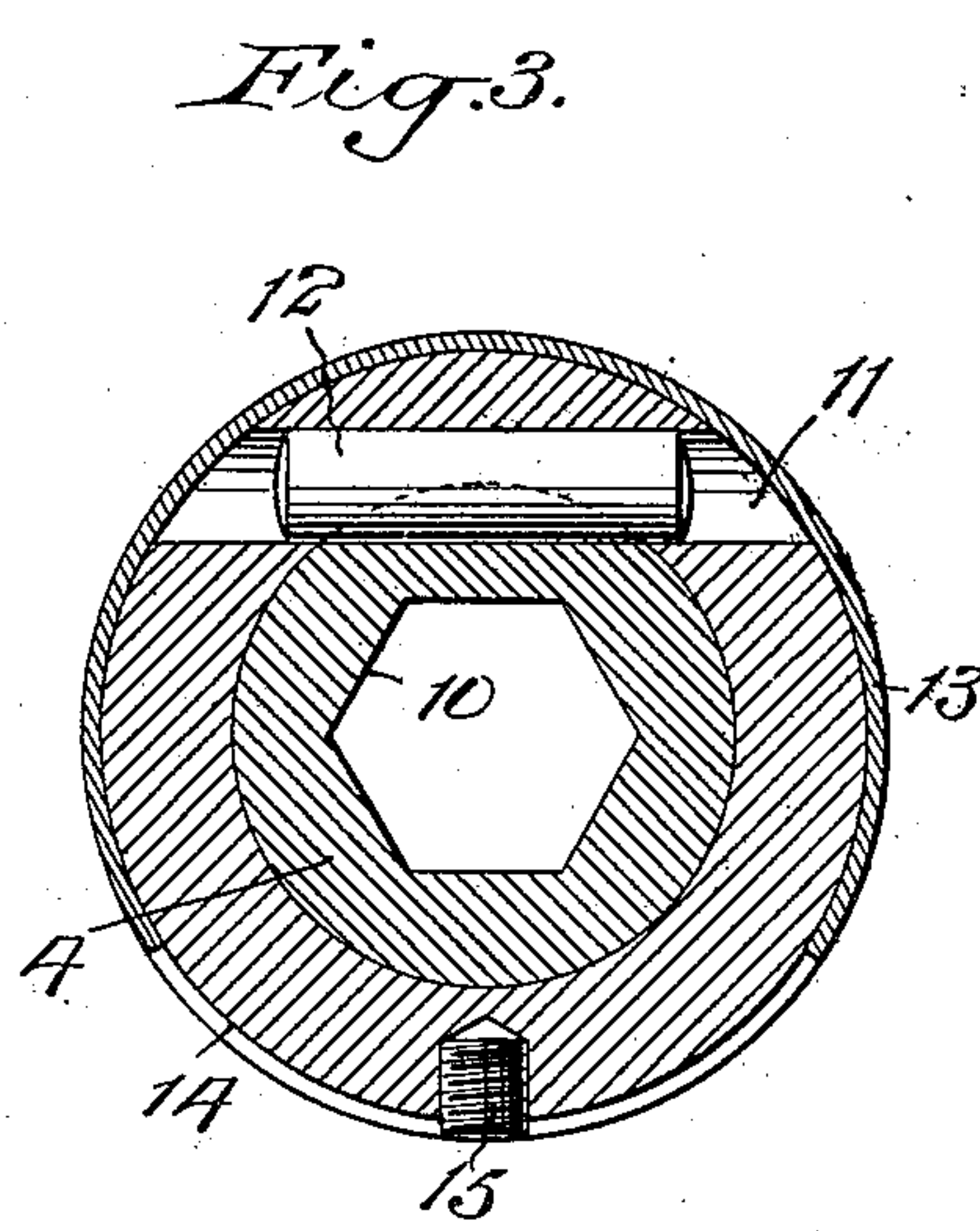
