PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Improvements in the Manufacture of Pens.

We, LA PLUME D'OR, a company constituted according to the laws of the French Republic, and LOUIS BADOIS, a French citizen, of 212bis, Boulevard Pereire, both of 63, rue des Archives, Paris, France, 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 a method of making pens, whereby, at a comparatively low cost of production, pens are obtained possessing the same qualities as the gold pens in general use, that is to say which are not attacked, in any appreciable way, either by atmospheric influence, or by inks; which do not cause decomposition of any ink; which possess an adequate flexibility; and, lastly, which wear with extreme slowness.

These different conditions must be so carried out that the pen may be used for a very long time without any appreciable change in its qualities.

The pen forming the subject of this invention comprises a body made of silver, a metal which, after gold, is the least sensitive to atmospheric action; but pure silver being a comparatively soft metal, and quickly tarnishing under the action of the traces of sulphur always present in the air, must be employed in well defined conditions.

In order to obtain the requisite elasticity, we employ an alloy of silver with antimony, or with any other metal imparting to it the requisite elasticity. The presence of a certain amount of antimony, in particular, gives to the pen the elastic flexibility, and the alloy is very slightly attackable by atmospheric influence. On the other hand, the alloy employed must therefore contain as little copper as possible, as this metal has the property of decomposing certain inks.

An appropriate alloy which has given advantageous results is one composed of about:

96% of silver,
3% of antimony,
1% of copper, or less.

Resistance to wear of the silver pen, thus constituted, would not be sufficient. To improve it, we provide, at the end of the nib, a point of an alloy of iridium, such as those used for gold pens. This point is finished off according to the processes usual in the manufacture of gold pens, to give it, at the same time as the form of point desired, the qualities of fineness and smoothness.

The silver body of the pen is brought to its final form by any of the processes now in use; but in this form it would still not present sufficient resistance to external agents (ink, atmospheric influence) and, in particular, to the tarnishing due to the sulphur.

The body of the pen being finished off, it is covered over with a suitable protective coating, which may, for instance, be constituted, either by deposition (electrolytic, or other) of fine gold, or by superficial sulphuration of the metal by any of the well known processes, so as to protect it against any ulterior action, or by a suitably selected varnish.

A simple way of carrying out this sulphuration, which is indicated merely by way of example, and is non-limiting, consists simply in dipping the pens, for a sufficient time, into a solution of polysulphides of potassium; a sufficient sulphuration is thereby produced on the surface of the metal as will protect the pen against the ulterior action of the ink and from atmospheric influence. As baths, we may employ salts, such as solutions of multiple polysulphides. This operation being effected after the pen has

received its final form, all the parts of the pen are protected, even the interior of the slit and the eye. In this way the pen may be considered as practically unattackable by reason, on the one hand, of the protection due to the superficial coating and, on the other hand, to its own composition.

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 pen, hereby characterized that its body is made of an alloy in which silver predominates, other components, such as antimony, being added to this metal to impart to it special qualities of elasticity and resistance, and exempt, as far as possible, from large quantities of copper so as to avoid decomposition of the inks.

2. A pen, as under Claim 1, hereby characterized that its body is made of an alloy containing 96% of silver, 3% of antimony, and less than 1% of copper.

3. A pen, as under Claim 1, characterized hereby that, at the end of the nibs of the silver pen, there are soldered points (in themselves well known) of an alloy of iridium, for instance.

4. A pen, as under Claims 1 and 3, hereby characterized that, upon the silver body, there is deposited, after the finishing off of the pen, a protective coating unattackable by atmospheric influence and inks, constituted either by a covering of gold (electrolytic for instance), or by a superficial sulphuration, or by a suitable varnish.

Dated this 3rd day of November, 1924.

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