

No. 847,742.

PATENTED MAR. 19, 1907.

J. DOWLING.  
BORING TOOL.

APPLICATION FILED FEB. 28, 1906.

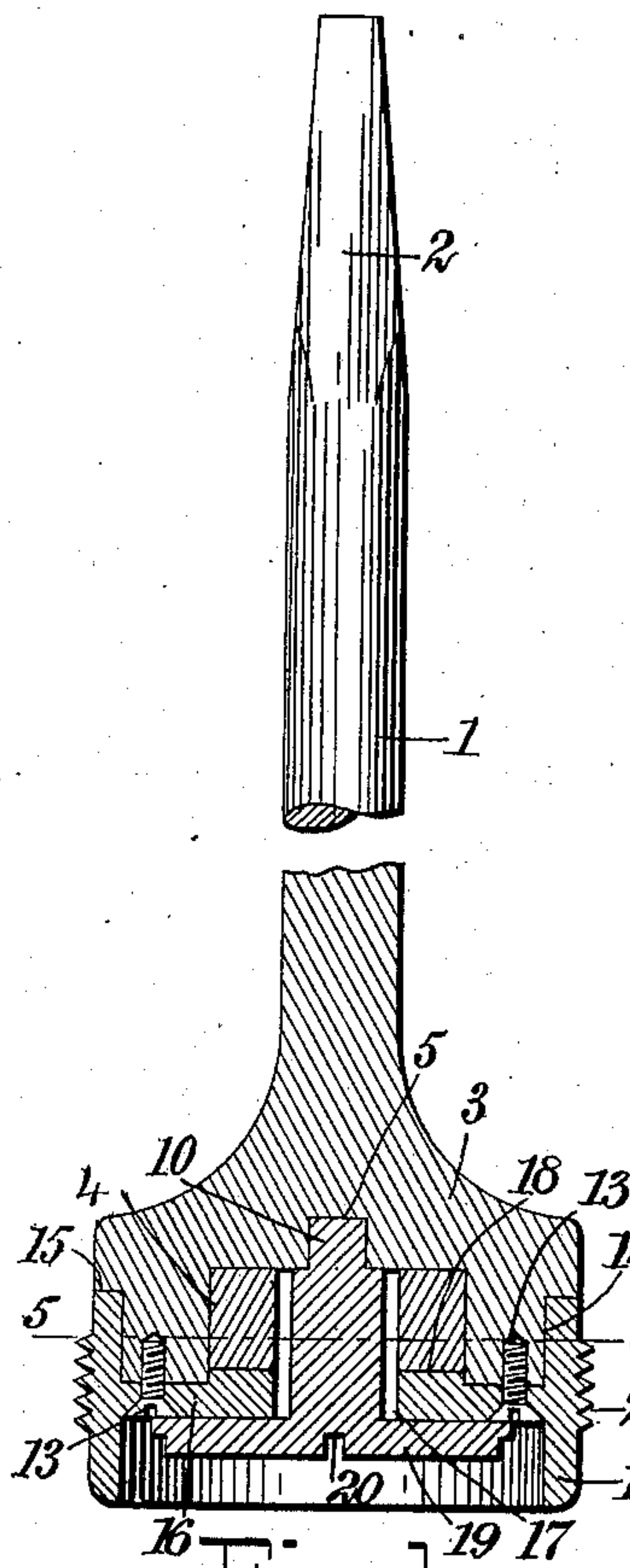


Fig. 1.

