

(No Model.)

F. W. MUSSON.  
PENCIL.

No. 574,362.

Patented Dec. 29, 1896.

Fig. 1.

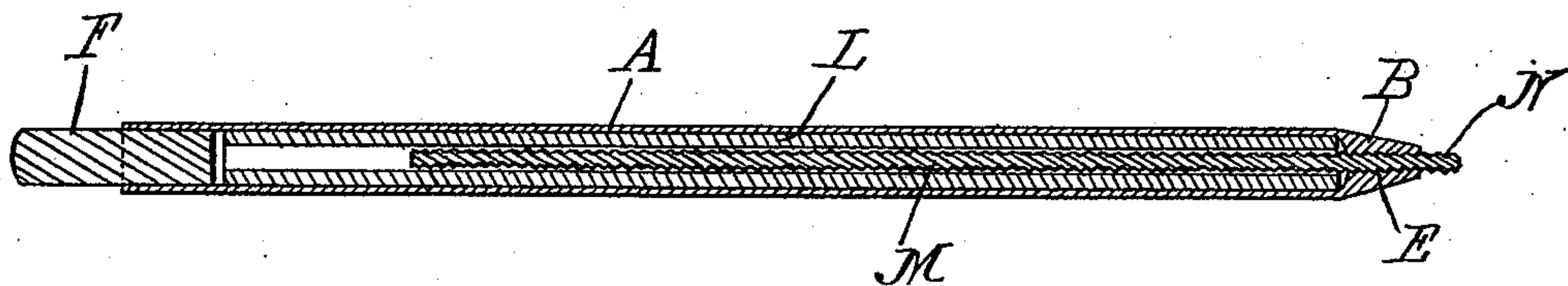


Fig. 2.

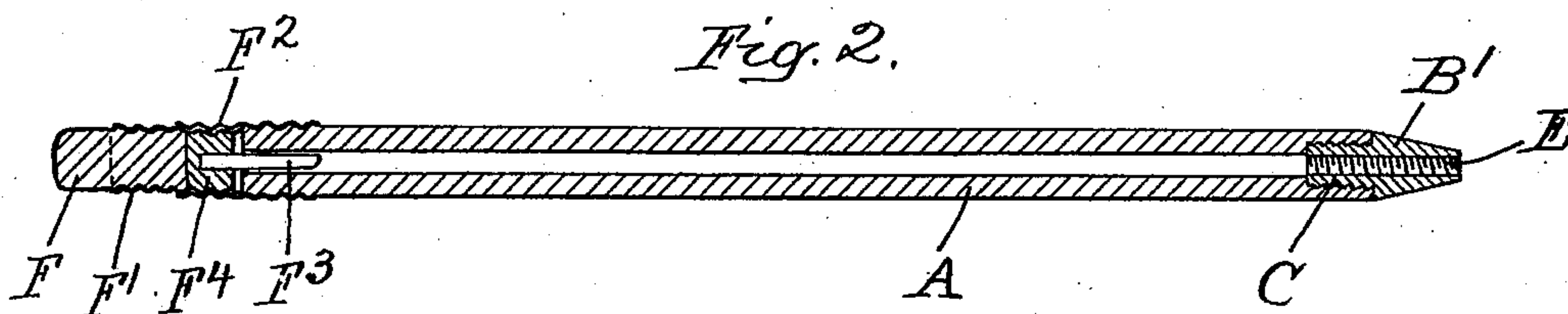


Fig. 3.