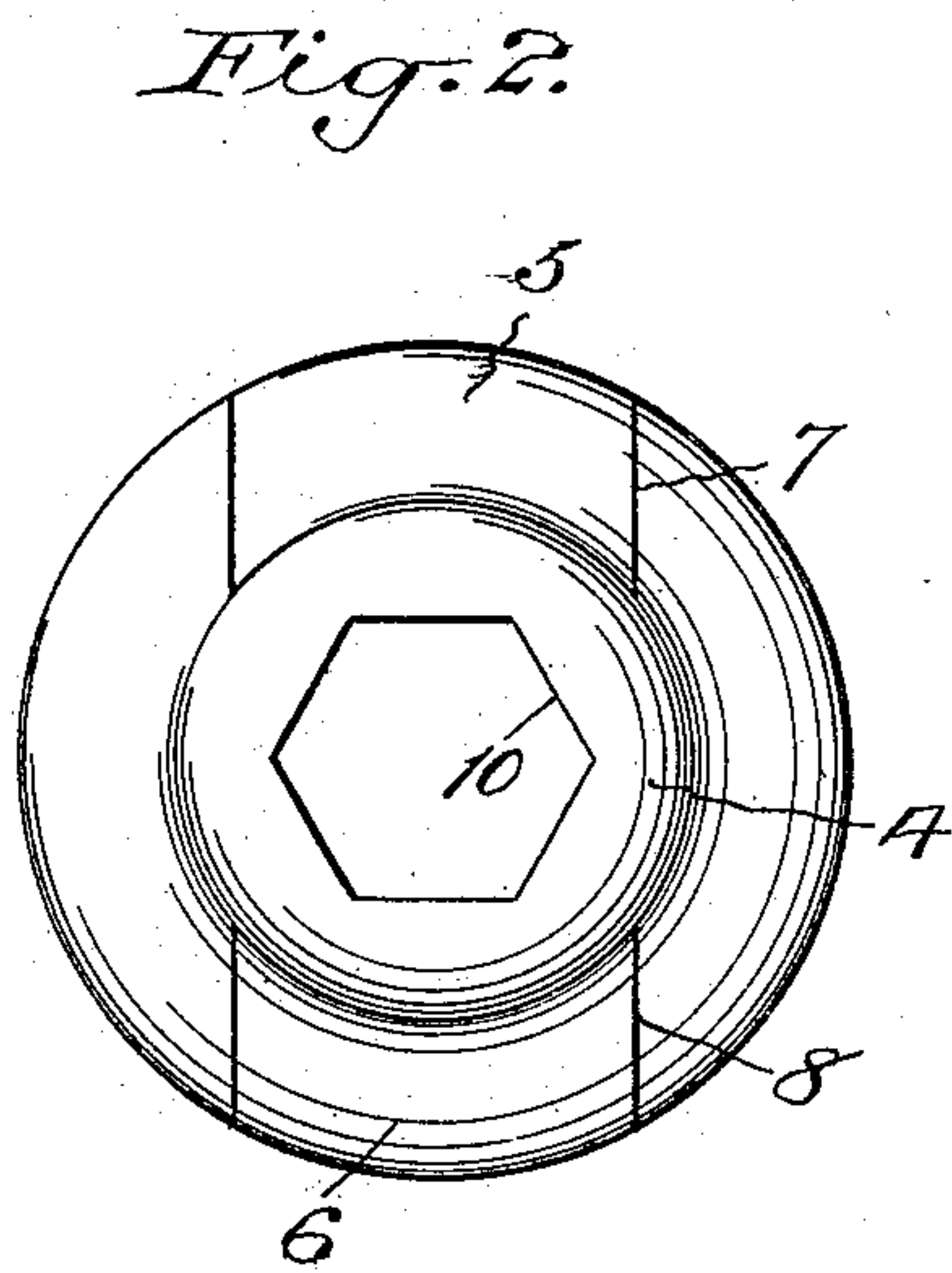