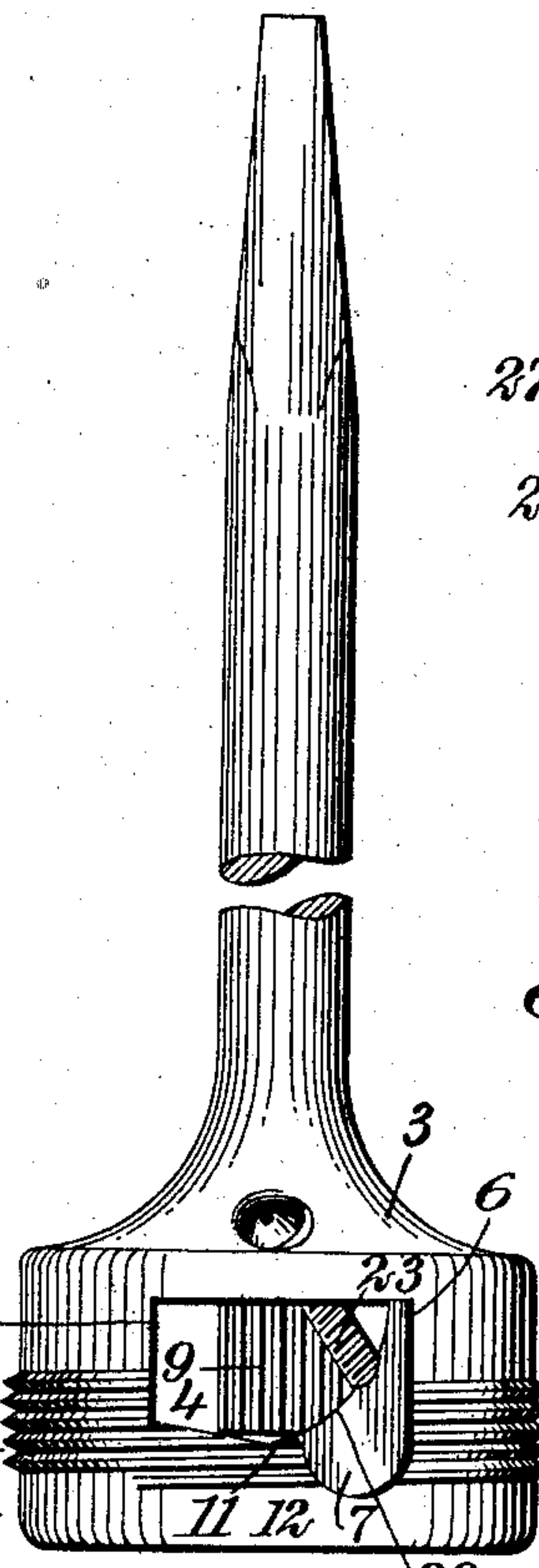


Fig. 2.

