J. B. ZIMDARS.

CLUTCH PENCIL.

APPLICATION FILED JUNE 7, 1916.

1,270,914.

Patented July 2, 1918.

Fig. 1

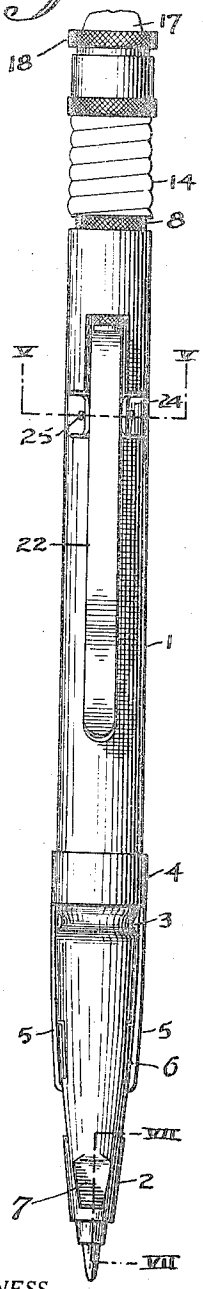


Fig. 2

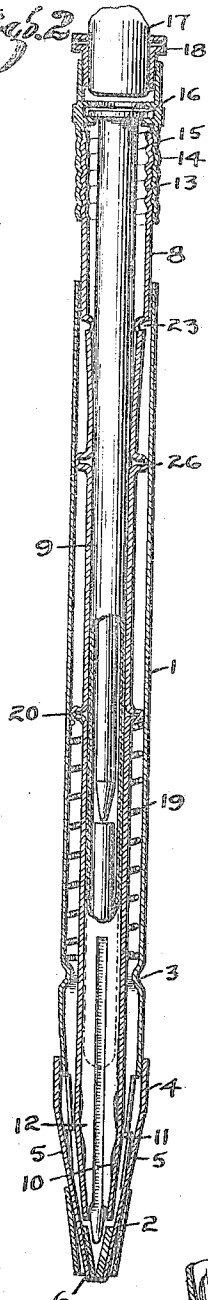


Fig. 3

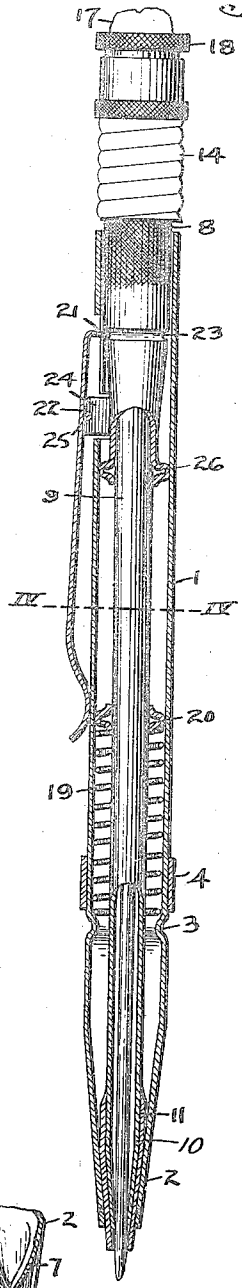


Fig. 4

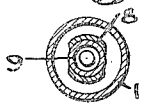


Fig. 5

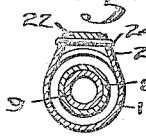


Fig. 6

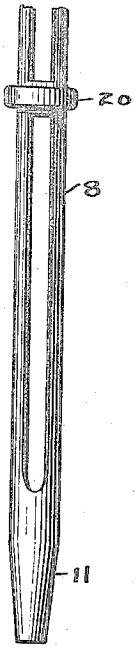
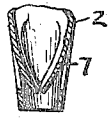


Fig. 7



WITNESS

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CLUTCH-PENCIL.

1,270,914. Specification of Letters Patent. Patented July 2, 1918.

Application filed June 7, 1916. Serial No. 102,214.

To all whom it may concern:

Be it known that I, JOHN B. ZIMDARS, a citizen of the United States, and a resident of the city and county of San Francisco, State of California, have made a new and useful invention—to wit, Clutch-Pencil; and I do hereby declare the following to be a full, clear, concise, and exact description of the same.

The invention relates particularly to a clutch pencil having automatic retracting means to withdraw the working end of the clutch within the casing of the pencil and thus shield the point of the lead.

In the specification and the annexed drawings, I illustrate the invention in the form that I consider to be the best, but it is to be understood that I do not limit myself to such form, because the said invention may be embodied in other forms, and it is also to be understood that in and by the claims following the description I desire to cover the invention in whatsoever form it may be embodied.

In the drawings:

Figure 1 is a side elevation of a clutch pencil constructed in accordance with this invention.

Fig. 2 is a longitudinal sectional view showing the working end of the clutch retracted within the casing of the pencil and the sharpening members in operative position.

