

UNITED STATES PATENT OFFICE

ADOLF FISCHER, OF NEW YORK, N. Y., AND PAUL FISCHER, OF TOTTENHAM, LONDON, ENGLAND, ASSIGNORS TO EAGLE PENCIL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE

PROCESS FOR MANUFACTURING RODS FROM PLASTIC MATERIALS

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This invention relates to a process for the manufacture of rods made from plastic material and particularly such rods as are used in the manufacture of lead pencils.

The principal object of the invention is to provide an improved composition of elements by reason of which it is possible to produce a pencil lead having greater tensile strength and smoother writing qualities than was heretofore possible.

In connection with the manufacture of such rods, up to the present time clay, loam or other earthy matter and graphite were ground in water, the mass was pressed moist, or if it was dry, it was first moistened and kneaded, whereupon the mass was drawn into threads, in presses, and laid out on boards for drying, whereupon it was cut, packed in pots and burned. Finally the finished rods were boiled in fats. Such process was cumbersome. Moreover, although Ceylon graphite is a well-known product having characteristics which render its use desirable in the manufacture of pencil leads, it was not practical to do so under the process heretofore known, for the reason that it proved difficult to press the same together with clay, and to lay same out. Furthermore, the additional substances used up to the present time in connection with the working of graphite, such as tannin (tannic acid) alum or other tanning materials, left in the rods, after the burning, charring residues which had a scratching action, thus reducing the good writing qualities of the rods.

We have discovered that if a sulphonated oil such for instance as Turkey red oil is added to a mixture of clay and graphite, either before or during the kneading and pressing of the mass, it is entirely practical to use Ceylon graphite, since the addition of the sulphonated oil makes it possible to press and lay out the composition perfectly, because the addition of the oil causes a more perfect combination of the more desirable

Ceylon graphite with the clay than was heretofore possible. Not only this, but, by reason of the fact that the sulphonated oil mixes readily with water, it is necessary to use only a comparatively small quantity of such oil, the additional moisture required being supplied by the use of water. Moreover, by the addition of a sulphonated oil to the mixture, the important advantage is gained that after the rods are burned they become very mild and soft, without any loss of strength. The Turkey red oil during the burning imparts to the graphite its fatty character, so that special tanning materials are no longer necessary and the final product is entirely free from any scratching residues.

For instance, there is added to the mass consisting of earthy matter and graphite, either prior to or during the kneading and pressing, an addition of 30% in weight of Turkey red oil. The mass is thereupon, as customary, laid out for drying in thread form, is cut, packed in pots and burned. The rods made in this manner show much better quality than those made in accordance with the processes hitherto used.

We claim:

1. A plastic rod for the manufacture of lead pencils, composed of a mixture of earthy matter, graphite, and a sulphonated oil.

2. A plastic rod for the manufacture of lead pencils, composed of a mixture of earthy matter, graphite, and Turkey red oil.

3. A plastic rod for the manufacture of lead pencils as set forth in claim 2, the Turkey red oil being in the proportion by weight of thirty percent of the mass.

4. The process for the manufacture of plastic rods for lead pencils which consists in combining earthy matter, graphite, and a sulphonated oil in predetermined proportions, and kneading and burning the mass.

5. The process for the manufacture of plastic rods for lead pencils which consists in combining earthy matter, graphite, and Tur-

key red oil in predetermined proportions, and kneading and burning the same.

6. The process for the manufacture of plastic rods for lead pencils as set forth in claim 5, in which the Turkey red oil is added in the amount of thirty percent by weight of the mass.

In testimony whereof, I have signed my name to this specification.

ADOLF PISCHEL.

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PAUL PISCHEL.

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