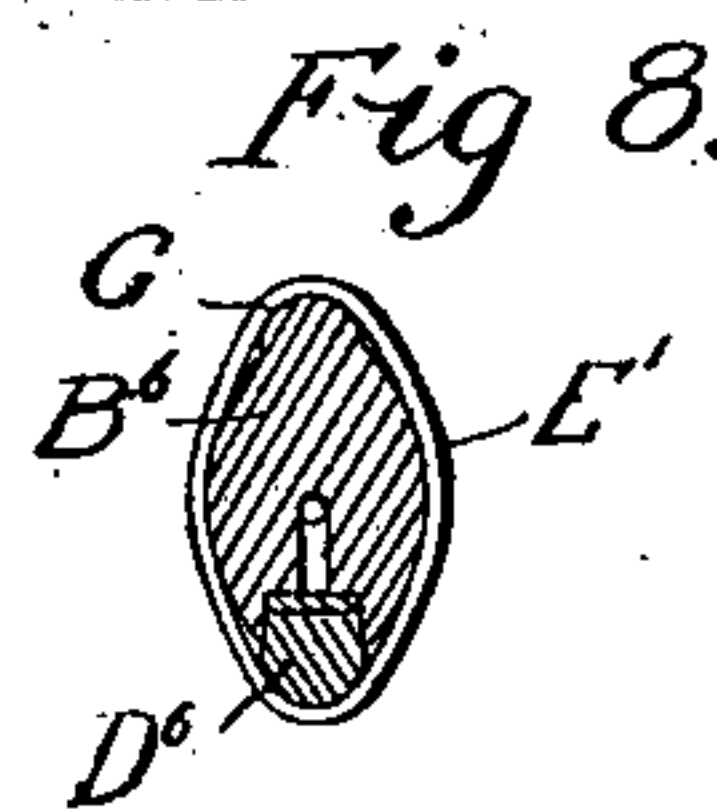
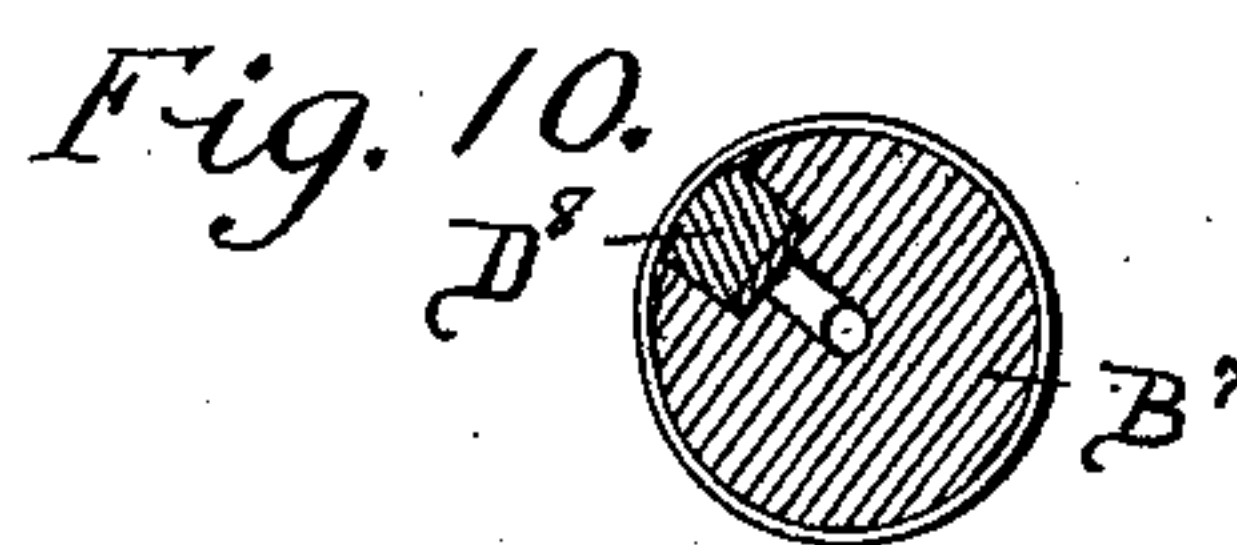
