

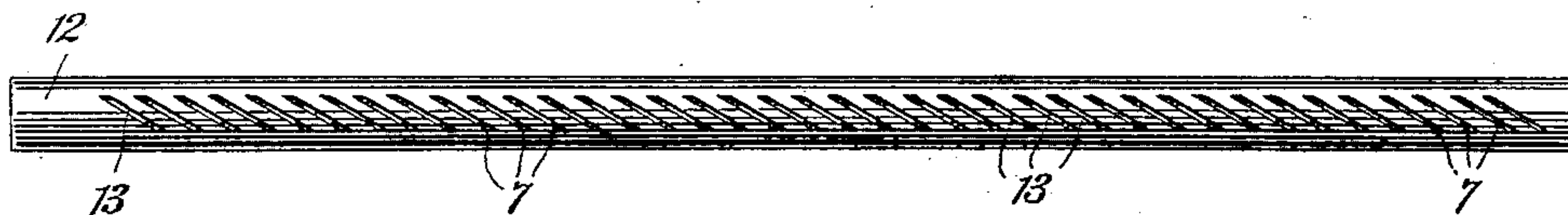
(No Model.)

H. H. SEAMAN.  
PENCIL.

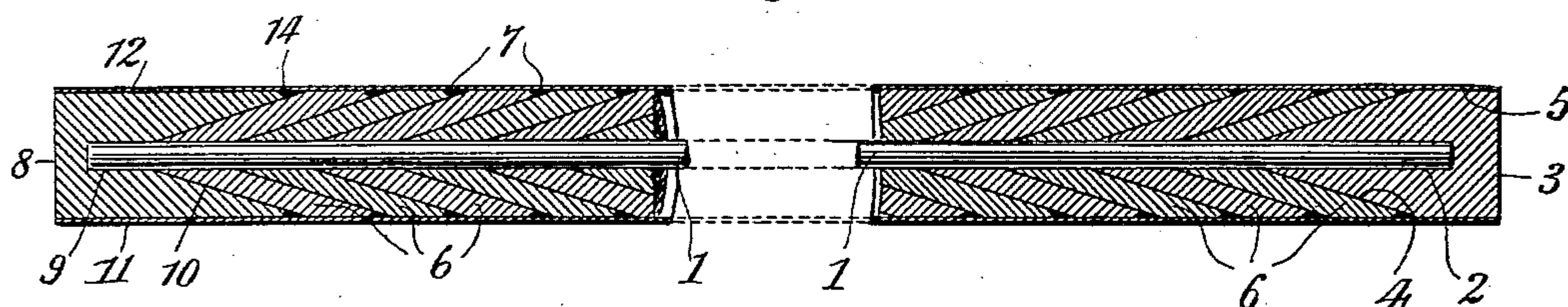
No. 555,341.

Patented Feb. 25, 1896.

