

(No Model.)

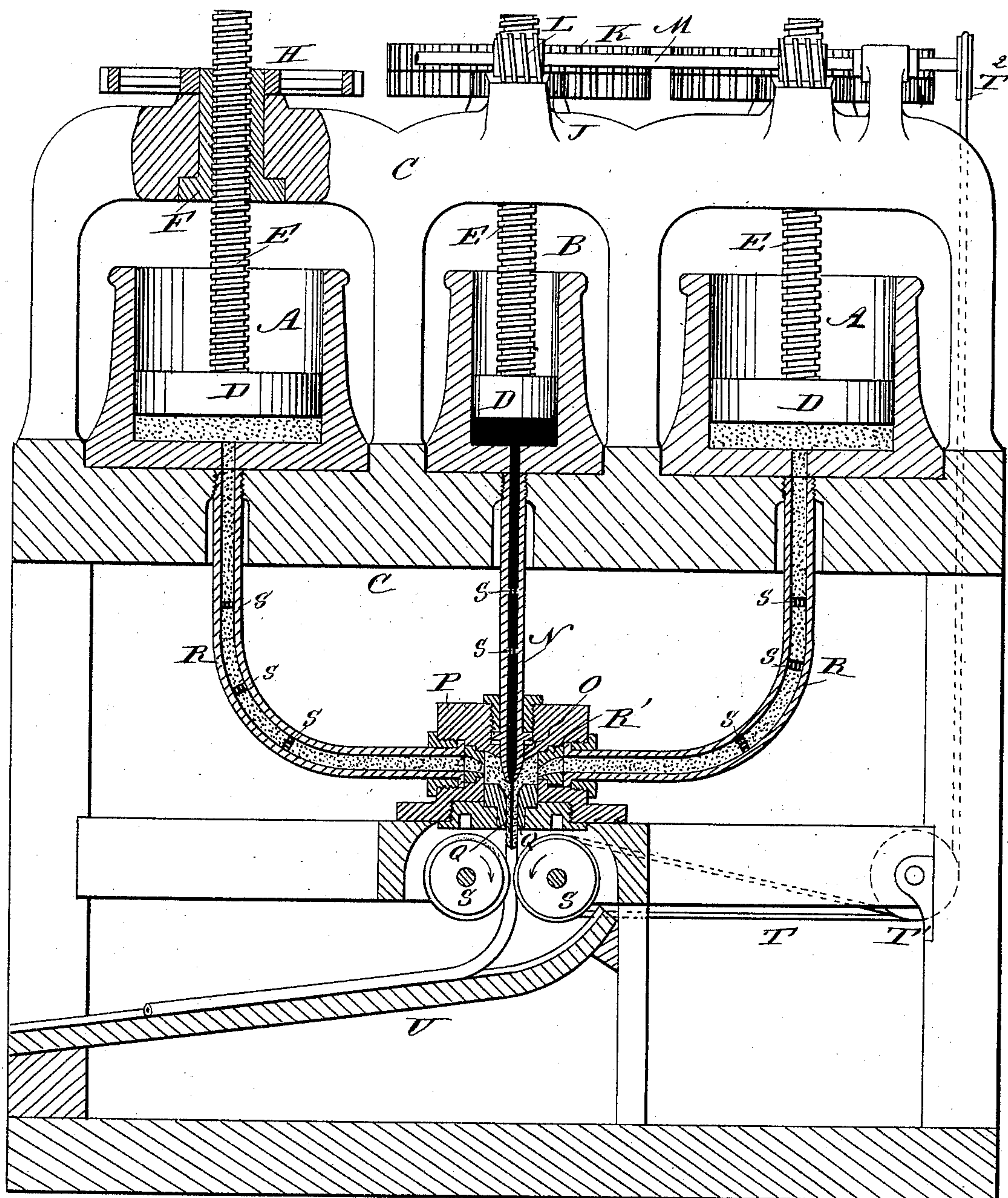
P. E. GONON.

MANUFACTURE OF LEAD PENCILS.

No. 277,707.

Patented May 15, 1883.

Fig. 1



WITNESSES:

C. Neveux

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Fig. 2



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MANUFACTURE OF LEAD-PENCILS.

SPECIFICATION forming part of Letters Patent No. 277,707, dated May 15, 1883.

Application filed March 9, 1883. (No model.)

To all whom it may concern:

Be it known that I, PAUL E. GONON, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Lead-Pencils, of which the following is a full, clear, and exact description.

The object of my invention is to provide certain new and useful improvements in the manufacture of lead-pencils, whereby the same can be produced at a considerably reduced price in relation to the present cost of making them.

The invention consists in a pencil provided with a central marking-core surrounded by a casing of wood fiber or analogous material pressed around the core in a plastic or semi-fluid state.

The invention also consists in a machine for making the above pencil by forming the core and pressing the plastic or semi-fluid material around the core immediately after the same has been formed, all as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a cross-sectional elevation of my improved machine for making lead-pencils, and Fig. 2 is a plan view of one of the dies in the tubes through which the wood pulp or covering mass is conducted.

