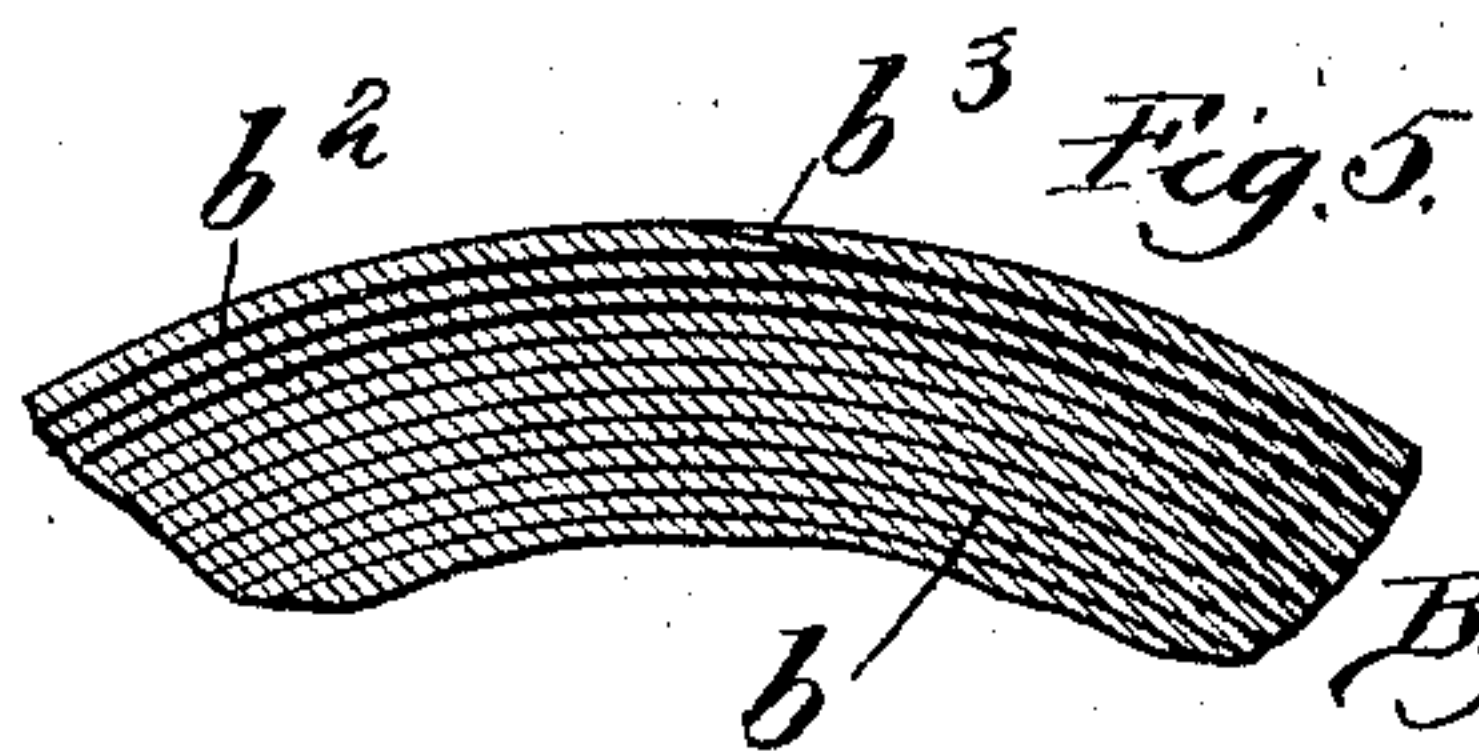
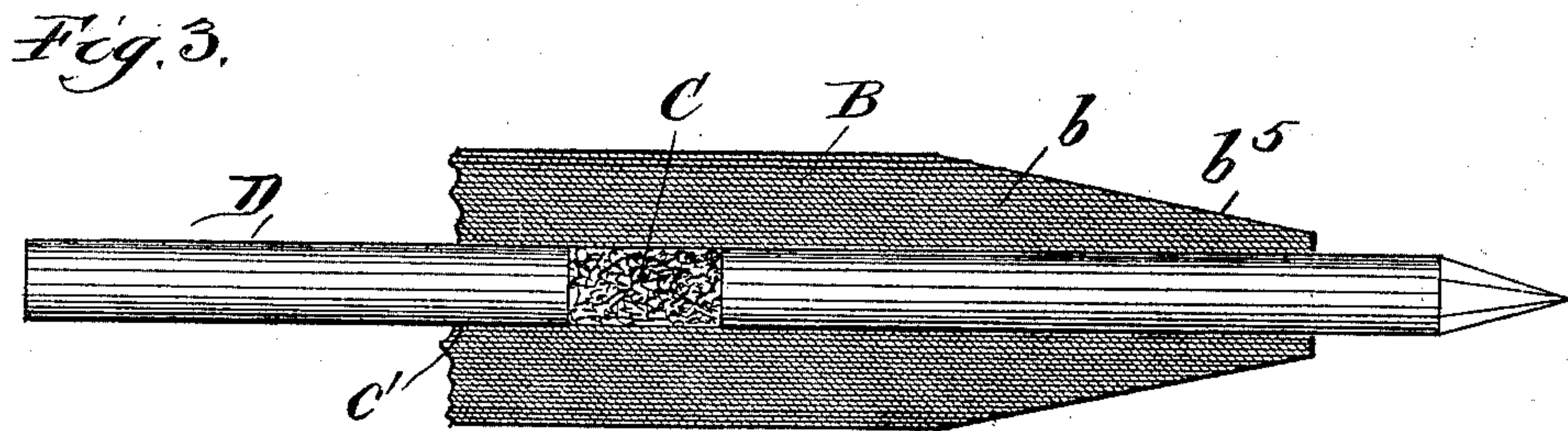