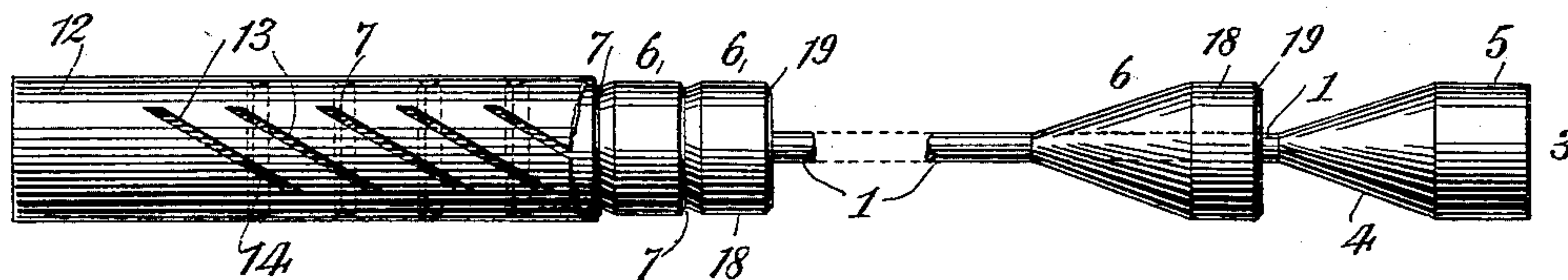
*Fig. 1.*



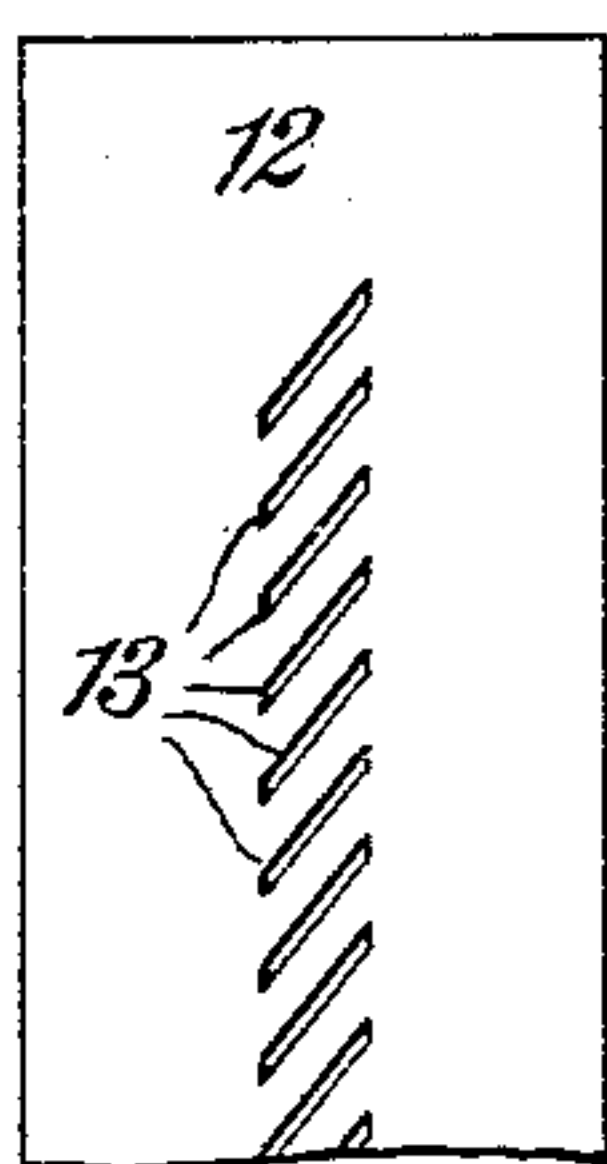
*Fig. 2.*



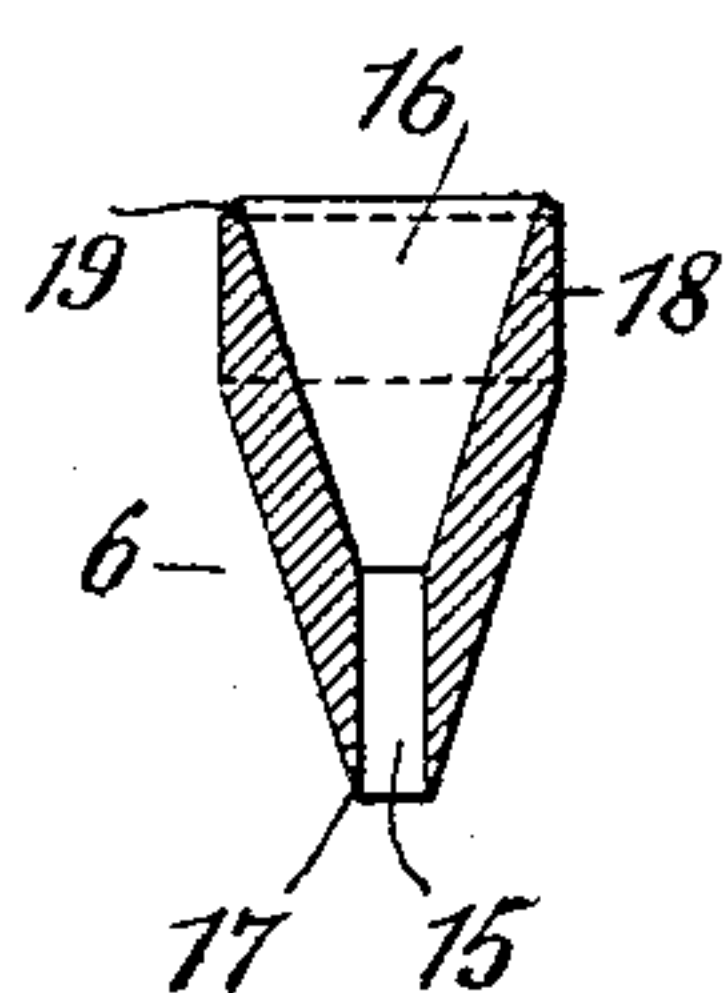
*Fig. 3.*



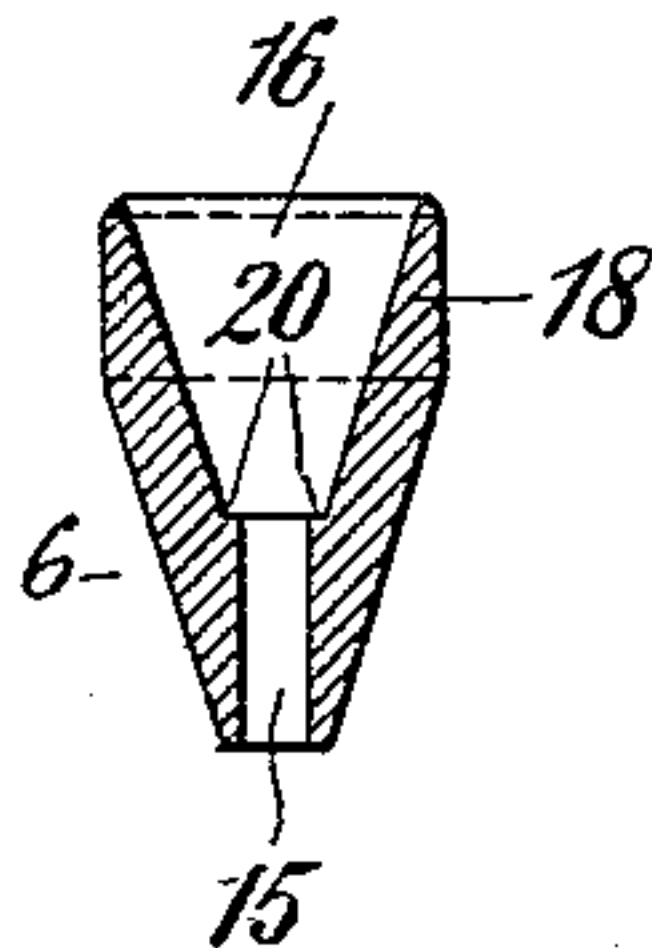
*Fig. 4.*



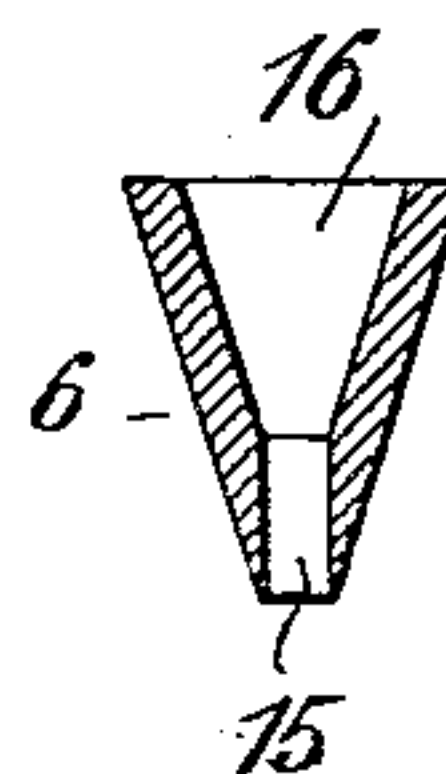
*Fig. 5.*



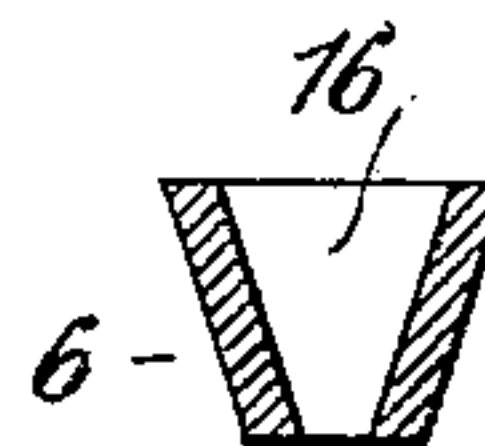
*Fig. 6.*



*Fig. 7.*



*Fig. 8.*



WITNESSES:

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INVENTOR:

*Herbert H. Seaman*  
By his Attorney  
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# UNITED STATES PATENT OFFICE.

HERBERT H. SEAMAN, OF BROOKLYN, NEW YORK.

## PENCIL.

SPECIFICATION forming part of Letters Patent No. 555,341, dated February 25, 1896.