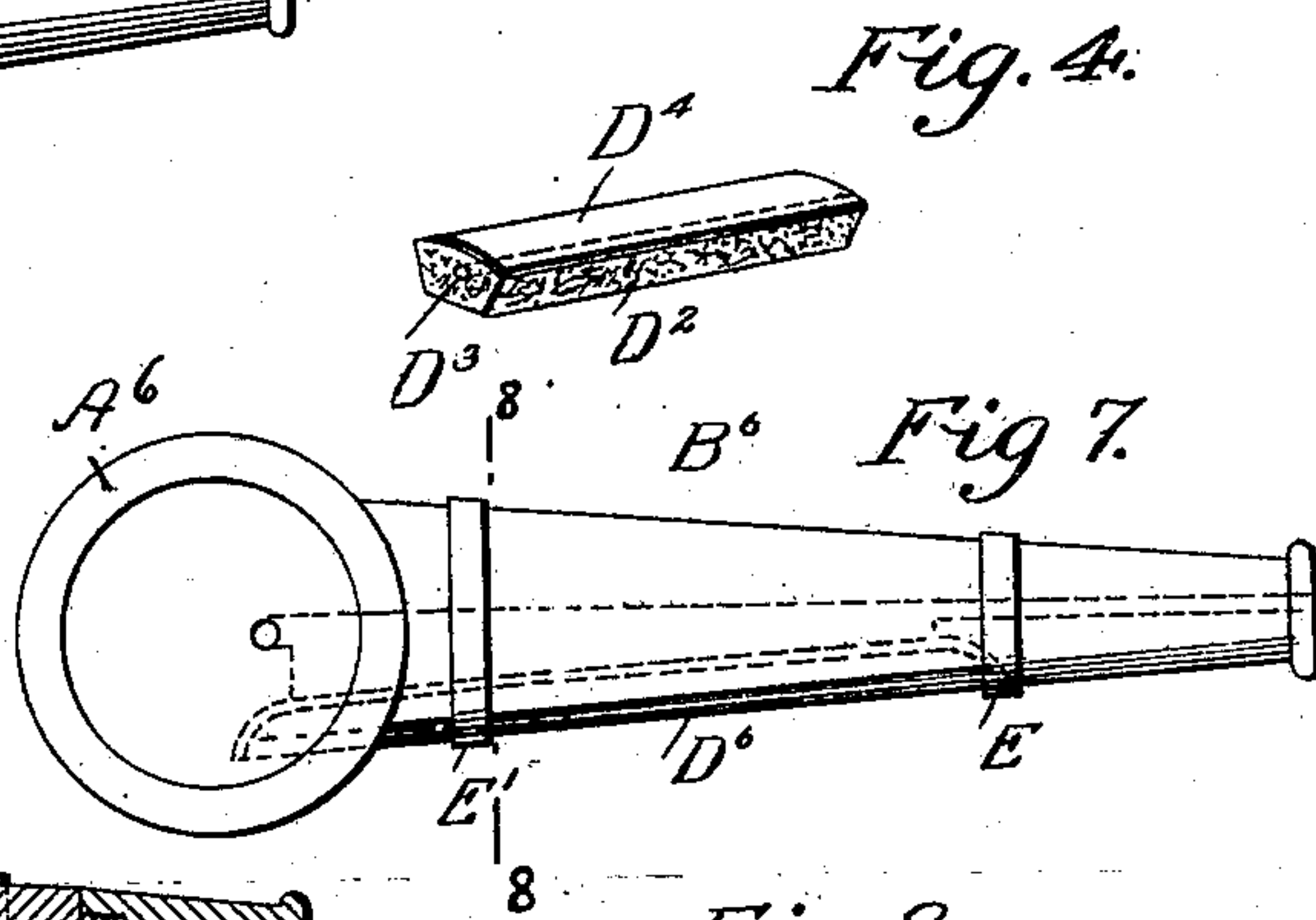
