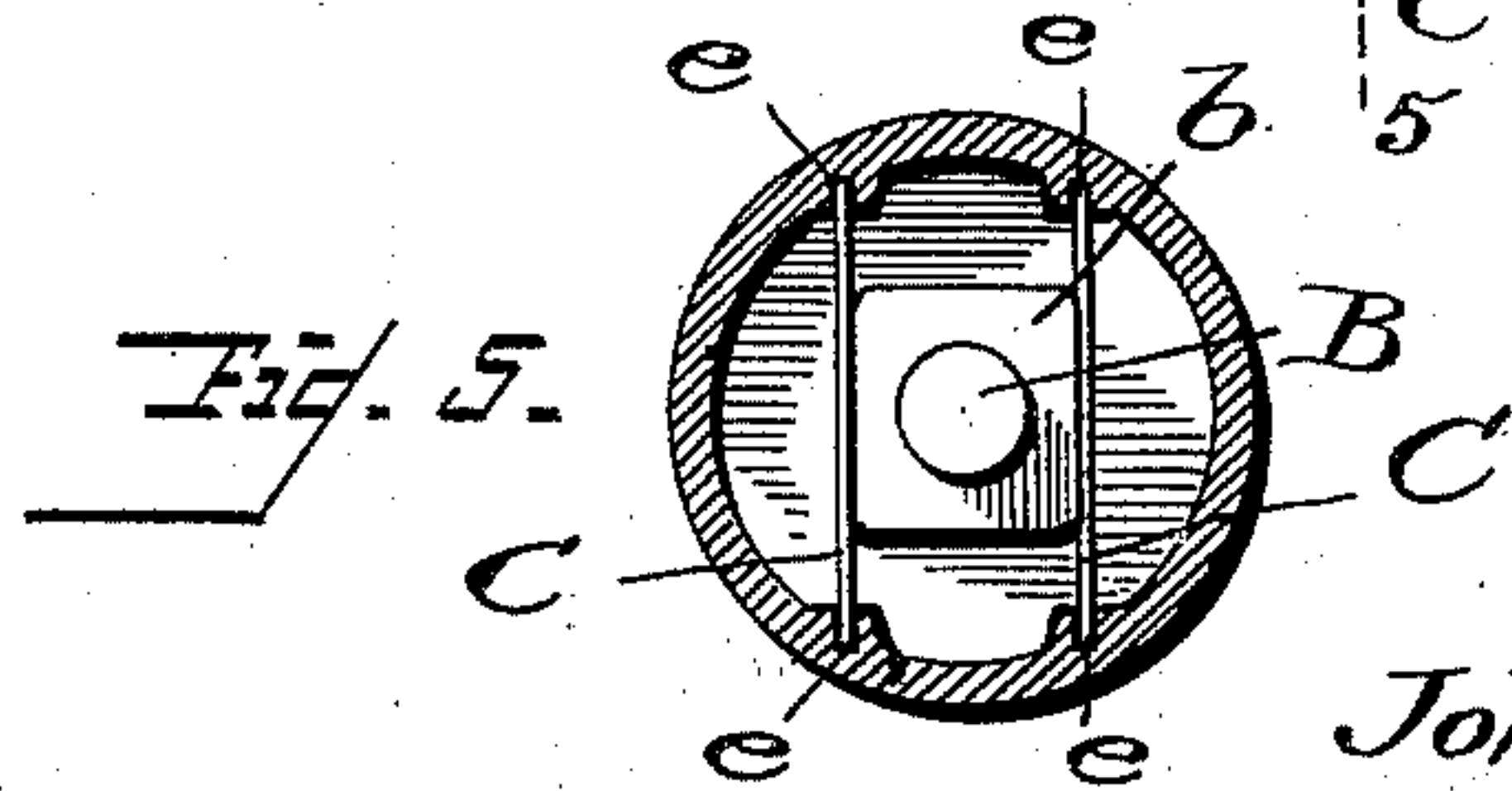
