

No. 652,015.

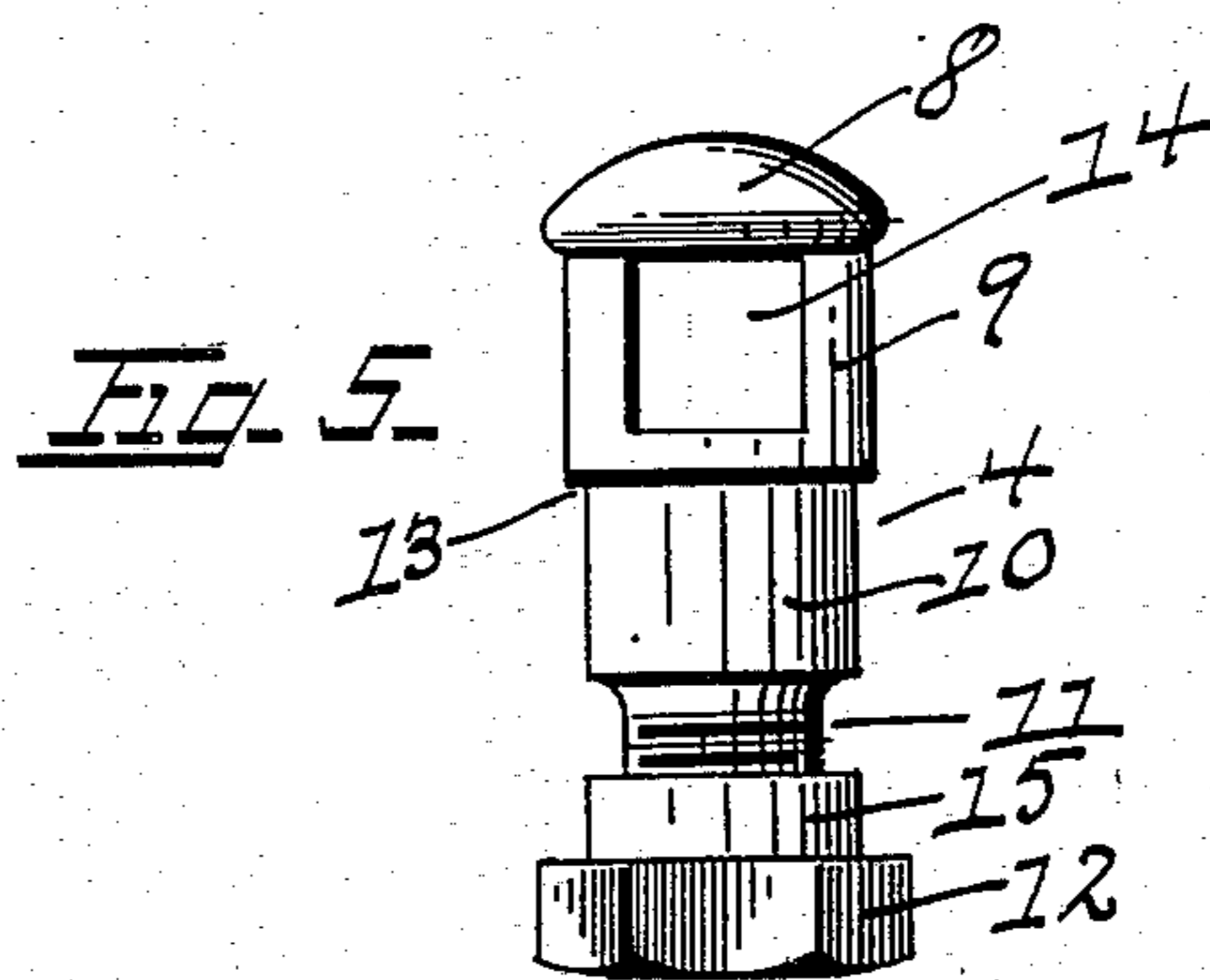