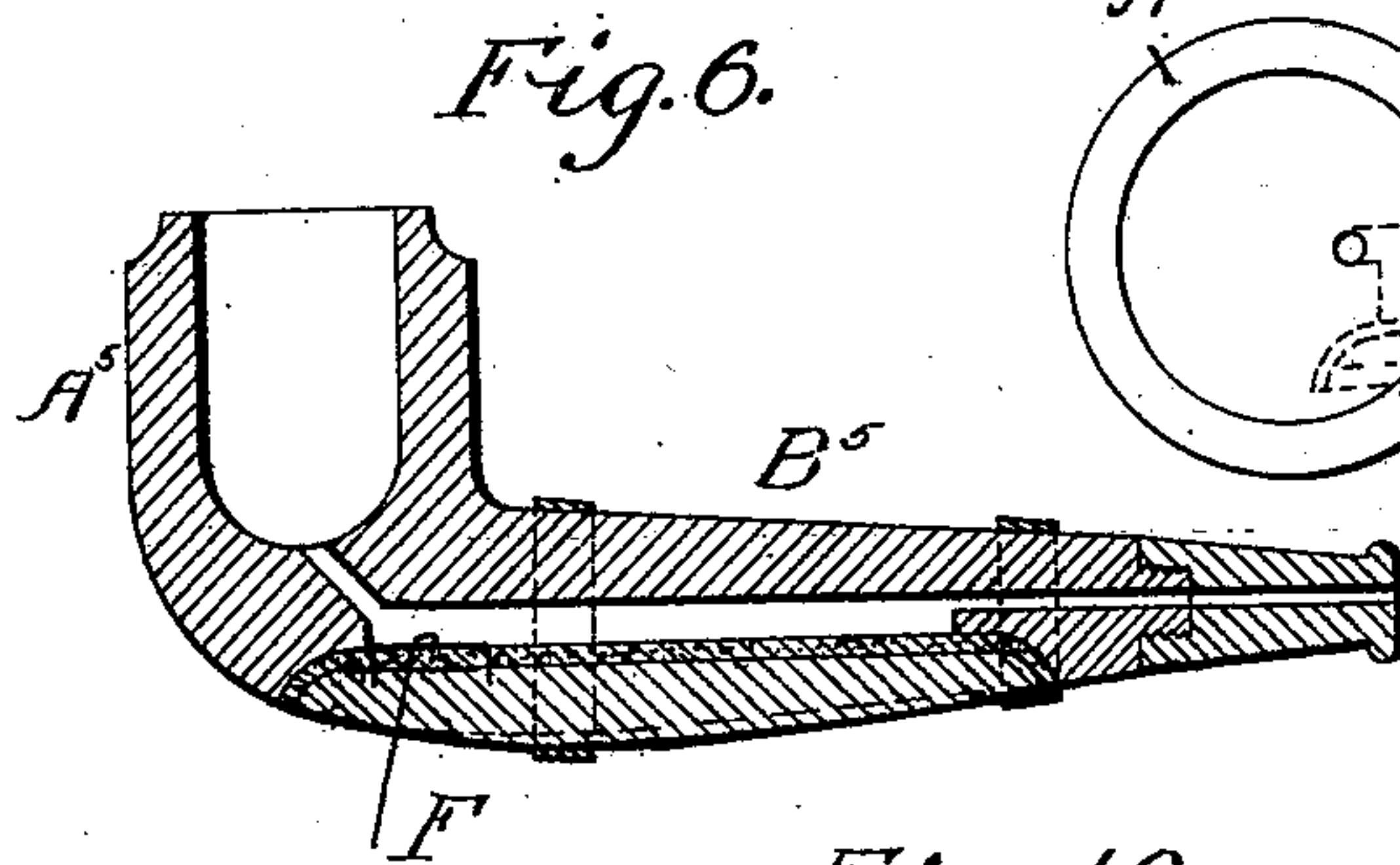
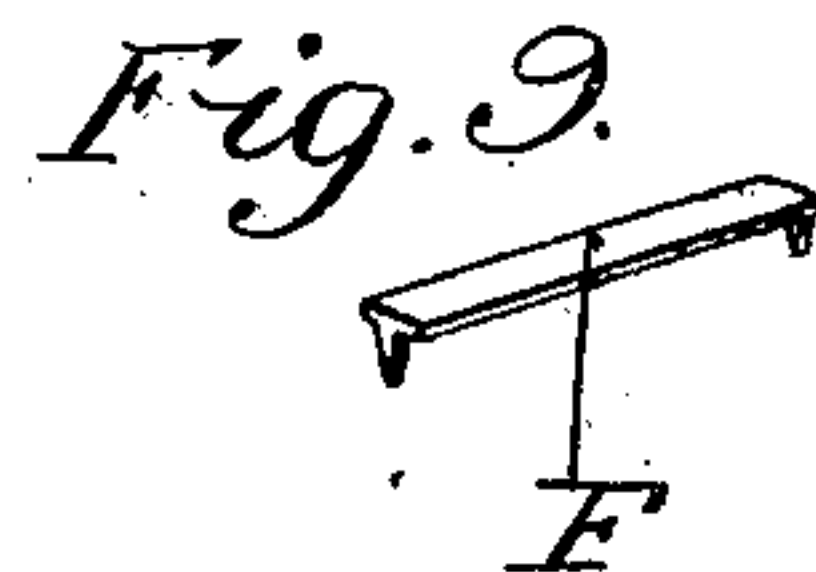