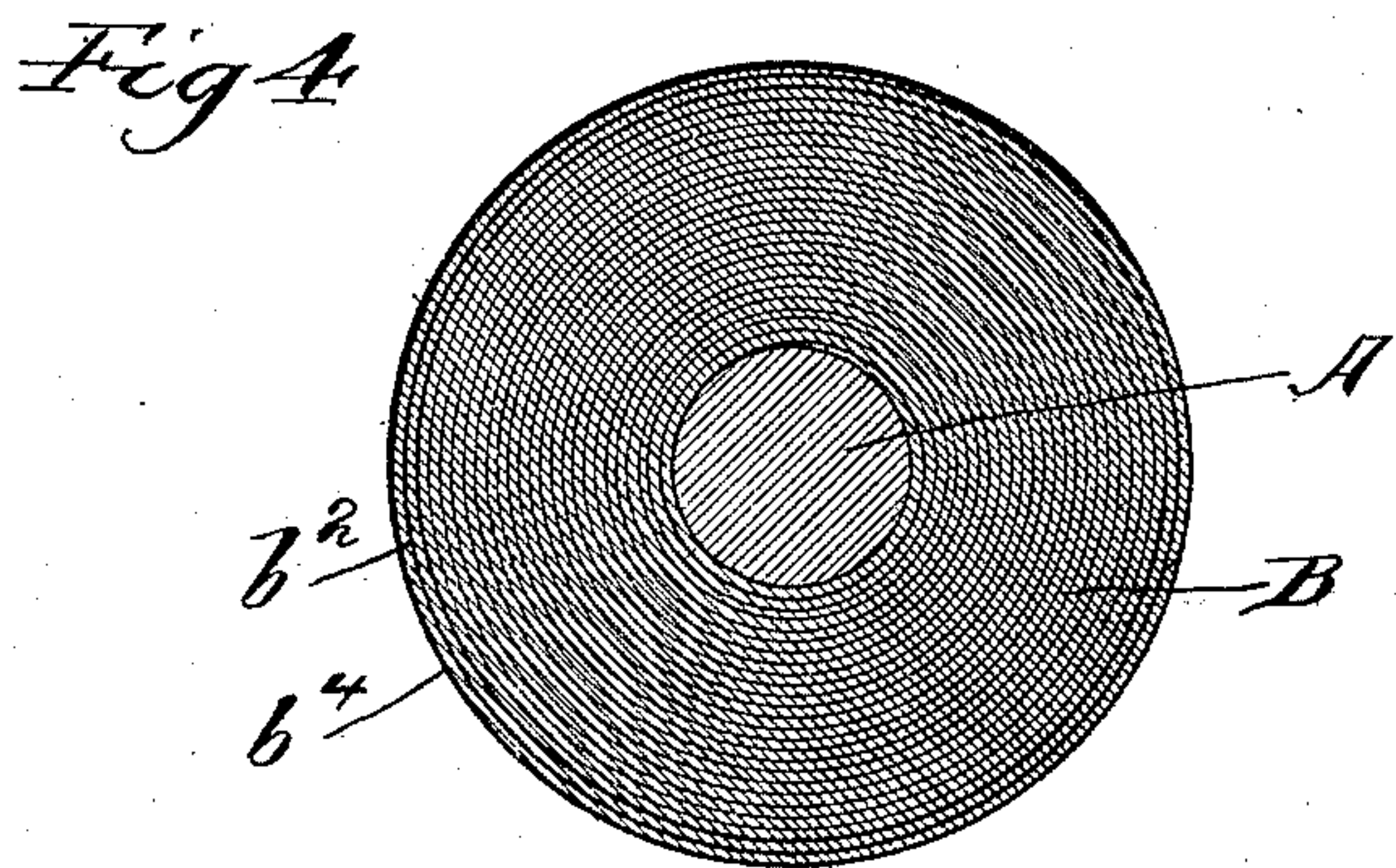
