(No Model.)

B. B. GOLDSMITH & W. BURT.

MAGAZINE LEAD PENCIL.

No. 512,954. Patented Jan. 16, 1894.

Fig. 1.

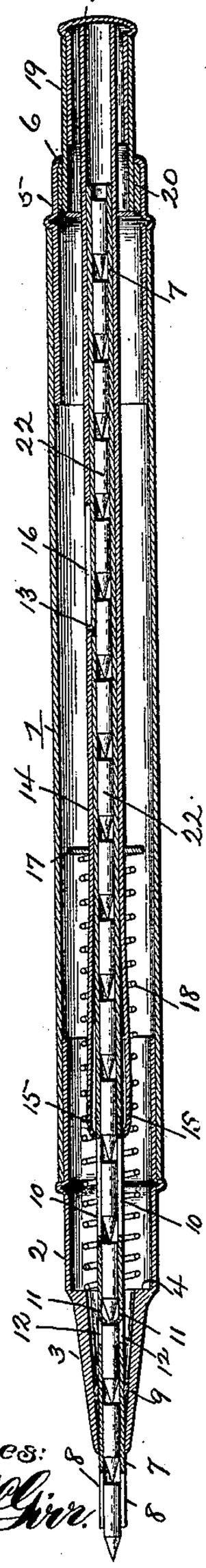


Fig. 2.

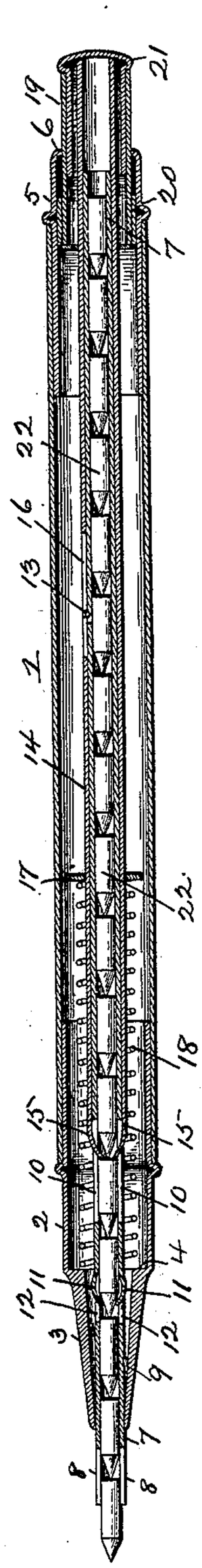
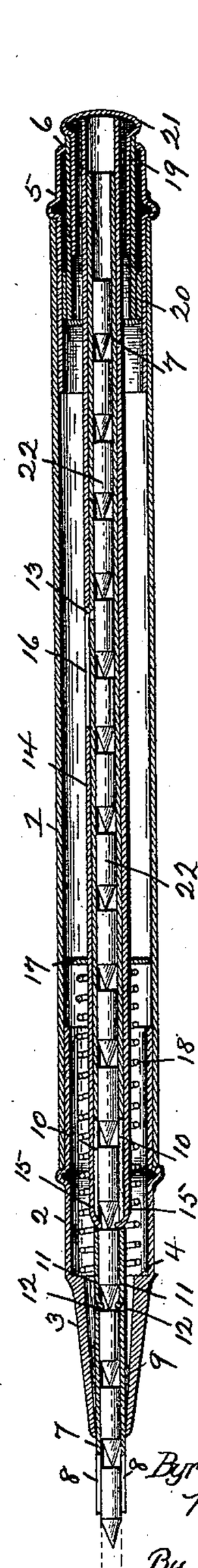


Fig. 3.



Witnesses:
J. B. McGinn.
F. T. Chapman

Inventors,
Byron B. Goldsmith and
William Burt,
By Joseph Lyons.
Attorney.

