

# PATENT SPECIFICATION



Application Date: May 10, 1932. No. 13,407/32.

399,592

„ „ June 13, 1932. No. 16,666/32.

One Complete Left: May 10, 1933.

Complete Accepted: Oct. 12, 1933.

PROVISIONAL SPECIFICATION.

No. 13,407, A.D. 1932.

## Improvements in or relating to Pencil Holders.

We, FREDERICK CHARLES BINA and FRANCIS FREDERICK BARREY, both German Citizens, both of 231, 233 and 235, Liverpool Road, Islington, London, N.1, do hereby declare the nature of this invention to be as follows:—

This invention relates to pencil or lead holders and has for its object to provide an improved device of this type for use with thin leads and without screw propelling mechanism.

The lead holding mechanism used in the present invention is of the spring jaw type having a sliding conical sleeve adapted to engage the lead gripping jaws on the return movement of a spring controlled operating knob.

According to the present invention the conical sleeve—or sleeve having a conical bore—is arranged to slide axially in a member fixed on or forming the lower end of a cylindrical member fixed in the casing of the pencil or it may contain the end of the spring and be screwed in or fixed in the lower or pointed portion of the pencil, also it may form a screwed ferrule connecting the pointed portion of the casing with the main portion thereof.

The sleeve containing member is preferably open-sided to enable the parts to be assembled, that is to enable the positioning of the sleeve in the sleeve containing member.

The spring jaws for gripping the lead and propelling it towards the point of the pencil are formed as spring members held normally open, and are arranged to pass freely through an opening in the lower end of the sleeve containing member, such lower end being formed with in-turned shoulders arranged to limit the downward movement of the sliding conical sleeve.

The sliding sleeve is conical in its inner surface or bore, such conical surface being adapted to engage a conical shoulder on the spring jaws which form the lead propeller.

The spring jaws of the lead propeller

have a cylindrical stem on which is supported a spiral spring arranged to hold the operating knob of the pencil in its upper position, and extends into and carries at its inner end a tubular member forming a lead delivery outlet for a refill magazine formed in the upper portion of the pencil.

The refill magazine is in the form of a tube extending to and fixed in the sliding operating knob of the pencil.

The operating knob of the pencil is preferably a cylindrical member sliding freely on the outside of the upper portion of the barrel or casing of the pencil, and is provided with a cap which can be removed to give access to the magazine, and the cap of the knob when in position thereon may be arranged to hold in position the flange or ring of a pocket clip.

In order to prevent jamming together of the leads in the outlet of the magazine, and to ensure them entering the feed outlet one at a time, at the entrance of such outlet there is provided a radial groove of which the bottom is inclined towards the axis of the pencil.

The extreme point of the pencil is formed as lead gripping or holding jaws, and may be made of metal or other springy material and formed by making one or more radial slits in the point extending to the bore which is arranged to fit the leads tightly.

In the normal position of the parts of the pencil the spring forcing the knob upwards also forces the conical portion of the propelling jaws into the conical bore of the sliding sleeve, thereby causing the jaws to grip the lead which has been dropped by gravity into the rear portion of the jaws from the magazine. When the knob of the pencil is pressed downwards, the conical sliding sleeve being jammed on the conical portion of the lead feeding jaws moves down with the jaws until it is arrested by the slide arresting shoulders, this movement of the jaws results in the lead being forced the desired

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amount through the gripping jaws in the point of the pencil casing, and immediately afterwards the feeding jaws are freed from the sliding sleeve and so are free to open by their own elasticity. Upon release of the knob feeding jaws are free to move upwards by the knob returning spring and re-engage the lead at a posi-

tion further in the rear ready for the next feeding operation.

Dated this 10th day of May, 1932.

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### PROVISIONAL SPECIFICATION.

No. 16,666, A.D. 1932.

### Improvements in or relating to Pencil Holders.

We, FREDERICK CHARLES BINA and FRANCIS FREDERICK BARREY, both German Citizens, both of 231, 233 and 235, Liverpool Road, Islington, London, N.1, do hereby declare the nature of this invention to be as follows:—

This invention relates to pencil or lead holders and has for its object to provide an improved device of this type for use with thin leads and without screw propelling mechanism.

The lead holding mechanism used in the present invention is of the spring jaw type having a sliding sleeve adapted to engage the lead gripping jaws on the return movement of a spring controlled operating knob.

According to the present invention the sleeve—is arranged to slide axially in a member fixed on or forming the lower end of a cylindrical member fixed in the casing of the pencil or it may contain the end of the spring and be screwed in or fixed in the lower or pointed portion of the pencil, also it may form a screwed ferrule connecting the pointed portion of the casing with the main portion thereof.

The sleeve containing member is preferably open-sided to enable the parts to be assembled, that is to enable the positioning of the sleeve in the sleeve containing member.

