(No Model.)

E. F. BEUGLER.

BORING TOOL.

No. 451,448. Patented May 5, 1891.

Fig.1.

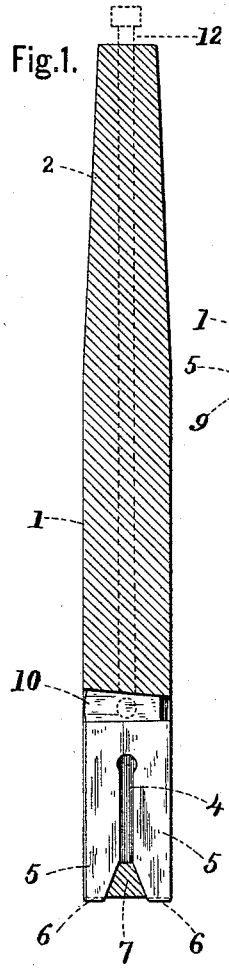


Fig.2.

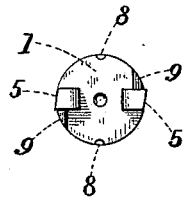


Fig.3.

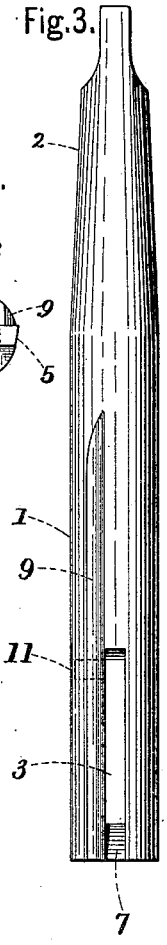
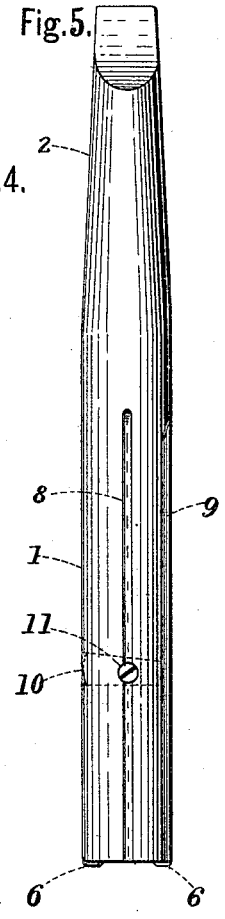


Fig.4.

Fig.5.



Witnesses.

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UNITED STATES PATENT OFFICE.

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BORING-TOOL.

SPECIFICATION forming part of Letters Patent No. 451,448, dated May 5, 1891.

Application filed September 1, 1890. Serial No. 363,641. (No model.)

To all whom it may concern:

Be it known that I, EDWIN F. BEUGLER, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Boring-Tools, of which the following is a specification.

The object of my invention is to produce a simple and convenient boring-tool or reamer having its cutting-edges adapted to be expanded to compensate for the gradual wearing by use or grinding, so as to keep the exact size required until the cutter is worn out, when it can easily be replaced by another, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation showing the cutter in place within the boring-tool, also the means for expanding it when required. Fig. 2 is a lower end view. Fig. 3 is a side elevation showing the open slot in which the cutter is placed, the cutter being omitted. Fig. 4 is a detached side edge view of the cutter. Fig. 5 is a side elevation of the boring-tool complete, showing the expanding device by dotted lines and the head of the screw by which it is secured in position when adjusted.

In said drawings, 1 represents the main cylindrical portion of the boring-tool. It is made preferably of steel, and is provided with the usual tapering shank 2, by which it is secured to the lathe or drilling-machine.

In Fig. 3 is shown a slot 3, which passes through the lower portion of the boring-bar. At the bottom of the slot 3 is a wedge-shaped portion 7.

The cutter consists of a plate of steel having a slot or opening 4 through the cutter, which extends upward toward the top, but leaving sufficient metal to securely hold the two downwardly-projecting cutting portions 5 and 5. The slot 4 extends down through the cutter, leaving the lower end portions 6 and 6 of the cutter inclined or beveled each way, substantially as shown in Fig. 1, so that the two ends of the cutter fit over and straddle the portion 7, substantially as shown in said Fig. 1. The body of the bar is provided with the usual clearing-grooves 8 and 9.

At the top the groove 3 is beveled or inclined from one side upward, and the top of the cutter is inclined in the opposite direction, so as to produce a wedge-shaped opening to receive the wedge or key 10, and to one side of the body 1 is a short screw 11, by which the key 10 is secured rigidly in position when adjusted to the point desired. An equivalent to the wedge or key would be a screw, substantially as shown by the dotted lines 12 in Fig. 1.

The operation of this device will be easily understood from the foregoing description and drawings. Whenever the cutting-edges at the sides 5 and 5 of the cutter become dull and require sharpening the cutter is removed by loosening and taking the wedge out and then removing the cutter, which can be easily done by moving the top portion to one side and then lifting it out. The cutter being sharpened, is then returned to its place, and the wedge inserted and driven so that the cutter is forced downward, causing the two portions 5 and 5 to spread outward as the inclined parts of the ends 6 and 6 are forced down on the wedge-shaped portion 7. When the exact size is thus obtained, the wedge 10 is rigidly secured, as above described.

I claim as my invention—

A boring-tool provided with a slot 3, having a wedge-shaped portion 7 at the bottom, in combination with a removable cutter having a slot 4 extending down through it and inclined outward at each side at the bottom, so as to fit the wedge-shaped portion 7, a wedge or key adapted to fit between the top of the slot 3 and cutter for forcing the cutter downward, and a screw for securing the wedge in position when adjusted, substantially as described.

EDWIN F. BEUGLER.

Witnesses:
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