adapted to be partially rotated and then moved longitudinally to thrust its fin beneath the edge of said cut-away portion to thereby lock the parts together, substantially as described.

4. In a pencil, a lead-holder consisting of a lead-receiving tube having a tapering fin, a sheath containing said tube, slitted longitudinally for the passage of said fin, and having a cut-away portion for the fin permitting partial rotary movement of said tube, said fin engaging the edge of said cut-away portion to lock the parts together, substantially as described.

5. In a pencil, a lead-holder consisting of a lead-receiving tube having a tapering fin, a sheath containing said tube, slitted longitudinally for the passage of said fin, and having a cut-away portion for the fin, the lower end of which has a cam portion causing a partial rotary movement of said tube, said fin engaging the edge of the cut-away portion to lock the parts together, substantially as described.

6. In a combined pencil and sharpener, a file-carrying section having one end beveled, and the other end provided with one or more notches, a lead-carrying section having an undercut portion for the beveled end of said file-carrying section, and having at its outer end one or more notches, and a rotatable ferrule having one or more inward projections, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ELMER E. MONROE.

Witnesses:
F. H. DAVIS,
B. J. NOYES.