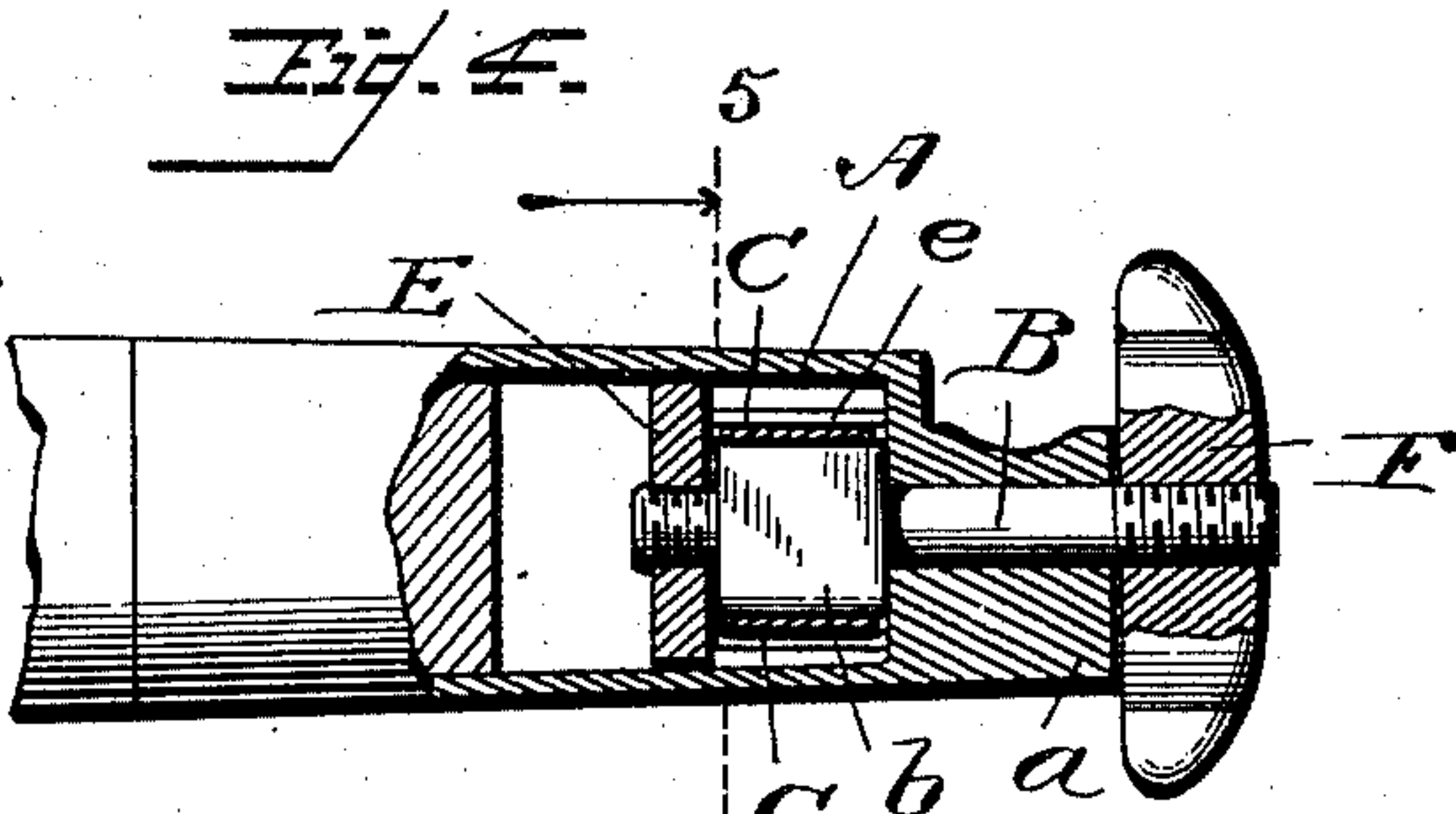
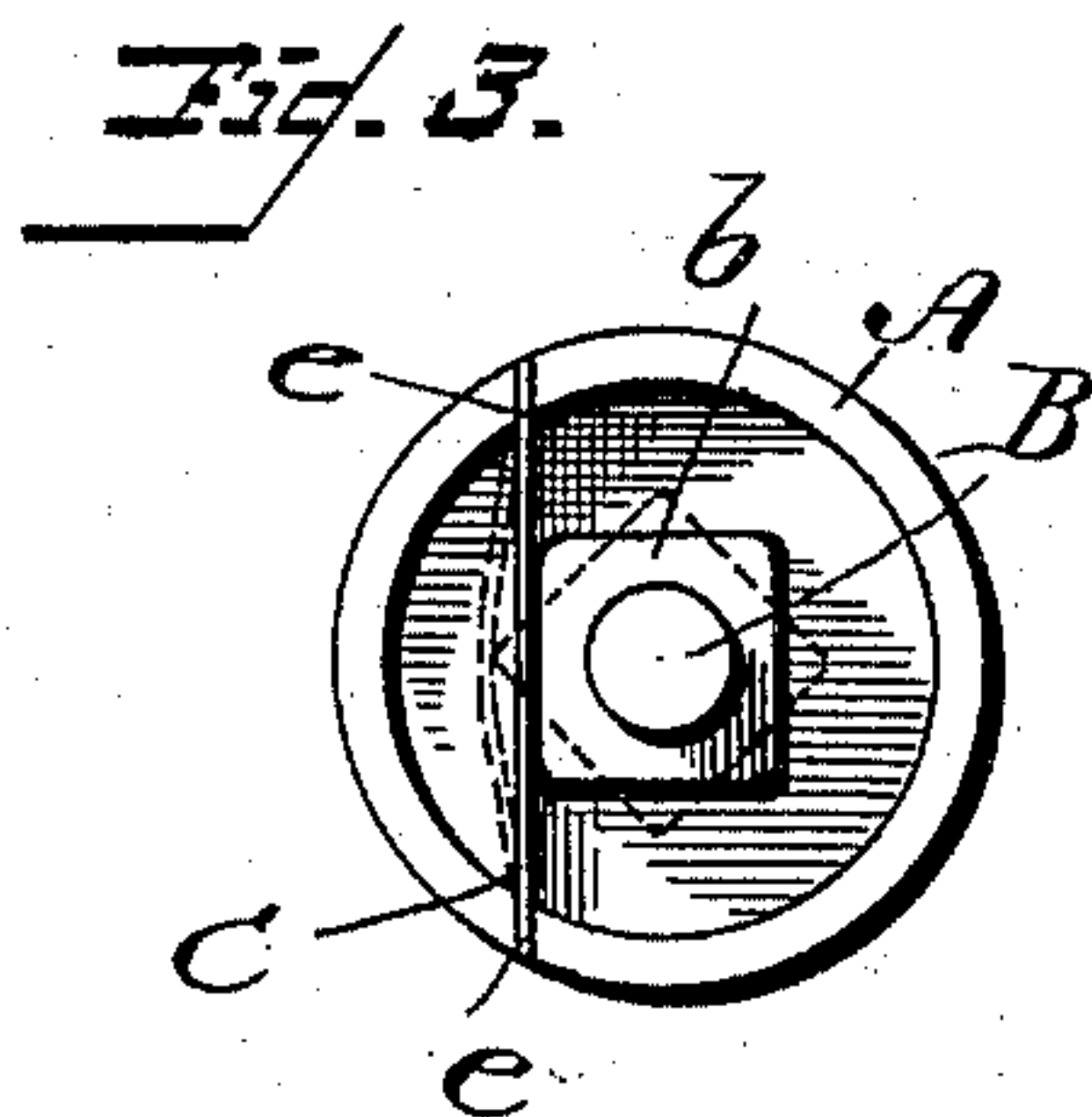