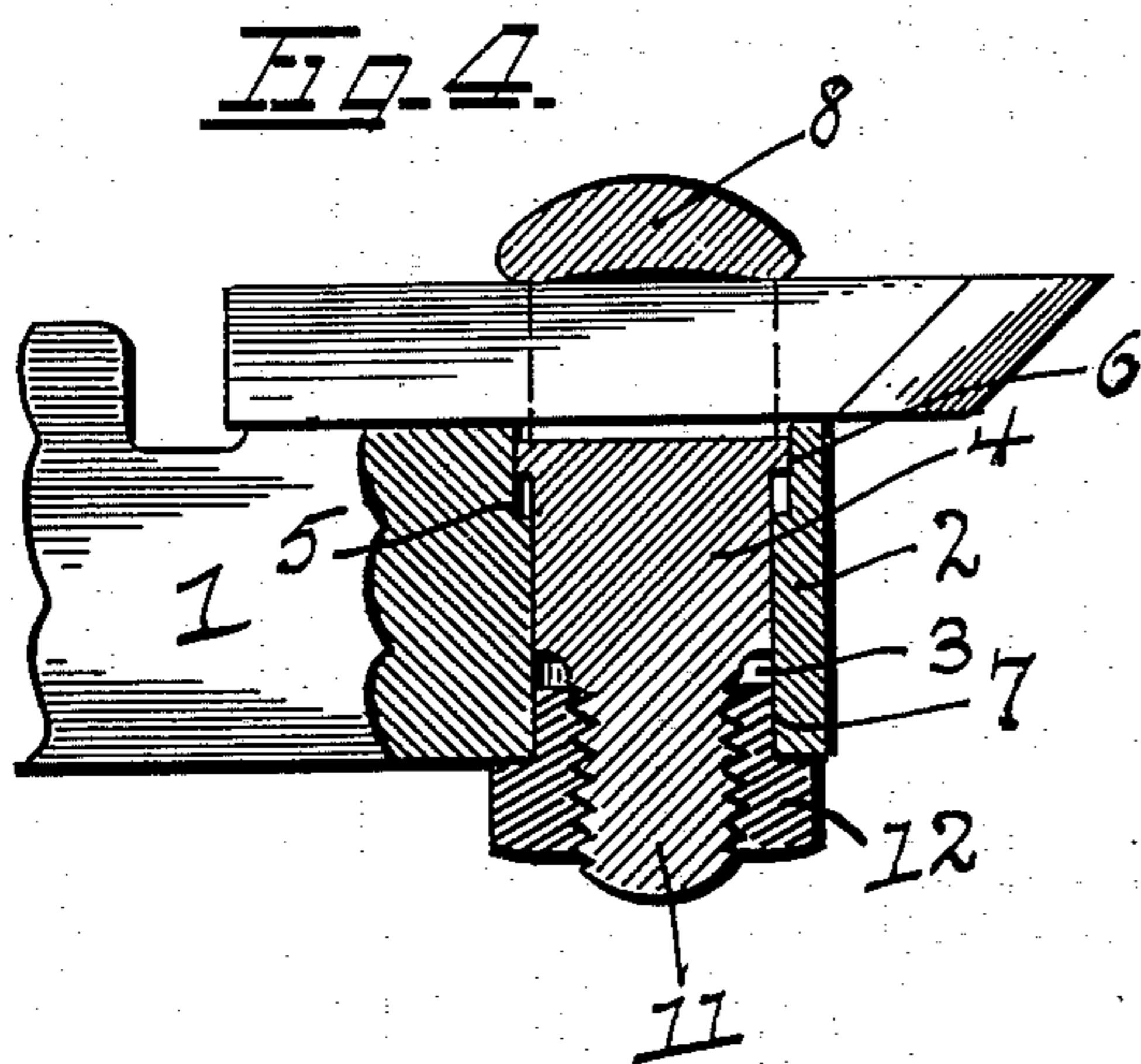