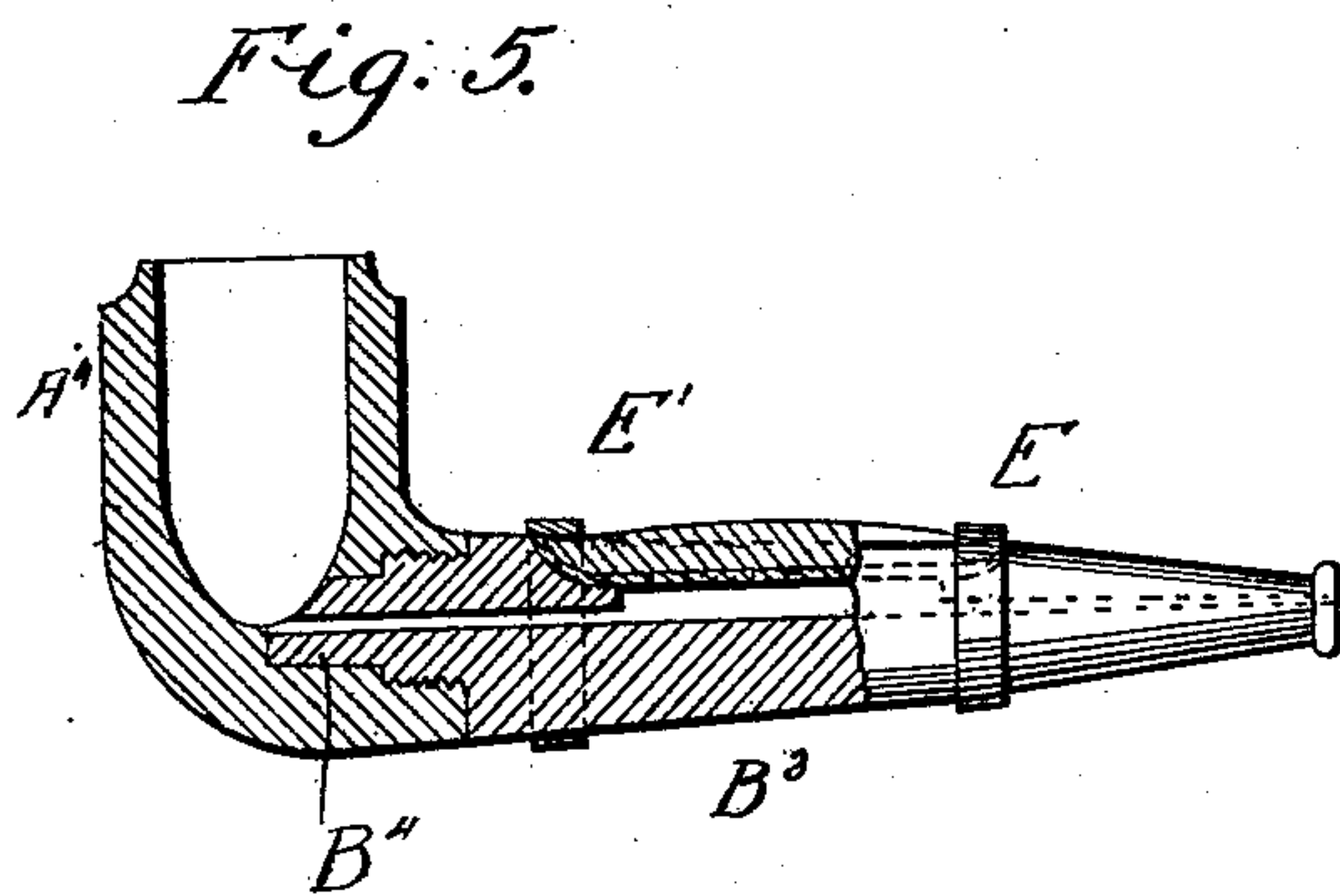