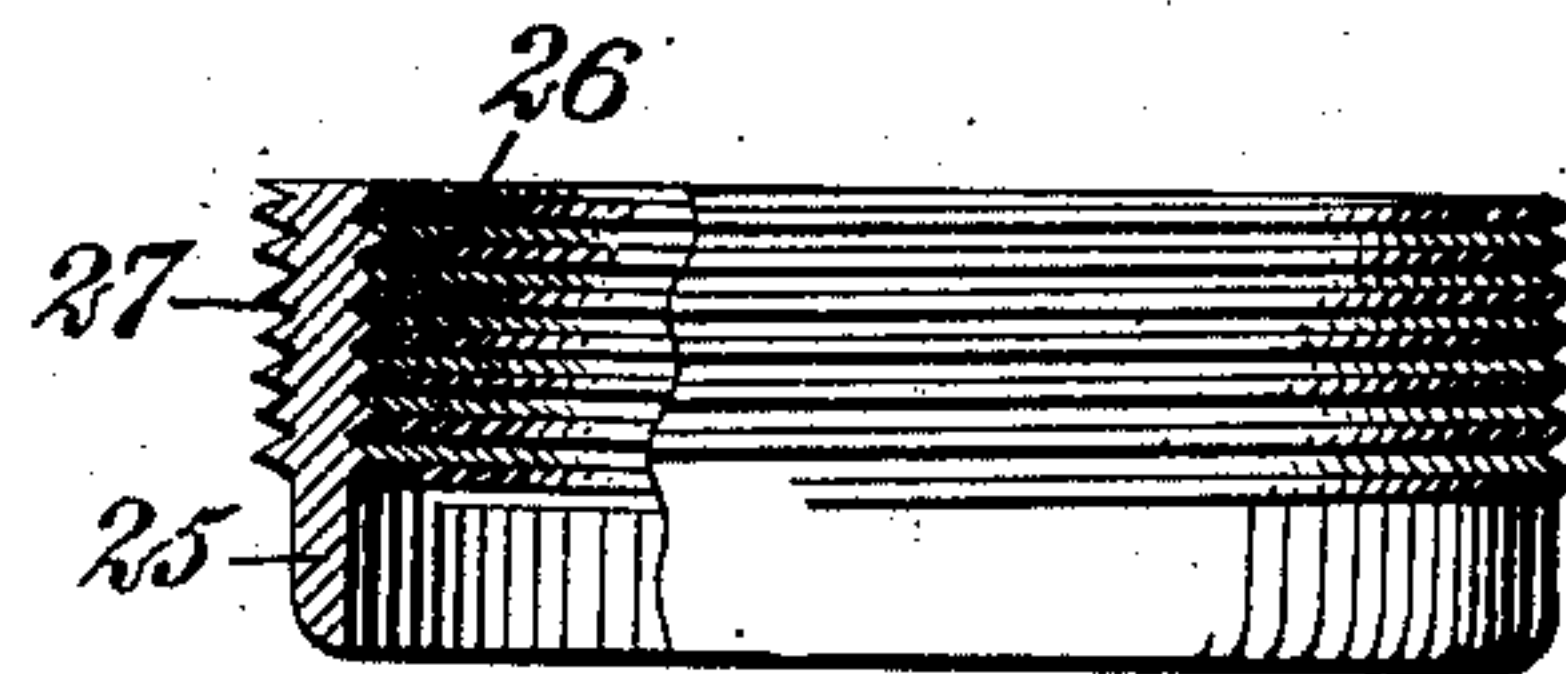


Fig. 7.