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

BYRON BENJAMIN GOLDSMITH, OF NEW YORK, N. Y., AND WILLIAM BURT, OF JERSEY CITY, NEW JERSEY, ASSIGNORS TO THE AMERICAN LEAD PENCIL COMPANY, OF NEW YORK, N. Y.

MAGAZINE LEAD-PENCIL.

SPECIFICATION forming part of Letters Patent No. 512,954, dated January 16, 1894.

Application filed September 20, 1893. Serial No. 485,985. (No model.)

To all whom it may concern:

Be it known that we, BYRON BENJAMIN GOLDSMITH, residing at New York, in the county and State of New York, and WILLIAM BURT, residing at Jersey City, in the county of Hudson, State of New Jersey, citizens of the United States, have invented certain new and useful Improvements in Magazine Lead-Pencils, of which the following is a specification.

Our invention has reference to improvements in magazine pencils, in which a series of individual marking points are stored in a magazine and by a simple manipulation of the device are successively projected in position for use, and are held in said position, while at the same time the used-up or broken marking point is ejected.

A characteristic feature of our invention is that the individual marking points are stored in a magazine tube which is fixed to the mantle or holder of the pencil, and that the longitudinally movable ejector is normally held out of engagement with the marking points, and when actuated, engages the butt of a marking point, propelling the same forward and with it a number of marking points in advance of the one directly acted upon, while spring fingers on the magazine tube prevent the rearward movement of the projected marking point. The longitudinal movement of the ejector is limited, so that it can be moved only sufficiently to eject the old marking point and project a new one in proper position for use. One of the forms of pencil embodying these and other features, is illustrated in the accompanying drawings, in which—

Figure 1, represents a longitudinal section of our magazine pencil, with the parts in their normal positions; Fig. 2, a like section, showing the pencil in the condition when the ejector has engaged an individual marking point and has started the forward series of points for the ejection of an old point and the projection of a new one, and Fig. 3, is a like section showing the parts in the position when the ejector has completed its forward stroke.

Like numerals of reference indicate like parts throughout the drawings.

The main body of the case is a cylindrical tube 1, into the forward end of which is fitted, with considerable friction, a thimble 2, the forward end of which is formed into a tapering nozzle 3, which, where it merges into the cylindrical portion of the thimble has formed, in the interior, a ledge 4. This thimble may be held in the cylinder 1, either by friction alone or it may be soldered to it, or otherwise secured to the same.

Into the rear end of the cylinder 1, is fitted a sleeve 5, the rear edge of which is slightly turned inwardly as indicated at 6. This sleeve 5, may also be held in the cylinder 1, either by friction alone or may be soldered to the same.

In the nozzle 3, is fixed by solder, or otherwise, the magazine tube 7, which extends centrally in the case and projects at its forward end beyond the nozzle, where it is formed into spring jaws 8, 8.

A small collar 9, secured to the magazine tube within the nozzle serves as a means for holding the magazine tube in a central position. It is also practicable to fit the magazine tube with its collar, so tightly in the nozzle that it may be held there by friction only, without being soldered to the same; soldering, however, will ordinarily be preferable.

The cylinder 1, thimble 2, and sleeve 5, assembled as shown, may be considered as the case or holder proper, the cylinder 1, being the main part of the same.

In that portion of the magazine tube which is within the cylindrical part of the thimble 2, are formed, diametrically opposite each other, two longitudinal slots 10, 10. In front of these slots and also on diametrically opposite sides of the magazine tube there are incisions by which two spring tongues 11, 11, are formed integral with the tube, and which are bent inwardly so as to project with their free ends through the slots 12, formed by the incisions. A similar incision is also made in the magazine tube at some point between the positions of the slots 10, and the rearward end of the magazine tube, and the short tongue 13, thus formed, is bent outwardly at right angles for a purpose which will presently appear.

