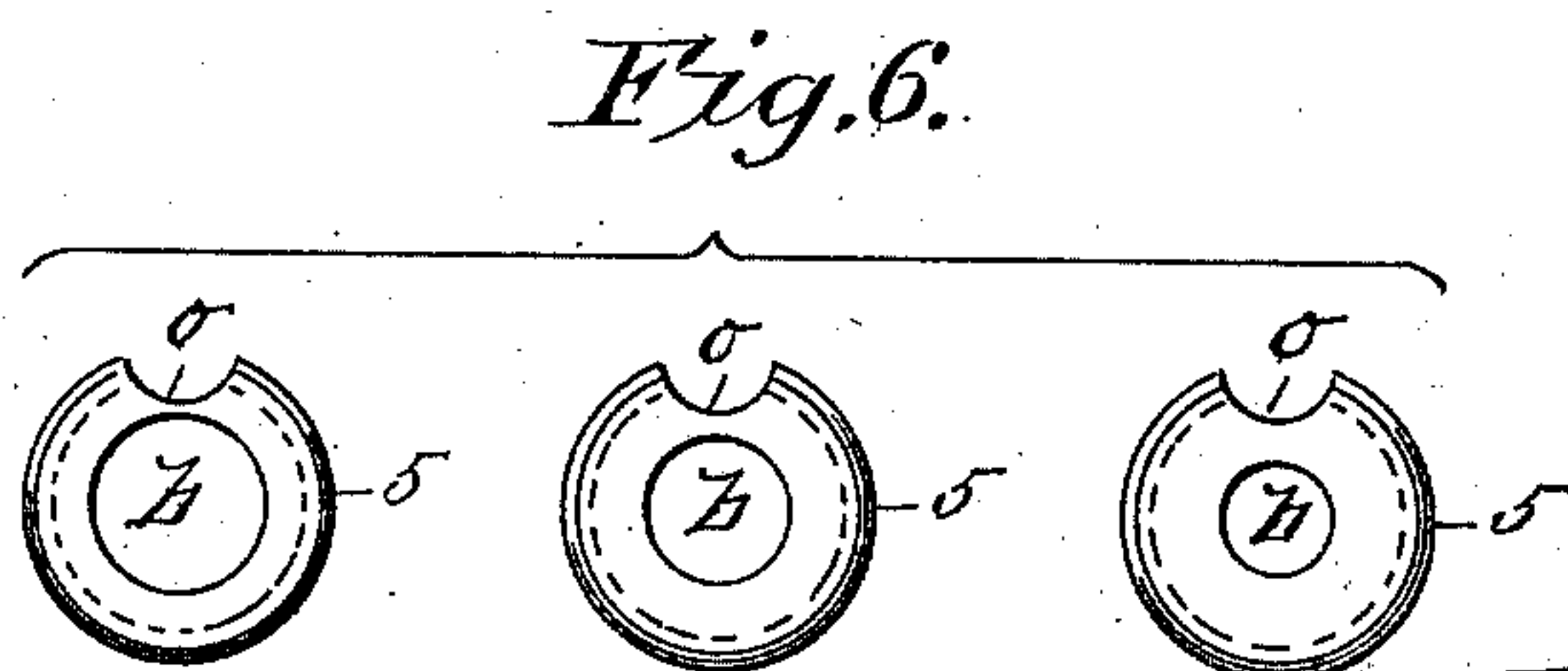
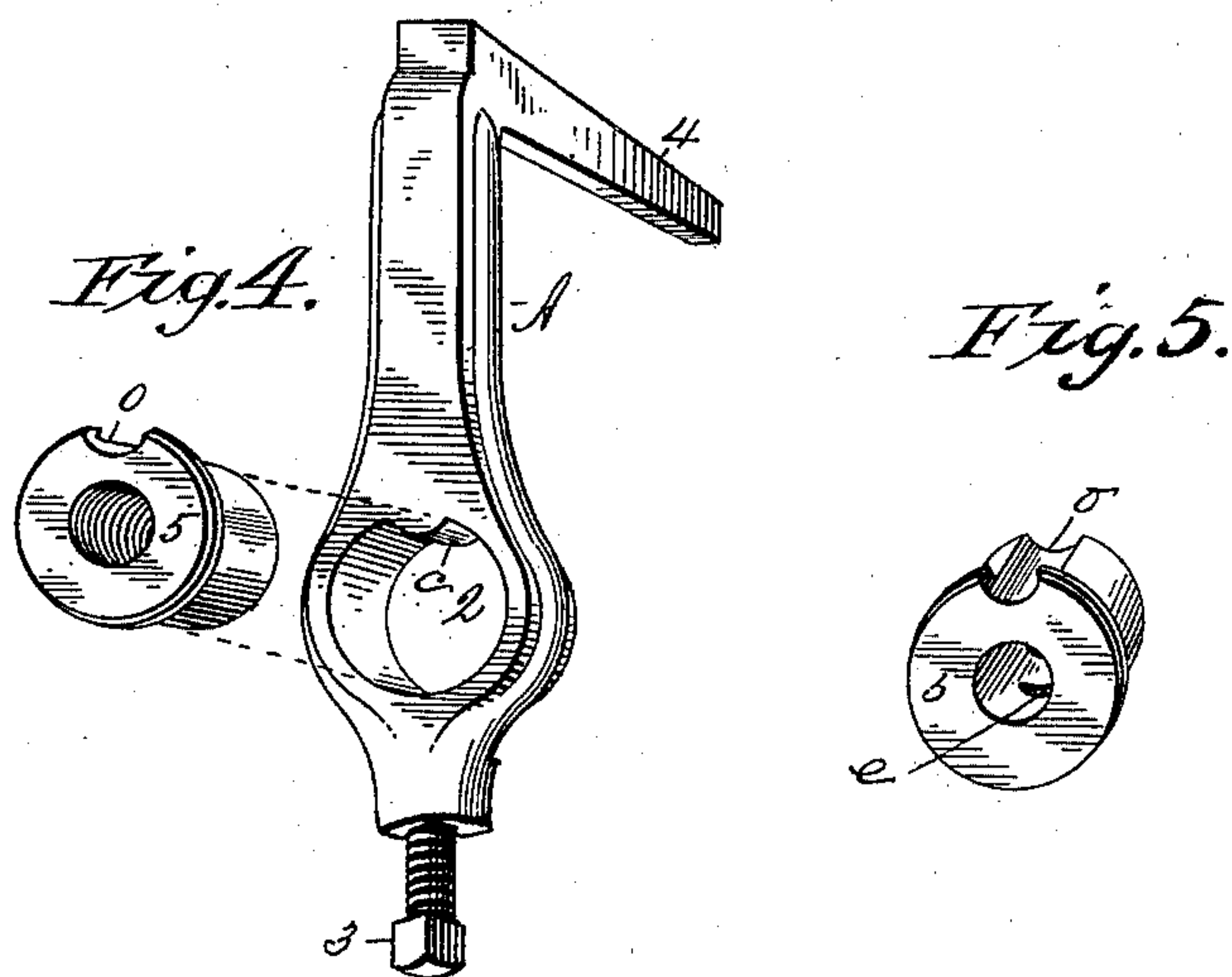