The spring jaws for gripping the lead and propelling it towards the point of the pencil are formed as spring members held normally open, and are arranged to pass freely through an opening in the lower end of the sleeve containing member, such lower end being formed with in-turned shoulders arranged to limit the downward movement of the sliding sleeve. The sliding sleeve has a straight bore and is internally flanged at its rear end to prevent the passage through it of the jaws of the lead gripper. The bore of the sleeve is sufficiently small at its front end to engage a conical shoulder on the spring jaws when they contain a lead

The spring jaws of the lead propeller have a cylindrical stem on which is supported a spiral spring arranged to hold the operating knob of the pencil in its upper position, and extends into and carries at its inner end a tubular member forming a lead delivery outlet for a refill magazine formed in the upper portion of the pencil.

The refill magazine is in the form of a tube extending to and fixed in the sliding operating knob of the pencil.

The operating knob of the pencil is preferably a cylindrical member sliding freely on the outside of the upper portion of the barrel or casing of the pencil, and is provided with a cap which can be removed to give access to the magazine, and the cap of the knob when in position thereon may be arranged to hold in position the flange or ring of a pocket clip.

In order to prevent jamming together of the leads in the outlet of the magazine, and to ensure them entering the feed outlet one at a time, at the entrance of such outlet there is provided a radial groove of which the bottom is inclined towards the axis of the pencil.

The extreme point of the pencil is formed as lead gripping or holding jaws, and may be made of metal or other springy material and formed by making one or more radial slits in the point extending to the bore which is arranged to fit the leads tightly.

In the normal position of the parts of the pencil the spring forcing the knob upwards also forces the conical portion of the propelling jaws into the bore of the sliding sleeve, thereby causing the jaws to grip the lead which has been dropped by gravity into the rear portion of the jaws from the magazine. When the knob of the pencil is pressed downwards, the sliding sleeve being jammed on the conical portion of the lead feeding jaws moves down with the jaws until it is arrested by the slide arresting shoulders. This movement of the jaws results in the

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lead being forced the desired amount through the gripping jaws in the point of the pencil casing, and immediately afterwards the feeding jaws are freed from the sliding sleeve and so are free to open by their own elasticity. Upon release of the knob the feeding jaws are free to move upwards by the knob returning spring and re-engage the lead at a posi-

tion further in the rear ready for the next feeding operation. 10

Dated this 13th day of June, 1932.

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For the Applicants.

## COMPLETE SPECIFICATION.

### Improvements in or relating to Pencil Holders.

We, FREDERICK CHARLES BINA and FRANCIS FREDERICK BARREY, both of 231, 233 and 235, Liverpool Road, Islington, N.1., both German Citizens, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to pencil or lead holders and has for its object to provide an improved device of this type for use with thin leads and without screw propelling mechanism.

The lead holding mechanism used in the present invention is of the spring jaw type having a sliding sleeve adapted to engage the lead gripping jaws on the return movement of a spring controlled operating knob of the lead feeding mechanism. Heretofore it has been proposed to make the inside of the sliding sleeve conical and to mount the sleeve directly in the central portion of the body supporting or forming member of the pencil.

According to the present invention the sleeve is arranged to slide axially in a member fixed on or forming the lower end of a cylindrical member fixed in the casing of the pencil or the said member may contain the end of the spring and be screwed in or fixed in the lower or pointed portion of the pencil, also it may form a screwed ferrule connecting the pointed portion of the casing with the main portion thereof.

A manner of carrying out the invention is illustrated by the accompanying drawings, wherein Fig. 1 is a general sectional elevation of the complete pencil, Fig. 2 is a sectional view of the point portion of Fig. 1 on an enlarged scale, Fig. 3 is an inverted plan of Fig. 2 with the point removed, Fig. 4 is an elevation on an enlarged scale of the ferrule member connecting the point of the pencil to the barrel portion, and Fig. 5 is an elevation and Fig. 6 a plan on an enlarged scale of a spring clip tube

arranged in the point of the pencil.

In these drawings *a* is the barrel or main casing of the pencil, and *b* the point portion thereof which is connected in the known manner to the barrel *a* by a screwed ferrule *c*. 65

The upper portion and action of the pencil are of the known kind having lead gripping jaws *d* normally held open by their springy nature and connected by a screwed portion *d1* to a slidable cylindrical member *d2* having a central bore for the passage of the leads, and carrying at its upper end a tubular magazine *d3* containing the leads and provided at its upper end with a head or knob *d4* by which the jaws *d* can be pressed downwards against a return spring *e* to enable them to spring open to release a lead *k*. In the present example the head *d4* is a spring grip fit on the split upper end of the tubular magazine member *d3*, to enable the refilling of the magazine. 70 75