Surrounding the magazine tube is the cylindrical ejector tube 14, which at its forward end is formed into two spring tongues 15, 15, which have å tendency to enter and project through the slots 10, 10, of the magazine tube. At about the middle of the ejector tube there is a longitudinal slot 16, into which the short tongue 13, of the magazine tube projects. The ejector tube loosely surrounds the magazine tube, so that it can be moved longitudinally over the same, and the extent of this movement is limited in both directions by the tongue 13, and slot 16; by the same means the ejector is also prevented from turning with reference to the magazine tube, the tongue 13, constituting a guide for the ejector. It will now be seen that when the ejector is moved rearwardly, the spring tongues 15, 15, will pass from the slots 10, 10, onto the solid portion of the magazine tube as shown in Fig. 1, and in this position the forward end of the slot 16, strikes against the short tongue 13, thus limiting the rearward movement of the ejector. When from this position the ejector is moved forward, the spring tongues 15, will ride down the edge of the slots 10, 10, projecting into and through the same, as shown in Fig. 2, and will approach the forward ends of these slots; at the same time the rearward end of the slot 16, will strike against the short tongue 13, of the magazine tube, whereby the forward stroke of the ejector is positively limited.

Upon the ejector tube is placed a collar 17, and between this collar and the ledge 4, of the thimble 2, there is a helical spring 18, which is in its expanded condition when the forward end of slot 16, strikes against the short tongue 13, and the spring tongues 15, have passed over the rear edge of the slots 10, and onto the solid portion of the magazine tube, all as shown in Fig. 1.

Into the sleeve 5, which constitutes a part of the case or handle, is fitted for longitudinal movement therein, the sliding sleeve 19, the forward end of which is enlarged either by a collar 20, as shown, or the tube may be widened at this point by spinning or otherwise, so that the enlarged portion will move loosely within the sleeve 5, while the inturned edge of the latter will serve as a limiting stop for the outward movement of the sliding sleeve. Into this sliding sleeve is fitted the removable cap or thumb piece 21. The ejector extends from about the rear edge of the slots 10, in the magazine tube, beyond said tube until it abuts against the head of the cap 21. In consequence of this construction, when the pencil case is held by the user, and pressure is applied by one finger upon the cap, the ejector is moved forward against the tension of the spring 18, and when the cap is released, the ejector is propelled back to its original position by said spring.

For filling the magazine with individual marking points 22, the cap 21, is removed and a number of marking points are dropped into the magazine with their points forward. It will be seen that the first point will drop down until it is arrested by the spring fingers 11, and the other marking points will freely follow the first, arranging themselves in a continuous series as shown, until the magazine is filled.

In order to bring the foremost marking point in position for use, the ejector, together with the sliding sleeve, 19, is pushed inwardly, thereby allowing the spring fingers 15 to enter the slots 10; and abut against the rear end of the second marking point of the series and push the same forward, which in turn pushes the first marking point between, and past, the yielding spring fingers 11, until the same close behind the rear end of that marking point. Pressure upon the ejector is now released, which permits the same to again assume the position shown in Fig. 1. This operation is repeated until the foremost marking point projects between the spring jaws 8, 8, in position for use. An additional number of marking points is then dropped into the magazine and the cap piece 21 is applied. The magazine pencil is then ready for use in the condition shown in Fig. 1. This condition is marked by the following features: The foremost marking point is held from dropping out by the spring jaws 8, while the spring fingers 11, abut against the rear end of the third marking point, thus preventing the first point which is in position for use, from being forced back into the magazine by the axial pressure exerted in writing. The remainder of the marking points are loose within the magazine. The spring 18, is extended; the spring fingers 15, 15, are slightly beyond the rear ends of the slots 10, bearing on the solid portion of the magazine tube, and the forward end of the slot 16, in the ejector bears against the short tongue 13, struck out from the magazine tube. If now the first marking point is used up or broken, and it is desired to eject the same and place another point in position for use, it is only necessary to press upon the cap piece 21, which bearing upon the ejector moves the same forward with its spring fingers within the slots 10, bearing upon the butt end of a marking point (in the present instance, the fifth of the series) and pushing all the forward marking points forward until the first is ejected and the second is in position for use, as shown in Fig. 3. By this movement the fourth of the series of marking points was forced between the spring fingers 11, (see Fig. 2,) which close behind the butt of the same, as shown in Fig. 3. Pressure upon the cap is now released, and the ejector assumes again the position shown in Fig. 1. It will thus be seen that not only are the used-up points positively ejected from the magazine, but the new points are also positively propelled in position for use, and are there held against

slipping back into the magazine positively, and are held from falling out by elastic pressure.