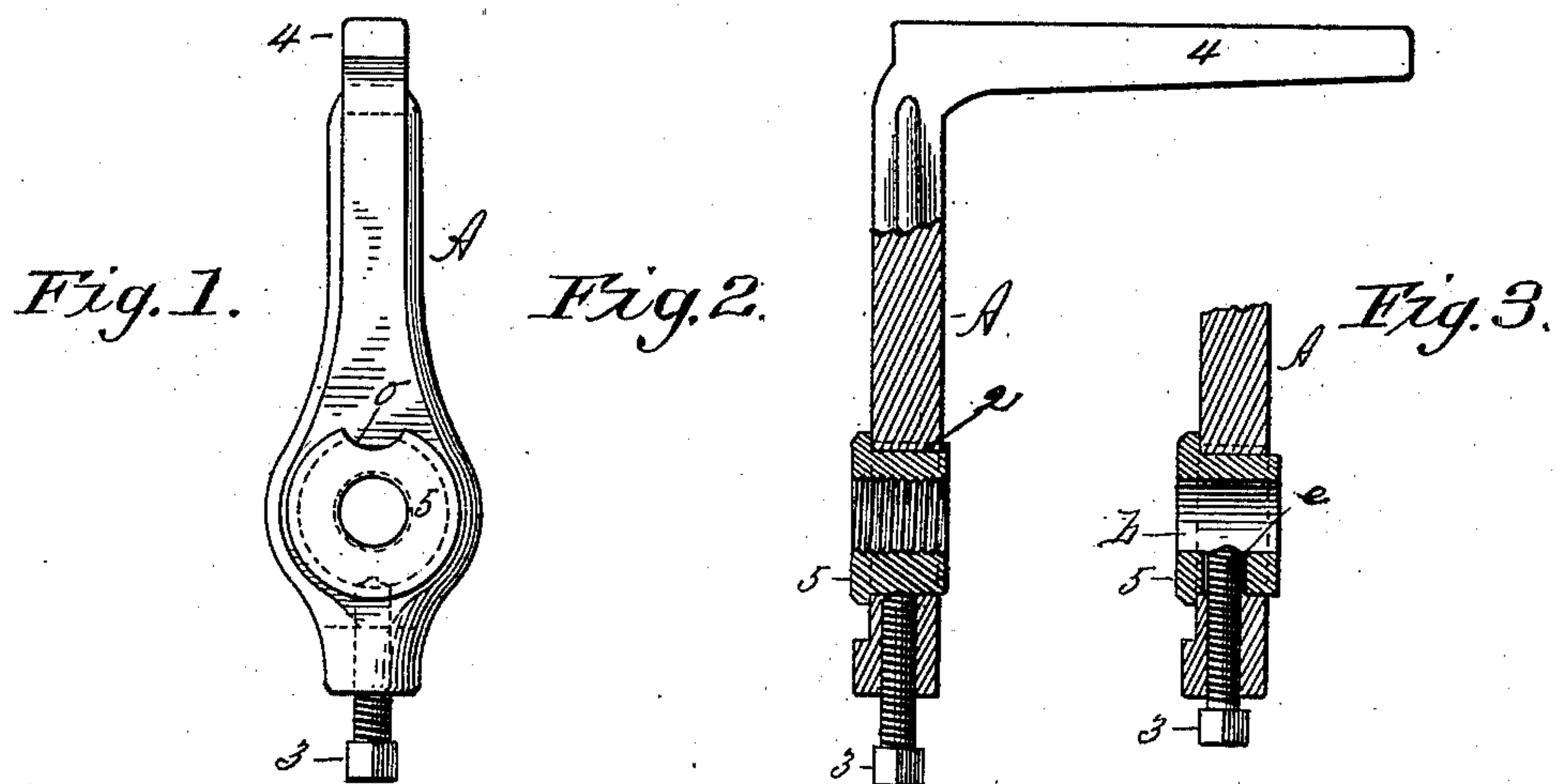