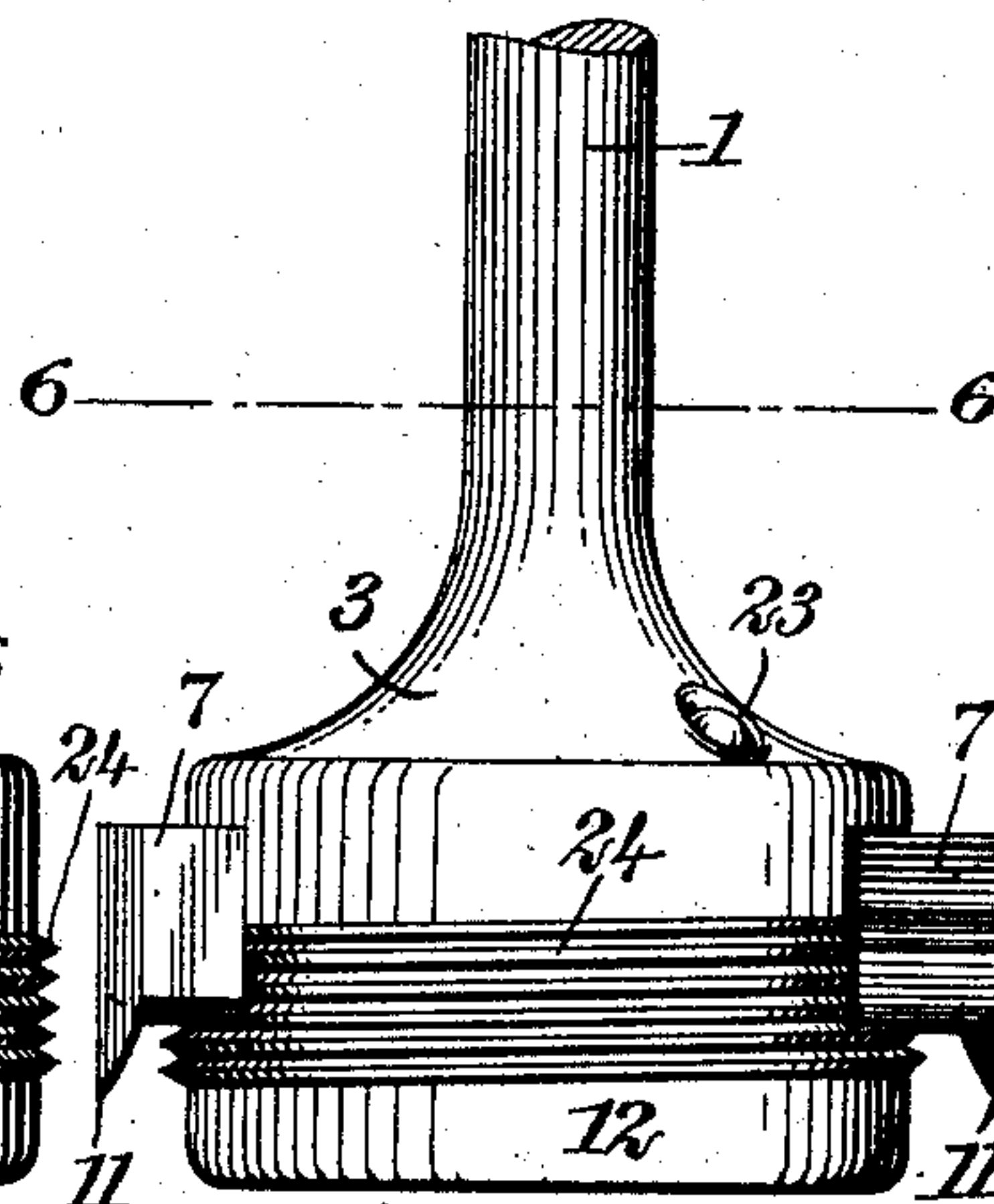


Fig. 3.

