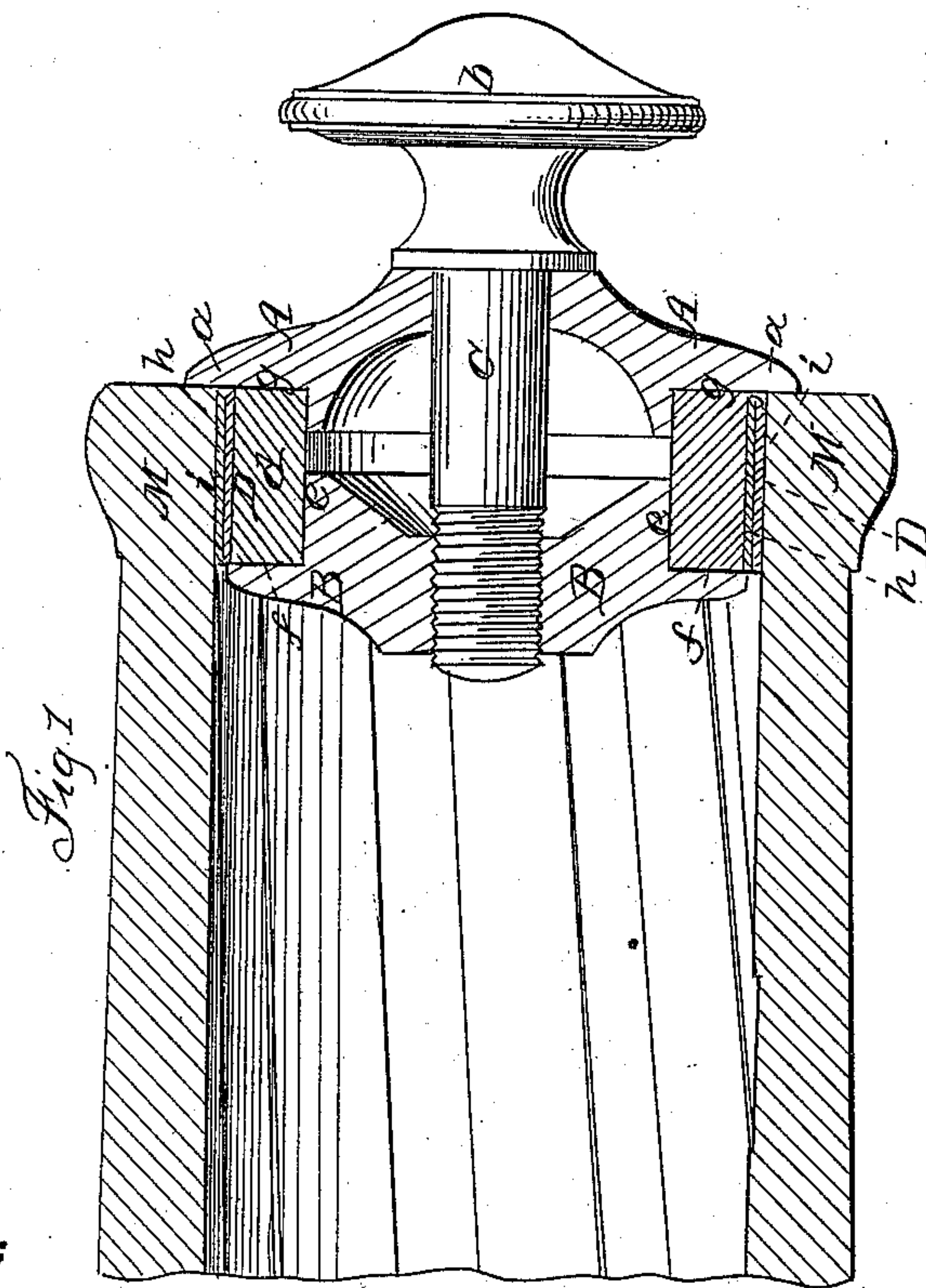
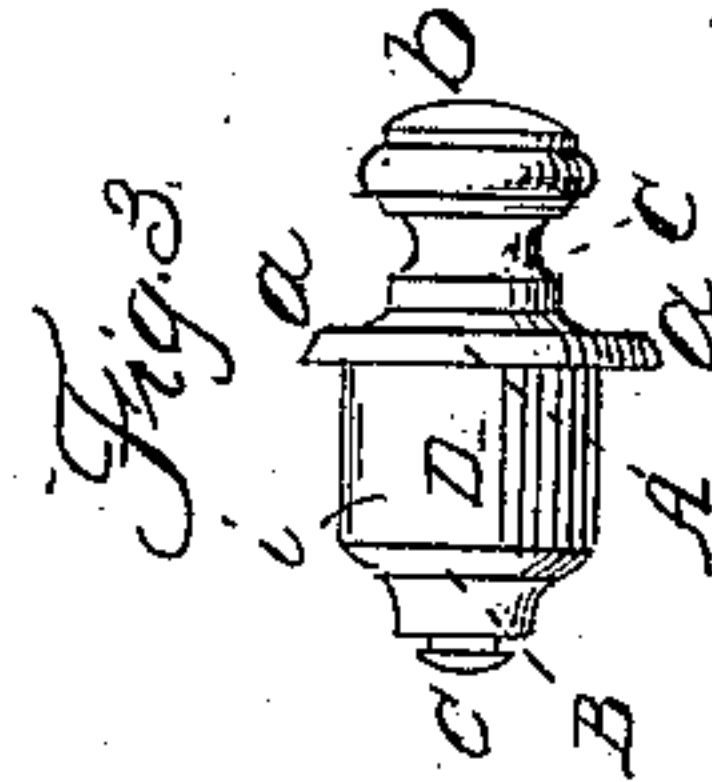