While we have shown only one specific construction embodying our invention, it will be understood that we are not limited to the details of that construction, which may be variously changed without departing from our invention, the broad feature of which is, that a number of individual marking points are stored in a magazine, from which an old point is positively ejected and the points are simultaneously renewed by the operation of a spring controlled push-piece.

Having now fully described our invention, we claim and desire to secure by Letters Patent—

1. A magazine lead-pencil having a magazine tube for the reception of a series of individual marking points, fixed to the case or mantle and a longitudinal movable ejector for positively ejecting the used-up points and positively projecting new points in position for use, substantially as described.

2. The combination of a tubular case or mantle, a magazine tube fixed therein, a longitudinally movable ejector adapted to project into the magazine when moved in one direction and to withdraw from the same when moved in the other direction, substantially as described.

3. In a magazine lead pencil, the combination of a magazine tube fixed to the case or mantle and adapted to receive a series of individual making points, with a longitudinally movable ejector adapted when moved in one direction to engage the butt-end of an individual marking point so as to propel the forward series forwardly, and fixed spring fingers projecting into the magazine tube for preventing the rearward movement of the projected marking points, substantially as described.

4. In a magazine lead-pencil, the combination of a magazine tube fixed to the case or mantle and adapted to receive a series of individual marking points, and a longitudinally movable ejector, adapted when moved in one direction to bear upon the butt-end of a marking point for ejecting an old point and projecting a new one in position for use; with a spring for returning the ejector to its original position, and means for limiting the stroke of the ejector, substantially as described.

5. The combination, of a tubular case or mantle, a longitudinally movable ejector and a fixed magazine tube adapted to receive a series of individual marking points; with a slot or slots in the magazine tube and spring tongues on the ejector projecting through the slots when the ejector is moved in one direction and withdrawing from the same when the ejector moves in the other direction, substantially as described.

6. In a magazine pencil, the combination of a fixed magazine tube adapted to receive a series of individual marking points, a longitudinally movable ejector in operative relation to the marking points, for ejecting and renewing the same, a spring for moving the ejector to its normal position; and means for guiding and limiting the movements of the ejector, substantially as described.

7. In a magazine pencil, the combination of a fixed magazine tube adapted to receive a series of individual marking points, spring jaws on the tube for clamping a point in position for use and spring fingers locking the same against rearward movement, substantially as described.

8. A lead-pencil comprising a magazine adapted to receive a number of individual marking points, and a spring controlled push-piece and means actuated thereby for positively ejecting and simultaneously renewing the points, substantially as described.

9. In a magazine pencil, the combination of a magazine tube adapted to receive a series of individual marking points, spring jaws on the tube for clamping a point in position for use, and a push piece for positively ejecting and simultaneously renewing the points, substantially as described.

10. In a magazine pencil, the combination of a magazine tube adapted to receive a series of individual marking points and provided at the forward end with spring jaws for clamping a point in position for use and open at the rear end for the insertion of the points, with a push piece for positively ejecting and simultaneously renewing the points, substantially as described.

11. A magazine pencil adapted to receive a series of individual marking points, having spring jaws at its forward end for clamping a point in position for use, a removable cap at its rear end and a push piece for positively ejecting and simultaneously receiving the points, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

BYRON BENJAMIN GOLDSMITH.
WM. BURT.

Witnesses:
MICHAEL J. CANNON,
JOHN C. SKELLY.