Application filed November 21, 1895. Serial No. 569,648. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT H. SEAMAN, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Pencils, &c., of which the following is a specification.

My invention has for one object to provide an improved construction of self-sharpening pencils—that is to say, pencils in which successive portions of the lead may be exposed for use by removing from time to time, as required, the separable portions comprising the sheath or holder which contains and supports the lead, crayon, or other analogous device; and my invention consists in certain features of construction and combinations of devices, all as will be hereinafter more fully described, and particularly pointed out in the appended claims.

In carrying out my invention I employ a series of hollow conical devices which nest together or intermatch and surround or incase a preferably continuous or unbroken stick of lead, crayon, or other marking device. Around the series of conical devices is wrapped a piece or sheet of paper or other suitable material to bind the said series of conical devices together. Between successive conical devices is formed a circular indentation or groove to facilitate the cutting or breakage of the outside sheath or wrapper and the removal of the conical sections. In order to aid or guide the user in the removal of the conical sections, the outside wrapper or sheath is slotted or perforated in such a manner that the said circumferential notches or grooves may be readily observed from the outside of the pencil. One end of the lead or crayon is cemented or otherwise secured to a conical base-piece and at the other end the pencil is preferably provided with a conical cap. Between these two devices the removable conical sections are strung upon the lead and nested together, and over or around the whole is secured the retaining-wrapper.

In the accompanying drawings, Figure 1 is a side elevation of a lead-pencil embodying my improvements. Fig. 2 is an enlarged central vertical section thereof, broken away at its middle to condense the view and to afford a better illustration of the construction. Fig. 3

is an enlarged side elevation with a large portion of the wrapper removed to show several of the conical members in side elevation and to show also the mode of forming the pencil, the lead being broken away between its ends to condense the view. Fig. 4 is a plan of the wrapper detached. Fig. 5 is a longitudinal section of one of the conical members; and Figs. 6, 7, and 8 are similar views of slightly-modified forms thereof.

In the various views the same part will be designated by the same numeral of reference.

1 designates a continuous stick of lead, crayon, or the like, which is preferably cemented at one end in a cylindrical aperture 2, formed in a base-piece 3, which at its forward or inner end is made conical or tapering, as at 4, and which at its opposite outer end is made cylindrical, as at 5.

6 6 designate a series of conical devices, sections, or members, all of the same size, shape, and construction and arranged to surround and support the lead and nest together. These conical sections 6 may be made of any suitable material—as paper, compressed paper-pulp, compressed wood-pulp, papier-maché, card or paste board, wood or metal, or any other suitable substance or material. Each individual section or member 6 may be made of any desired or suitable thickness of stock—for example, one-sixteenth of an inch. Each is made hollow to encompass the lead and to receive its adjacent section. At the base of each conical section is formed or provided a circumferential notch or indentation 7.

At the forward or lower end of the lead is preferably provided a cap-piece 8, having a cylindrical aperture 9 to receive the end of the lead, and having also a conical seat 10 to receive the foremost conical section 6, and the said cap-piece is formed cylindrical exteriorly, as at 11.

Surrounding the base-piece, cap-piece, and the series of individual nested lead-supporting conical sections or members is a wrapper or cover 12, which is preferably of paper and which is glued or otherwise secured to the said several devices, and by which, more especially, the plurality of conical sections 6 are maintained firmly in their nested condition upon the centrally-disposed lead. The



said wrapper or cover is preferably provided for substantially its whole length with a series of slots or openings 13, which may be obliquely arranged, as shown at Figs. 1 and 3, so that one slot or opening overlaps the next adjacent slot or opening, considered circumferentially of the pencil. By this construction and arrangement of slots or openings in the wrapper it is insured that all of the circumferential notches or indentations 7 are exposed to view, and hence little or no care need be taken in the application of the wrapper. If the slots or openings 13 extended circumferentially of the wrapper or at right angles to its axis or length, it might be difficult to so apply the wrapper as that such slots or openings would register exactly with the notches or indentations formed by the overlapping series of conical sections. While this difficulty would be presented with the slots formed as last described, it would not be impossible to employ such circumferential slots in the wrapper in place of the parallel oblique overlapping slots preferred, and for this reason I do not wish to be limited, so far as this feature of my invention is concerned, unless specifically recited in the claims, to any particular form or arrangement of slots or openings in the wrapper.