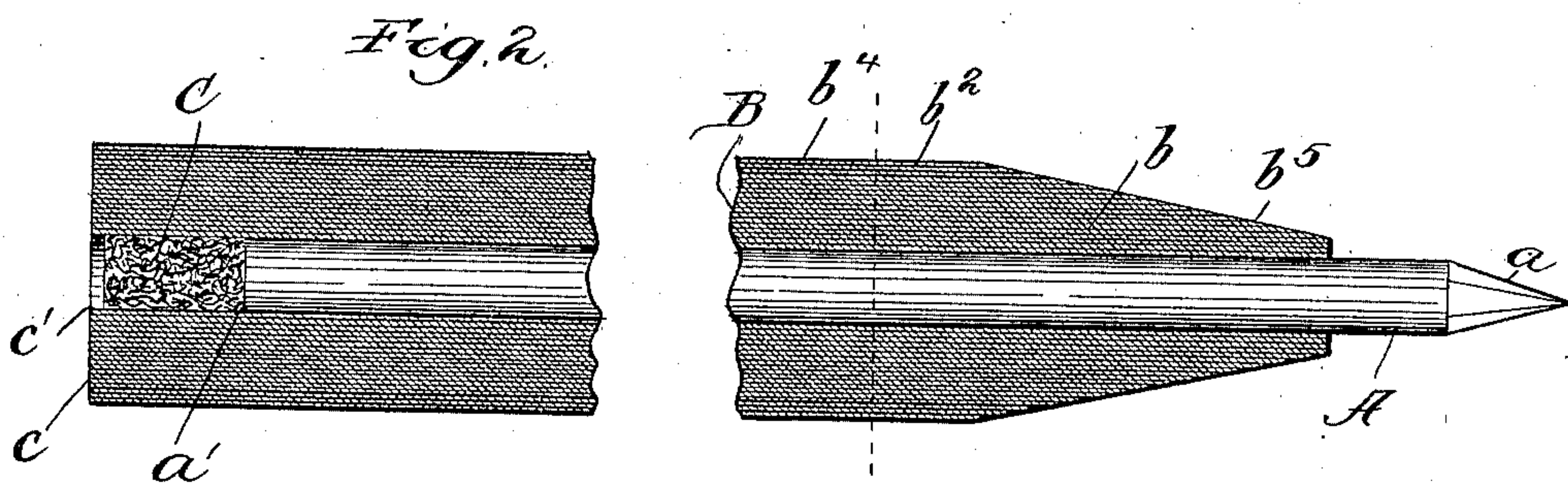
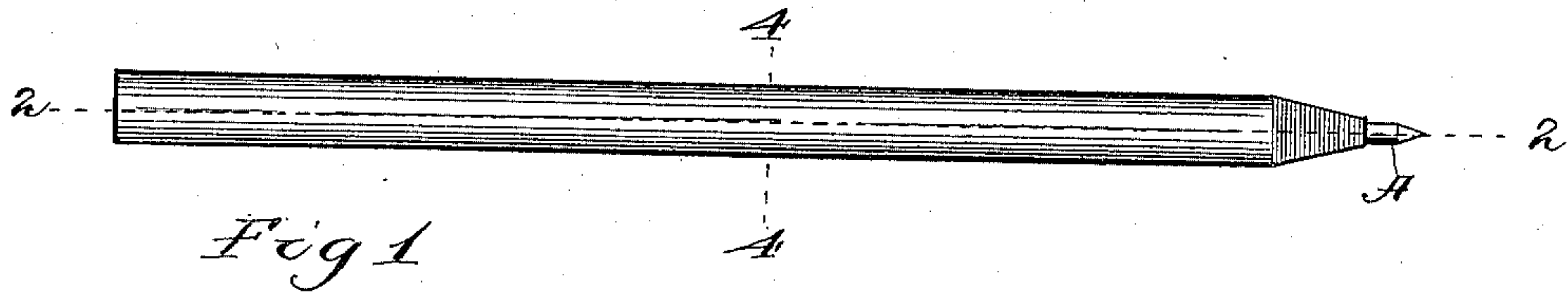