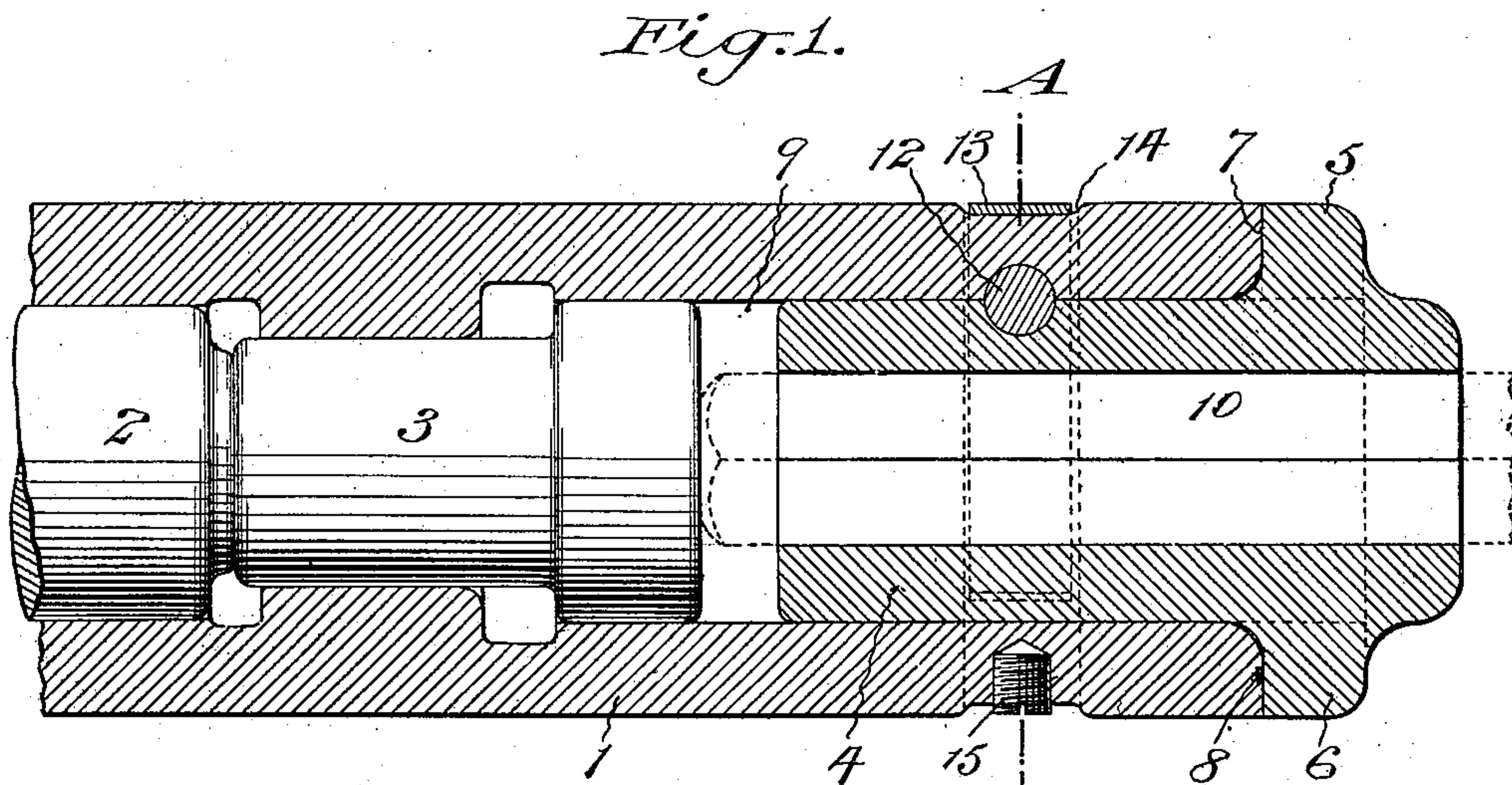


