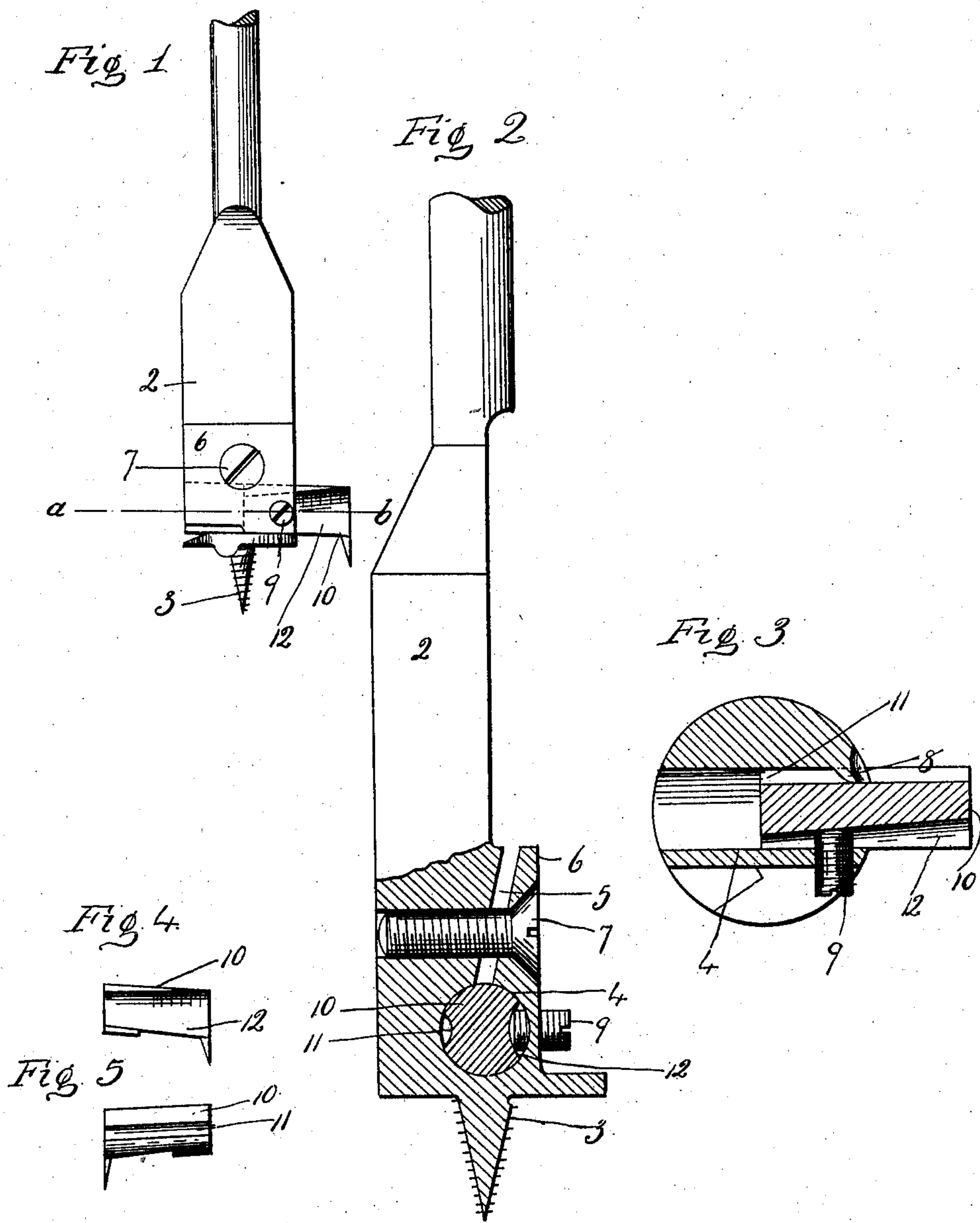


E. PASTORE.  
EXPANSIBLE BIT.  
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963,468.

Patented July 5, 1910.



