

H. HESS.  
PENCIL.

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1,278,147.

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*Fig. 1.*

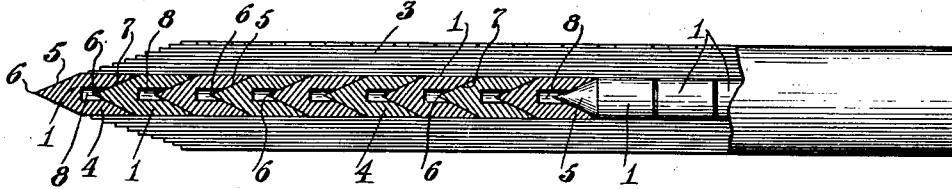


*Fig. 2.*

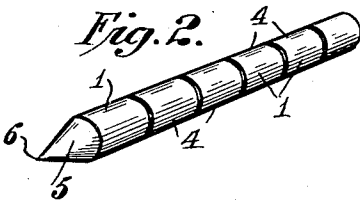


*Fig. 3.*

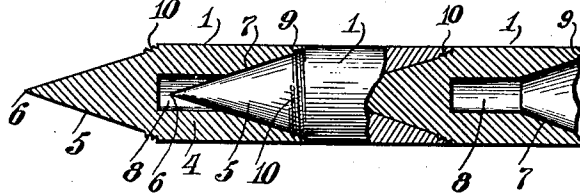


*Fig. 4.*

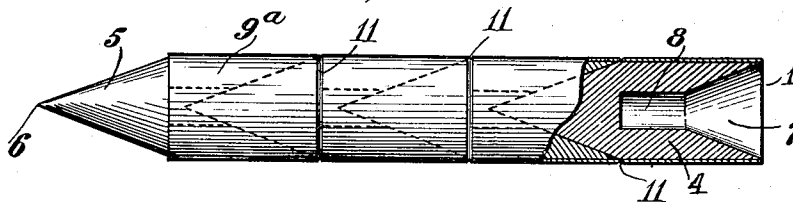


*Fig. 5.*

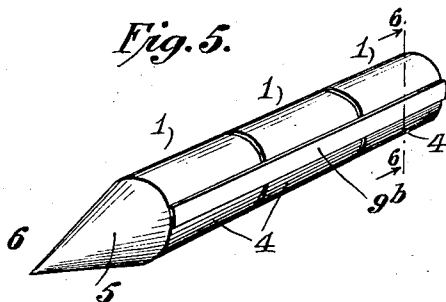
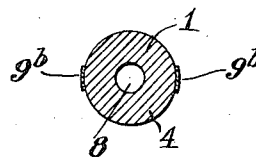


*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

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## PENCIL.

1,278,147.

Specification of Letters Patent.

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Application filed November 18, 1915. Serial No. 62,101.

### *To all whom it may concern:*

Be it known that I, HENRY HESS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Pencils, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to pencil leads or crayons and has reference more particularly to that type of lead consisting of a number of pointed sections which are disposed end to end in the pencil, so that when one section becomes dull or so worn as to be unfit for further use, it may be readily removed and a fresh section brought into use.

15 The aim of my invention is to so form the individual sections that in their assembled condition end to end they will give mutual support to each other; the extremities of the points not in use will be protected from injury; and the outer surface of the assembled sections will be substantially uninterrupted and continuous and free from depressions. A further object of the invention is to separably connect the sections together to form a composite self-holding body; whereby the application of the built-up holding body is facilitated and the sections are adapted for use in magazine or mine pencils.

20 With these ends in view my invention consists in forming in the base of each section, a socket to receive the pointed end of the next section, the parts being of such relative formation that the pointed extremities of the several sections will be maintained out of contact with the walls of the sockets, and will thereby be prevented from injury.

25 The invention consists also in forming the sections each with a cylindrical body portion, and with a conical point or end portion, the cylindrical portion of each section being provided with a conical socket in which the conical end portion of the next section engages, and the construction of the parts being such that when the sections are nested one within the other, the cylindrical body portion of one section will form a substantially uninterrupted continuation of that of the next section; whereby the several sections will mutually support each other.

30 The invention consists also in forming the

sections so that they may be nested one within the other end to end, and in so separably connecting them together into a self holding composite body that when one section wears down or becomes dull, it may be readily detached from the next section, and the fresh point of the latter exposed for use.

35 The invention consists also in the details of construction and combination of parts hereinafter described and claimed.

In the accompanying drawings:

40 Figure 1 is a longitudinal section partly in elevation through a pencil having a built up holding body inclosing assembled point sections embodying my invention.

45 Fig. 2 is a perspective view of the sections assembled end to end showing how the outer surfaces of the sections form continuations of each other.

50 Fig. 3 is a longitudinal section through a number of sections showing one form of means for separably connecting them together into a composite self holding body.