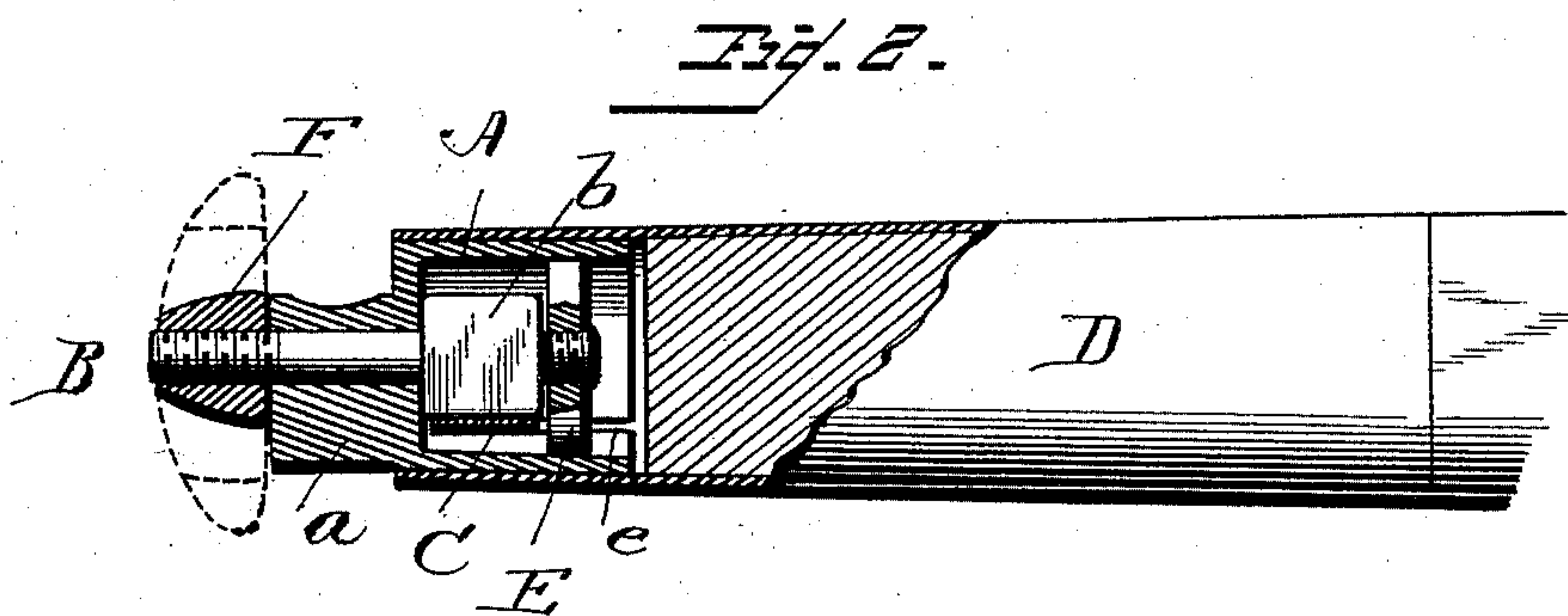
