

F. DUTCHER.  
FUSEE CAP.  
APPLICATION FILED AUG. 8, 1907.

929,409.

Patented July 27, 1909.

Fig. 1.

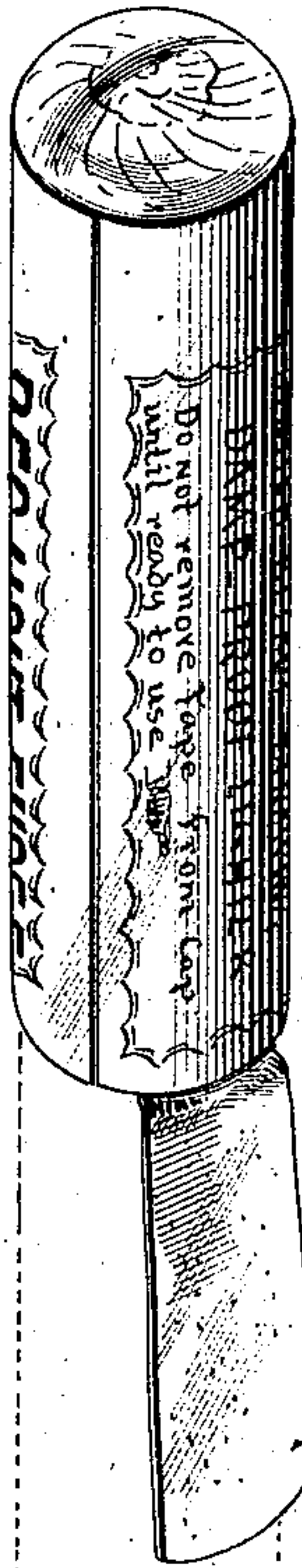


Fig. 2.

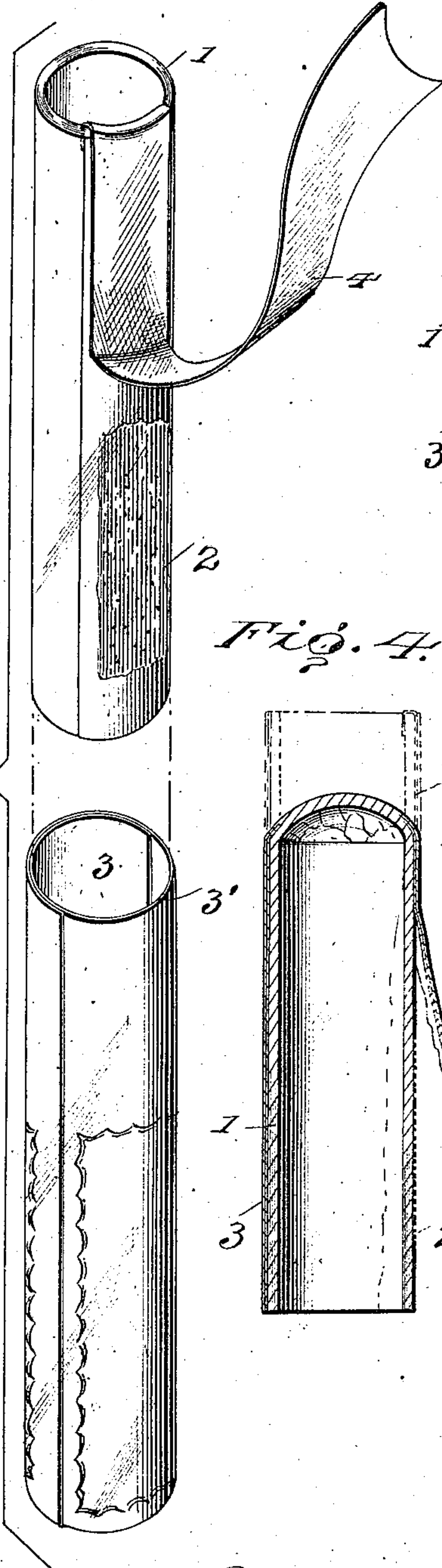
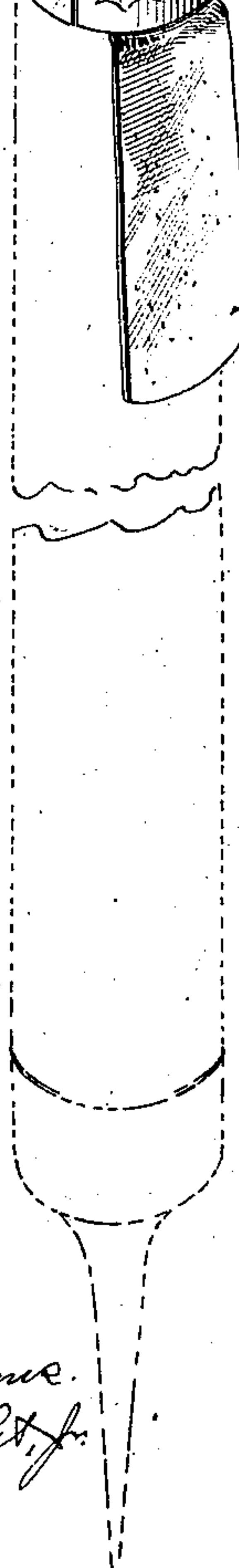


Fig. 3.

