

No. 781,557.

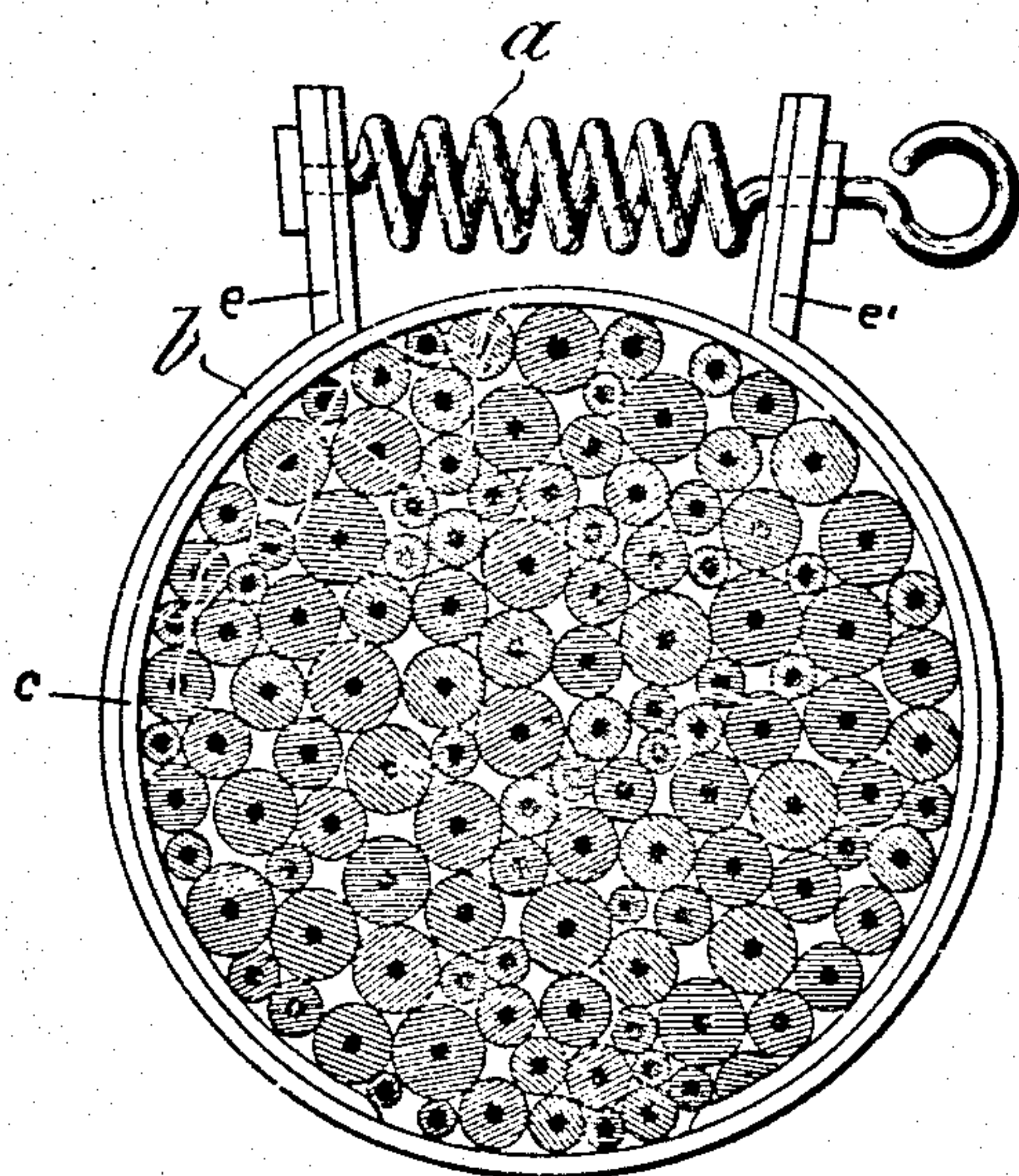
PATENTED JAN. 31, 1905.

CARL RITTER VON SCHEMNITZKY.