(No Model.)

H. E. HOLMES.  
LATHE DOG.

No. 418,464.

Patented Dec. 31, 1889.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

HERBERT E. HOLMES, OF WEST SPRINGFIELD, MASSACHUSETTS.

## LATHE-DOG.

SPECIFICATION forming part of Letters Patent No. 418,464, dated December 31, 1889.

Application filed October 31, 1889. Serial No. 328,833. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT E. HOLMES, a citizen of the United States, residing at West Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Lathe-Dogs, of which the following is a specification.

This invention relates to lathe-dogs, the object being to provide an improved implement of this class which is adapted by simple means to bring the piece to which it may be attached, whereby it is held for turning in a lathe or for other similar operation to a central position in the eye of the lathe-dog, and whereby one dog is adapted in such manner to hold the ends of pieces to be operated upon which have different diameters, and also to efficiently hold metallic pieces having screw-threaded ends to which the lathe-dog is attached without marring or injuring the screw-threaded parts of said pieces; and the invention consists in the peculiar construction of the lathe-dog and its attachments, all as hereinafter fully described, and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a rear elevation, and Fig. 2 a side elevation, partly in section, of a lathe-dog and attachments embodying my improvements, said two figures illustrating said attachments internally screw-threaded. Fig. 3 is a sectional view of that portion of a lathe-dog surrounding the eye thereof, and showing in section said lathe-dog attachment not screw-threaded, and the binding or set screw of the lathe-dog passing through the side of said attachment. Fig. 4 is a perspective view of the lathe-dog and of a screw-threaded attachment therefor. Fig. 5 is a perspective view of one of said lathe-dog attachments whose interior is not screw-threaded. Fig. 6 illustrates in end view several of said lathe-dog attachments having different internal diameters.

In the drawings, A indicates the lathe-dog, provided with the usual opening or eye 2, in which the end of a piece of metal or other thing is inserted when the lathe-dog is attached thereto to form a connection therewith and between it and a lathe, whereby rotary motion is imparted to said piece or

thing by said lathe, said piece being secured in the lathe-dog by the set-screw 3, the arm 4 of said dog being adapted for engagement with the slotted face-plate on the spindle of the lathe or other object thereon, whereby the lathe-dog and the thing held by it are caused to rotate coincident with the lathe-spindle in a manner well known to machinists and others conversant with the use of such tools.