(No Model.)

C. E. RANDALL.
PENCIL.

No. 591,007.

Patented Oct. 5, 1897.



Witnesses
W. C. Corlies
C. H. Crawford

Inventor
Charles E. Randall
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his Attys

UNITED STATES PATENT OFFICE.

CHARLES E. RANDALL, OF CHICAGO, ILLINOIS.

PENCIL.

SPECIFICATION forming part of Letters Patent No. 591,007, dated October 5, 1897.

Application filed June 20, 1896. Serial No. 596,258. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. RANDALL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencils; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in lead-pencils of that class in which the graphite core or lead proper is contained within a wrapper of paper; and its principal object is to produce a construction whereby the necessity of trimming or cutting away the holder is obviated and the latter retained in its original length, while the core or lead is constantly diminished in length as being used.

A further object of the invention is to produce a cheap and durable construction in articles of this class.

These objects and other advantages of the construction will be more fully understood by reference to the accompanying drawings, as well as to the subjoined description and claims appended thereto.

Referring to the drawings, Figure 1 is a side view of a lead-pencil embodying my invention. Fig. 2 is a horizontal sectional view of the same enlarged, the center portion being broken away and the section being taken upon the line 2 2 of Fig. 1. Fig. 3 is a similar view to that shown in Fig. 2, illustrating a method of using the last end of the lead. Fig. 4 is a transverse sectional view, taken on line 4 4 of Fig. 1, considerably enlarged to show the paper wrappings. Fig. 5 is a fractional sectional view similar to Fig. 3, but still further enlarged to show the method of joining the last end or lap of the wrapper.