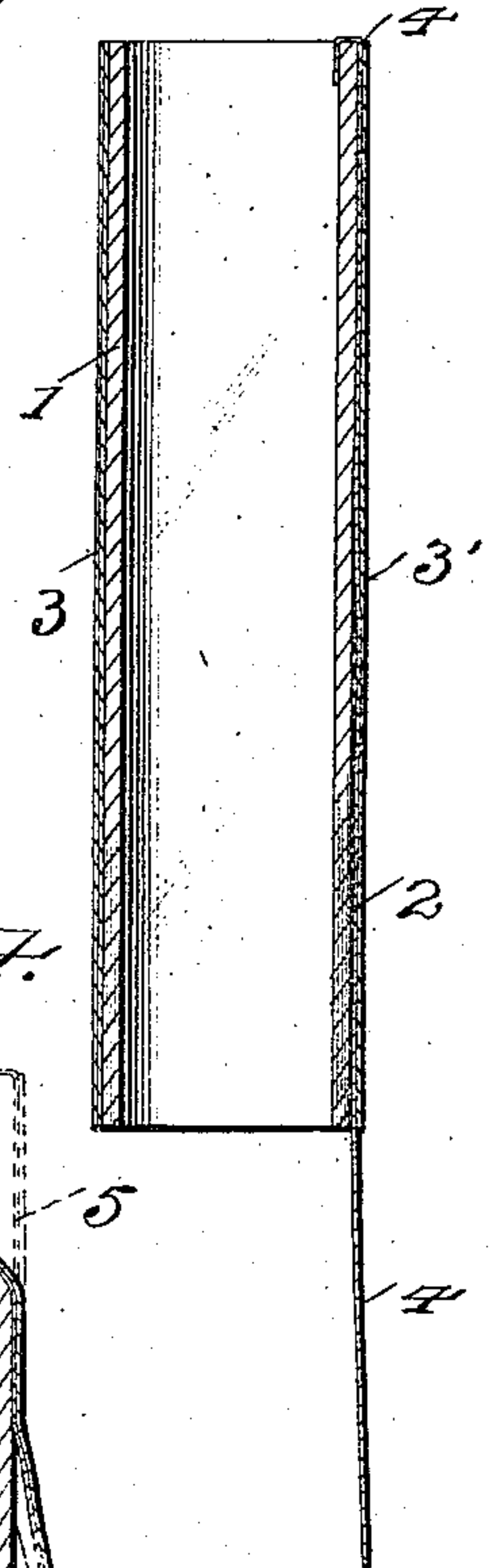
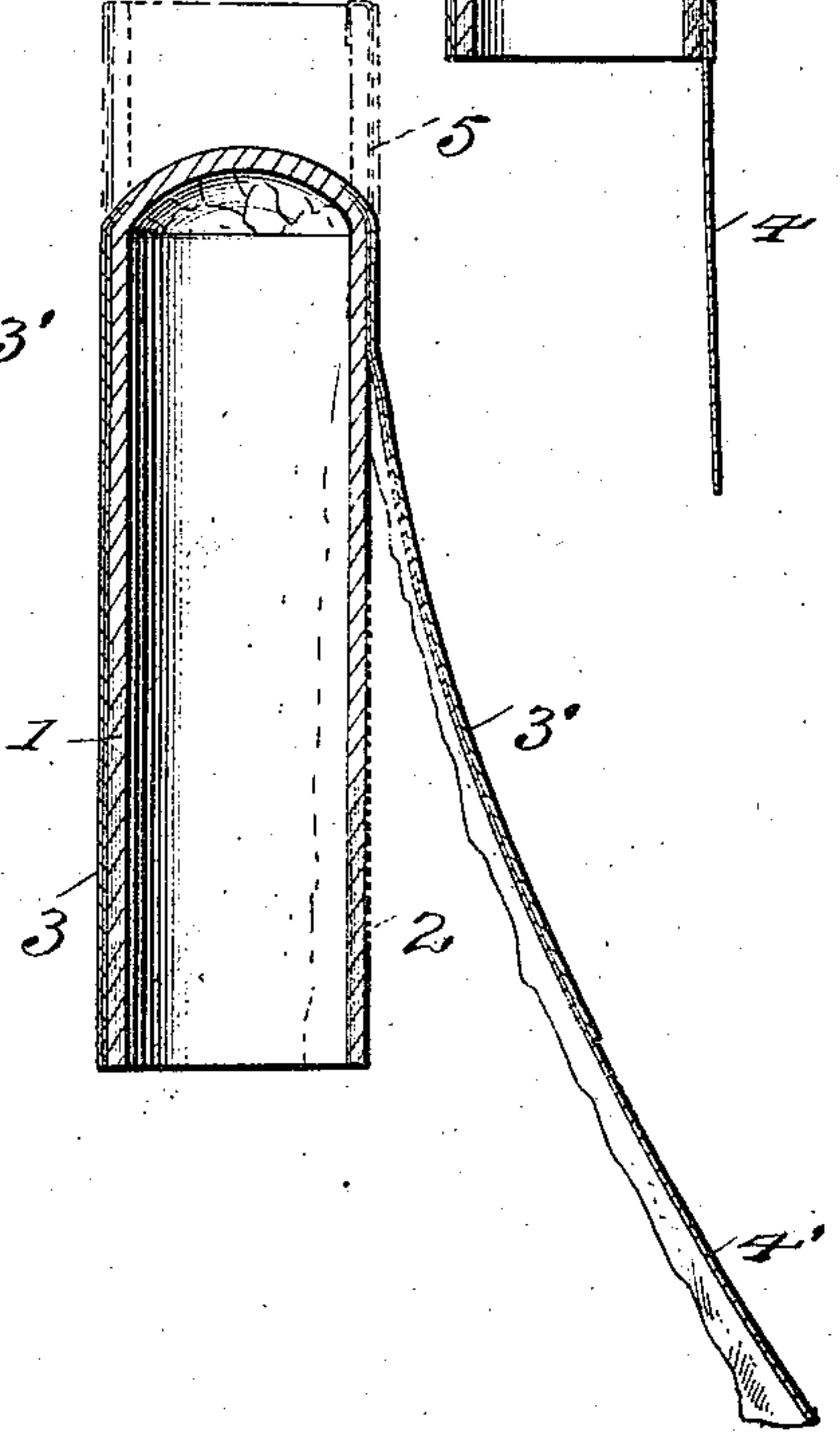