From the foregoing and from the drawings it will be plain that the pencil as a whole is formed or constructed by first inserting the upper or rear end of the lead into the opening in the base-piece, and by then slipping the conical sections 6, one after the other, or in the series, down upon the lead and causing them to seat one upon the other or nest together, as shown, until the required number of conical sections have been so applied. After this operation, if the cap-piece is to be employed, it is slipped upon the lower or foremost end of the lead and upon the outermost conical member. After this step the sheath or strip of paper or other material constituting the wrapper of a length equal to that of the pencil to be formed, and of a width sufficient to surround the sectional devices and to slightly overlap at its edges, is then applied and secured to the several devices, preferably by means of glue or some other adhesive substance. This completes the making of the pencil, and when finished it will present the appearance shown at Fig. 1 of the drawings.

While I prefer to make pencils of this appearance and supply them in this manner to consumers, it will be understood, of course, that so far as some of the features of my improvements are concerned the cap-piece 8 and the wrapping portion thereof may be omitted, and the pencil supplied with the front end of the lead exposed for immediate use.

Pencils having the cap-piece 8 require, of course, the removal of the same before the pencil can be used, but this may be readily accomplished by cutting or otherwise break-

ing the wrapper at the circumferential notch 14, whereupon the said cap-piece may be readily slipped off or detached. As the projecting end of the lead wears away and it becomes necessary to expose more lead for use, the first or foremost conical section 6 is then removed by running a knife or the finger-nail or any sharp instrument around the wrapper at the first notch 7, thus rupturing the paper and freeing said conical section from the main body of the pencil, and enabling its ready removal by a mere endwise sliding movement in the direction of the point of the pencil. In this manner the remaining conical sections are successively removed as required, such removal being greatly facilitated by reason of the circumferential notches or grooves and the slotted or perforated wrapper, the perforations in the wrapper enabling the user to locate the circumferential notch at a glance, and the notch itself permitting the wrapper to be readily cut or broken, the presence of the notch leaving the paper unsupported at this locality, and hence easily severed or disjoined.

Referring now more particularly to Figs. 1 to 5, inclusive, it will be observed that each conical section or member is peculiarly made—that is to say, it is formed or provided at its apex or pointed end with a cylindrical or parallel-sided bore 15 for about one-third of its length, and that the remainder of the interior of the section is tapering or frusto-conical, as shown at 16. The cylindrical portion 15 is provided more especially to afford to the member a comparatively-long bearing upon or about the lead, while the flared or tapering portion 16 is provided to permit the insertion of an adjacent section, which likewise affords an extended bearing for the preceding section. It will be observed that the cylindrical portions 15 form a practically continuous or uninterrupted bearing for the whole length of the pencil, and hence that the lead is supported for substantially its whole length, whereby a structure of great strength is consequently produced. In these views it will also be observed that the outside of the conical section tapers down to substantially a knife or thin edge, as at 17, while the base or rear end of the conical section is formed or provided with a cylindrical portion 18; or, in other words, this end of the conical device for an appreciable distance is cut away parallel with its axis to produce a cylindrical or parallel-sided portion 18, and by reason of which the diameter of the pencil as a whole may be reduced; but a still more important function is performed by this portion 18, to wit: it serves to afford a wide or extended surface for the support of the wrapper and for its firm adhesion to the conical sections as a whole, so that there is no liability whatsoever of any of the members of the series becoming loose or of rotating or moving longitudinally during use of the pencil. The large pasting-surfaces afforded by the series of cy-



lindrical portions 18 are therefore useful not only to reduce the diameter of the pencil and enable the formation of pencils of practically-continuous cylindrical form, but to also enable the wrapper to be firmly pasted to the conical sections for practically its whole length, and in consequence keep the series of nested conical sections firmly down one upon the other, so that there will be no break in the continuity of the structure, and so that it will be rendered as rigid and as solid practically as the ordinary wood-incased lead-pencil of commerce. It will also be observed in these views that the base or rear end of each cylindrical portion 18 is beveled or chamfered inwardly, as at 19, and that this portion assists in the formation of the circular notch or indentation 7, the remaining portion of the notch or indentation being formed by the beveled or tapering exterior of the adjacent conical member.

While I prefer to make the conical sections or members in the specific manner shown at Figs. 1 to 5, inclusive, I do not, however, wish to be limited altogether to this particular construction or formation, inasmuch as the main features of my improvements may be employed with conical sections differing some in details of construction, as shown, for example, in the remaining figures of the drawings.