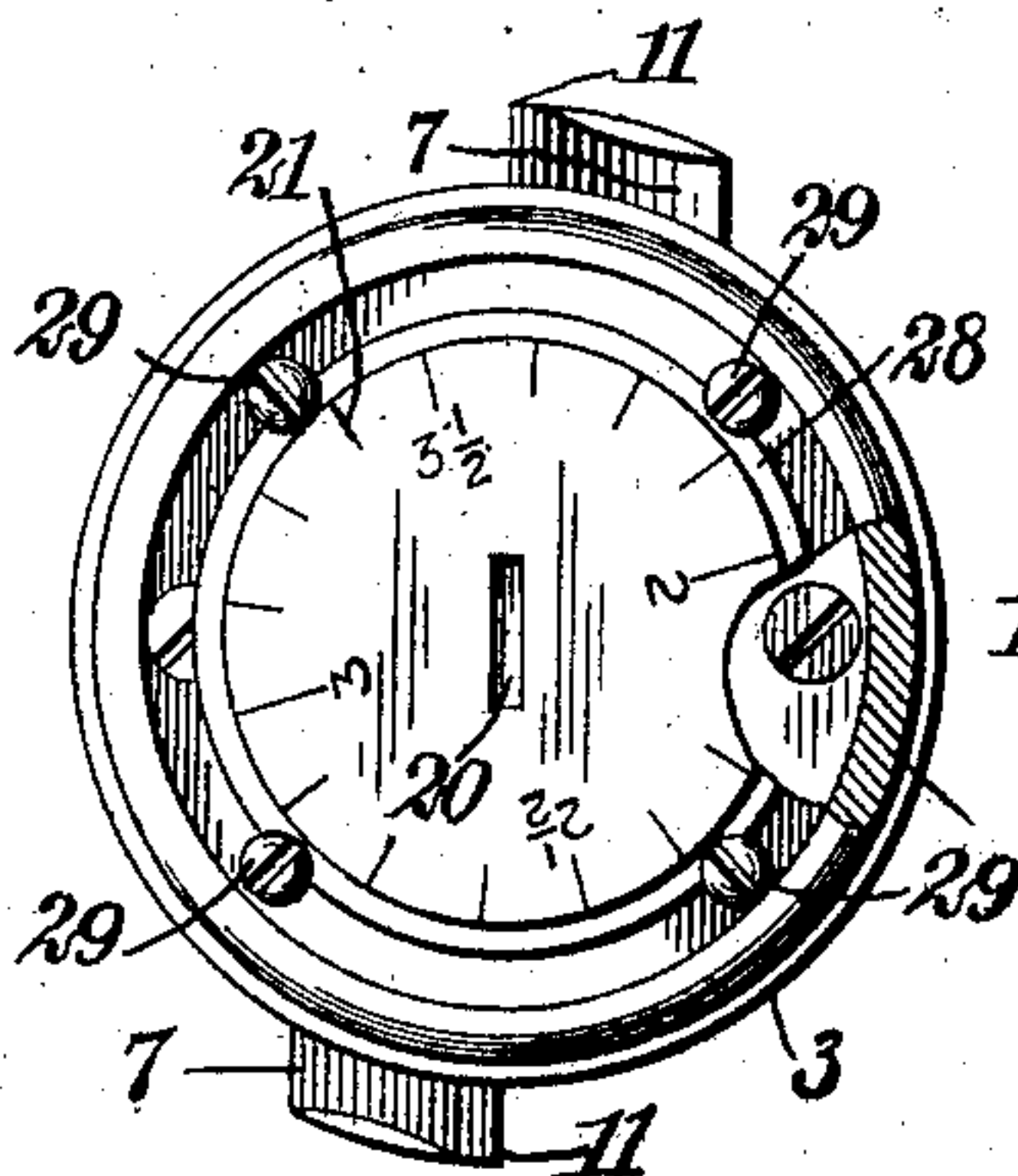


Fig. 4.

WITNESSES:  
