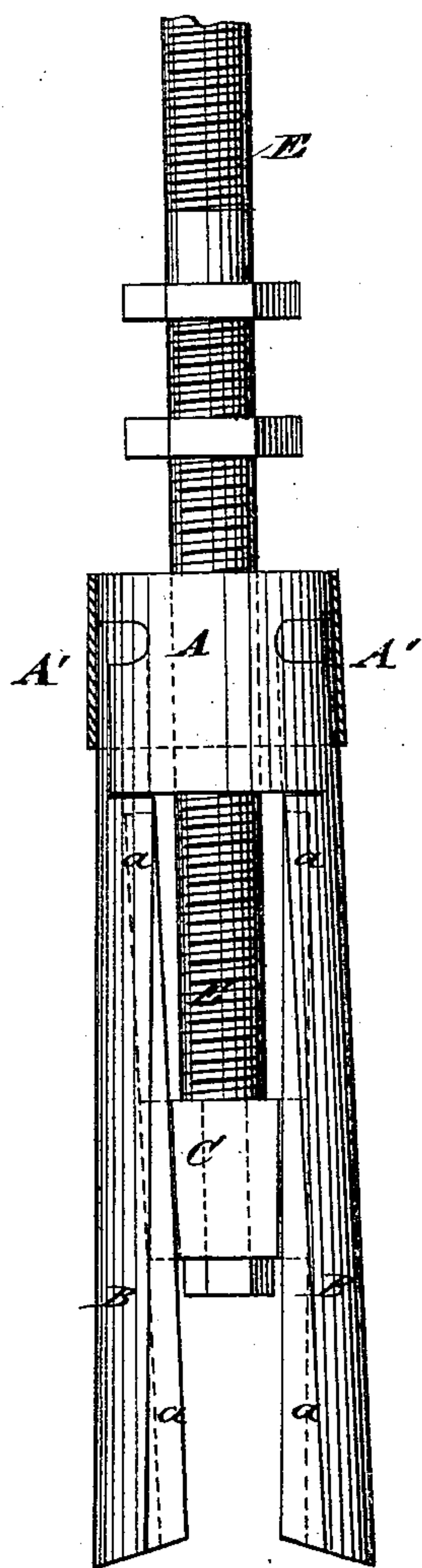


W. R. BURT.  
EXPANDING ROCK-DRILL.

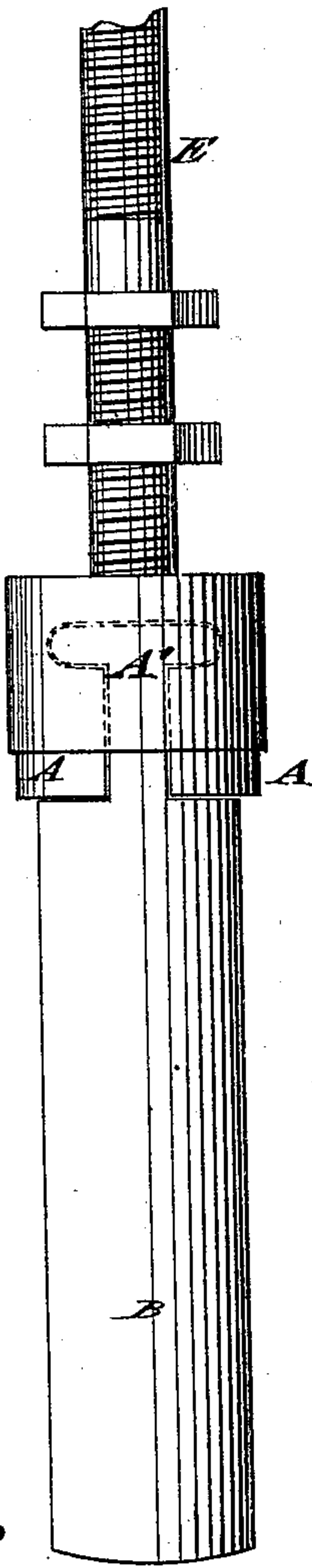
No. 191,307.

Patented May 29, 1877.