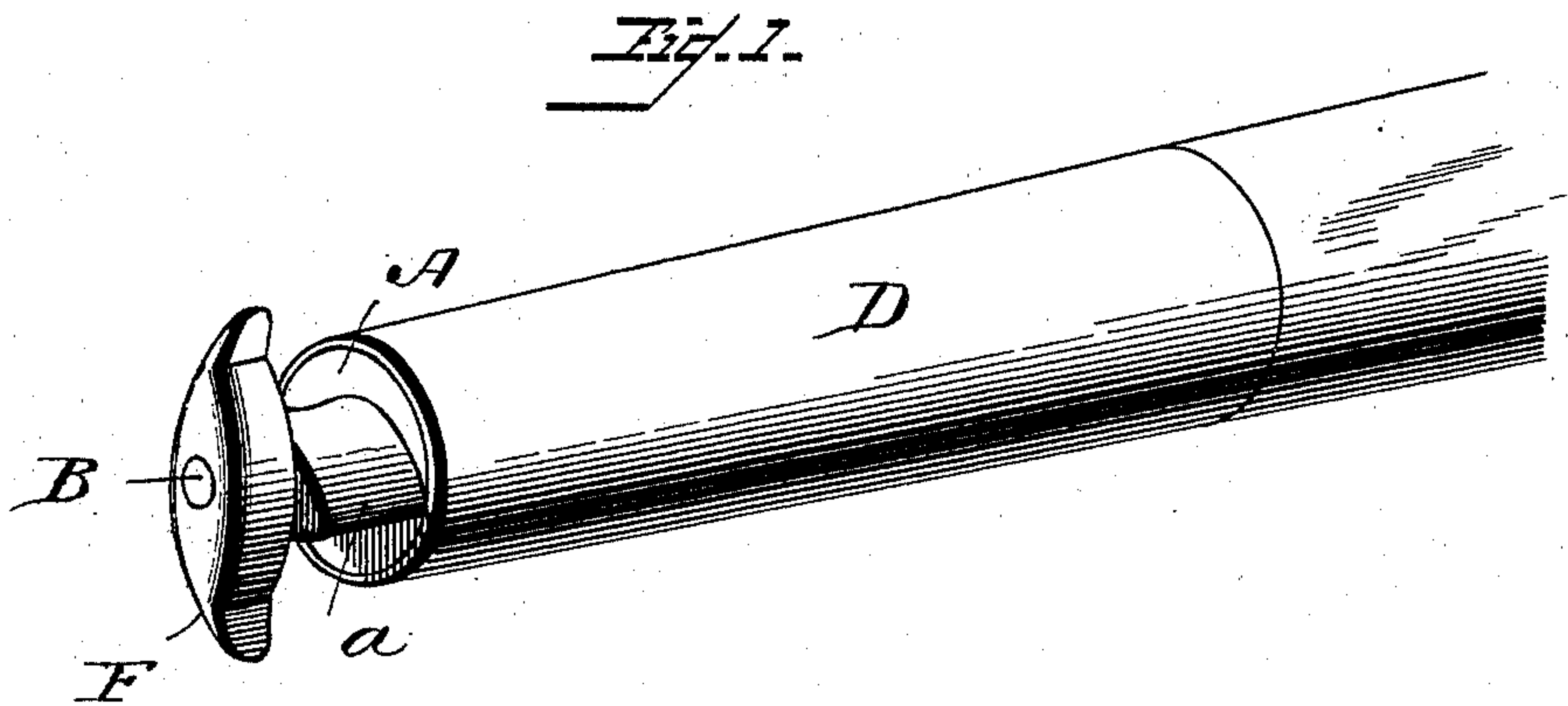