A. H. TAYLOR.  
PNEUMATIC HAMMER.  
APPLICATION FILED MAY 8, 1908.

981,899.

Patented Jan. 17, 1911.



*Witnesses:*  
*F. George Barry,*  
*Harry Chieme.*

*Inventor:*  
*Albert H. Taylor*  
*by attorneys*  
*Brown & Howard*



# UNITED STATES PATENT OFFICE.

ALBERT H. TAYLOR, OF EASTON, PENNSYLVANIA, ASSIGNOR TO INGERSOLL-RAND COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## PNEUMATIC HAMMER.

981,899.

Specification of Letters Patent.

Patented Jan. 17, 1911.

Application filed May 8, 1908. Serial No. 431,612.

*To all whom it may concern:*

Be it known that I, ALBERT H. TAYLOR, a citizen of the United States, and resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and useful Improvement in Pneumatic Hammers, of which the following is a specification.

The object of my invention is to provide certain improvements in the construction, form and arrangement of the several parts of a pneumatic hammer, such, for instance, as a hammer drill whereby the tool holding bushing may be strongly interlocked with the tool cylinder for imparting the rotation of the cylinder to the tool; means being provided for securely holding the bushing in its interlocked position without the necessity of increasing the size of the front end of the cylinder, said means being readily removable without the use of tools, to permit the removal of the bushing and the anvil block whenever desired.

In the accompanying drawings, Figure 1 represents in longitudinal central section so much of a pneumatic drill as will give a clear understanding of my invention, Fig. 2 is a front end view of the drill, and Fig. 3 is a cross section taken in the plane of the line A—A of Fig. 1.

The hammer cylinder is denoted by 1; the hammer piston by 2 and the anvil block by 3. The bushing is interlocked with the cylinder 1 by providing the bushing with oppositely arranged lugs 5 and 6 which snugly fit within notches 7 and 8 in the front end of the cylinder. The body portion of the bushing extends within the bore 9 of the cylinder beyond said lugs and notches and is provided with the usual angular bore 10 for receiving the shank of the tool, the end of which presses against the anvil 3. A hole 11 extends transversely through the cylinder 1 and the body portion of the bushing 4 a distance from the lugs and notches, which hole is adapted to receive with an easy sliding fit a pin 12 for holding the bushing 4 in its interlocked position with the cylinder 1.

I provide a spring 13 which is fitted to snap around the cylinder 1 for closing the ends of the hole 11 to prevent the unintentional removal of the pin 12. In the present instance, I provide the cylinder 1 with a

circumferential groove 14 for receiving the spring 13 and retaining it against longitudinal movement along the cylinder.

The stop pin 15 is provided for preventing a sufficient turning movement of the spring on the cylinder to expose the hole 11, which pin comprises, in the present instance, a screw inserted into the cylinder 1 with its end projecting above the bottom of the circumferential groove 14.

In the construction such as herein described it will be seen that the bushing may be securely interlocked with the cylinder by the lugs of the bushing fitting in the notches in the cylinder thus permitting the use of a small pin for simply holding the bushing in its interlocked position.

When it is desired to remove the anvil block, the spring 13 is removed thus permitting the removal of the pin 12. The bushing may then be withdrawn which will allow the anvil block to be dropped out of the cylinder.

The construction herein shown will not necessitate the increase in the size of the front end of the cylinder thus permitting the tool to work in more cramped positions than where an enlarged front end of the cylinder is provided or where attachments to the end of said cylinder are used for holding the bushing in place.

What I claim is:—

1. In a pneumatic hammer, a hammer cylinder having notches in its front end, a bushing provided with outwardly extended lugs fitted within said notches for interlocking the bushing with the cylinder, the body portion of the bushing extending into the hammer cylinder beyond the said lugs and notches and a manually removable pin engaging the body portion of the bushing and the cylinder for holding the bushing in its interlocked position.

2. In a pneumatic hammer, a hammer cylinder having notches in its front end, a bushing provided with outwardly extended lugs fitted within said notches for interlocking the bushing with the cylinder, the body portion of the bushing extending into the hammer cylinder beyond the said lugs and notches, and a manually removable pin engaging the body portion of the bushing and the cylinder for holding the bushing in its

interlocked position, and a spring embracing the cylinder arranged in position to hold the pin in place.

3. In a pneumatic hammer, a hammer cylinder having notches in its front end, a bushing provided with outwardly extended lugs fitted within said notches for interlocking the bushing with the cylinder, the body portion of the bushing extending into the hammer cylinder beyond the said lugs and notches, a manually removable pin engaging the body portion of the bushing and the cylinder for holding the bushing in its inter-

locked position, a spring embracing the cylinder arranged in position to hold the pin in place, and a stop for preventing the spring from turning on the cylinder sufficiently to expose the pin. 15

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this 30th day of April 1908. 20

ALBERT H. TAYLOR.

Witnesses:

RUSSELL H. WILHELM,  
WARD RAYMOND.