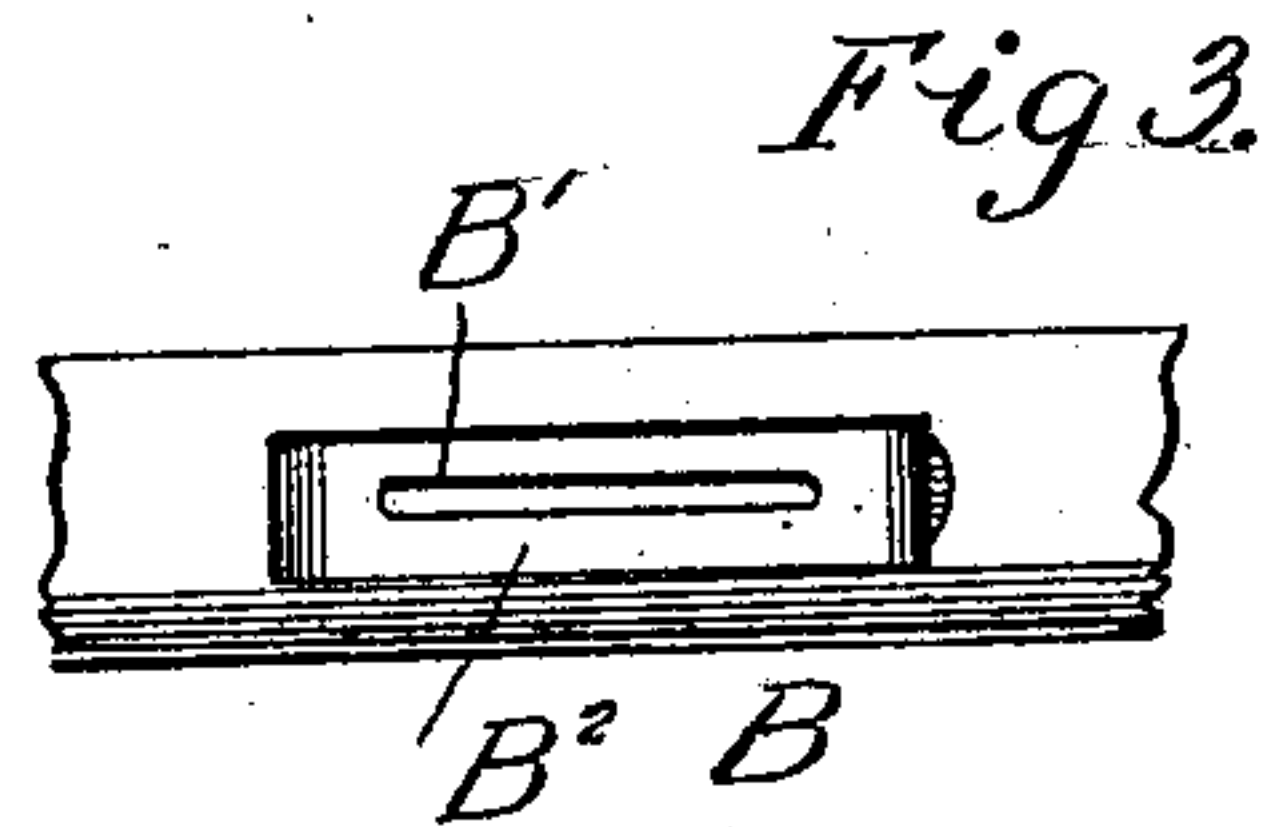
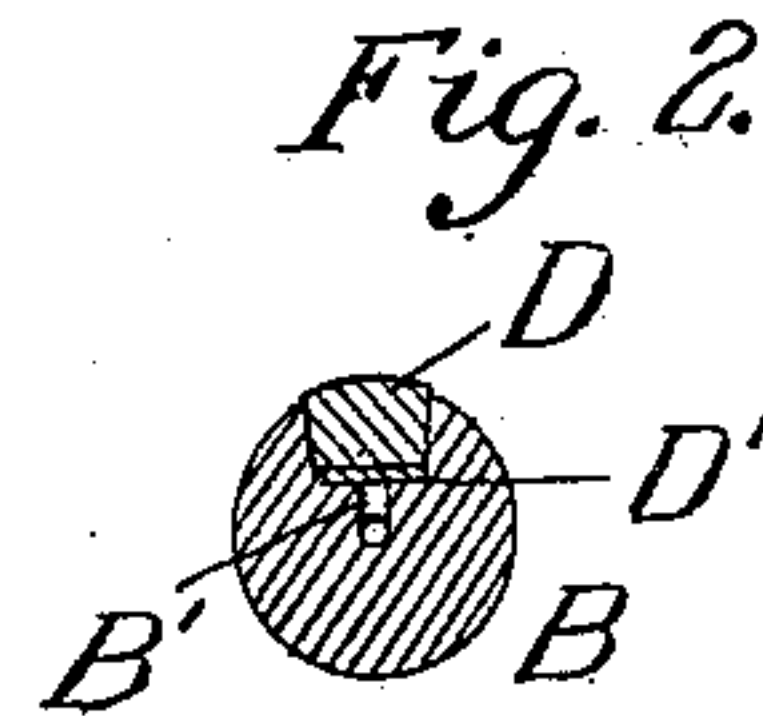
