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PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

An Improved Pencil

We, LI HUNG and CHAO FU CHIN, both of Chinese nationality, and both of 37—9, Chung Shan Road, North, Section 2, Taipei, Taiwan, China, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to pencils. It has for its object to provide a pencil in which a point sharpening is unnecessary as it is with normal wooden body pencils. Another object is to provide a pencil in which the point is not broken easily, as is common with screw-type propelling pencils, but if broken, a new writing point is obtainable without sharpening, and a further object is to provide a pencil which can be produced cheaply, for example made mainly of synthetic plastics materials.

According to this invention, there is provided a pencil comprising a tubular casing having a front end and a rear end; a plurality of cartridge writing units positioned in end-to-end position in said casing, each of said writing units having a pre-sharpened lead in its front end, the lead of the front-most writing unit projecting out of the front end of said casing; each of said writing units being provided with a recess in its rear end; the lead of each writing unit except the front-most writing unit resting in the recess of the writing unit immediately in front of it; and two sleeves of substantially the same diameter to receive the cartridge writing units in snug fit and being mounted at the front and rear ends of said casing respectively.

The fit of the cartridges and sleeves may be sufficient to prevent rearward displacement, but preferably at least one sleeve is formed with an inturned part or parts, arranged to engage behind a shoulder formed on a cartridge to prevent rearward move-

ment of the line, the said sleeve being made of a resilient or yielding material.

The rear sleeve, for example, may have an inturned lip at its front end.

The arrangement according to the invention enables a broken lead to be replaced easily. The front cartridge is pulled out and its front end or the front end of a new cartridge inserted into the cavity of the rear cartridge and the line then pushed forwardly, so that the lead of the next cartridge is in the in-use position.

A preferred embodiment of pencil constructed according to the invention is illustrated in the accompanying drawings to which reference will now be made and in which:—

Figure 1 is a side perspective view of the pencil,

Figure 2 is a longitudinal sectional view taken through the pencil body, and

Figure 3 is a sectional view of the cartridges.

As shown in the drawings, each cartridge referenced generally 1 is of a plug-like form and has a front end 1a of smaller width than a rear end 1b, the front end having an undercut recess in which the rear end of a pre-sharpened lead 2 is held. A cavity extends into the cartridge from the rear, this cavity consisting of a rear end 1c of a diameter greater than a front part 1d, so that a lead 2 of one cartridge can be inserted into the cavity of another cartridge to be accommodated in the front part 1d thereof, whilst part of the front end of the said one carriage is received in the cavity part 1c. This is shown in Figure 3.

The holder comprises a tubular body or holder 3a which is fitted at the front with a sleeve 3b and at the rear with a sleeve 3c. The sleeve 3b is formed so that by a front part 3b' it holds and guides the rear part 1b

[Price 4s. 6d.]

SPECIFICATION AMENDED - SEE ATTACHED SLIP

of a cartridge. The rear sleeve 3c is formed to receive snugly the rear part 1b of a cartridge and also has an inturned lip 3d at its front to provide a guide for the rear portion of a cartridge as it enters the body 3a. The sleeves 3b and 3c are of a resilient material and the lip 3d prevents rearward movement of the cartridges when writing by engaging the shoulder formed by the rear end of a cartridge. The front sleeve also serves to grip the front cartridge.

As will be seen from the drawings, the pencil is loaded with a number of cartridges which are interfitted, the lead 2a of the leading one being exposed for use. When this lead 2a is blunted or broken, the leading cartridge is pulled out from the sleeve 3b and its front end is inserted into the hollow 1c of the last cartridge and is pushed so that the interfitted line moves forwardly until the now leading lead is in the position for writing.

WHAT WE CLAIM IS:—

1. A pencil comprising a tubular casing having a front end and a rear end; a plurality of cartridge writing units positioned in end-to-end position in said casing; each of said writing units having a pre-sharpened lead in its front end, the lead of the front-most writing unit projecting out of the front end of said casing; each of said writing units being provided with a recess in its rear end; the lead of each writing unit except the front-most writing unit nesting in the recess of the writing unit immediately in front of it; and two sleeves of substantially the same diameter

to receive the cartridge writing units in snug fit and being mounted at the front and rear ends of said casing respectively.

2. A pencil as claimed in Claim 1, wherein one sleeve is formed with an inturned part or parts, arranged to engage behind a shoulder formed on a cartridge writing unit to prevent rearward movement of the line of units, the one sleeve being made of a resilient or yielding material.

3. A pencil as claimed in any one of the preceding claims, wherein each cartridge writing unit comprises a plug-like member with a short writing lead held at its front, and a front end part of smaller diameter than its rear end part, said recess having a rear end of a diameter greater than a front part thereof, the construction being such that the front end of a cartridge writing unit can be fitted into the recess of another cartridge, with the lead in the front part of the said recess and a part of said front end part in said rear end of the recess.

5. A pencil as claimed in Claims 1—3, having a cartridge writing unit substantially as herein described with reference to the accompanying drawings.

6. A pencil with lead cartridges substantially as herein described with reference to the accompanying drawings.

KINGS PATENT AGENCY LIMITED,
By B. T. KING, Director. A.I.Mech.E.,
Registered Patent Agent,
146a, Queen Victoria Street,
London, E.C.4.,
Agents for the Applicants.

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WHAT WE CLAIM IS:—

1. A pencil comprising a tubular casing having a front end and a rear end; a plurality of cartridge writing units positioned in end-to-end position in said casing, each of said writing units having a pre-sharpened lead in its front end, the lead of the front-most writing unit projecting out of the front end of said casing; each of said writing units being provided with a recess in its rear end; the lead of each writing unit except the front-most writing unit nesting in the recess of the writing unit immediately in front of it; and two sleeves of substantially the same diameter

to receive the cartridge writing units in snug fit and being mounted at the front and rear ends of said casing respectively.

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Registered Patent Agent,
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Agents for the Applicants.

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