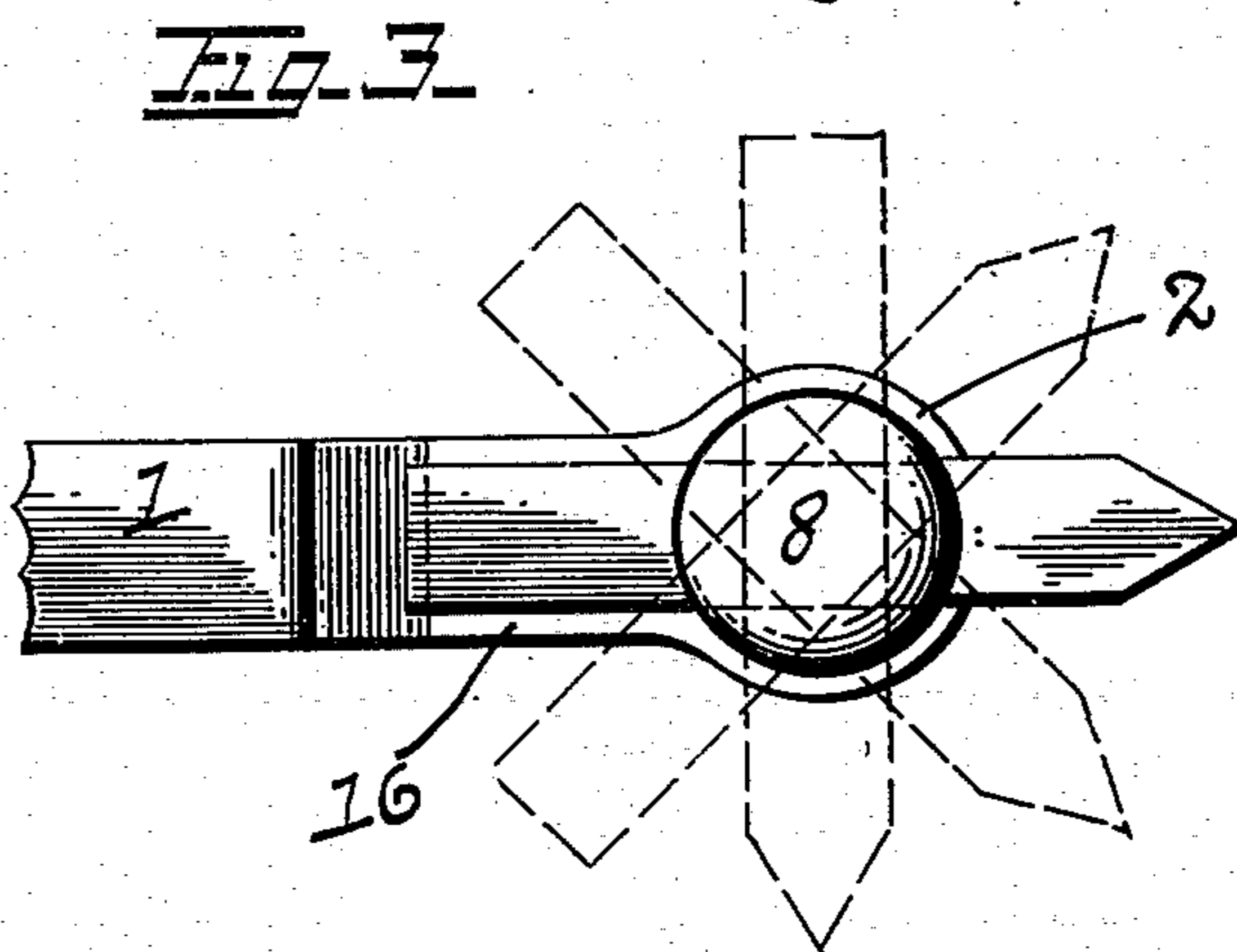