Fig. 4.



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# UNITED STATES PATENT OFFICE.

FRANK DUTCHER, OF VERSAILLES, PENNSYLVANIA.

## FUSEE-CAP.

No. 929,409.

Specification of Letters Patent.

Patented July 27, 1909.

Application filed August 8, 1907. Serial No. 387,664.

*To all whom it may concern:*

Be it known that I, FRANK DUTCHER, a citizen of the United States, residing at Versailles, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Fusee-Caps, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in fusee caps, and the objects of which are to improve the construction of the cap, and to reduce the cost of production.

The cap pertains to that type which is the subject matter of my co-pending application, in which one end of the cap-tube is closed by crimping inwardly an extended end of the tube, and subjecting the crimped portion to a disintegrating or frictional action under pressure, as fully explained and claimed in said application.

My present improvement pertains to the manner of applying and protecting a complementary igniting material on the cap, and to the manner of constructing and applying a label.

Figure 1 is a perspective view of my improved fusee cap complete, the fusee to which it is applied being shown in dotted lines. Fig. 2 is a perspective view of the cap-tube with the igniting material and protecting tape applied thereto, and the label detached. Fig. 3 is a longitudinal central sectional view of the tube with the complementary igniting material, the protecting tape, and the label applied thereto before the closing of the end of the tube to form a closure therefor. Fig. 4 is a similar view of the tube with its end closed, and the label and removing tape drawn outward to break away the label and expose the complementary igniting material.

It is well understood by those skilled in this art that a fusee has its lighting end provided with an igniting material, and that this is protected by a fusee cap, which has also an igniting material complementary to the igniting material of the fusee, whereby a frictional engagement of these materials will light the fusee. It is also known to those skilled in this art that the igniting material on the cap must be properly protected from the weather, and must be protected in the shipment of the fusees. The complementary material has heretofore been placed in some instances on the end of the fusee-cap, and a detachable cover provided for the end of the

fusee cap, and in other instances the material has been placed on the side of the cap and protected by a label with an intervening strip for tearing away the label and exposing the igniting material, such as that shown for instance in Patent 725,231 of April 14, 1903 granted to myself and another. My present improved cap has the igniting material applied to the side of the cap, and is an improvement on the form of cap shown in the said patent.