55 Fig. 4 is a side elevation partly in section showing a modified form of means for the connection of the sections.

60 Fig. 5 is a perspective view showing still another modification.

65 Fig. 6 is a transverse section on the line a-a of Fig. 5.

Referring to the drawings:

70 Referring more particularly to Figs. 1 and 2, 1, 1, etc., indicates pointed lead sections, composed as usual of suitable marking material such for instance as plumbago, graphite, and the like, which are disposed end to end within a surrounding pencil body 3. The pencil body in the present instance is built up on the sections by winding a strip of paper containing weakened lines spirally therearound, the unwinding or removal of successive portions of the strip releasing the worn point and exposing the next one for use. In accordance with my invention I form each of the sections 1 with a cylindrical body portion 4, and with a conical end portion 5 provided with a sharp writing point 5. The base of the cylindrical portion of each section is formed with a conical socket 7 ending in a cylindrical cavity 8, the socket being adapted to receive the conical end portion 5 of the next section, and the cavity being adapted to receive the pointed extremity 6 of said section. The form and relation of these parts is such that

when the several sections are assembled end to end and nested one within the other as shown in Fig. 1, the conical surface of the end portion of one section will engage and bear against the wall of the conical cavity in the next section, and the extremity of the pointed end of the first mentioned section will extend within the cavity of said next section; whereby the sharp point will be prevented from contacting with the walls of the cavity and will be thereby effectually protected from injury or from becoming dull. With the sections thus assembled, the several sections will mutually support each other by reason of the extended engagement of the interfitting conical surfaces, and the outer cylindrical portions of the sections forming continuations of each other will conjointly present a continuous and uninterrupted surface throughout the extent of the assembled section. This will enable the covering strip to be wound about the assembled sections in such manner as to produce a solid built-up body of uniform and symmetrical shape.

In order to facilitate the application of the strip in producing the built up inclosing body, it is desirable that the several sections be connected together into a self holding body, and to effect this object and at the same time enable the sections to be detached as they become worn in the use of the pencil, I prefer to adopt the construction shown in Fig. 3, where it will be seen that the outer end of the conical socket in the base of each section is provided with screw threads 9 to receive external screw threads 10 at the base of the conical end portion of the next section. The sections may be thus interlocked directly together to form an elongated self holding body, and in removing a worn section, it will be necessary to merely unscrew the same from the next section and thus expose the latter for use.

Instead of connecting the sections together by screw threads in this manner, they may be connected as shown in Fig. 4, where it will be seen that the assembled sections are inclosed in a thin tubular wrapper 9<sup>a</sup>, which is weakened at intervals, as at 11 corresponding to the joints between the sections, to permit the worn sections to be removed.

A still further method of connection may be employed as shown in Figs. 5 and 6, where it will be seen that thin strips 9<sup>b</sup> are applied to the opposite sides of the assembled sections and extend longitudinally thereof throughout the series, the strips being cemented to the cylindrical portions of the sections.

The connection of the assembled sections separably together into a self holding composite body, enables the same to be employed in magazine pencils in the same manner as the usual integral lead is employed, but with

the additional advantage that a fresh point is available when the used point becomes worn, thereby avoiding the necessity of sharpening the lead as is necessary with an integral structure.

Having thus described my invention, what I claim is:

1. A composite pencil lead consisting of a plurality of complementary pencil-point sections composed wholly of marking material nested one within another end to end so as to mutually support each other and separably connected together to form an elongated self holding body.

2. A composite pencil lead consisting of a plurality of complementary pencil-point sections composed wholly of marking material disposed end to end and separably interlocked one directly with another to form an elongated self holding body.

3. A composite pencil lead consisting of a plurality of complementary pencil-point sections composed wholly of marking material disposed end to end and separably connected one directly with another by screw threads to form an elongated self holding body.

4. A composite pencil lead consisting of a plurality of complementary pencil-point sections composed wholly of marking material nested one within another so as to mutually support each other and separably connected directly together by screw threads to form an elongated self holding body.

5. In a pencil, the combination with a plurality of pointed lead sections disposed end to end, of an inclosing body adapted to be removed in sections to expose said lead sections in succession, the base of each lead section being provided with a socket in which the point of the next section extends so that the lead sections will mutually support each other, and said lead sections being of such relative formation that the outer surface of one will form an uninterrupted continuation of the outer surface of the next section; whereby the continuous character of the outer surface of the sections will enable the outer covering to be effectually applied, and whereby the removal of the sections of the outer covering in succession will expose fresh marking points.

6. In a pencil, the combination of a plurality of pointed lead sections disposed end to end, the base of each section being formed with a socket in which the pointed portion of the next section engages along its sides so that the said sections will mutually support each other, and said parts being of such relative formation that the extremities of the points of the several sections will be maintained free of engagement with the walls of the sockets.

7. In a pencil, the combination of a plurality of pointed lead sections disposed end

to end, the base of each section being provided with a socket in which the pointed portion of the next section engages along its sides so that said sections will mutually support each other, and said sockets being provided with cavities surrounding the extremities of the points and spaced therefrom; whereby the extremities of the said points will be protected from injury.

10 8. In a pencil, the combination of a plurality of cylindrical lead sections composed wholly of marking material and having pointed ends, said sections being nested one within the other end to end and mutually supporting each other with the cylindrical portion of one section forming a substantially uninterrupted continuation of the cylindrical portion of the next section.

15 9. In a pencil, the combination of a plurality of lead sections disposed end to end and having conical pointed portions, each

of said sections being provided in its base with a conical socket in which the conical portion of the next section fits, with its conical surface engaging the conical wall of the socket; whereby the several sections will mutually support each other. 25

10. In a pencil, the combination of a plurality of lead sections consisting each of a cylindrical base portion having a conical socket therein, and a conical end portion, the said sections being adapted to be assembled end to end with the conical end portion of one section engaging within and wholly inclosed by the conical socket of the next section; whereby said sections will mutually support each other, and the cylindrical portions of the sections will form substantially uninterrupted continuations of each other. 35

In testimony whereof, I have affixed my signature. 40

HENRY HESS.