The head *d4* in the present example slides in a tubular portion *a1* secured in the top of the barrel *a* and securing in position a pocket clip *f* in the usual manner. 80 85

The spring *e* fits freely over the shanks of the jaws *d* and one end of it bears against a shoulder *c1* in the ferrule *c* while its other end bears against the slidable cylindrical member *d2*. 90

The ferrule or member *c* in the present example has at its lower end a cylindrical extension or member *c2* in which is formed a cylindrical bore *c3* in which slides axially a sleeve *h* adapted to engage the lead gripping jaws *d* and close them on the lead *k*. The upward movement of the sleeve *h* is limited by a shoulder *c4* formed at the top of the bore *c3* and downward movement by the inturned flange *c5* formed at the lower end of the bore *c3*. The sleeve *h* is inserted in the bore in the extension *c2* of the ferrule member *c* through a lateral opening *c6* formed by cutting away a portion of the sides of *c2*. 95 100 105

The sleeve *h* is provided at its upper 110

end with an inturned flange *h1* to prevent the passage through it of the jaws *d*, the said jaws being free to move through the lower end of the member *c2* when the sleeve *h* is arrested by the inturned flange *c5* in the member *c2*.

In order to prevent jamming together of the leads in the outlet at the lower end of the magazine *d3* which is usually the case when such magazines are provided with a conical opening leading to the outlet, means are provided for ensuring the leads entering the bore in the member *d2* forming the base of the magazine, one at a time. In the present example means are provided for ensuring the leads entering the outlet one at a time by providing a helical pathway *d6* leading to the central bore in the member *d2*.

The extreme portion of the point *b* of the pencil may be formed as lead gripping or holding jaws, and may be made of metal or other springy material and formed by making one or more radial slits in the point in the known manner.

In the present invention as illustrated in order to provide means for preventing the leads sticking to the jaws and being returned with them, in addition to the usual split point of *b3* there is provided a tube *m* having a flange *m1* by which it is held by a screwed gland *b3* forming a portion of the point *b* of the pencil, such tube *m* having split portions *m2* arranged to form spring gripping portions engaging the lead *k* and preventing its return with the jaws *d* by the spring *e*.

During the use of the pencil when the knob thereof is pressed downwards, the sliding sleeve *h* is carried by the jaws *d* downwards until it is arrested by the slide arresting shoulders *c5*. This movement of the jaw results in the lead *k* being forced the desired amount through the gripping jaws *m2* of the fixed tube *m* in the point *b* of the pencil casing, and immediately upon releasing pressure on the knob *d4* the feeding jaws by the action of the spring *e* are freed from the sliding sleeve *h* and so are free to open by their own elasticity. Upon release of the knob or head *d4* the feeding jaws *d* are free to move upwards by the spring *e* which forces the knob *d4* upwards and also forces the propelling jaws *d* upwards carrying with them the sliding sleeve *h* until the flange *h1* thereof engages the shoulder *c4* of the fixed member *c*, further upward movement of the jaws *d* then causes the conical portions of them to engage the lower edge of the arrested sleeve *h* thereby causing the jaws *d* to grip the lead *k* at a position further in

the rear ready for the next feeding operation.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A pencil or lead holder of the spring jaw type having a sliding sleeve adapted to engage the lead gripping jaws on the return movement of a spring controlled operating knob, characterised in that the sleeve is arranged to slide axially in a member extending from or forming the lower end of a cylindrical member fixed in the casing of the pencil.

2. A pencil or lead holder in accordance with claim 1, characterised in that the fixed member contains the end of the spring and is screwed into or fixed in the lower or pointed portion of the pencil.

3. A pencil or lead holder in accordance with claim 2, characterised in that the fixed member forms the screwed ferrule frequently used for connecting the pointed portion of the casing with the main portion thereof.

4. A pencil or lead holder in accordance with claim 1, characterised in that the sliding sleeve slides in a cylindrical box in the lower end of the fixed member and is introduced therein laterally through a side opening.

5. A pencil or lead holder in accordance with claim 1, characterised in that the sliding sleeve has a straight bore and is internally flanged at its rear or upper end to prevent the passage through it of jaws of the lead gripper.

6. A pencil or lead holder in accordance with claim 1, and having a magazine of which the lower end has a central outlet delivering leads to the jaws of the pencil, characterised in that the lower end of the magazine has a helical pathway leading to the central bore.

7. A pencil or lead holder in accordance with claim 1, characterised in that, in the bore in the rear of the point of the pencil, there is fixed a tube containing a spring grip portion which engages the lead and prevents its return by the open jaws should it stick therein during their return movement by the spring.

8. The improved pencil holder substantially as described.

Dated this 10th day of May, 1933.

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[This Drawing is a reproduction of the Original on a reduced scale.]

