

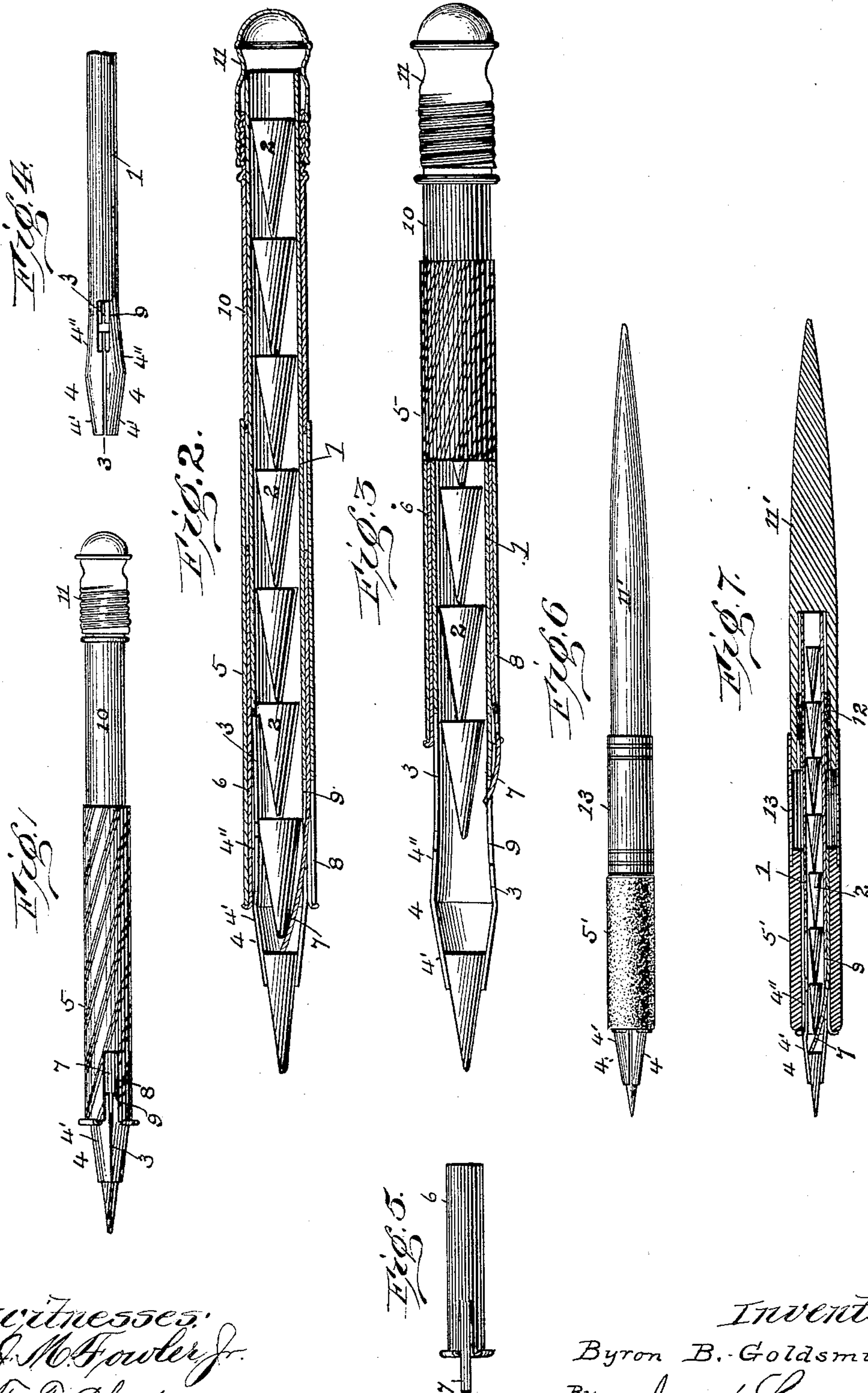
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Patented Jan. 24, 1899.

B. B. GOLDSMITH.
MAGAZINE PENCIL.

(Application filed Feb. 7, 1898.)

(No Model.)



witnesses:
J. M. Fowler Jr.
F. J. Chapman.

Inventor:
Byron B. Goldsmith,
By Joseph Hyman,
Attorney.

UNITED STATES PATENT OFFICE.

BYRON B. GOLDSMITH, OF NEW YORK, N. Y.

MAGAZINE-PENCIL.

SPECIFICATION forming part of Letters Patent No. 618,172, dated January 24, 1899.

Application filed February 7, 1898. Serial No. 669,446. (No model.)

To all whom it may concern:

Be it known that I, BYRON B. GOLDSMITH, a citizen of the United States, and a resident of New York, in the State of New York, have invented certain new and useful Improvements in Magazine Lead-Pencils, of which the following is a specification.

This invention has reference to improvements in magazine lead-pencils of that class in which a number of marking-points are stored within the magazine and suitable mechanism is provided for projecting the marking-points one by one into position for use, while at the same time worn or broken points are ejected from the pencil. Magazine-pencils of this class as heretofore made were more or less complicated in structure, due, among other things, in some cases, to the presence of springs, which were deemed necessary in order to make the operation of the pencil automatic to a certain extent.