In the invention the lead A is of the usual size and configuration and is provided with a conical point *a* at one end and with a flat end or surface *a'* at its other end. Surrounding the core A is a wrapper B, composed of a strip of paper wrapped a desirable number of times about the core A of reasonable tightness and in such manner as to afford a frictional contact about the core. Care will be exercised in making the inner layers sufficiently loose and unpasted or unjoined as to

impart the quality of elasticity to the entire holder B. The yielding quality or elasticity of the wrapper B will be such as will cause sufficient friction upon the core A to hold the latter properly in place when the pencil is being used, but at the same time permit of the core being moved lengthwise through the wrapper B in the manner hereinafter described. The last layer or two of the outer layers of the wrapper B will preferably be pasted together, as shown by the darker lines *b*² of Figs. 4 and 5, while the extreme edge of the outer layer *b*² will be scarfed, as shown at *b*³, whereby no raised edge will be presented to the exterior surface of the wrapper B. The outside of the wrapper B will of course be varnished, painted, printed upon, or decorated in any desirable manner, it being desirable, however, to in all cases apply at least one coating of varnish or other similar protecting material, as indicated at *b*⁴.

The length of the core A will be such that when it is positioned within the wrapper B the end *a'* will not extend to the extreme end *c* of the core B, whereby a recess will be formed in the end of the wrapper B, which recess I fill with a plug of some soft material, preferably cotton, as shown at C. D is a metal wire or plug, furnished with each set of pencils sold, or, if necessary, with each pencil, of a diameter equal to that of the core A. When the pointed end *a* of the core has become worn away in use, I insert one end of the wire or rod D into the recess *c'* and against the outer end of the plug C. By further inserting the wire or rod D the plug C is pressed against the end *a'* of the core A, and the latter, by reason of the looseness or elasticity of the inner layers of the wrapper B, is moved longitudinally through the wrapper, so that the point *a* projects a desired distance from the conical or tapered end *b*⁵ of the wrapper B. Fig. 3 illustrates the method of inserting the wire D into the recess *c'*, thus forcing the last end of the core A through the wrapper B. It will of course be understood that the plug C may be made of wood, cotton, or other material, and also that the rod D may be of wood or wire, as desired.

I find from practical tests that the inner paper layers can be placed around the core A and the holder B be constructed with great

rapidity and by the use of very simple apparatus, as well as by hand, and that in either case a very desirable and effective lead-pencil produced at the very minimum cost.

5 I have found that the provision of loose or unpasted inner layers of paper insures the holding of the core in the best possible manner, the same in practical use affording a sufficiently yielding pressure to enable the
10 lead to be moved with sufficient ease when necessary, while giving sufficient pressure on the lead to hold it with all the firmness required to prevent it from slipping backward under the pressure used in writing. The construction described herein produces results
15 not obtained in prior constructions, wherein the lead is placed in a casing of rigid or non-yielding material, it being obvious that in such prior constructions it is very difficult,
20 if not impossible, to make the hole in the casing of such size with respect to the lead that the latter shall be neither too loose nor too tight therein. Obviously the employment of loose inner layers, affording elastic pressure
25 on the core, insures uniform frictional engagement of the lead with the holder or casing, without regard to any exactness of dimensions in the parts and without requiring any expensive construction to secure the desired result.
30

I claim as my invention—

1. A lead-pencil comprising a core A, movably positioned within a holder B, the latter comprising a plurality of layers of paper wrapped about the core, the outer layers being secured together to form a firm exterior, and the inner layers being wrapped relatively loose to hold the core with elastic pressure, substantially as described. 35

2. A lead-pencil comprising a core A, movably positioned within a holder B, the latter comprising a plurality of layers of paper wrapped about the core, the outer layers being secured together to form a firm exterior, and the inner layers being wrapped relatively loose to hold the core with elastic pressure, in combination with a plug inserted within the holder B at one end of the core, and means for forcing the plug against the core to feed the latter endwise through the wrapper, substantially as described. 40 45 50

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 16th day of June, A. D. 1896.

CHARLES E. RANDALL.

Witnesses:

WILLIAM L. HALL,
C. CLARENCE POOLE.