Referring now to Fig. 6, the conical section there shown is substantially the same as that exhibited in the previous views, the only difference being that the smaller end of the section does not taper to a knife or sharp edge, but to a thicker or duller edge, and in consequence thereof the circular shoulder 20 is provided at the junction of the cylindrical portion 15 and tapering portion 16 for the abutment thereagainst of the thickened end of the corresponding conical member to be associated therewith.

Referring now to Fig. 7, it will be seen that the conical section is provided with the cylindrical portion 15 tapering to a knife edge, but that the base or wider end of the structure is unprovided with a cylindrical portion corresponding to 18 in the previous views and likewise lacks the beveled or chamfered end 19.

Referring now to Fig. 8, the device there exhibited will be found to consist of a frusto-conical section purely and of uniform thickness of stock.

The wrapper or envelope may be made of paper, vellum, cloth, or any other pliable and frangible substance which is thin and strong, and it may be polished, glazed, varnished or painted either before or after its application to the conical sections. The lead or marking-crayon may be such as is commonly used in pencils of commerce, or the marking substance may be of slate or soapstone or any material used by architects, artists, draftsmen, painters or artisans. The inclosed substance may also be a caustic, drug, or chemi-

cal for use by physicians, surgeons, &c., and in the subjoined claims I desire to be understood as covering the use of any marking material or substance used for purposes other than marking, so long as the same is contained in a structure embodying my improvements.

From the foregoing it will be apparent that various changes may be made in the details of construction of the conical sections or members and in the wrappers or envelopes without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. A pencil or the like consisting of a continuous lead, &c., a block or base-piece to which the lead or the like is secured, a series of individual, nested conical members, and an outside wrapper or covering; substantially as set forth.

2. A pencil or the like consisting of a marking or other substance, a block or base-piece to which the lead or the like is attached, a series of individual, nested conical members, a cylindrical cap-piece having a tapering interior and a cylindrical bore, and an outside wrapper or covering; substantially as set forth.

3. In a pencil or the like, the combination with the lead, &c., of a base-piece to which one end of the lead is secured, a series of conical members surrounding and supporting the lead longitudinally and entering one another, and a longitudinal wrapping-strip pasted or gummed to said base-piece and to said series of conical members; substantially as set forth.

4. In a pencil or the like, the combination with the lead, &c., of a base-piece to which one end of the lead is secured, a cap fitted over the other end thereof, an intermediate series of individual, conical members, and a longitudinal wrapping-strip pasted or gummed around the base-piece, cap-piece, and the series of conical members; substantially as set forth.

5. A pencil or the like comprising a continuous central marking or other device, a series of individual, nested conical members, a series of circumferential grooves or indentations, and a longitudinal wrapping-strip secured to said members and bridging over the said series of circumferential grooves or indentations, whereby the wrapping-strip is left unsupported at these localities and hence may be easily severed; substantially as set forth.

6. A pencil or the like consisting of a central marking or other device, a series of individual, nested conical members, a series of circumferential grooves or indentations, and a perforated wrapper or covering secured to said members and adapted to disclose the series of grooves or indentations; substantially as set forth.

7. A pencil or the like consisting of a central marking or other device, a series of individual, nested conical members, a series of cir-



cumferential grooves or indentations, and a wrapper or covering having a series of oblique or diagonal perforations; substantially as set forth.

- 5 8. A pencil or the like consisting of a base-piece to which one end of the lead or other device is secured, a series of individual, conical members supported upon said base-piece and within one another, and surrounding said  
10 lead, &c., a cap-piece embracing the point of the lead, and seated upon the foremost conical member, a series of circumferential grooves or indentations, and a slotted or perforated wrapper pasted or gummed to said cap and base-  
15 piece, and to said series of individual conical members; substantially as set forth.

9. In a pencil or the like, a series of individual, nested conical members having a practically-continuous cylindrical bore through-

out the series and supporting therein the con- 20 tinuous lead or other material, and having a practically-continuous cylindrical exterior, with a series of narrow intervening circumferential grooves or indentations, and a wrap- 25 ping-strip pasted or gummed around and to said practically-continuous cylindrical exterior and bridging over the said series of grooves or indentations, and thereby leaving a series of circular spaces beneath said strip to enable it to be readily severed; substan- 30 tially as set forth.

Signed at New York city, in the county of New York and State of New York, this 18th day of November, A. D. 1895.

HERBERT H. SEAMAN.

Witnesses:

CORNELIUS P. McLAUGHLIN,  
K. V. DONOVAN.