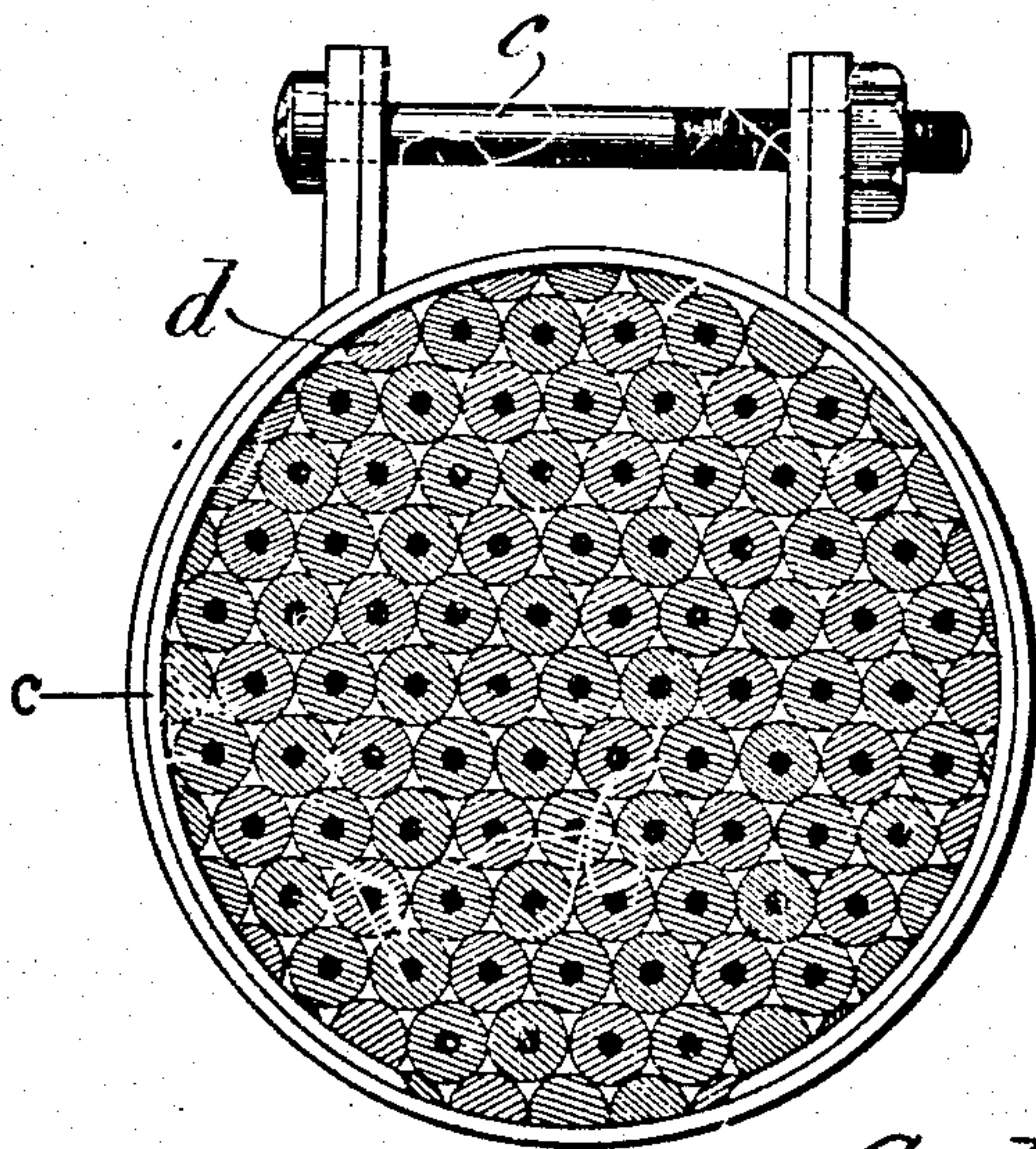
PENCIL.

APPLICATION FILED APR. 28, 1904.

*Fig. 1*



*Fig. 2*



*Witnesses*

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## UNITED STATES PATENT OFFICE.

CARL RITTER VON SCHEMNITZKY, OF VIENNA, AUSTRIA-HUNGARY.

## PENCIL.

SPECIFICATION forming part of Letters Patent No. 781,557, dated January 31, 1905.

Application filed April 26, 1904. Serial No. 205,029.

*To all whom it may concern:*

Be it known that I, CARL RITTER VON SCHEMNITZKY, gentleman, a subject of the Emperor of Austria-Hungary, residing at Vienna, in the Province of Lower Austria and Empire of Austria-Hungary, have invented certain new and useful Improvements in Pencils, of which the following is a specification.