The cylindrical receptacles A A B, open at the top and provided with a central aperture at the bottom, are arranged on the bottom of a frame, C. The cylindrical vessel B is smaller than the vessels A, and is arranged between them. Each vessel contains a close-fitting plunger, D, attached to a vertical screw-spindle, E, each of which passes through a nut, F, in the top of the frame, on each of which nuts a cog-wheel, H, is mounted to engage with the pinion J on the same shaft with a cog-wheel, K, which is operated by a worm, L, on a horizontal driving-shaft, M, which is operated from a suitable motor in any suitable well-known manner, whereby by turning the said shaft M the worms L will turn the wheels K, which turn the pinions J on the same shaft therewith, and the said pinions J turn the wheels H, whereby the nuts F will be turned

and the screw-spindle E and piston D forced downward. From the bottom of the middle cylindrical vessel, B, a tube, N, leads downward, and is provided at its end with a tapered nozzle, O, within a recess in a block, P, which block is provided in its bottom with a tubular downward opening, Q. Curved tubes R extend from the bottoms of the said cylindrical vessel A to the block P and terminate in nozzles R', which have their inner openings in the sides of the recess in the block P. Directly below the block P two grooved rollers or wheels, S, are provided, of which one is rotated by a belt, T, passing over a pulley, T', and over a pulley, T², at the end of the shaft M. The rollers or wheels S are placed so far apart that the finished pencil can just pass between them. Below the wheels or rollers S an inclined platform, V, is arranged for receiving the finished lead-pencils. The circumference of each roller S is exactly equal to the desired length of a pencil, and one of the rollers is provided in its periphery with the stamp of the factory.

Black lead, colored lead, or any other material that is to form a core or marking substance of the pencil, is filled in a plastic or semi-fluid state into the cylinder B. Wood pulp, papier-maché, wood mixed with glue and other adhesive materials, soapstone pulp, or any other suitable mass that can be used as a substitute for wood, is placed in a plastic or semi-fluid state into the cylinders A, and the machine is then operated. The black lead or other colored marking material is forced through the tube N and ejected at the nozzle R, as a rod of the desired thickness of the core of the pencil to be made. At the same time the wood mass, paper-pulp, or other like material in the cylinders A is forced through the pipes R and the nozzles R' into the opening in the block P, and forms a cylindrical casing around the freshly-pressed core of the pencil. The core and its surrounding are then together pressed out of the bottom opening, O, of the block P, and passed between the rollers S, which draw the plastic freshly-made pencil downward upon the inclined chute or platform U, where it is permitted to harden, and is then cut into pieces of the desired length. While passing between the rollers S the name, stamp

of the factory, &c., are pressed into the pencil for every pencil-length.

In the tubes R and N, I have arranged a series of transverse dies, S, short distances from each other, which dies S are provided with a series of perforations or apertures, through which the wood pulp and the coloring material are forced, and will pass through the said dies as thin cords or strands, which immediately mix, and then are forced through the next die, and so on, whereby all large pieces of wood, &c., will be thoroughly disintegrated, the lumps will be broken, and the wood pulp or the coloring mass will be subdivided very finely, and will be of a uniform consistency.

Pencils made in the manner above described can be made much cheaper than pencils made by the usual method, for the expensive wood coating used in pencils heretofore can be dispensed with, and any quality of wood can be ground to pulp and used for forming the casing of the core or marking substance. If desired, the leads can be formed in the usual manner and then the plastic covering substance pressed around the same in the manner described.

The improved pencil can be made circular, hexagonal, square, triangular, &c., in cross-section, can be colored any desired color, have cores of any desired thickness, and is in every respect fully equal if not superior to ordinary pencils.

In the place of making the marking-lead or marking substance of the pencil of one color, it can be made of two or more, the receptacle B, its plunger D, and the tube N being subdivided into as many compartments as there are to be colors, each compartment containing a different color, so that when the marking substance is pressed from the lower end of the tube N it will be composed of several colors. The marking substance can then be surrounded by the wood pulp in the manner previously described. One pencil can thus be used for making marks of different colors, by turning the pencil so that one or the other color only can come in contact with the paper.

If desired, colored marking substance can be placed in the cylinders A A and pressed through the tubes R, in place of wood pulp. For instance, the middle of the pencil might be made of red coloring material and the covering of the same might be made of blue, so that a red mark could be made with the middle of the pencil and a blue with the covering or casing of the same, and in the same manner different colors can be combined.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. As an improved article of manufacture, a

pencil made substantially as herein shown and described, and consisting of a marking-core surrounded by material pressed around the said core in a plastic or semi-fluid state, as set forth.

2. As an improved article of manufacture, a lead-pencil constructed with a marking-core having two or more colors arranged in parallel strips throughout the entire length of the pencil, substantially as herein shown and described, and for the purpose set forth.

3. A machine for making pencils, constructed with a device for pressing the core for the pencils, combined with devices for pressing the coating of plastic or semi-fluid substance around the core, substantially as herein shown and described, and for the purpose set forth.

4. In a machine for making pencils, the combination, with the device for pressing a marking-core for pencils, of devices for pressing a plastic or semi-fluid substance around the said core, and of devices for pressing a stamp into the freshly-made pencil, substantially as herein shown and described, and for the purpose set forth.

5. In a machine for making pencils, the combination, with the vessels A A B and the tubes N R R, of a block, P, provided with a cavity in which the tubes N R R terminate, substantially as herein shown and described, and for the purpose set forth.

6. In a machine for making pencils, the combination, with the vessels A A B and the tubes N R R, of a block, P, provided with a cavity in which the tubes N R R terminate, and of the cylindrical aperture Q, extending from the cavity to the bottom of the block, substantially as herein shown and described, and for the purpose set forth.

7. In a machine for making pencils, the combination, with the vessels A A B and the tubes N R R, of a block, P, provided with a cavity in which the tubes N R R terminate, of the cylindrical aperture Q, extending from the cavity to the bottom of the block, and of the rollers S S, between which the freshly-made pencils pass, one of the said rollers being provided with the stamp of the factory or works in its periphery, substantially as herein shown and described, and for the purpose set forth.

8. In a machine for making pencils, the combination, with the vessels A A B and the tubes N R R, of the block P and the nozzles O R', projecting into a cavity in the block, substantially as herein shown and described, and for the purpose set forth.

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Witnesses:

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