

J. JULIEN.

Expanding-Drill for Boring Blast-Holes.

No. 207,122.

Patented Aug. 20, 1878.

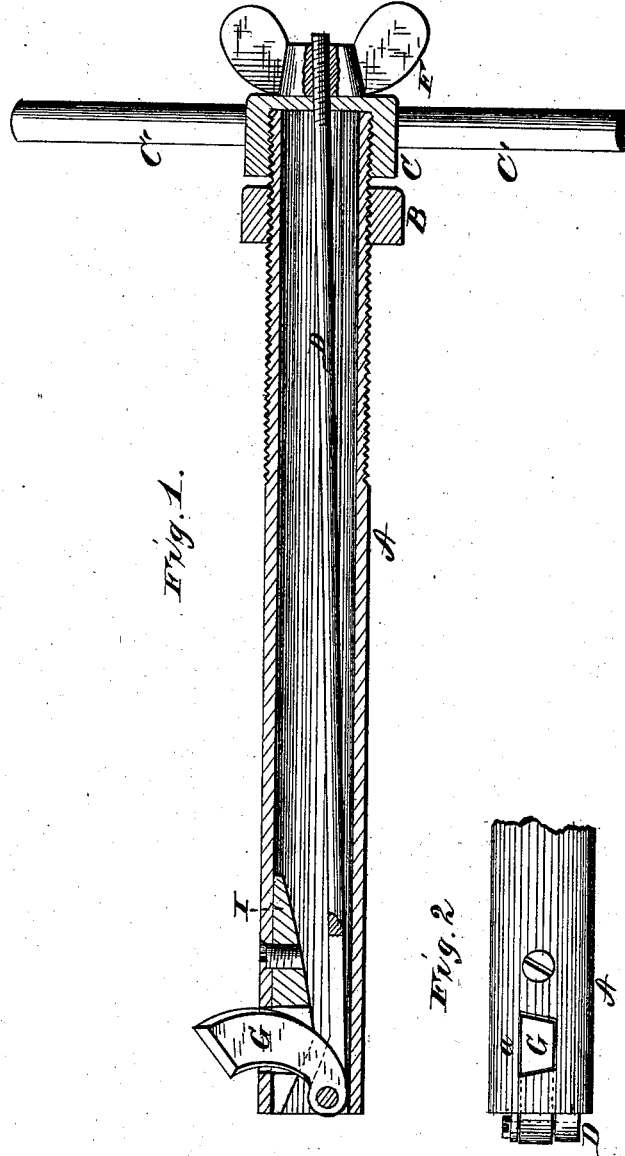


Fig. 1.

Fig. 2.

WITNESSES  
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By

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# UNITED STATES PATENT OFFICE.

JOHN JULIEN, OF DUBUQUE, IOWA.

## IMPROVEMENT IN EXPANDING DRILLS FOR BORING BLAST-HOLES.

Specification forming part of Letters Patent No. 207,122, dated August 20, 1878; application filed May 15, 1878.

*To all whom it may concern:*

Be it known that I, JOHN JULIEN, of Dubuque, in the county of Dubuque, and in the State of Iowa, have invented certain new and useful improvements in drilling such holes in stone as can be used for a strong blast of powder; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction and arrangement of a drilling-machine for enlarging the lower or inner ends of holes made in stone for blasting purposes, so as to admit of a large charge of powder being placed therein, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal section of my invention. Fig. 2 is a side view of the lower part thereof.

A represents a tube of any suitable dimensions, having its upper end provided with exterior screw-threads, and on the same is screwed a jam-nut, B, and upon the end of the tube is screwed a cap, C, having radial arms C'.

Through the center of the cap C is passed a rod, D, having a thumb-nut, F, screwed on its upper end. This rod extends down to the bottom of the tube, and its lower end is forked,

and has a curved bit or cutter, G, pivoted therein. This curved bit or cutter G is to project through a hole, a, in the side of the tube, near the lower end, and within the tube is fastened a slotted guide-piece, I, as shown, which also prevents the cutter being drawn up with the tube.

After the usual hole has been drilled this instrument is inserted in such hole to any desired depth, and then rotated by any suitable means. The cutter G is then, by screwing down the thumb-nut F, gradually fed outward through the slot a, so as to make an enlarged chamber at the bottom of the drilled hole, for the purpose of applying an increased charge of powder.

I am aware that a reamer having enlarging-bits, to be thrown out and in, are not new, and I do not claim such, broadly, as my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination of the tube A, having slot a and slotted guide-piece I, the cap C, rod D, with thumb-nut F, and the curved bit or cutter G, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 27th day of April, 1878.

JOHN JULIEN.

Witnesses:

FRANK W. ALTMAN,  
HENRY KIENE.