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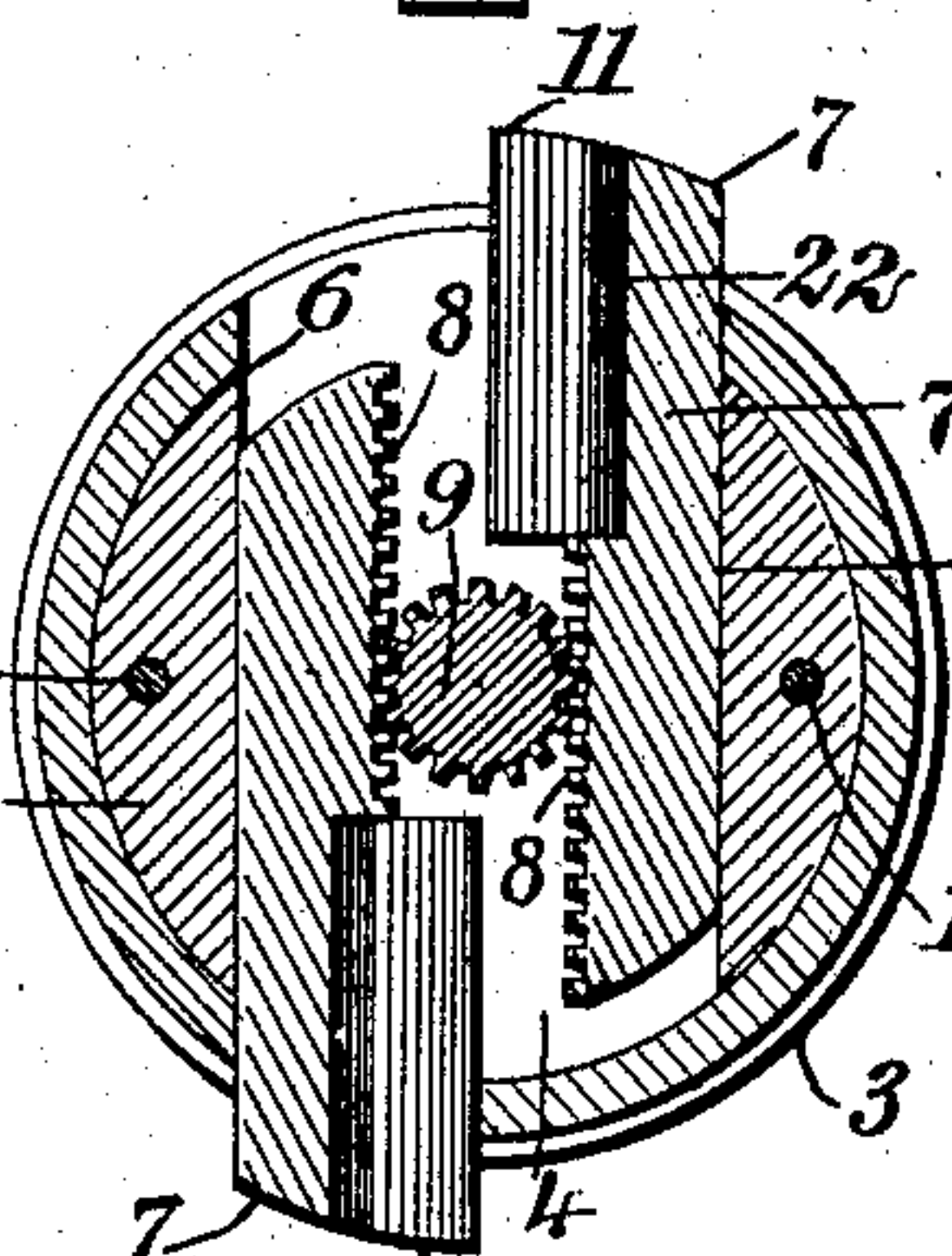