Fig. 3 is a longitudinal sectional view partly in elevation taken on a plane at right angles to the plane of Fig. 2 and showing the clutch in its protracted position.

Fig. 4 is a transverse section on the plane of IV—IV of Fig. 3.

Fig. 5 is a similar section on the plane of line V—V of Fig. 1.

Fig. 6 is a fragmentary view of the clutch means or body, and

Fig. 7 is a fragmentary sectional view through the pencil casing on the plane of line VII—VII of Fig. 1.

Referring in detail to the drawings by numerals, 1 indicates the body of the pencil which is tubular with its lower end tapered as indicated at 2. A circumferential groove is formed in the body 1 at the upper end of the tapered portion 2 and forms an internal shoulder 3 for a purpose to be hereinafter explained. Above the shoulder 3 is a band 4 which carries a pair of oppositely disposed arms 5 to which are attached sharpening members 6, which work within the casing 1 and which are brought together in operative position when the band 4 is moved downwardly toward the writing end of the pencil. Spring check or gage fingers 7 are formed adjacent the writing end of the casing 1 and when permitted spring inwardly to bring their free ends in contact with each other and close the passage at the writing end of the casing.

A lead clutch generally designated 8 extends longitudinally within the casing 1 and comprises a lead tube 9 having its lower end split longitudinally to provide jaws 10, which may be forced against a piece of lead by means of the clutch sleeve 11. The lower end of the sleeve is conical to conform to the reduced end 2 of the casing 1.

In order that the lead may be gripped firmly between two points, the jaws 10 are enlarged or embossed at points above their terminals as indicated at 12, and therefore when the clutch is forced into the taper of the clutch sleeve the lead will be clamped at the terminals of the jaws and at the point of enlargement. The upper end of the sleeve or body is enlarged and threaded as indicated at 13 and this threaded portion is engaged by a head 14 having a threaded body 15 which screws externally on the upper end of the clutch sleeve. The lead tube 9 is swiveled at 16 to the head 14 so when the head is rotated relative to the sleeve 11 the jaws of the clutch will be either clamped into engagement with the lead or released therefrom because of their longitudinal movement relative to the sleeve. The head 14 carries at its outer end an eraser 17 secured thereto in any suitable manner such as by the clamping ring 18 shown.

To automatically retract the working end of the clutch into the casing 1 an expansive helical spring 19 is fitted within the casing 1 and encircles the clutch. The lower end of the spring abuts against the internal shoulder 3 and the upper end engages the flange or shoulder 20 of the clutch.

To lock the clutch in its protracted position against the tension of the spring 19, a dog 21 formed on the end of the spring clip 22 is provided. The terminal of the dog projects through the casing 1 and engages in a locking groove 23 formed circumferentially with the clutch sleeve. The spring clip 22 bows outwardly from the pencil and is pivotally secured between the ears 24 by a pivot

25. To limit the retractile movement of the clutch relative to the casing 1, a shoulder 26 is formed on the sleeve of the clutch between the locking groove 23 and the shoulder 20. The shoulder 26 has a snug running fit within the casing 1 and the dog 21 will engage it to prevent the clutch slipping entirely from the casing.

With the parts in the position shown in Fig. 3, the spring 19 is compressed and exerts an upward pressure on the clutch, but the latter is held against relative movement with respect to the casing 1 by the locking dog 21. To automatically retract the clutch within the casing 1 to shield the point of the lead, the spring clip 22 is pressed inwardly which throws the dog out of engagement with the groove 23, whereupon the clutch will spring upwardly until the shoulder or flange 26 comes in engagement with the dog. The pencil is now in a position to allow carrying in the pockets without danger of breaking the point. When the clutch is protracted to expose the point of the lead, the dog 21 automatically snaps into engagement with the groove 23 to hold the lead in working position.

To reset the lead the clutch is first retracted into the casing 1 whereupon the gage fingers 7 contact with each other and close the writing end of the pencil. The jaws 10 are then opened by turning the head 14 relative to the sleeve 11 and the lead will feed downwardly to bring the terminal into engagement with the gage fingers. When in this position, the clutch is again tightened and the pencil is ready for writing when the clutch is protracted. The stops or fingers 7 form an important feature of this invention for they guard against the lead slipping entirely from the clutch when it is being reset. The double grip of the clutch jaws on the piece of lead is another feature of importance since it insures against the lead being broken and against its slipping inwardly due to the pressure brought to bear thereagainst when writing or sharpening.

To sharpen the lead the clutch is retracted as shown in Fig. 2 and the band 4 is slid downwardly causing the sharpening elements to come together. Then the clutch is forced downwardly to bring the point of the lead in contact with the sharpening faces of the sharpening elements and rotated causing a grinding action which sharpens the lead. The sharpening surfaces may be either flat or concave.