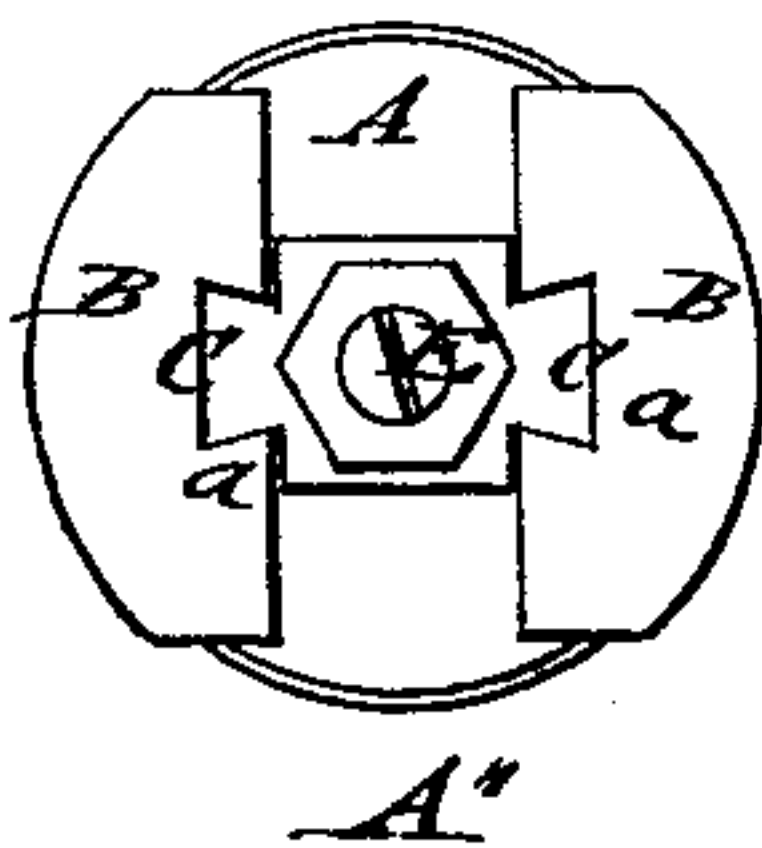
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

WELLINGTON R. BURT, OF EAST SAGINAW, MICHIGAN.

## IMPROVEMENT IN EXPANDING ROCK-DRILLS.

Specification forming part of Letters Patent No. **191,307**, dated May 29, 1877; application filed April 9, 1877.

*To all whom it may concern:*

Be it known that I, WELLINGTON R. BURT, of East Saginaw, in the county of Saginaw and State of Michigan, have invented a new and Improved Device for Enlarging the Lower Part of Salt, Oil, and Artesian Wells, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side view, Fig. 2 an end view, and Fig. 3 a bottom view, of my improved device for enlarging the lower part of the bore-holes of wells.

Similar letters of reference indicate corresponding parts.

This invention is intended to provide an improved tool or drill for the purpose of enlarging the lower part of salt, oil, and artesian wells without enlarging the top of the same; and it consists of hinged and wedge-shaped expanding-arms that are spread or closed by a wedge-shaped slide-piece and operating screw-shaft passing through the same, and turning in the head of socket of the expanding-arms.

In the drawing, A represents the recessed head or socket of the tool; B, the wedge-shaped enlarging-arms, which are hinged in suitable manner to the recesses of the socket and retained therein by an encircling-band, A', of the same. The expanding-arms B increase in thickness from the upper to the lower ends, and are rounded off at the outside and beveled at the lower ends.

When the expanding-arms are closed they

form a cylindrical tool that passes readily through the bore-hole of the well down to the lower part of the same, where they are spread by a wedge-shaped slide-piece, C, that moves in interior dovetail grooves *a* of the expanding-arms B, by the turning action of a screw-shaft, E, that revolves in the centrally-threaded socket or head A, so as to move the wedge-piece C up or down, as desired. By moving the wedge-piece down the arms are spread outwardly, so as to press against the surrounding walls of the well and expand the same to some extent, obtaining thereby a larger-sized hole than at the upper part of the well. By turning the screw-shaft in opposite direction, the wedge-piece is moved up and the arms are brought closer to each other, to be drawn up again through the bore-hole.

Thus a very simple and effective tool for enlarging the lower part of the bore-holes of wells is obtained.

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

The combination of the hinged expanding-arms, having interior guide-grooves, with a vertically-sliding wedge-piece guided therein, and an operating screw-shaft, turning in the head of the arms and in the wedge-piece, substantially as specified.

WELLINGTON R. BURT.

Witnesses:

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