Fig. 5.

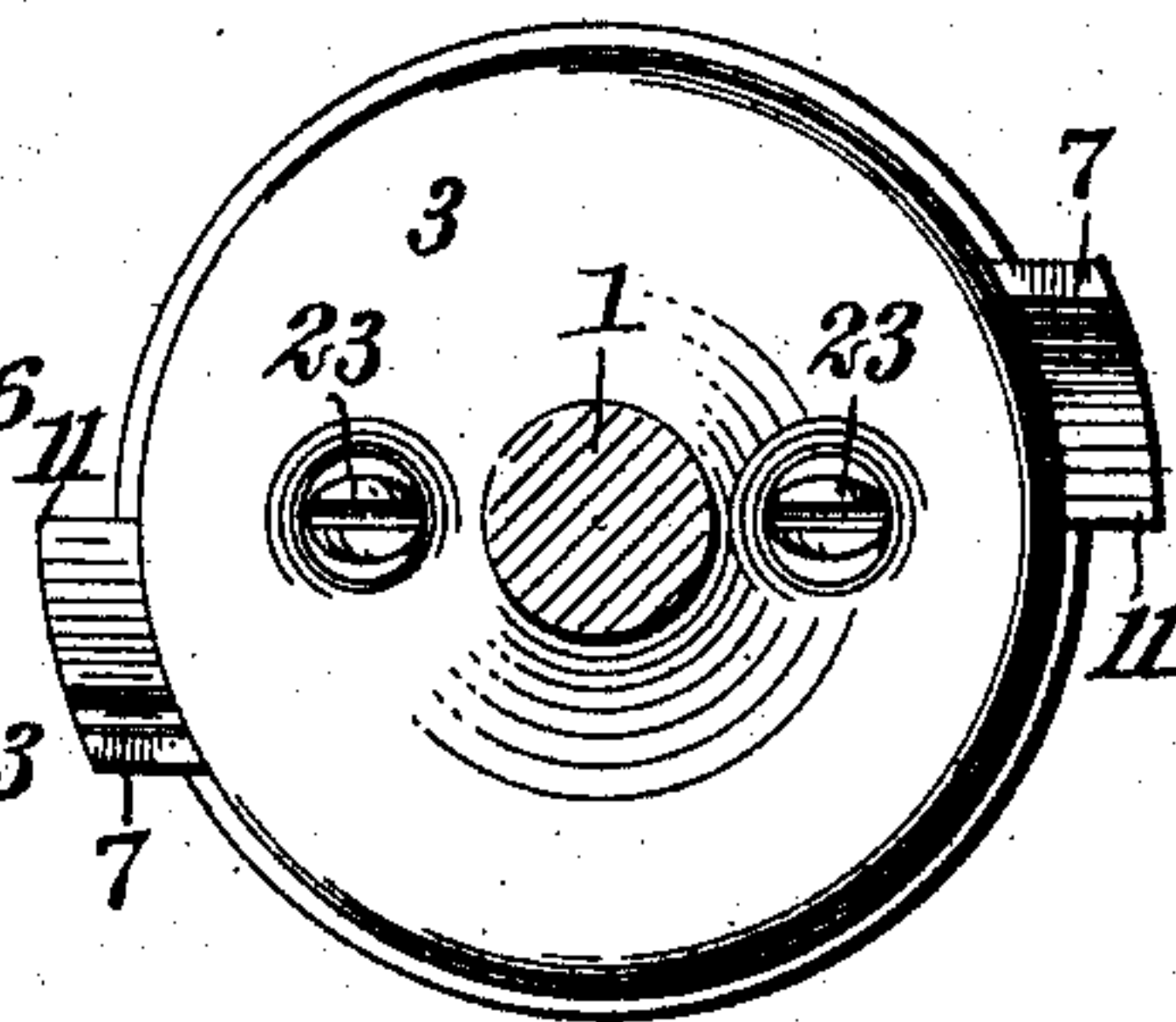


Fig. 6.

INVENTOR

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# UNITED STATES PATENT OFFICE.

JOHN DOWLING, OF OLYMPIA, WASHINGTON.

## BORING-TOOL.

No. 847,742.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed February 28, 1906. Serial No. 303,366.

*To all whom it may concern:*

Be it known that I, JOHN DOWLING, a citizen of the United States, and a resident of Olympia, in the county of Thurston and State of Washington, have invented a new and Improved Boring-Tool, of which the following is a full, clear, and exact description.

This invention relates to boring-tools.

The object of the invention is to produce a tool of this description which is simple in construction and which is intended especially for facilitating the cutting of large openings not usually formed with an auger or bit.

The invention consists in the construction and combination of parts to be more fully described hereinafter, and definitely set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical central section through the lower portion or head of the device, a portion of the shank thereof being represented as broken away, the upper portion being in elevation. Fig. 2 is a side elevation of the boring-tool, a portion of the shank being represented as broken away. Fig. 3 is a view showing the lower portion of the device which is represented in Fig. 2; but this view is taken in a plane at right angles to Fig. 2, the upper portion of the shank being represented as broken away. Fig. 4 is a bottom or end view of the boring-tool. Fig. 5 is a cross-section through the tool, taken substantially on the line 5 5 of Fig. 1. Fig. 6 is a cross-section on the line 6 6 of Fig. 3; and Fig. 7 is a side elevation of a sleeve, several of which may be used in connection with the boring-tool to enable holes of unusually large size to be bored.

Referring more particularly to the parts, 1 represents the shank of the device, which is preferably of round form, having a substantially square tang 2, formed at the upper extremity thereof, adapted to be received in the chuck of a boring-machine spindle or brace. Integral with the lower extremity of the shank 1 there is an enlarged head 3. The lower side of the head 3 is formed with a large transverse groove or slot 4, and at the bottom of this slot a center bore 5 is formed, for a purpose which will appear more fully hereinafter. In this way transversely-disposed guide-faces 6 are formed which extend across the head. In the slot 4 I mount laterally-adjustable cutters 7, the bodies whereof

are formed with rack-teeth 8, which engage with a pinion 9, which pinion is formed on a stud 10, rotatably mounted in the aforesaid center bore 5. The outer extremities of the cutters 7 project laterally and are formed with cutting points or edges 11, which extend downwardly or away from the shank 1. The outer faces of the cutters 7 rest against the guide-faces 6 and are guided laterally thereby, as will be readily understood. These cutters 7 are held in position by a cap 12, which is attached to the under face of the head 3 by means of suitable screws 13.