The present invention avoids the use of springs to assist in the operation of the pencil, and I am thereby enabled to simplify the structure and operation of multipoint magazine lead-pencils to a marked degree.

The improved pencil consists, essentially, of two parts—namely, a magazine with spring-jaws at the front capable of being clamped tightly upon a point that has been projected into position for use and a mantle upon and movable along the magazine and carrying an ejector normally entering the magazine, but capable of being withdrawn therefrom.

The construction and operation of the improved pencil will be understood from the following detail description, taken in connection with the accompanying drawings, in which—

Figure 1 is an elevation of one form of pencil. Fig. 2 is a longitudinal section of the same. Fig. 3 is a similar view, but partly broken away, showing the position of the parts during a different period of operation than that shown in Fig. 2. Fig. 4 is an elevation of the front portion of the magazine. Fig. 5 is an elevation of the ejector attachment of the mantle. Fig. 6 is an elevation of a modified form of the pencil, and Fig. 7 is a longitudinal section of the form of pencil shown in Fig. 6.

Referring to the drawings, there is shown

a magazine-tube 1 of such size as to freely receive a series of sharpened marking-points 2, preferably of conical shape. The forward end of the magazine-tube is slotted longitudinally, as shown at 3, to form two spring-jaws 4 4. These jaws are in the shape of two cone frusta 4' 4'', joined at the bases, at which point they are of greater diameter than the main body of the magazine-tube. The jaws are normally slightly open and are so proportioned that the front conical portion 4' conforms in shape to a marking-point and permits the latter to project a little more than half its length, and when these jaws are closed in the manner to be presently explained they grasp the butt-end of the marking-point with firm pressure.

Surrounding the magazine there is a mantle so much shorter than the magazine that the latter can easily be grasped in the fingers of one hand, while the other hand is used to manipulate the mantle in a manner to be described farther on. The mantle is composed of a tube 5 of suitable length, but considerably shorter than the magazine-tube, and another still shorter tube 6, inserted into the front end of the tube 5.

The tube 6 has its front end spun over the front edge of the tube 5 and may be held in place within the tube 5 by solder or simply by friction. A spring-finger 7 is formed integral with the tube 6 and projects beyond the front edge of the same and also extends back a short distance into the body of the tube, as shown in Fig. 5, while the outer tube 5 has a narrow longitudinal slot 8, here shown as opening through the front edge of the tube. This slot or recess allows the finger to move slightly outwardly through the mantle for a purpose that will presently appear.

The mantle is so constructed and is so mounted upon the magazine as to be capable of being moved longitudinally thereon for a limited distance. This movement of the mantle upon the magazine is for the purpose of moving the spring-finger 7 into and out of the magazine through a slot 9 therein and also for the purpose of closing the spring-jaws 4 to clamp a marking-point between them. The slot 9 is simply a widened or enlarged portion of one of the slots 3, separating the jaws 4, and extends from the main body of

the magazine-tube into the rear conical portion 4" of the jaws. The finger 7 is curved inwardly, so as to normally extend through the slot 9 into the magazine-tube. When the mantle is moved toward the forward position, the front edge of the slot 9 engages the top of the curved portion of the finger, causing it to bend inwardly until it ultimately engages the opposite side of the jaws. When the mantle is moved rearwardly, the rear edge of the slot 9 engages the under side of the finger, lifting it sufficiently to clear the interior of the magazine, the slot 8 of the tube 5 permitting this outward movement of the finger. When the mantle is moved forward the front end thereof, made rounded and rigid by the bead formed by spinning the end of the tube 6 over the front end of the tube 5, rides along the conical or outwardly-inclined portion 4" of the jaws and forces the latter together, the internal diameter of the mantle being for this purpose made sufficiently less than the normal external diameter of the largest portion of the jaws.

The rear end of the mantle slides upon and is supported by a sleeve 10, fast on the exterior of the rear portion of the magazine-tube and of such length as to be engaged by the rear end of the tube 6 when the mantle is moved rearwardly a distance sufficient to draw the spring-finger 7 out of the interior of the magazine. This sleeve therefore acts as a stop limiting the rearward movement of the mantle.

The rear end of the sleeve 10 is screw-threaded to receive a screw-threaded cap 11, serving as a closure for the rear end of the magazine. On removing this cap the magazine may be filled with marking-points, which are inserted with the sharpened end foremost. If now the mantle is drawn back until the spring-finger is out of the magazine and the pencil is held with the jaws downward, the points will fall until the forward point has lodged in the jaws, with about half of its length protruding therethrough, and will be gently held in this position by the jaws. On inverting the pencil the other points will fall back toward the rear end of the magazine. While the pencil is held in this inverted position the mantle is pushed forward, causing the finger 7 to enter the magazine through the slot 9 until it ultimately comes in contact with the butt-end of the point lodged in the jaws. The front end of the mantle at the same time rides along the inclined or conical portion 4" of the jaws and forces the latter together until they have firmly clamped the marking-point in the writing position.