Referring now to the drawings, Fig. 1 illustrates the completed cap which consists of a tubular portion 1 having on its outer side at a point below its top the complementary material 2, and a surrounding label 3, with an intervening strip of cloth 4 positioned between the label and the igniting material 2. The tubular portion 1 consists of a roll of sheet paper made from tough stock, and the label 3 is formed also of tough paper stock, preferably of the same sheet stock of which the tube 1 is formed for the purpose hereinafter explained.

One feature of my present improvement is the manner of securing the label to the cap; another feature is the manner of securing the cloth strip and label to the cap, and the further feature is the manner of constructing and applying the label to the cap. Heretofore the labels and cloth strip have been permanently attached to the cap by paste or cement, and in this instance the label is in sheet form and wrapped around and pasted to the cap.

In carrying out my present invention the label and cloth strip are permanently secured to the cap in the process of forming the closure for the cap, the said members being commingled with the wall of the tube of which the cap is formed when the extended portion is formed into a closure for one end of the tube. The tube 1 is made longer than the finished cap and is provided with an extended portion 5 as shown in Fig. 4, and this extended portion forms the closure for the tube. As shown in Fig. 2 the label is made of a length substantially corresponding to the length of the tube 1, so that when it is applied to it it extends around the extended portion of the tube, so that in effect the label is provided with what may be termed an extended portion. In making up my improved cap the label 3 is first made in the tubular form as shown in Fig. 2 and of a size to receive the tube 1 with the cloth tape



and igniting material. In forming the tubular label a portion 3' of a single layer is left, and this single layer is preferably positioned over the cloth strip or tape 4, so that the label which is preferably made of the same tough sheet stock of which the tube is made may be torn away by pulling on the extended end 4' of the strip as shown in Fig. 4 to expose the igniting material.

10 The strip 4 is likewise provided with an extended portion which extends to the extended end of the tube 1, and preferably to the end or extremity thereof, and is preferably temporarily pasted to the tube to hold it

15 while the tube is being inserted into the tubular label 3. If desired however the end of the tape can be pushed around the end of the tube and caused to slightly lap thereover as shown in dotted lines Fig. 2 to permit the

20 placing of the tubular label, instead of temporarily pasting the extended portion of the tape to the extended end of the tube. The tape and label having been applied to the tube, they are crimped and commingled with

25 the closure in the process of making the closure and thereby permanently attached to the tube, so that they cannot become accidentally detached, but must be torn away by the tape 4.

30 As explained in my aforesaid co-pending application the extended end of the tube is crimped inward and the crimped in portion then subjected to a disintegrating rotary pressure, and in this process of forming the closure the label and the tape are subjected to

35 the same actions.

The foregoing manner of attaching the label and the tape makes a permanent attachment, and avoids the necessity of cementing or pasting the label to the tube, and

40 by forming the label of tough paper corresponding to, or substantially corresponding to the paper of which the tube is formed, a very permanent label is provided, and one

45 which will protect the igniting material from moisture and dampness in the hands of the brakeman when it is being handled before or when preparing for use, which does not always occur when the label is made of thin

50 material as heretofore.

Altogether a cap constructed substantially as herein shown and described produces a very durable and effective cap.

Preferably the extended ends of the tube, and the label with the intervening strip are dampened before they are crimped and compressed inwardly, and preferably this dampening is effected by treating them or coating them in any convenient manner with

paste.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. An improved fiber fusee cap consisting of a fiber tube and an embracing fiber label, the label and the tube having extended portions intimately crimped and compressed inwardly to form a closure for the tube.

2. A labeled paper fusee cap composed of a paper tube having a closed end formed from an inwardly crimped and compressed portion of the tube and the label intimately commingled with the crimped in portion of the tube.

3. An improved labeled paper fusee cap composed of a paper tube, an embracing fiber label, an intervening label removing strip, the tube having a closure composed of one end of the tube, the label and the strip intimately commingled and united.

4. An improved labeled paper fusee cap composed of a paper tube and an embracing fiber label, the tube having a closure for one end composed of one end of the tube and the label intimately commingled and united.

5. An improved labeled paper fusee cap consisting of a paper tube made of wrapped tough sheet paper, and a label embracing the tube and formed of tough sheet paper, the outer surface of the tube containing igniting material embraced by said label, an intervening label removing strip, one end of the strip, the label and the tube being permanently connected together.

In testimony whereof I affix my signature in presence of two witnesses.

FRANK DUTCHER.

Witnesses:

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ARCH OSBORNE.