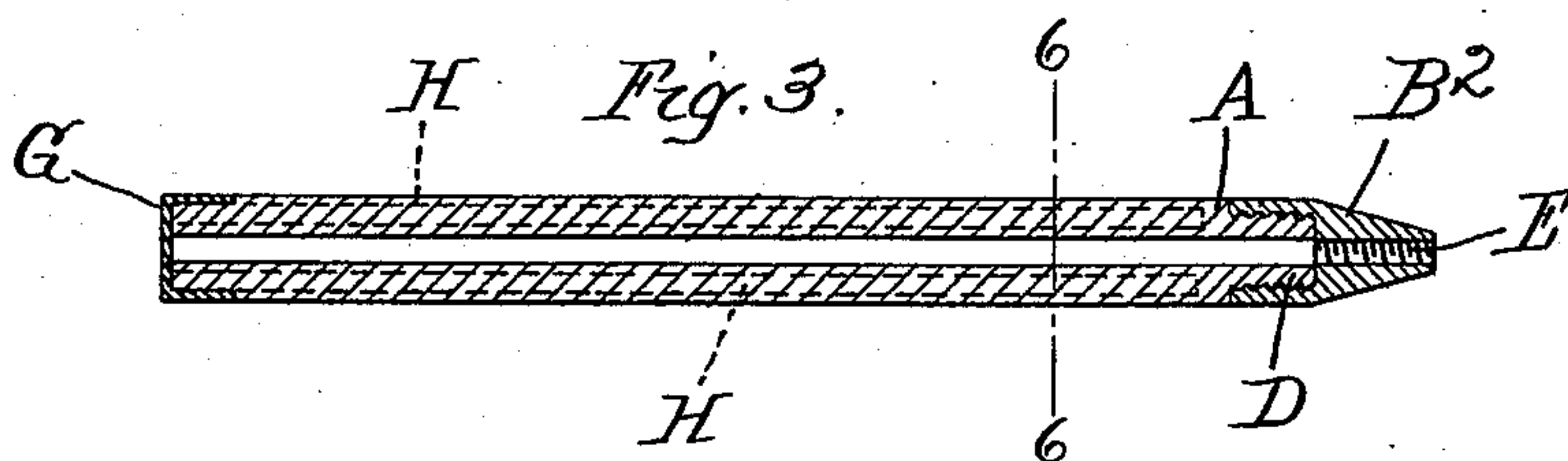


Fig. 4.

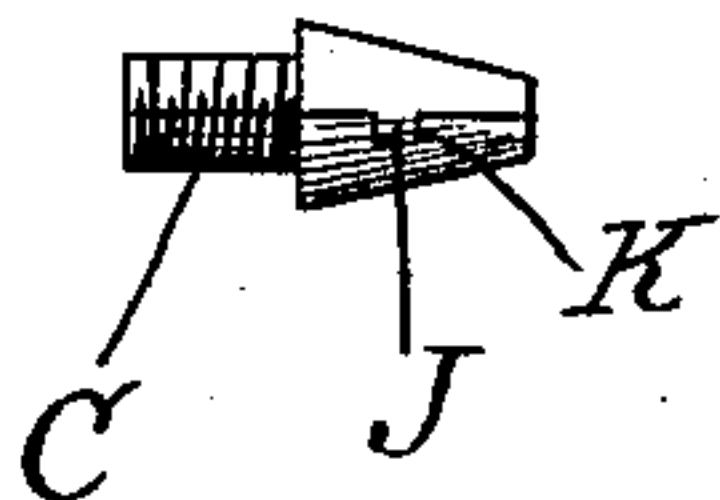


Fig. 5.

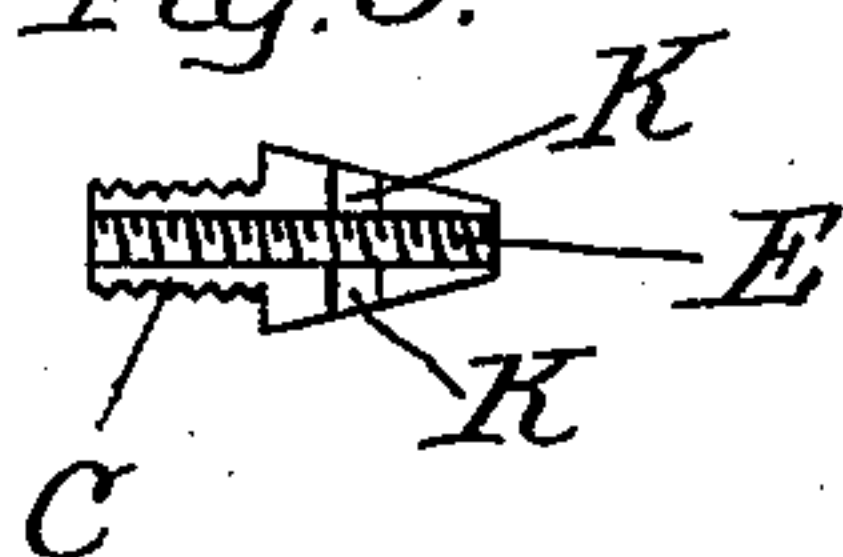
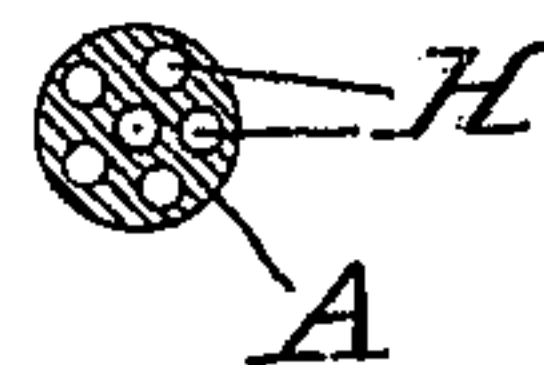


Fig. 6.



Witnesses,

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# UNITED STATES PATENT OFFICE.

FREDERICK W. MUSSON, OF CHICAGO, ILLINOIS.

## PENCIL.

SPECIFICATION forming part of Letters Patent No. 574,362, dated December 29, 1896.

