

W. A. CLARK.
Expansive Bits.

No. 141,324.

Patented July 29, 1873.

Fig 1.

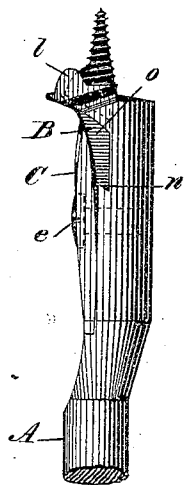


Fig 2.

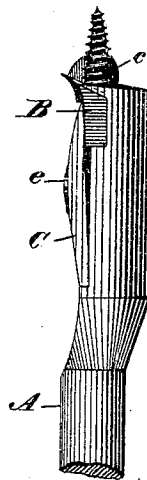


Fig 3.

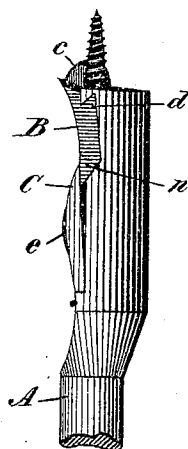
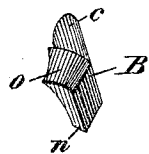


Fig 4.



Witnesses.

Harry King.
John Williams

Inventor.

Wm A. Clark,
by Dodge & Co.,
Attys.

UNITED STATES PATENT OFFICE.

WILLIAM A. CLARK, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN EXPANSIVE BITS.

Specification forming part of Letters Patent No. **141,324**, dated July 29, 1873; application filed December 5, 1872.

To all whom it may concern:

Be it known that I, WM. A. CLARK, of New Haven, in the county of New Haven and State of Connecticut, have invented certain Improvements in Expansive Bits, of which the following is a specification:

My invention relates to that class of boring-bits which have an adjustable cutter, usually denominated expansible bits, it being an improvement upon the mode of fastening the adjustable cutter shown in my patent granted May 11, 1858, and reissued December 12, 1871.

Figures 1, 2, and 3 are side views of a bit constructed on my improved plan; and Fig. 4 is a perspective view of an adjustable cutter detached.

In constructing my present bit, I make the body A of the same general form as in my well-known expansible bit previously patented; but, instead of securing the adjustable cutter, as in that case, I make a seat or recess for its body in the body of the bit A, and then fit over it a clamping piece or plate, C, which I secure to the body A by a screw, *e*, as shown in Figs. 1, 2, and 3. In Figs. 1 and 2 I have shown the recess in which the cutter B fits as formed with an inclined or beveled shoulder at the side nearest the point, and the opposite shoulder of the recess may be cut under or made to overhang, as shown in Fig. 1; or it may be made a right angle, as shown in Fig. 2. The cutter B, as shown at Fig. 4, will be made with corresponding edges, its upper edge *n* being either inclined or right-angled, according as it is intended to fit one or the other form of recess, and its lower edge *o* being beveled or inclined and slightly rounded, as shown in Figs. 1, 2, and 4, the cutter represented in Fig. 4 being made to fit a recess such as is shown in Fig. 1. When the cutter is formed as shown in Fig. 1 the clamping-plate C, which is a simple flat piece of metal with a hole for a screw at its center, is made so that its lower end will press upon the face of the cutter C near its lower edge, and thereby force the cutter B firmly

into its recess or seat, the inclined edge *o* causing its opposite edge *n* to engage firmly under the overhanging shoulder, as shown clearly in Fig. 1. If the upper shoulder *n* be made right-angled, then the plate C will be made to fit flat against the face of the cutter B, and thus hold it firmly in place; or, if preferred, the lower edge *o* may have formed thereon a lip, *d*, beveled or inclined in the opposite direction, to fit in a recess which has an overhanging shoulder at the lower side, as represented in Fig. 3, the upper edge of the cutter B and the corresponding shoulder of the recess being inclined in the opposite direction. In this case the clamp C is made so that its lower end will press on face of the cutter near its upper edge, which, acting on the incline, will crowd its lip *d* into the dovetailed groove at the bottom of the recess, and thereby hold the cutter very securely in place. I prefer the plans shown in Figs. 1 and 2, because it will be seen that pressure or force applied to the bit in cutting will tend to force it back into the recess, and thus make it all the more tight, whereas in the form shown in Fig. 3 said force will tend to force it out of its seat, thus exerting more strain on the clamp C and its screw *e*.

It is obvious that this method of fastening the cutter may be applied to a bit which has but a single cutting-lip, as represented in Figs. 2 and 3, or to one having two cutting-lips, as shown in Fig. 1, *c* representing the lip on the cutter B, and *l* representing the stationary lip, which is made on the body of the bit proper.

Having thus described my invention, what I claim is—

An adjustable or expanding bit having its cutter B secured in a recess in its shank by means of the clamp C and screw *e*, substantially as shown and described.

WILLIAM A. CLARK.

Witnesses:

PHIL. T. DODGE,
J. MCKENNEY.