(No Model.)

J. F. GRAVES.  
WHIFFLETREE HOOK.

No. 488,391.

Patented Dec. 20, 1892.



Witnesses  
*Wm. S. Steidus.*  
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Inventor  
*John F. Graves.*

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# UNITED STATES PATENT OFFICE.

JOHN FLOYD GRAVES, OF ELLSWORTH, MINNESOTA.

## WHIFFLETREE-HOOK.

SPECIFICATION forming part of Letters Patent No. 488,391, dated December 20, 1892.

Application filed April 13, 1892. Serial No. 429,024. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FLOYD GRAVES, a citizen of the United States, residing at Ellsworth, in the county of Nobles and State of Minnesota, have invented certain new and useful Improvements in Whiffletree-Clips; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to whiffletree clips.

The object of the invention is to provide a fastening or clip that will admit of the trace being readily secured to and removed from the whiffletree, and which will be efficient and convenient of manipulation.

The improvement consists of the novel features and the peculiar construction and combination of the parts which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which;

Figure 1 is a perspective view of the end of a whiffletree having my improved clip applied thereto. Fig. 2 is a longitudinal section of the outer end of the clip. Fig. 3 is an inner view of the hollow plug which is inserted in the thimble, the cap plate being removed, and showing the operation of the headed pin and the retaining spring by dotted lines. Fig. 4 is a detail view of a modification, parts being broken away to the better show the details of construction. Fig. 5 is a section on the line 5 5 of Fig. 4 looking in the direction of the arrow.

The clip comprises essentially a hollow plug A having an oval shaped projection *a* eccentrically disposed on its outer end, and having a bore through said projection and the closed end of the plug to receive the pin B which is adapted to turn therein. This pin is provided at its inner end with a flat side head *b* which is adapted to be engaged by one or more flat springs C which are extended across the space between and secured at their ends to the sides of the plug. The spring or springs C serve to hold the pin B at the required adjustment by engaging with the flat sides of the head *b*, and have their ends

slipped in grooves or slots *e* in the side of the said plug. The cap plate E secured to the inner end of the pin B, preferably by being riveted to or screwed upon a short projection integral therewith, protects the spring or springs from injury and retains them in position. The turn button F secured to the outer end of the pin B is adapted to be turned parallel with the major axis of the projection *a* or set crosswise thereof, being held in either position by the spring or springs engaging with the flat sided head *b*.

The plug constructed as shown in Fig. 4 is designed to be slipped on the end of a whiffletree, and when made as shown in the remaining figures is designed to be fitted in a thimble D which is preferably tapering and adapted to be slipped on the end of a whiffletree.

When applying or removing the trace from the clips, the turn-button is set parallel with the projection *a*, and when the trace is in position on the said projection *a* the turn button is set crosswise to prevent the trace slipping off.

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

1. A whiffletree clip consisting of a plug having a projection at one end to receive the trace, a pin journaled in the said plug and formed with a flat sided head at its inner end, and provided with a turn button at its outer end, and a flat spring adapted to press laterally on the flat side of said head to retain the said pin and turn button in proper position, substantially as and for the purpose set forth.

2. A whiffletree clip comprising a hollow plug having a projection at the closed end to receive a trace, a pin journaled in the said closed end of the plug and having a flat sided head at its inner end, and having a turn button at its outer end, a flat spring having its ends let into the sides of the plug, and a cap plate secured to the said pin and adapted to protect and retain the said spring in place, substantially as described.

3. The herein described whiffletree clip comprising a hollow plug having a projection at the closed end to receive a trace, a pin jour-

naled in the said closed end of the plug and  
having a flat sided head at its inner end and  
having a turn button at its outer end, a spring  
having its ends let into the sides of the plug  
5 and adapted to act on the flat sides of the  
said head, a cap plate secured to the inner  
end of the pin, and a thimble embracing the  
plug and the ends of the flat spring to hold

the latter from longitudinal displacement  
substantially as specified. 10

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

JOHN FLOYD GRAVES.

Witnesses:

CHARLES M. CRANDALL,  
J. H. McROBERT.