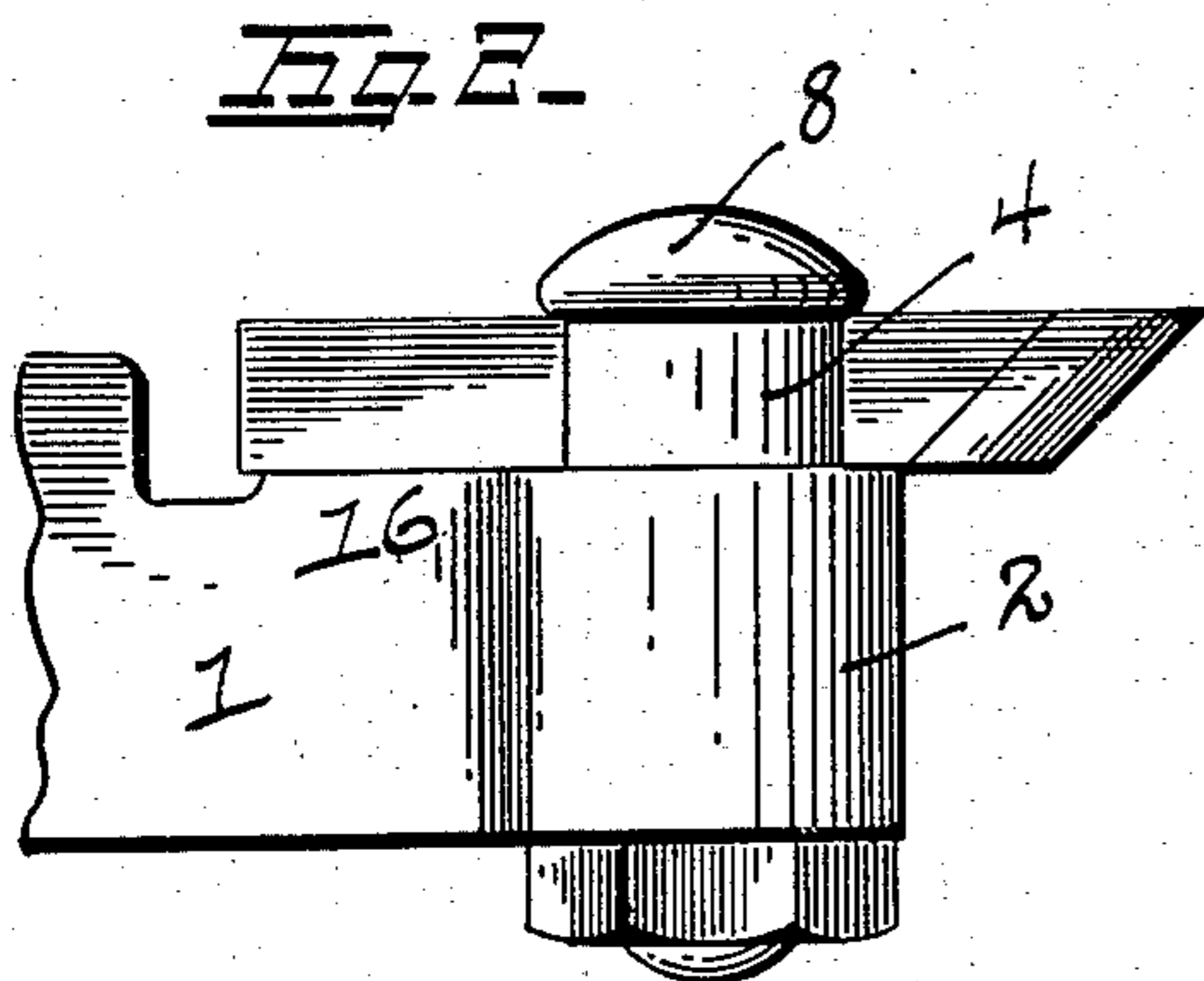