Lathe-dogs as heretofore made, of the description illustrated in the drawings, consisting only of the lathe-dog and its set-screw 3, have contained a circular eye to receive the end of the work not adapted to varying diameters of the pieces of work to which the dog may be applied, and hence when the lathe-dog so made is attached to the end of a cylindrical piece of metal, or one of other exterior form considerably smaller in cross-section than the eye of the lathe-dog, the latter is with difficulty secured to said piece with the requisite firmness, from the fact that only a small portion of the interior wall of the eye of the lathe-dog is held in contact with the side of the piece secured therein, and under these conditions the set-screw 3 must necessarily be so forced against said piece as to injuriously indent or mark it; and, furthermore, when it is desired to attach a lathe-dog of the above description to a piece of metal having a screw-threaded end the dog cannot be attached close to the end thereof or at the end without first putting a nut or similar piece on said screw-threaded part, lest the screw-thread on the piece should be defaced or ruined by the action of the set-screw of the dog, said nut-bearing end of the piece to be operated upon being inserted in the eye of the dog and there secured by forcing the set-screw against the side of the nut.

To obviate the above-named inconveniences and to provide simple and inexpensive means therefor, I construct the lathe-dog A with the eye 2 thereof having on its interior wall a projection or rib c, as shown in Fig. 4, and for the lathe-dog eye thus made I construct several attachments or bushings 5, adapted to be inserted in the eye of the lathe-dog in the positions shown in Figs. 1, 2, and 3 of the draw-



ings, each of said bushings being provided with a groove to receive the said rib or projection *c* when the bushing is placed in the eye of the lathe-dog, whereby it is prevented from turning therein when the set-screw 3 of the lathe-dog does not pass through the side of the bushing, as it is shown to do in Fig. 3. The said set-screw 3, as shown in said last-named figure, passes through an aperture *e* in the side of the bushing 5, when the cylindrical chamber therein has a plane face or is not screw-threaded, thereby permitting the screw to bear directly against the side of a piece of metal placed through said chamber and bind it rigidly therein when the screw is turned against it to attach the dog thereto. I do not wish it to be understood by the above description that I would not under said circumstances make the eye of the lathe-dog with the rib *c* therein, because said rib by its engagement with the bushing, as below described, aids in firmly holding the work from rotating within the lathe-dog while being turned and as firmly as would be the result were the lathe-dog eye cylindrical and the piece of work to which it may be attached fitted closely in the eye and was there secured by said set-screw.

The bushings 5 for a lathe-dog having an eye of a given diameter are of a like exterior diameter to fit said eye, but have varying diameters of chambers *b*, as shown in Fig. 6, and said bushings have a longitudinal groove *o* in the side thereof, which, when the bushing is placed in the eye of the lathe-dog, receives said projection *c* on the wall of said eye. The said bushings 5, as before mentioned, may be made with either a plane chamber, as shown in Figs. 3 and 5, or with said chamber screw-threaded, as shown in Figs. 2 and 4, said bushings, whether having a screw-threaded or plane chamber, being adapted to be used on different descriptions of work in which the lathe-dog is employed, as above described.

In using the screw-threaded bushing in connection with a metal piece having a screw-threaded end, to which it is desirable to attach the lathe-dog, the threaded bushing is

placed in the eye of the dog in the position shown in Fig. 2, the screw 3 being turned thereagainst to hold it from being accidentally drawn out of the eye.

In practice a number of bushings of suitable metallic construction are provided, with each lathe-dog comprising several having plane chambers *b* therein of different diameters and several having screw-threaded chambers therein, adapted to the screw-threads of the work with which the lathe-dogs are to be used; or with each lathe-dog are supplied a number of bushings having plane chambers therethrough, and the purchaser of said dogs and bushings may tap them out to suit his convenience, such bushings as shall be internally screw-threaded to be used, as aforesaid, without any side aperture *e*, and those which are to be used with the plane chamber *b* having said aperture *e* made therethrough.

What I claim as my invention is—

1. In combination, a lathe-dog having a cylindrical eye, a projection on the wall of said eye, a set-screw penetrating the same, and a cylindrical bushing having a groove in its surface in which said projection engages, and a side aperture in which said screw enters, substantially as set forth.

2. In combination, a lathe-dog having a cylindrical eye, a projection on the wall of said eye, a set-screw projecting into the same, and several cylindrical bushings of varying internal diameters, each having a groove in its surface in which said projection engages, and a side aperture in which said screw enters, substantially as set forth.

3. In combination, a lathe-dog having a cylindrical eye, a projection on the wall of said eye, a set-screw projecting into the same, and a cylindrical bushing having its chamber screw-threaded, and a groove in its surface in which said projection engages, substantially as set forth.

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