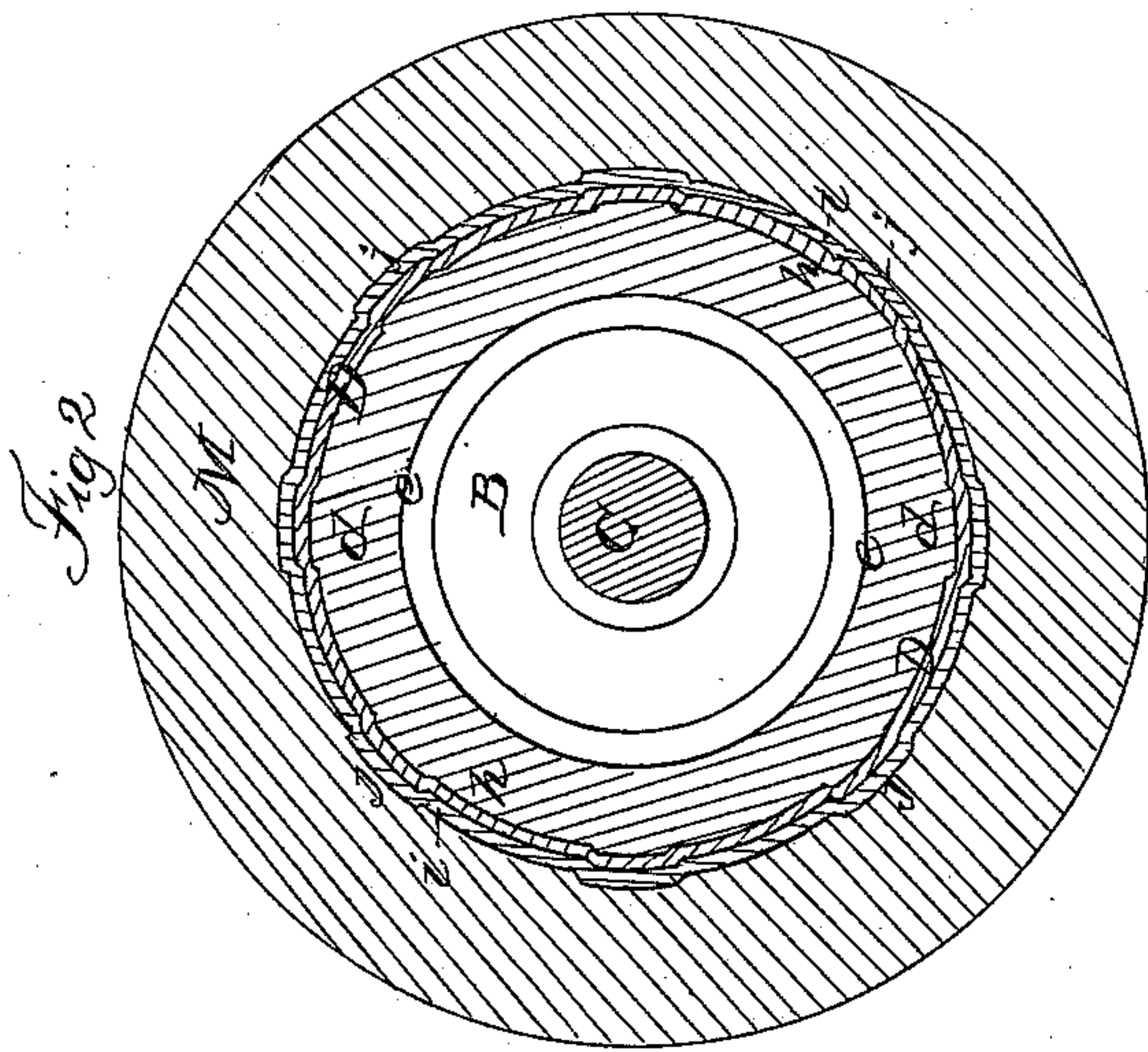


