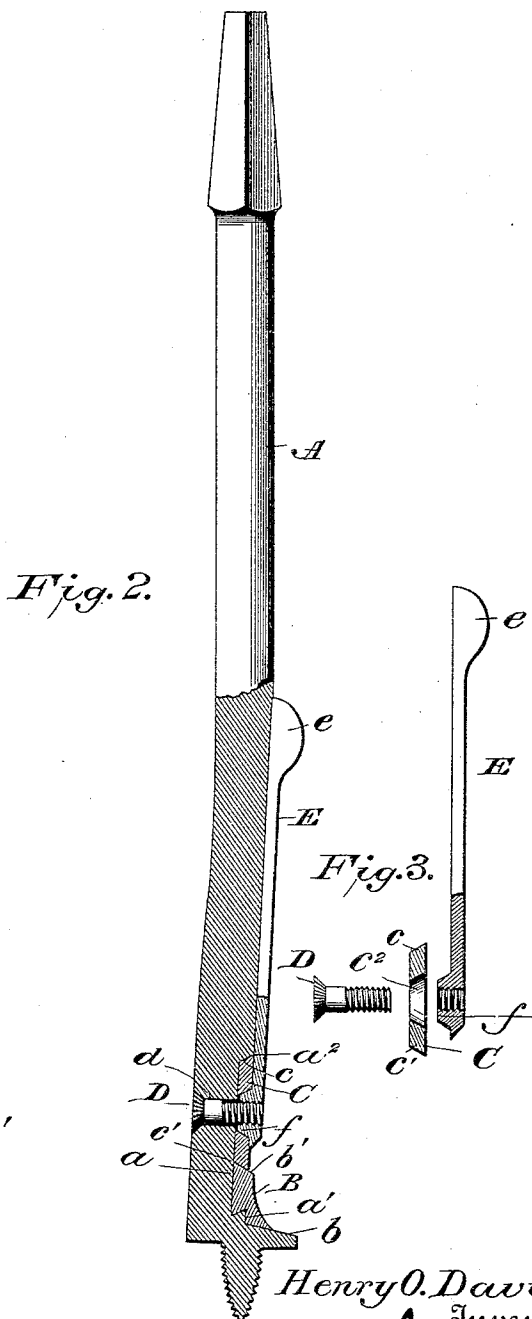
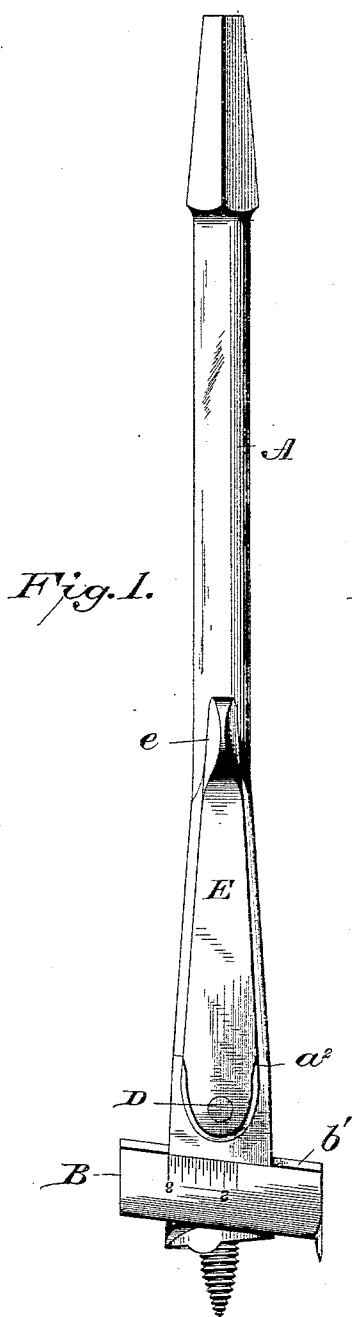


(No Model.)

H. O. DAVIS.
ADJUSTABLE BIT.

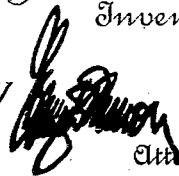
No. 476,614.

Patented June 7, 1892.



Witnesses
G. S. Elliott.
M. Johnson.

Henry O. Davis.
Inventor

by 
Attorney

UNITED STATES PATENT OFFICE.

HENRY O. DAVIS, OF ANNISQUAM, MASSACHUSETTS.

ADJUSTABLE BIT.

SPECIFICATION forming part of Letters Patent No. 476,614, dated June 7, 1892.

Application filed December 10, 1891. Serial No. 414,621. (No model.)