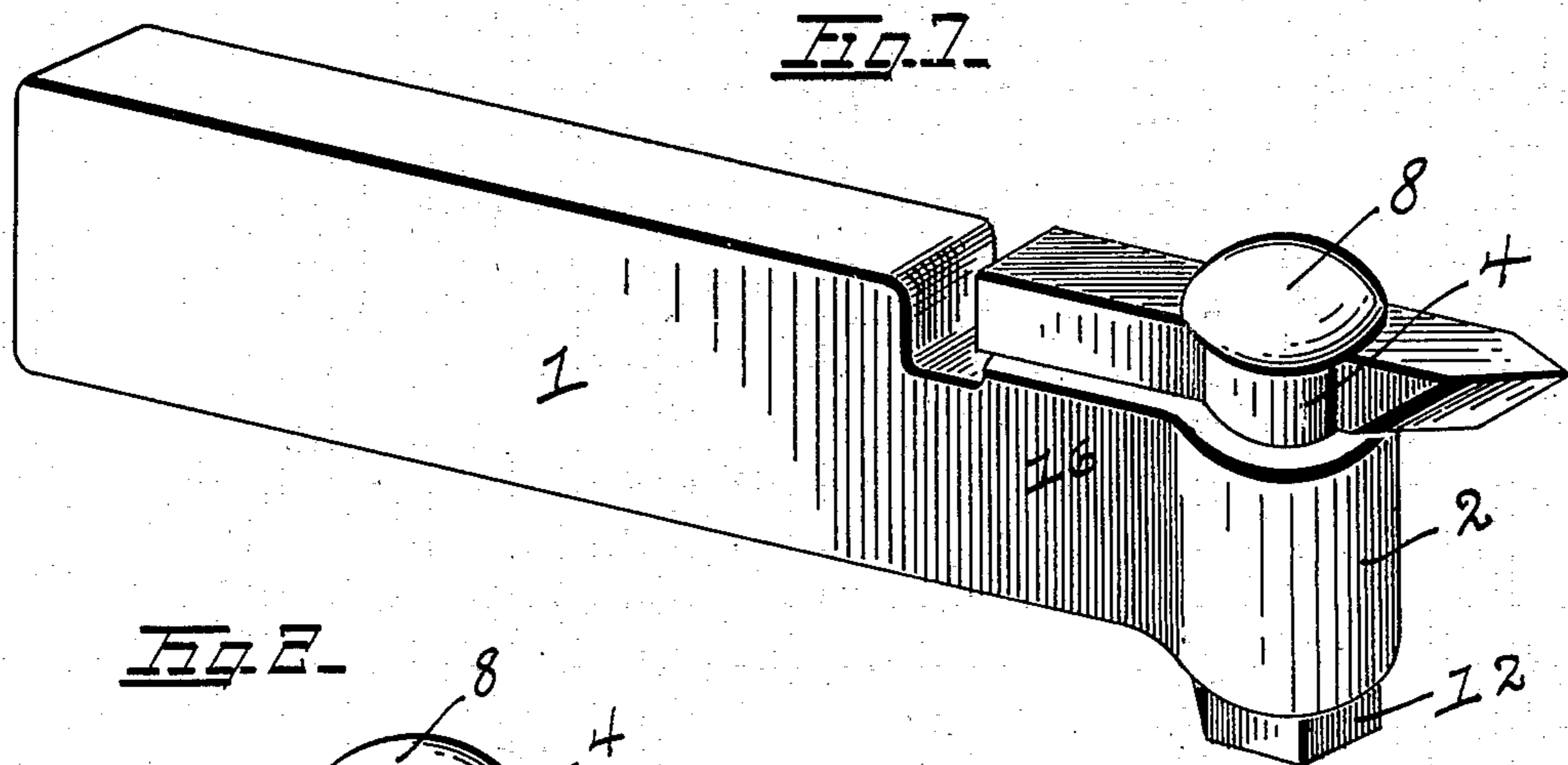
Patented June 19, 1900.