G. R. WILLMOT.

Tompion.

No. 40,720.

Patented Nov. 24, 1863.



Witnesses;

*Geo. Reed*  
*Theo. Tusch*

Inventor;

*Geo R Willmot*



# UNITED STATES PATENT OFFICE.

GEORGE R. WILLMOT, OF MERIDEN, CONNECTICUT.

## IMPROVEMENT IN EXPANSIBLE TOMPIONS FOR FIRE-ARMS.

Specification forming part of Letters Patent No. 40,720, dated November 24, 1863.

*To all whom it may concern:*

Be it known that I, GEORGE R. WILLMOT, of Meriden, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Expanding Tompions for Ordnance and Small-Arms; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

Figure 1 is a central section, showing the application of my improved tompion within the muzzle of a rifled cannon. Fig. 2 is a transverse section of the same. Fig. 3 is a side view of a tompion for small-arms. Fig. 4 is a transverse section of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to the expanding packing of the tompion. This packing has been heretofore made of vulcanized india-rubber or other gum, and the free sulphur which remains in the gum after vulcanization has produced the corrosion of the interior of the muzzle of the piece to which it has been applied.

The object of my improvement is to prevent this effect; and it consists in the application to the vulcanized gun-packing of a covering of chamois or other leather, cloth, felt, velvet, plush, or other suitable material which is neither sticky nor contains any of the elements by which the corrosion of metal can be produced, and in the interposition between the vulcanized gum and the said covering of vulcanized india-rubber or other material possessing a similar quality of being impervious to sulphur.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the head of the tompion, made with a flange, *a*, broad enough to cover a portion of the face of the muzzle M of the piece; and B is the compressing-plate, having its largest part of smaller diameter than the bore of the piece.

C is the screw for expanding the tompion, passing freely through a hole in the center of the head and screwing into a tapped hole in the center of the plate B, and having at its outer end a knob, *b*, to serve as a handle by which to turn it, for the purpose of drawing

the compressing-plate toward the head and so compressing the packing D in a direction parallel with the axis of the tompion, and thereby expanding it in circumferentially for the purpose of making it fit tightly within the muzzle of the piece. The packing-ring D is fitted into a suitable groove or recess formed between the head and compressing-plate, and, with the exception of the covering of the said ring, the construction of the tompion is essentially the same as that of other expanding tompions. In tompions of small size I incase the screw C in a metal tube, *k*, Fig. 4, fitting loosely over the screw, and adapted to sustain the inward pressure of the packing when compressed and prevent contact and friction between it and the screw. The latter will thus be enabled to work perfectly free. The packing D is composed, principally, of a ring, *d*, of vulcanized india-rubber or other elastic gum fitting the recess *e f g*, formed between the head A and compressing-plate B of the tompion, and has its exterior periphery first coated with unvulcanized india-rubber or other flexible gum or material, *h*, which is impervious to the sulphur of the vulcanized gum, and afterward covered with soft leather, cloth, felt, velvet, plush, or other material, *i*, which is not sticky like unvulcanized gum and does not contain any of the elements by which corrosion of metal is produced. The coating *h* may be composed of a thin band of pure india-rubber or other gum wrapped round the ring *d*, and cemented to the said ring by a cement composed of a solution of such gum, or may be produced by dipping the ring *d* one or more times into a solution of india-rubber or other flexible gum, and the outer covering, *i*, may be secured by means of the cement or solution above mentioned. The packing thus produced and prepared should in its normal condition be of such circumference that it will pass only into the muzzle of the piece, but that after the insertion of the tompion into the muzzle it may, by turning the screw C to compress it in a direction parallel with the axis of the tompion, be expanded circumferentially to fit tightly into the muzzle of the piece, and also to fill up the grooves *j j*, as shown in Fig. 2, when the piece is rifled.

I do not claim the application to a tompion of an expanding packing set out by means of a screw; but

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

1. The employment, in a tompon, in combination with an expanding packing of vulcanized gum, of an outer covering of leather, cloth, felt, velvet, plush, or other soft unadhesive material, which contains no elements that can corrode metal, and an interposed flexible material—such as unvulcanized gum—which is impervious to the sulphur of the vulcanized gum, substantially as herein described.

2. The use, in an expansible tompon, of the casing or tube *k*, in the described combination with the screw *C*, elastic ring *d*, and plates A and B, for the purpose specified.

GEORGE R. WILLMOT.

Witnesses:

J. W. COOMBS,  
GEO. W. REED.