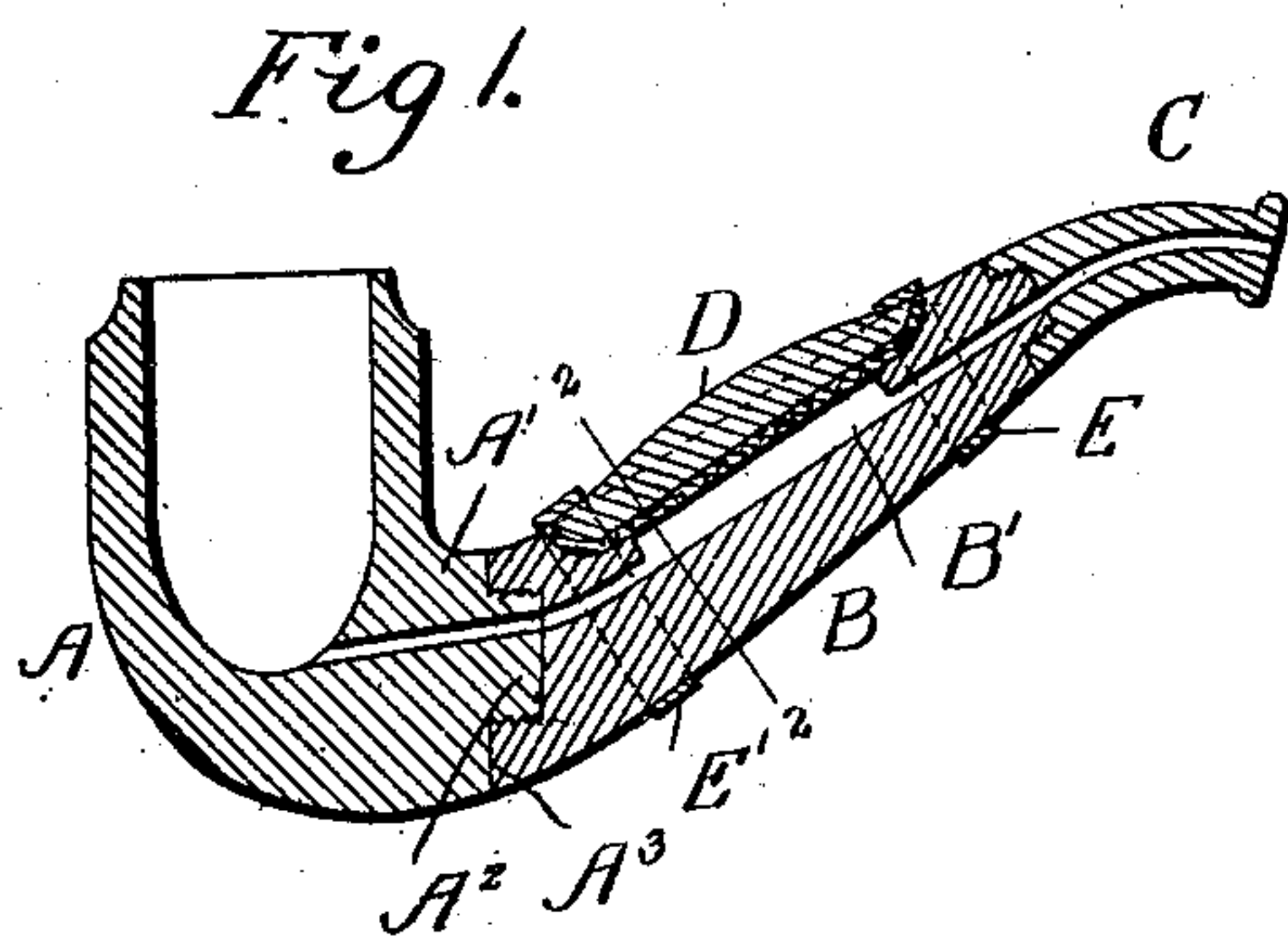