Application filed July 17, 1896. Serial No. 599,586. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK W. MUSSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pencils, of which the following is a specification.

My invention relates to lead-pencils, and has for its object to provide certain new and useful improvements in lead-pencils, particularly relating to a convenient means for providing the pencil with a movable or removable lead. It is illustrated in the accompanying drawings, wherein—

Figure 1 is a longitudinal section of a lead-pencil in which the case and screw-threaded cutting-tip are formed in one piece. Fig. 2 is a longitudinal section through a lead-pencil in which the screw-threaded cutting-tip is screwed into an aperture in the end of the case. Fig. 3 is a longitudinal section of a pencil in which the screw-threaded cutting-tip incloses the end of the case. Figs. 4 and 5 are details of a divided cutting-tip. Fig. 6 is a cross-section on the line 6 6 of Fig. 3.

Like parts are indicated by the same letters in all the figures.

A is the case or outer portion of the pencil, with which is associated the tip B, formed continuous with the case portion or adapted to be secured thereto. The tip B is provided with the exteriorly-screw-threaded portion C, adapted to be screw-threaded into a socket in the end of the case portion A. The tip B<sup>2</sup> contains the socket into which the portion D of the case A is received. All the tips have the screw-threaded or thread-cutting interior portion E.

F is a rubber tip in the end of the pencil indicated in Fig. 1.

G is a cap for the end of the pencil indicated in Fig. 2.

H H are a series of holes in the case portion of the pencil, as indicated in Figs. 3 and 6, and designed to hold leads.

The tip indicated in Figs. 4 and 5 is divided into two portions, which two portions are locked together from longitudinal motion by ribs J, received into the recesses K.

L is an inner cushion, cylindrical in form, which can be employed in any of these pen-

cils where required to surround and thus protect the lead.

M is the lead illustrated only in Fig. 1 and having the screw-threads N cut thereon by the portion E.

I do not of course desire to be limited to the specific construction of the several parts here illustrated.

In Fig. 2 I have illustrated the rubber tip F as contained within a metal thimble F<sup>1</sup>, which is received into a metal thimble F<sup>2</sup> on the end of the case A. A knife or blade F<sup>3</sup> is associated with a block F<sup>4</sup>, which is secured to the metal sleeve F<sup>1</sup>. The end of this blade projects into the central longitudinal aperture in the case.

The use and operation of my invention are as follows:

Referring to the lead-pencil indicated in Fig. 1, it will be noted that the case proper and the tip are continuous with each other, being formed of a single piece of metal. In this case the lead is introduced at the tip, the thread being cut as the lead is inserted until it is wholly inserted, leaving only the end portion projecting. This is because of the practical difficulty of inserting the lead from the other end, unless it should happen to be just long enough or should happen to be associated with some sort of a tip which would permit it to be inserted. As the lead is used it is only necessary to turn the end of N to bring the lead forward, as from time to time required. In Fig. 2 the cutting-tip is screw-threaded into the case portion A, as indicated, and in this event the lead is associated only directly with the tip. The tip is removed and the lead inserted and screwed therethrough until the working point projects, whereupon the lead is put into the case and the tip screwed into proper position. The operation is substantially the same in Fig. 3, except that here the tip is arranged so as to include or inclose the end of the pencil. The cushioning-cylinder can be used in any case where it is required, and less than the whole cylinder could be employed provided it were found desirable or when only a portion of the length of the lead is necessary to be protected. A series of leads can be carried in the holes H H, to be used when desired. The two parts of



the tip C are held together from longitudinal motion by the ribs and groove and are screw-threaded into place, the two parts being then held firmly in position. This is to avoid the  
5 difficulty from breakage of lead should it be found that in any particular sort of pencil or for any special use there was excessive danger of the lead portions being broken in the cutting-tip.

10 The device shown in Fig. 2 comprises also a knife to sharpen the lead, associated with the rubber tip and adapted to be inclosed in the aperture of the pencil-case.

The tip proposed to be made in two parts  
15 separable along the line of their length or along the lead-aperture which passes through or between them is important in case of a broken lead. It might sometimes happen that a lead would break off within the tip,  
20 and some difficulty might then be experienced in removing the broken portion of the lead from the tip. Where the tip is made in two

parts, the parts can be removed and separated and the broken portion of the lead thus be easily taken out.

25 The cylindrical cushion is of course preferably somewhat elastic or yielding, and in any event furnishes more or less of a bearing for the otherwise unsupported lead, and in case of the pencil being dropped or receiving  
30 a hard blow the lead will by the cushion be prevented from breaking.

I claim—

A lead-pencil comprising an outer portion with a longitudinal aperture, a tip removably  
35 attached to the outer portion and consisting of two interlocking parts separable along the line of the lead-aperture, and a free lead adapted to pass through the tip.

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Witnesses:

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