When the pencil is in use, the projected marking-point cannot be forced into the magazine by the pressure of the act of writing, this being prevented by the finger 7 on the mantle, the finger 7 acting as a stop, and the tendency of the mantle to slide forward on the jaws closes them still tighter on the projected marking-point, while the spring-finger,

moving with the mantle, forces the point more firmly between the jaws.

When the projected marking-point has become worn or broken and it is desired to project a new point into position for use, the mantle is pulled backward until the finger 7 is withdrawn from the magazine. The pencil is now so placed that the marking-points will fall by gravity until the second point is in contact with the first or projected point. The mantle is now moved forward, and the finger 7, entering the magazine, comes in contact with the butt-end of the second point before the front end of the mantle has reached the conical section 4" of the jaws. A continued forward movement of the mantle causes the second point to force the first point through and out of the front end of the jaws, the latter being elastic enough for this purpose, and the second point is ultimately by the same forward movement of the mantle projected through the jaws and the latter clamped upon it in the manner heretofore described. The finger 7 in this case acts as an ejector.

When all the points have been used, a new supply may be inserted in the magazine after the screw-cap 11 has been removed.

It will be seen from the foregoing description of the operation of this pencil that every new marking-point after having been brought between the clamping-jaws is positively clamped between the same and is simultaneously therewith pushed home with increasing force and that the act of writing tends to still more firmly push the point between the jaws and at the same time force the latter more firmly together. A loosening of the marking-point during or by the act of writing is thereby positively prevented. It will also be seen that the spring-finger 7 has the double function of a stop for preventing rearward movement of a projected marking-point when the pencil is in use and an ejector for expelling worn or broken points from the pencil.

The modified form of pencil shown in Figs. 6 and 7 is in operation and general construction the same as that already described. The outer tube 5 of the mantle is replaced by a sleeve 5' of cork or other similar material, forming a pleasant surface to grasp in the fingers. The screw-cap 11 is replaced by a cap 11' of wood or other suitable material, shaped like the rear end of a penholder. This cap 11' has its front end bored out longitudinally, and a threaded sleeve 12 is inserted in the bore to engage the threaded end of the sleeve 10, fast on the magazine. There is a sleeve 13 fast on the rear end of the cork sleeve 5' and constituting a continuation of the mantle. This sleeve 13 is of such diameter and length as to receive the front end of the cap 11' and hide the same from view, thus giving the pencil a finished appearance.

In the form of magazine-pencil shown in Figs. 6 and 7 it is not necessary to provide the sleeve 5' with a slot corresponding to the

slot 8 in the tube 5 of the form shown in Fig. 1, since the elasticity of the cork sleeve 5' permits the finger 7 to move outwardly on being withdrawn from the magazine.

5 Having fully described the invention, what I claim, and desire to secure by Letters Patent, is—

10 1. A magazine lead-pencil comprising a magazine adapted to receive a series of conical individual marking-points, and having at its front end normally, partially open, conical spring-jaws, and a shorter mantle between the ends of the magazine, the mantle being movable on the magazine and constructed to engage on its forward movement, the spring-jaws and close them upon a marking-point to clamp the same in position for use, substantially as described.

20 2. A magazine lead-pencil comprising a magazine adapted to receive a series of marking-points and having normally open spring-jaws at its front end, and a mantle movable longitudinally on the magazine and provided with a stop entering the magazine through a slot therein, the said mantle being constructed to engage and clamp the jaws on a marking-point lodged therein and at the same time move the stop into engagement with the butt-end of said marking-point, substantially as described.

30 3. A magazine lead-pencil comprising a magazine, a mantle thereon provided with a cork finger-hold, and a cap for the rear end of the magazine, shaped like the rear end of a penholder and having its front end bored out and containing a nut within the bore adapted to be screwed upon the rear end of the magazine, substantially as described.

40 4. A magazine lead-pencil comprising a magazine adapted to receive a series of mark-

ing-points and having normally open spring-jaws at its front end, a shorter mantle movable longitudinally between the ends of the magazine, provided with a stop entering the magazine through a slot therein and with means for clamping the spring-jaws, and a cap for the rear end of the magazine, shaped like the rear end of a penholder and forming a finger-hold for the magazine while the mantle is moved, substantially as described.

50 5. A magazine lead-pencil comprising a magazine, a mantle movable longitudinally thereon and provided with a finger-hold, a removable handle attached to the rear end of the magazine-tube and a sleeve surrounding the rear end of the finger-hold and the front end of the handle, substantially as described.

60 6. A magazine lead-pencil comprising a magazine-tube for carrying a series of conical marking-points provided with spring-jaws, and a tube-like mantle, movable longitudinally thereon, having its front end both shaped to clamp the spring-jaws on a marking-point and carrying an ejector and stop substantially as described.

70 7. A magazine lead-pencil for conical marking-points comprising a magazine-tube provided with spring-jaws, a tube-like mantle having its front end both shaped to clamp the spring-jaws on a marking-point and carrying a stop and a removable hollow handle attached to the rear end of the magazine-tube, substantially as described.

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

BYRON B. GOLDSMITH.

Witnesses:

WILLIAM S. STUHR,
BARBARA C. DINGWALL.