J. BRICKEN.

PENCIL.

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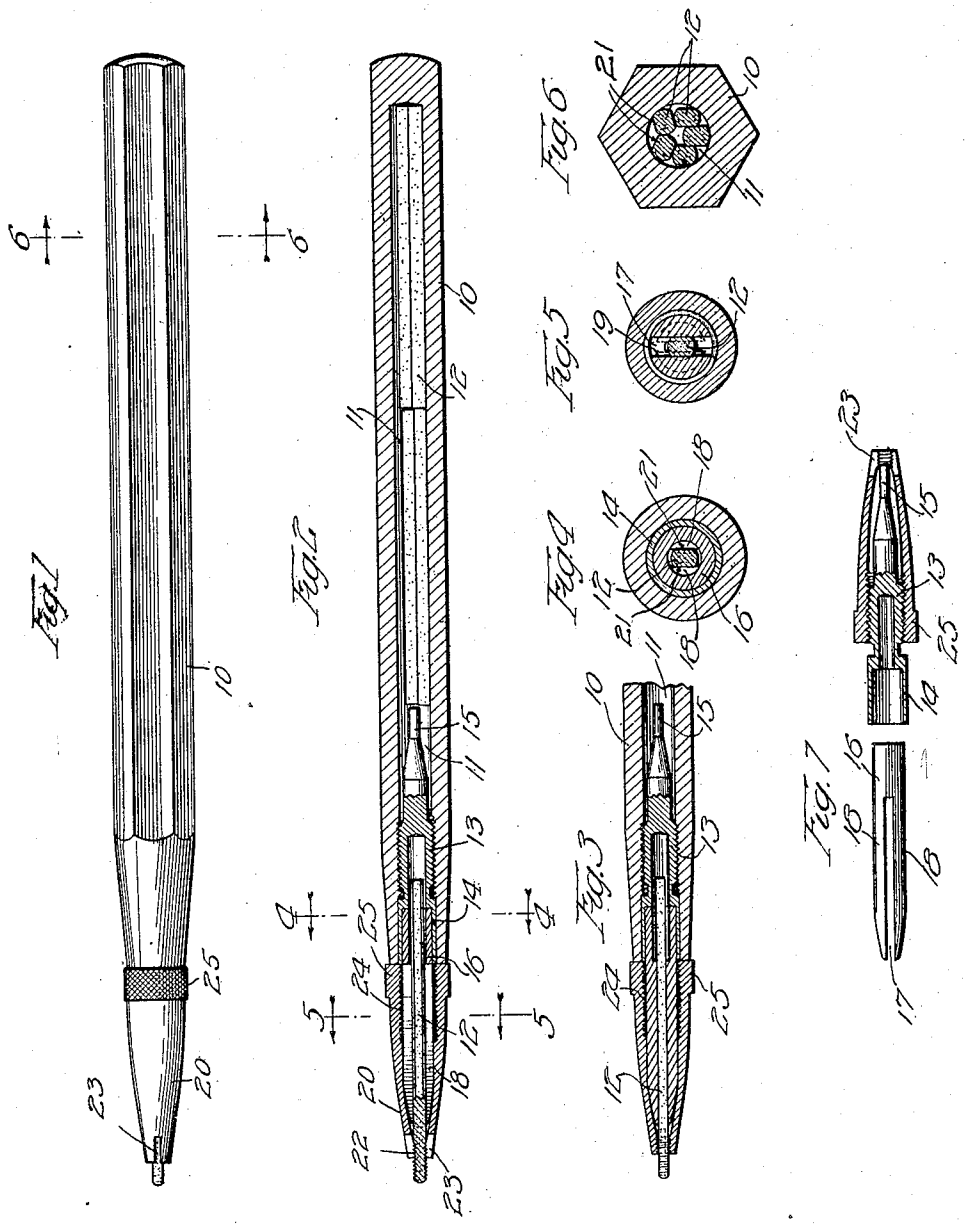
1,351,552. Patented Aug. 31, 1920.



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UNITED STATES PATENT OFFICE.

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PENCIL.

1,351,552. Specification of Letters Patent. Patented Aug. 31, 1920.

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To all whom it may concern:

Be it known that I, JOHN BRICKEN, a citizen of Russia, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencils, of which the following is a specification.

This invention relates to improvements in lead pencils and more particularly to lead pencils of the magazine type.

One object of the invention is to provide a pencil of this character which shall be provided with means whereby the lead, as the same is fed outwardly by a proper manipulation of the operating means, is positively gripped and securely held by said means after the manipulation thereof is discontinued thereby avoiding the inconvenience of having the lead become accidentally displaced when it is desired to use the pencil or during the use of the same.

Another object resides in the provision of a pencil of the type described which shall be simple in construction and operation and one which lends itself readily to economical manufacture.

Other objects and advantages will be more apparent from the following description taken in connection with the accompanying drawings wherein the preferred embodiment of the invention is illustrated.

Figure 1 is a side elevation of a pencil constructed in accordance with the present invention.

Fig. 2 is a longitudinal sectional view thereof showing the lead embracing fingers in elevation.

Fig. 3 is a similar sectional view showing the fingers in section.

Fig. 4 is a section on line 4—4 of Fig. 2.

Fig. 5 is a section on line 5—5 of Fig. 2.

Fig. 6 is a section on line 6—6 of Fig. 1, and

Fig. 7 is a view showing the elements disassembled.