Witnesses  
C. J. Reed  
C. L. Reed

Inventor  
Ernest Pastore  
by Seymour & Carey  
Attys



# UNITED STATES PATENT OFFICE.

ERNESTO PASTORE, OF NEW HAVEN, CONNECTICUT.

## EXPANSIBLE BIT.

963,468.

Specification of Letters Patent.

Patented July 5, 1910.

Application filed April 25, 1910. Serial No. 557,431.

*To all whom it may concern:*

Be it known that I, ERNESTO PASTORE, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Expansible Bits; and I do hereby declare the following, when taken in connection with the accompanying drawings and the reference characters marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1 a front view of an expansible bit constructed in accordance with my invention. Fig. 2 a side view partially in section of the same on an enlarged scale. Fig. 3 a sectional view on the line *a—b* of Fig. 1. Fig. 4 a front view of the cutter, detached. Fig. 5 a rear view of the same.

This invention relates to an improvement in expansible bits, the object being to provide means for securely clamping the adjustable cutter so that it will be held rigidly and provide means for temporarily holding the cutter at the time of adjusting the same; and the invention consists in the construction hereinafter described and particularly recited in the claims.

In carrying out my invention, I employ a head 2 of substantially usual form with a gimlet point 3, and this head is formed with an inclined transverse round hole 4. As usual in bits of this class the head, which is substantially semi-circular in form, is provided with an inclined slot 5 extending downward from the flat face of the head and intersecting the round hole 4 forming, as it were, a finger 6 through which a screw 7 extends into the head and so that the hole may be contracted. At one end of the hole 4 the metal is struck inward to form a short stud 8 for the purpose as will hereinafter appear, and mounted in the head in line with the hole 4 and at one side is a set screw 9.

The adjustable cutter 10 may be of any suitable length and is formed on its rear face with a transverse groove 11 into which the stud 8 extends, and whereby the cutter is held against rotation. The face 12 of the cutter is concaved and tapers from the inner end outward; that is, the face of the cutter is inclined. The set screw 9 must be turned

outward sufficiently to allow the introduction of the cutter into the hole 4. As it is introduced the stud 8 enters the groove 11 at the back, and as before stated, prevents the cutter from turning. When the cutter is adjusted to the desired point the screw 9 may be turned inward so as to temporarily hold the cutter in that position, and when so temporarily held by the screw 9 the screw 7 is turned inward to crowd the finger 6 against the head 2 so as to contract the hole 4 and cause the metal to bind upon the cutter, and this it will do throughout the surface of the cutter which may be within the hole; and in this way the cutter is supported much more firmly than is the case when it is held by the engagement of a single screw at the center. The screw 9 not only facilitates the convenient adjustment of the cutter, but owing to the inclination of the face of the cutter the screw prevents the accidental complete withdrawal of the cutter from the head. With this construction the cutter is rigidly held even when drawn outward to the limit of its cutting capacity.

I claim:—

1. An expansible bit comprising a head formed with a transverse inclined round hole and with an inclined slot extending downward from the face of the head into said hole whereby a clamping finger is formed, a screw extending through said finger into the head, combined with a cutter adapted to be entered into said transverse hole and be clamped therein.

2. An expansible bit comprising a head formed with a transverse inclined round hole and with an inclined slot extending downward from the face of the head into said hole whereby a clamping finger is formed, a screw extending through said finger into the head a set screw mounted in said head in line with said hole, a cutter adapted to be entered into said hole and having a concave inclined round face against which the said screw may impinge.

3. An expansible bit comprising a head formed with a transverse inclined round hole and with an inclined slot extending downward from the face of the head into said hole whereby a clamping finger is formed, a screw extending through said finger into the head a set screw mounted in said head in line with



said hole one end of said hole formed with an inwardly projecting stud, combined with a cutter having an inclined concave front face against which the set screw may impinge,  
5 and a longitudinal groove at the rear for engagement with said stud whereby the cutter is held against turning.

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

ERNESTO PASTORE.

Witnesses:

EDMUND J. HOUDÉ,  
WM. W. SCOTT.