My invention relates to improvements in lead-pencils and so-called "colored" pencils with fixed or movable leads or the like.

In the accompanying drawings, Figure 1 is a front view of the drying-mold, and Fig. 2 is a view of a mold for pressing the pencils into hexagonal shape.

According to this invention the pencils are manufactured with jackets consisting of naturally-grown or artificially-forced sticks from which the pith has been removed by boring, the graphite or other coloring material being inserted in place of the pith. For the manufacture of the pencils dry or wet sticks can be used and the sticks can be made of circular or hexagonal cross-section. If sticks dried in the air are used, they are cut into pieces corresponding in length to the pencils to be made, and the said pieces are heated and straightened and then longitudinally bored out by means of a borer or wire the point of which is heated by an electric current. Into the holes bored are placed wires, which are heated electrically or by means of fire, so that the heat causes the wood to expand, whereupon the leads can be easily inserted. When the sticks become cool again, the wood contracts, and the lead is thus held fast, so that the use of adhesive material can be dispensed with. If fresh-cut green sticks are used, they are also cut into the requisite lengths and straightened, whereupon they are bored out by means of an ordinary borer, and the lead is immediately inserted. To prevent the warping of the sticks during the drying, the pencils are inserted into elastic molds, as shown in Fig. 1. This mold consists of an inner split ring *c* and an outer ring *b*, having arms *e* *e'* secured thereto. These arms are connected together by a coiled spring *a*, which tends to pull the arms together. After the mold is filled with the pencils it is closed and placed in a drying-

machine. During the drying the wood contracts, and the object of the springs *a* is to continuously compress the mold, so that the sticks are held closely together and prevented from warping. The shrinking of the wood causes the leads to be gripped. The pencils are then ready for use; but to give them a more elegant appearance they can be ground smooth and polished. The sticks can also be colored by impregnating the wood in the known manner; but this must be done directly after the sticks have been cut into the proper length for pencils. The wet colored sticks are then treated as described above.

The following method is adapted for producing pencils of hexagonal shape: Fresh-cut green sticks are cut into the proper length for pencils and accurately sorted according to thickness with the aid of a wire gage. The buds or the like on the sticks are carefully removed, (cut out,) and cut sticks of equal thickness thus prepared are placed in a boiler into which liquid coloring-matter for impregnating the sticks can be introduced, if desired. In the said boiler the sticks are steamed at a pressure amounting to from three to four atmospheres, by which means they are rendered as soft as beet-root. The sticks are then bored out, and the leads are inserted. To prevent the adhesion of the sticks to each other, they are coated with grease or glycerin and placed in a press-mold. One form of press-mold for this purpose is shown in Fig. 2 of the drawings, the mold being in this case similar in shape to that shown in Fig. 1, but provided with a screw-threaded bolt *C* in place of springs in view of the large amount of pressure required. The empty spaces at the circumference of the mold are filled by means of suitable sections *d* of sticks in order to obtain as uniform pressure as possible for the purpose of preserving the graphite or the like. By the screwing up of the mold the soft sticks are compressed, as it were, into a compact mass, and thus molded or pressed into hexagonal shapes, as in the case of a honeycomb. The filled molds are placed into a drying apparatus, and at intervals during the drying the clamping-screws of the mold are tightened up. This method is adapted for



simultaneously pressing or molding a large number of sticks. The sticks can obviously also be molded separately into hexagonal shapes, and this can easily be effected by means 5 of rollers.

For pencils with movable leads dry sticks are used or green sticks dried in the manner described, the insertion of the leads in the described manner being of course dispensed 10 with. These sticks are rebored for the reception of the movable leads.

With this method of manufacture it is unnecessary to make the wooden jacket of the pencil in two parts, so that the cost of manu- 15 facture is considerably reduced and a large saving of wood is effected. The fact that the wood is in one piece also facilitates the sharpening of the pencil, since the fibers all lie in the same direction.

Having now described my invention, what 20 I claim, and desire to secure by Letters Patent of the United States, is—

1. A pencil having its casing formed from a naturally-grown stick from which the pith has been removed and a core of writing material 25 in the hole left by the removal of the pith, substantially as described.

2. The herein-described method of making pencils consisting in removing the pith from a naturally-grown stick and inserting a core of 30 writing material in place of the pith.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CARL RITTER VON SCHEMNITZKY

Witnesses:

HANS PAPPENHEIM,  
ALVESTO S. HOGUE.