903,277.

Patented Nov. 10, 1908.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM E. ELAM, OF WASHINGTON, DISTRICT OF COLUMBIA.

TOBACCO-PIPE.

No. 903,277.

Specification of Letters Patent.

Patented Nov. 10, 1908.

Application filed April 8, 1908. Serial No. 425,823.

To all whom it may concern:

Be it known that I, WILLIAM E. ELAM, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Tobacco-Pipes, of which the following is a specification, reference being had therein to the accompanying drawing.

The object of this invention is to provide a pipe such that the smoke passage can be readily cleaned by means of a lateral slot which is normally hermetically sealed by a closure that may be readily replaced if lost or injured.

In many kinds of pipes having provision for opening the smoke duct it has been found that a pipe which was at first entirely satisfactory soon became leaky and worthless because the wood, subjected to heat and internal moisture from the smoke and saliva, became slightly distorted destroying the accurate fitting indispensable to hermetic sealing. Usually, no adequate repair has been possible and the pipe must be discarded after vexatious attempts to make use of it.

An additional object of this invention is to eliminate evils just mentioned.

In the accompanying drawings, Figure 1 is an axial section through a pipe bowl and stem embodying one form of my invention. Fig. 2 is a section on the line 2—2, Fig. 1. Fig. 3 is a plan view of a portion of the stem of Fig. 1, showing the lateral slot therein. Fig. 4 is a perspective view of a modified closure. Fig. 5 is an axial section of a slightly modified pipe having its stem at right angles to the axis of its bowl. Fig. 6 is a like section of a pipe having its slot below the smoke duct. Fig. 7 is a plan view of a stem having its slot in its side. Fig. 8 is a cross section of the stem of Fig. 7 along line 8—8. Fig. 9 shows in perspective one form of an incombustible shield sometimes used in the bottom of the smoke duct, near the pipe bowl, and Fig. 10 is a section of a modified stem.

In Figs. 1, 2, 3, A represents a pipe bowl, B a stem, and C a mouth piece, attached in the ordinary manner. The bowl is provided with an integral projection A' having a central threaded portion A², to screw into the stem B, and an angular shoulder A³ the plane of which is perpendicular to the axis of the portion A², and therefore adapted to receive either the abutting end of a straight stem having the same axis as the portion A²

or the obliquely cut end of the inclined stem B. In the upper side of the stem B is formed a longitudinal slot (B') which extends inward to the smoke duct, and the outer portion of the walls of the slot are cut away to form a shoulder (B²) which extends along both sides and both ends of the inner portion of the slot and lies in a plane approximately perpendicular to the plane of the slot.

The end walls of the outer wider part of the slot are preferably inclined or curved as shown. This slot is normally hermetically sealed by a closure (D) made to fit the enlarged outer portion and having a yielding inner face to rest upon the shoulder at all points. The closure is pressed inward perpendicularly to the plane of the shoulder by suitable devices, shown as two rings (E, E') one near each end of the closure, adapted to slide along the stem. The middle portion of the closure projects outward beyond the body of the stem to form gentle inclines so that as each ring is pushed toward the other it progressively presses the yielding face of the closure directly against the shoulder in the slot and effectually closes the latter.