W. J. CUNNINGHAM.

TOOL HOLDER.

(Application filed Oct. 16, 1899.)

(No Model.)



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM J. CUNNINGHAM, OF TOLEDO, OHIO.

TOOL-HOLDER.

SPECIFICATION forming part of Letters Patent No. 652,015, dated June 19, 1900.

Application filed October 16, 1899. Serial No. 733,708. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CUNNINGHAM, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Tool-Holders; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form part of this specification.

My invention has reference to a tool-holder to be employed in planers, shapers, lathes, and other machinery in which metal is shaped by cutting a small portion from the surface and advancing the tool as the operation proceeds.

One object of my invention is to provide an improved construction whereby the removal of the tool from and its insertion into the holder will be greatly facilitated. There are in extensive use at the present time devices of the class to which my invention relates in which the tool enters a slot or groove in the shank of the holder and is secured therein by a clamping device. In this form of holder the removal of the tool is often hindered by the formation of rust between the tool and the shank of the holder and also by the lodgment of chips of metal in the slot, thereby impeding instead of facilitating work. In my device I overcome this difficulty, and the possibility of the tool becoming clogged in the shank is eliminated.

A further object of my invention is to provide a holder in which the tool shall have a wide angle of adjustment, permitting its use as a right-hand, left-hand, or straight-ahead tool.

My invention permits of such extensive adjustment that the tool can be used as a boring-tool for boring out large work in the lathe.

A further object of my invention is to provide a tool-holder in which the tool is held rigidly in position, thus obviating the annoyance of having the tool slip while cutting.

My invention further embodies certain novel features of construction and the parts and combination of parts hereinafter shown, described, and claimed.

In the drawings, Figure 1 is a perspective view of my improved tool-holder. Fig. 2 is a side elevation thereof, the shank of the holder being cut away. Fig. 3 is a plan view showing the position of the tool straight ahead in full lines and some of the positions which the tool can be made to assume in dotted lines. Fig. 4 is a section through the head of the shank and the clamping-bolt. The tool in this view is shown in full lines. Fig. 5 is an elevation of the clamping-bolt, showing the transverse opening therein to receive the tool.

Referring to the drawings, 1 is the shank of the holder, adapted to be secured to the machine in which it is to be used in any well-known manner. The end 2 of the shank is cylindrical in form and is disposed in right vertical plane as regards the position of the shank when placed in a lathe, Fig. 1.

Extending entirely through the cylindrical end 2 of the holder and having an axis coincident therewith is a cylindrical opening 3 for the reception of a clamping-bolt 4. Opening 3 is formed with a shoulder at 5, making the portion 6 of the opening of slightly-greater diameter than that at 7. Clamping-bolt 4 is formed with a rounded head 8, a cylindrical portion 9, equivalent in diameter to the portion 6 of the opening, and a portion 10, equal in diameter to 7 of the opening, and is further formed with a screw-threaded stud 11, upon which is run the locking-nut 12.

13 designates a shoulder formed upon the bolt complementary to the shoulder 5, upon which it rests when the bolt is lowered. This prevents the bolt from falling into the opening and still permits sufficient play to clamp the tool. Extending transversely through the clamping-bolt is a rectangular opening or slot 14 to receive the tool, having a slightly-greater vertical diameter than that of the tool. The opening is of sufficient lateral diameter to permit the tool to freely enter the same. Locking-nut 12 is formed with a squared or hexagonal head for the reception of a wrench and has a cylindrical extension 15, equivalent in diameter to portion 10 of the bolt. This extension serves to close the lower end of the opening 3, thereby excluding chips of metal or other foreign substances, which would clog the thread upon the end of the bolt and prevent the nut from being run thereon. The

shank 1 is preferably made of less height at its forward end at 16 than at its rear and has the top side thereof formed with a plane face to serve as a seat for the tool. Adjoining this plane face and extending downwardly below the surface thereof is a recess 17. It is evident that by forming the shank as shown any adjustment of the tool about the clamping-bolt is possible.

10 In Fig. 3 I have shown some of the many positions which the tool can be made to assume.

In these several figures I have shown a threading-tool in place in the holder; but it will be understood that any one of the variety of tools ordinarily employed in lathe or planer work can be substituted therefor. It will also be apparent that the size of the holder can be changed to adapt it to the various sizes of tools ordinarily employed.

From the foregoing description it is evident that I provide a machine-tool holder of the greatest possible lateral adjustment and of such simple construction as to make my invention of great practical value.

25 Having described my invention, what I

claim, and desire to secure by Letters Patent, is—

A tool-holder, comprising a shank having one end reduced and formed on the upper side thereof with a plane face, said reduced portion extending toward the rear of the holder a sufficient distance to permit the unobstructed rotation of the tool, an opening arranged vertically in the reduced portion of the shank, having a section of large diameter and another section of smaller diameter; a shouldered clamping-bolt, having complementary sections to fit the opening, a transverse slot in the bolt to receive the tool, and a nut on the end of the bolt having a cylindrical extension of a diameter to fit the lower portion of the cylindrical opening, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM J. CUNNINGHAM.

Witnesses:

CARL H. KELLER,
FRANK X. HENRIOT.