In order to facilitate the attachment of the cap 12, the lower extremity of the head is preferably formed of reduced diameter, as shown at 14, so that an annular shoulder 15 is presented against which the upper extremity of the cap 12 abuts. The body of the cap 12 consists of an annular ring, as shown, near the middle of which is formed a transverse diaphragm or disk 16, which lies flat against the under face of the cutter-head 3. Through this disk 16 the aforesaid screws 13 pass. At its center this disk 16 is provided with an opening 17, through which the body of the aforesaid pinion 9 extends, and adjacent to this opening 17 the inner face of the disk 16 is formed into a circular boss 18, which projects up into the transverse slot 4, referred to above. Against the inner face of this boss 18 the aforesaid cutters 7 rest.

The pinion 9 is formed integral with an enlarged flat dial 19, the inner face whereof rests against the under side or outer face of the disk 16. This dial 19 is formed with a transverse slot 20 of sufficient length to enable a screw-driver to be applied for rotating the dial. The outer face of the dial is provided with graduations or marks 21, which correspond to different positions of the cutters 7, it being understood that when the dial is rotated, as described, the pinion 9 will operate to extend the cutters more or less, as desired. The numbers upon the dial preferably represent inches of diameter of the opening which would be produced by the cutters.

I provide means for clamping the cutters in any desired position. For this purpose the outer portions of the cutters are provided with cheeks 22, which are engaged by inclined set-screws 23, which are seated in the upper face of the head, as indicated most clearly in Figs. 2 and 6. Evidently the bodies of these set-screws incline in opposite directions. - By screwing up the set-screws



23 tightly against the cheeks 22 evidently the cutters 7 may be clamped securely against the guide-faces 6.

It should be understood that the tool is used for enlarging holes already formed. The lower extremity of the cap 12 is to be inserted in the opening which is to be enlarged. In order to enable the head 3 to advance itself in the opening as the cutters are operating, I provide the outer face of the cap 12 with threads 24. These threads will be of suitable pitch and of proper character to advance the head in the opening as the same is rotated.

In order to enable the device to be used for enlarging holes of unusual diameter, I provide extra sleeves or thimbles, such as the thimble 25. (Shown in Fig. 7.) These thimbles have the general form of the cap 12, but are provided with internal threads 26, which engage the threads 24. Their outer faces are provided with threads 27, which are adapted to engage the edge of the original opening when the same is being enlarged. If desired, several of these extra thimbles may be supplied, in which case the internal thread of the second thimble will engage the external thread of the first one applied to the cap 12.

In order to enable the dial 19 to be held in place and conveniently removed, the edge thereof is preferably formed with a laterally-projecting flange 28, which is engaged by screws 29, as indicated in Fig. 4, the bodies of the screws being seated in the head 3 and passing through the disk 16.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a boring-tool of the class described, in combination, a head, transversely-guided cutters mounted in said head, a cap carried by said head and having external threads adapted to engage the edge of an opening, and affording means for feeding said cutters and head forwardly and a movable thimble

having internal threads engaging said first threads and having external threads adapted to engage the edge of an enlarged opening.

2. In a boring-tool of the class described, in combination, a head having a transverse slot therein, a pair of cutters mounted to slide on the side faces of said slot, and having teeth on their adjacent faces, a cap attached to the end of said head and retaining said cutters, said cap having an opening there-through, a rotatable dial seating against the under side of said cap and having a pinion lying within said opening and meshing with said teeth, said dial having graduations indicating the amount of extension of said cutters, and means engaging the edge of said dial to lock the same rigidly to said cap.

3. In a boring-tool of the class described, in combination, a head having a transverse slot therein, a pair of cutters mounted to slide on the side faces of said slot, and having teeth on their adjacent faces, a cap seating on the end of said head, screws passing through said cap and attaching the same to said head to retain said cutters, said cap having an opening therethrough, a rotatable dial seating against the under side of said cap and covering the heads of said screws, said dial having a pinion lying within said opening and meshing with said teeth, said dial further having graduations on the outer face thereof indicating the amount of extension of said cutters for a given movement of said dial, and screws mounted in said cap around the edge of said dial and engaging said dial to lock the same rigidly to said cap.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN DOWLING.

Witnesses:

G. J. HILDEBRAND,  
T. L. BROWN.