To all whom it may concern:

Be it known that I, HENRY O. DAVIS, a citizen of the United States of America, residing at Annisquam, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Adjustable Bits; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in expandible bits.

The object of the invention is to provide a bit with an adjustable cutter which can be so set that the implement can be used for boring holes of different diameters; and the invention consists in the construction and combination of the parts, as will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, forming part of this specification, Figure 1 is a front elevation of an expandible bit constructed in accordance with my improvement. Fig. 2 is a side elevation, partly in section. Fig. 3 refers to detail views of the screw, clamping-plate, and lever detached.

A designates the shank of the bit, the lower portion of which immediately above the bit proper being cut away to provide a recess *a*, having at its lower end an undercut shoulder *a'*, from which extends an inclined straight surface *b*, against which the lower edge of the adjustable cutter B bears. The upper end of the recess *a* is provided with an inclined shoulder *a''*, this construction of the lower portion of the bit as to the configuration of the recess and shoulders being substantially the same as that shown in Patent No. 360,990, issued to Charles E. Billings April 12, 1887, with the exception that the portion of the shank above the shoulder *a''* is on a line with the outer end of said shoulder.

The adjustable cutter B is constructed so as to bear against the vertical wall of the recess *a* and upon the shoulders or bearing-surfaces *a'* and *b*, the upper edge *b'* thereof being inclined, as shown.

C designates a clamping-plate which is provided with inwardly-inclined upper and lower edges *c* and *c'*, which conform to the inclination of the shoulder *a''* and upper edge of the cutter, and between this plate and the shoulder *a'* is formed a dovetailed recess, within which the adjustable cutter is clamped. Centrally this clamping-plate has a tapered aperture *c''*, which registers with the aperture *d* in the bit, the outer end of said aperture *d* being countersunk and serrated.

D designates a screw or bolt which lies in the recess *d*, the head thereof being serrated to engage with the serrations in the countersunk portion of said recess.

E designates a lever which is provided at its upper end with an outwardly-projecting grasping portion *e*, while upon its lower end is formed a conical projecting portion *f*, which is centrally apertured and screw-threaded, said conical portion being adapted to enter the tapered aperture in the clamping-plate. This lever has a straight inner face which is adapted to bear against the straight face of the bit.

To organize the parts for use, the clamping-plate, screw, and lever are properly positioned, the lever E being placed at nearly right angles with the shank. The screw is then turned until the serrated head thereof engages with the serrated aperture, after which the expandible bit is inserted and adjusted. The lever is then turned so as to bring it on a line with the shank, which movement will draw the head of the bolt in contact with the serrations, and at the same time the conical portion of the lever bearing upon the clamping-plate will exert a great power upon said plate, forcing the same toward the base and against the adjustable cutter, so as to hold the same rigidly in the position it may have been adjusted to.

It will be obvious that by this construction there is exerted upon the adjustable cutter a force sufficient to hold the same securely in position, and that when in use, should the parts wear, the screw can be turned to compensate for the same.

Having thus described my invention, I claim—

1. In combination with a bit, an adjustable cutter constructed substantially as shown, the bit having a bolt-receiving aperture which is

countersunk and serrated, a bolt having a serrated head, a clamping-plate having opposite beveled upper and lower edges, a conical aperture, and a lever having a conical portion adapted to engage therewith, substantially as set forth.

2. A bit having its shank straight on one edge and cut away to receive an adjustable cutter and clamping-plate, an adjustable bolt, means for holding the same against turning, a lever pivoted upon the threaded portion of the bolt and adapted to engage with a clamping-plate, so as to force the same against the adjustable cutter, substantially as shown, and for the purpose set forth.

3. In combination with a bit constructed substantially as shown and provided with a flat side, which is recessed, so as to provide shoulders a' and a^2 , an adjustable cutter B, adapted to lie partially within said recess, a clamping-plate having oppositely-beveled edges, a bolt adjustably secured to the bit, and a lever E, threaded for engagement with the

bolt, said lever being adapted to bear upon the clamping-plate when turned to lie parallel with the bit, substantially as shown, and for the purpose set forth.

4. In combination with a bit provided with an adjustable cutter and clamping-plate, which are adapted to be forced against each other, a bolt carried by the bit, the threaded end passing through the clamping-plate for engagement with the lever, which is pivoted thereto, said lever having a conical portion which is adapted to engage with the inclined walls of the aperture in the clamping-plate, the end of said lever extending beyond said aperture in the clamping-plate, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY O. DAVIS.

Witnesses:

JOHN J. DAVIS,

FRANK E. SMOTTEN.