Referring more in detail to the drawings, 10 designates the barrel or magazine of the pencil provided as usual with an elongated chamber 11 in which the reserve lengths of lead 12 may be stored. Preferably screw-threaded into the outer end of this storage chamber 11 is a suitable plug 13 provided at one end with an annular socket member 14, the outer edge of which preferably lies flush with the outer end of the barrel 10 when said plug is in its operative position. The plug 13 is also provided with a rearwardly extending projection 15 of reduced diameter, the purposes of which will be hereinafter pointed out. Extending outwardly from the annular socket member 14 is a hollow cylindrical member 16 bifurcated as at 17 to provide a plurality of spring prongs or fingers 18, said hollow cylindrical member 16 being securely held within said socket 14 by means of a driving fit therein. The spring fingers 18 are preferably normally urged apart and the adjacent surfaces thereof are preferably flat substantially as illustrated in the drawings at 19.

The operating tip or cap of the pencil is shown at 20 and is designed to be moved into position against the end of the barrel 10 by moving the same over the outwardly urged spring fingers 18 whereby said tip or cap 20 is frictionally maintained in its proper adjusted position. Each of the lengths of lead in the present improvements is preferably formed with two diametrically opposite flattened surfaces extending from one end of the lead to the other, as shown more clearly at 21 of the drawings, whereby said lead when positioned between the spring fingers 18, is prevented by said fingers from rotating relative thereto. The opening in the outer end of the tip or cap 20 is preferably screw-threaded as illustrated at 22 and by bifurcating said outer end, as shown more clearly at 23, a small die is formed of the same. The lead is preferably of substantially the same diameter as the diameter of the screw-threaded aperture in the outer end of the tip or cap and is first positioned therein by removing the tip or cap 20 from the pencil and screwing the lead the desired distance through said screw-threaded aperture whereupon the lead will be firmly gripped or held against longitudinal displacement relative to the cap. After the lead has been so positioned in the cap, it is fitted with the flat surfaces thereof in contact with the flat inner surfaces of the spring fingers 18 and the cap then moved back against the end of the barrel 10 thereby causing the fingers 18 to be pressed inwardly against the lead thereby holding the same against rotation. This positioning of the cap over the spring fingers will, it will be noted, tend to maintain the tip or cap 20

in position by means of its frictional engagement therewith, as above described. It will also be noted from the foregoing that any rotation of the operating tip or cap about the spring fingers 18 will cause the lead to be fed outwardly or inwardly depending on the direction of rotation.

To charge the pencil, it is merely necessary to remove the tip or cap 20 whereupon access to the spring fingers 18 may be had, upon the rotation of which the plug 13 will be screwed out of the storage chamber 11 thereby permitting a length of the reserved lead, stored therein, to be withdrawn and properly positioned in the pencil in the manner, as above described.

Should the lead, after it has been screwed through the apertured end of the tip or cap 20, become broken off in such wise as to render it inconvenient to remove the same, the tip or cap may be removed from the fingers 18, the plug 13 screwed out of the storage chamber 11 and the projection 15 provided on the inner end thereof inserted in through the large end of the tip or cap 20 until the screw-threaded plug 13 engages the screw threads 24 of said tip or cap whereupon, by screwing the plug into the tip or cap 20, the projection 15 thereof will force the broken lead out through the small end of said tip or cap substantially as illustrated in Fig. 7. This means may also be used for removing from the small apertured end of the cap 20 not only broken lead, but dirt, grit or any foreign substance which may lodge therein.

As above described, it is preferred to form the strips of lead without screw threads or, in other words, to screw thread the same as they are used by rotating them through the screw-threaded aperture 22 of the cap 20. It is, however, obvious that, if desired, the strips of lead may be screw-threaded when they are made and in such form passed through the screw-threaded aperture 22 of the cap 20 as it is desired to use the same. The enlarged end of the cap or tip 20 is preferably provided with a knurled shoulder 25 whereby the same may be readily and easily manipulated.

While the plug 13 and spring-pronged member 16 have been herein illustrated and described as separate elements assembled and held together by the frictional engagement of the rear end of said member 16 within the socket 14 of the plug, it is obvious that these elements might be constructed as one integral unit if desired without in any way affecting their proper and efficient functioning and without necessitating any alteration in the construction or arrangement of the parts related thereto.

It is also obvious that various other changes and modifications may be made in the construction herein illustrated and described and it is not, therefore, desired to limit or restrict the invention except where limitations appear in the appended claims.

What I claim is:—

1. In a pencil of the type described, a barrel or storage chamber, a plug in the outer end thereof provided with an outwardly opening socket, a spring pronged element designed to fit within said socket and adapted to project outwardly beyond the end of said barrel, a strip of flattened lead designed to fit between said prongs and to be held thereby against rotation, a rotatable cap fitting over said prongs and held thereby, and a screw-threaded aperture in one end of said cap designed to receive one end of said lead and to feed the same inwardly or outwardly, the screw threads formed on said lead by said feeding operation serving to maintain the same against accidental longitudinal displacement.

2. In a pencil of the type described, a barrel or storage chamber, a plug in the outer end thereof provided with spring prongs adapted to project outwardly beyond the end of said barrel, a strip of flattened lead designed to fit between said prongs and to be held thereby against rotation, and a rotatable cap fitting over said prongs and held thereby, said cap being provided with a screw-threaded aperture at one end thereof designed to receive one end of said lead and to feed the same inwardly or outwardly, the screw threads formed on said lead by said feeding operation serving to maintain the same against accidental longitudinal displacement.

In testimony whereof, I have subscribed my name.

JOHN BRICKEN.