The yielding inner face of the closure may be secured by facing the wood body of the same with a layer (D') of cork or other yielding material, or if desired, the body as well as the inner face of the closure may be of cork or the like. In the latter case the closure D², Fig. 4, may be reinforced by inserting in it a metal rod D³ and by covering its outer face with sheet metal or thin strip of wood D⁴, although one of the stiffening devices may, if desired, be omitted. The metal D⁴, when used, also serves to prevent the pressure of the rings E, E' from injuring the yielding material, and also may aid in removing the closure.

Fig. 5 shows a pipe provided with a bowl A⁴, a non-inclined straight stem B³ but equally adapted to receive an inclined stem having the oblique end face. The stem is shown in this case as screwed into the pipe and as having a large end portion B⁴ reaching to and forming a part of the bowl's interior surface. The lateral slot in the stem is precisely similar to that already described. In either form, the parts being detached the unopened portions of the smoke duct are very short and hence readily cleaned.

Fig. 6 shows a pipe having a stem B⁵, and bowl A⁵, integral and with the duct-opening

slot upon the lower side and extending from a point near the mouthpiece to a point in the lower side of the bowl. Here, a portion of the yielding layer lies very near the interior of the bowl and in such position that the hot smoke from the bowl constantly impinges upon it, and as the material, if cork or the like, is readily charred, it will not long resist without injury such direct impact of hot gases and even of sparks, a shield F of incombustible material is provided. This may be a narrow plate of metal extending along the stem as far toward the mouthpiece as may be desired, but nowhere extending between the shoulder and that part of the yielding layer which should meet the shoulder. The same shield may be employed in the form of Fig. 1.

Figs. 7 and 8 illustrate a stem B^c tapered uniformly toward the mouth piece, so that the closure D^c may be straight upon its outer side, and having its slot extending horizontally inward. In order that the pressure exerted by the rings may act properly upon the closure, although the outer side of the latter is in a straight line with the corresponding parts of the stem, the closure is given a shorter radius of curvature than the surface alongside it, and the whole is made symmetrical by providing the opposite side of the stem with a projecting rib G having the same short radius.

The slot may extend into the bowl of the pipe as indicated so as to open a greater portion of the duct. It is not essential that the slot be in the horizontal axial plane of the stem, but it may extend obliquely downward and inward to the smoke duct, as shown in Fig. 10, so that any fluid that may collect will not ordinarily reach the closure seat.

It may be noted that the closures mentioned are preferably slightly wedge shaped, and that when as in the form shown in Fig. 4 the lateral and end faces are of yielding material, the closure acts to some extent like a yielding plug. In any case the closure having a yielding contact face, whatever the location of the seat upon which it rests, conforms to that seat when pressed home and gives a perfect closure in spite of small changes by warping of the wood, and indeed when the closure rests upon a shoulder or seat approximately at right angles to the direction of the slot, no probable distortion

of the wood prevents perfect closure. This closing effect is aided by the fact that the yielding material advances slightly into the narrow portion of the slot, the angle of the stem embedding itself in the material and the latter tending at the same time to plug the narrow portion.

What I claim is:

1. The combination with a pipe provided with a longitudinal slot extending inward to its smoke duct and with a closure seat entirely surrounding said slot, of a slot closing member of yielding material adapted to fit said seat, a comparatively rigid and unyielding member reinforcing said yielding closing member, and means for pressing the closure against its seat and binding it firmly against the same.

2. The combination with a pipe provided with a slot opening its smoke duct laterally and having a closure seat entirely surrounding said slot, of a closure for said slot having a yielding face adapted to fit said seat, and means for at will pressing said face against said seat and holding it in position.

3. The combination with a pipe having a slot opening its smoke duct laterally and provided with a shoulder or seat surrounding said slot, of a closure having a yielding face adapted to fit against said seat, and means for pressing said closure firmly against said seat.

4. The combination with a pipe having a slot opening its smoke duct laterally and provided with a closure-seat completely surrounding the slot, of a closure for said slot, having a yielding face adapted to fit said seat, and means for applying adjustable pressure to force the closure into seating position.

5. The combination with a pipe provided with a slot opening its smoke duct laterally and having its outer portion of greater dimensions than its inner duct-meeting portion, of a closure of elastic material adapted to be seated in said slot to hermetically close the same, and devices adapted for applying a gradually increasing pressure to said closure to force it home.

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

WILLIAM E. ELAM.

Witnesses:

JAMES L. CRAWFORD,
WALLACE GREENE.