A. ARNTZ.

Expansible Reaming-Bit.

No. 225,265. Patented Mar. 9, 1880.

Fig. 1.

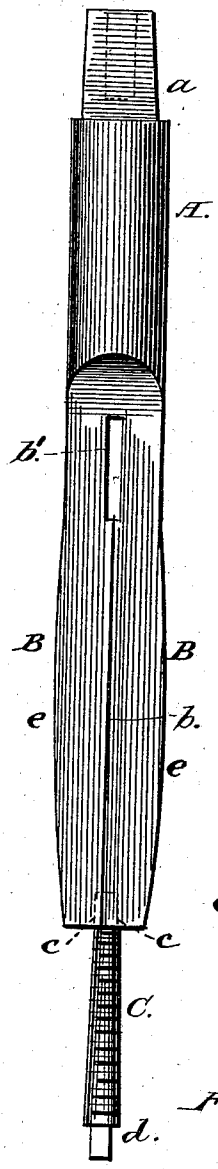


Fig. 2.

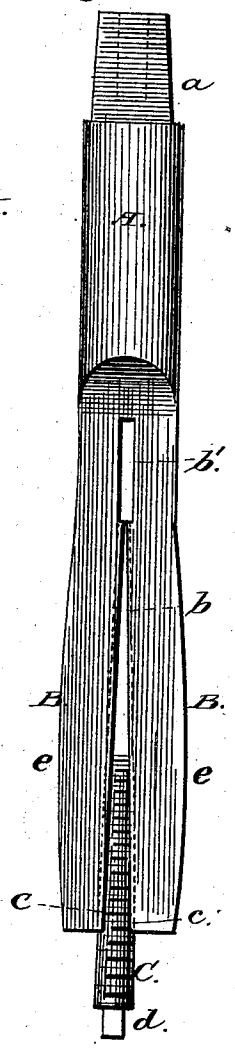


Fig. 3.

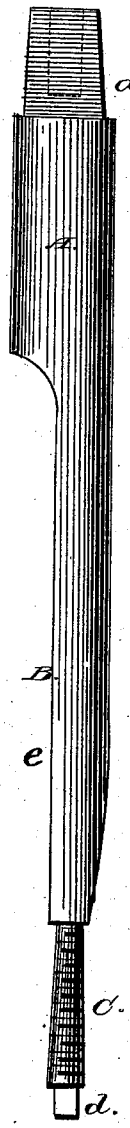
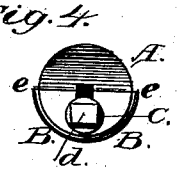


Fig. 4.



Witnesses.
Fred G. Dieterich
Jno. A. Madigan

Inventor
Adolph Arntz.
by Louis Bagger & Co.
Attorneys

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ADOLPH ARNTZ, OF MUSKEGON, MICHIGAN.

EXPANSIBLE REAMING-BIT.

SPECIFICATION forming part of Letters Patent No. 225,265, dated March 9, 1880.

Application field July 26, 1879.

To all whom it may concern:

Be it known that I, ADOLPH ARNTZ, of Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Expansible Reaming-Bits; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figures 1 and 2 are front elevations. Fig. 3 is a side view, and Fig. 4 is an end or bottom view.

Similar letters of reference indicate corresponding parts in all the figures.

This invention relates to expansible reamers or reamer-bits; and it consists in an improved construction of the bit, and in the combination therewith of a tapering tapped screw, as hereinafter described, and particularly pointed out in the claims.

In the drawings, A is the upper cylindrical part of the bit, which has a square part, *a*, for fitting it into the stock. The bit proper is semicircular in cross-section, and consists of two parts, B B, divided by a longitudinal slot, *b*, the upper part of which, just below the cylindrical head A, is enlarged, as shown at *b'*, to prevent splitting in expanding the bit. If desired, a small brush, cotton-waste, or an oiled rag for cleaning may be inserted into this enlargement *b'* to wipe or clean the hole as the reamer progresses, and remove the fine metal threads or shavings. Each of the two parts, B B, has a straight inner edge, but curvilinear outer edge, *e*, as shown in Figs. 1 and 2. The curvilinear edges *e e* form the cutting parts of the bit, the widest or broadest part of which is about midway between the enlargement *b'* and the end of the bit. The straight inner edges have each a tapering recess, *c c*, which are opposite to and register with each other, and into which a tapering screw, C, having a square part, *d*, at its lower end, is inserted, the recesses *c c* being screw-threaded to fit the tapering adjusting-screw C. By turning this screw so as to cause it to enter the recesses *c c* the slot *b* is widened and the bit B B accordingly expanded, while by moving the screw in the opposite direction the elasticity of the bit will cause the parts B B to reassume their normal position with their inner straight edges parallel to each other.

The adjusting-screw C may readily be turned in either direction by inserting a key upon its square part *d*, or with the aid of a pair of pliers.

By making the outer cutting-edges, *e e*, of the bit curvilinear, as described, the parts B B will always, whatever the degree of expansion may be, present a true slightly-curved cutting-edge to the inside of the tube or barrel which is to be bored out, and the strain upon the bit will always be at or near the middle of its curved parts B B, which would not be the case if these parts were constructed with straight edges.

This reamer is particularly adapted for the reboring or choke-boring of gun-barrels, or for "truing" the same; and as (besides the stock) it consists of only two parts, it is simple and durable in its construction, easily operated, and not liable to get out of order.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The expansible reamer-bit, consisting of the square part *a*, cylindrical part A, and semi-cylindrical parts B B, having longitudinal central slot *b*, enlargement *b'*, tapering screw-threaded recesses *c c*, and curvilinear cutting-edges *e e*, and provided with means for its expansion, substantially as and for the purpose herein shown and described.

2. The combination, with the bit *a* A B B, having longitudinal slot *b*, enlargement *b'*, tapering screw-threaded recesses *c c*, and curvilinear cutting-edges *e e*, of the tapering adjusting-screw C, provided with the square part *d*, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ADOLPH ARNTZ.

Witnesses:
FRANCIS JIROCH,
WM. PEER.