To refill the pencil with fresh lead, loosen the clutch and then in its loosened position protract the clutch until its jaws are past the gaging fingers, then insert lead and retract the clutch.

From the foregoing description taken in connection with the accompanying drawings, it will be apparent that I have provided a very practical and simple clutch pencil having automatically acting means to retract the clutch within the pencil casing, having gage fingers to determine the feed of the lead at each resetting of the point, and having means providing a double grip upon the lead.

I claim:

1. A pencil including a clutch, a casing embracing the clutch, and spring means for retracting the clutch longitudinally of the casing and means for automatically locking said spring.

2. A pencil including a clutch, a casing embracing the clutch, automatic means for locking the clutch in operative position, and spring means for retracting the clutch into inoperative position.

3. A pencil including a lead clutch, a casing embracing said clutch, means for automatically retracting the working end of the clutch within the casing, and opposed spring fingers at the writing end of the casing to check the downward feed of lead from the clutch when the latter is retracted and the lead released.

4. In a pencil, a casing, a lead clutch operatively mounted within said casing, jaws on said lead clutch for clutching the lead with its point projecting beyond the end of the clutch, means for locking the clutch in position to hold the point of the lead beyond the lower end of said casing, and means for automatically closing the lead end of said casing when the lead is retracted therein and for gaging the length of the point of the lead.

5. In a pencil, a casing, a lead clutch operatively mounted therein, means for locking the clutch in position to hold the lead point beyond the lower end of the casing, means for automatically retracting the lead within the casing when said locking means releases said clutch, and means for automatically closing the lead end of the casing when the lead point is retracted therein.

6. In a pencil, a casing, a lead clutch, operatively mounted therein to project the lead point beyond the end of the casing and to retract the point within the casing, means for locking the clutch in position to hold the lead point beyond the lower end of the casing, jaws on the clutch for clutching the lead when projected and retracted, and for unclutching the lead within the casing, a gage within the casing for gaging the length of the point of the lead when released within the casing, and means for sharpening the point of the lead while in the clutch within the casing.

7. In a pencil, a casing, a lead clutch operatively mounted therein to project the lead point beyond the end of the casing and to retract the point within the casing, means for locking the clutch with the lead pro-

jected beyond the end of the casing, automatic means for retracting the lead point within the casing when the holder is released, jaws on the clutch for clutching the lead when projected or retracted, and sharpening means mounted in said casing for sharpening the lead point while retracted within the casing.

8. In a pencil, a casing, a lead clutch operatively mounted therein to project the lead point beyond the end of the casing and to retract the lead point within the casing, a spring clip pivoted on said casing, a dog on said clip for engaging and locking said clutch with the lead point projected beyond the end of said casing, said dog being arranged to snap into engagement with said clutch under the influence of the spring action of the clip and to be withdrawn from said clutch when the clip is pressed inwardly on the side of its pivot opposite the dog.

9. In a pencil, a casing, a lead clutch operatively mounted within said clutch to project the point of the lead beyond the end of the casing and to retract the lead point within the casing, a spring pocket clip pivoted on said casing, a dog on said clip, said clutch being provided with an annular groove to be engaged by said dog under the influence of the spring action of said clip, for locking the clutch with the point projected beyond the end of said casing and for permitting turning of said clutch, said dog being arranged on the clip so that when the clip is pressed inwardly at the side of the pivot opposite the dog, the dog will disengage said groove, a lead sharpener in the lower end of said casing for engaging the lead when retracted within the casing, said clutch being adapted to be turned when retracted to sharpen the lead point.

10. In a pencil, a casing, a lead clutch operatively mounted in said casing to project and retract the lead point beyond and within the end of the casing, said clutch comprising an outer clutch member mounted within said casing, an inner tubular member slidably mounted within said outer member, the lower end of said outer member being conical, the inner tubular member being split longitudinally at its lower end, jaws on the lower ends of said split portions of the inner member, a threaded head screwing on the upper end of said outer member and engaging the upper end of said inner member for effecting relative longitudinal movement of the inner and outer clutch members when the head is turned in one direction or the other to cause said jaws to grip or release the lead.

11. In a pencil, a casing, a lead clutch operatively mounted in said casing to project and retract the lead point beyond and within the end of the casing, said clutch comprising an outer clutch member mounted within said casing, an inner tubular member slidably mounted within said outer member, the lower end of said outer member being conical, the inner tubular member being split longitudinally at its lower end, jaws on the lower ends of said split portions of the inner member, a threaded head screwing on the upper end of said outer member and engaging the upper end of said inner member for effecting relative longitudinal movement of the inner and outer clutch members when the head is turned in one direction or the other to cause said jaws to grip or release the lead when the holder is retracted within the casing.

In testimony whereof, I have hereunto set my hand at San Francisco, California, this 3d day of May, 1916.

JOHN B. ZIMDARS.

In presence of—
BALDWIN VALE.