

Grier & Boyd

Metal Drill Bit,

N^o 47,812 -

Patented May 23, 1865.

Fig: 1.

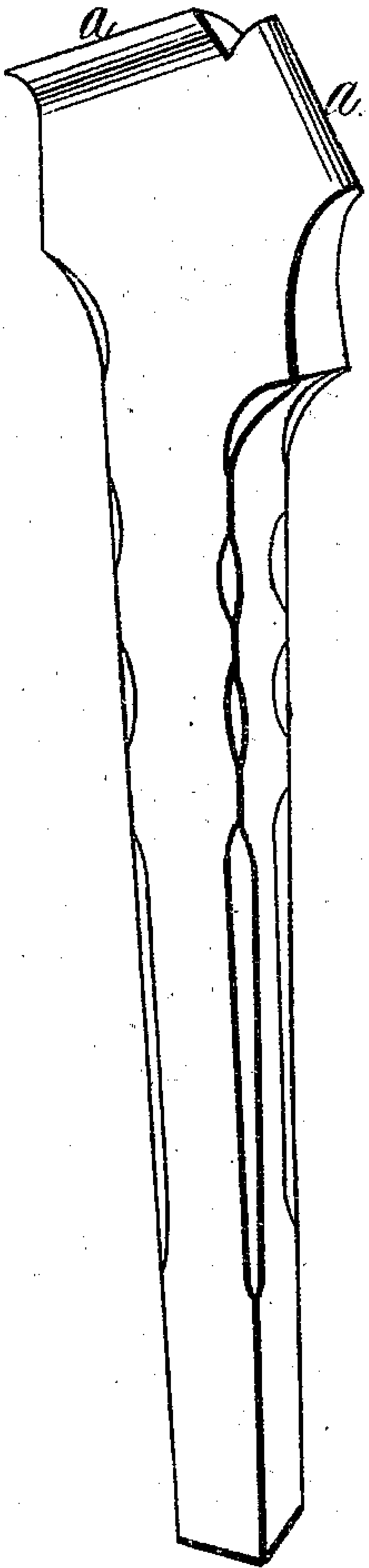


Fig. 2.

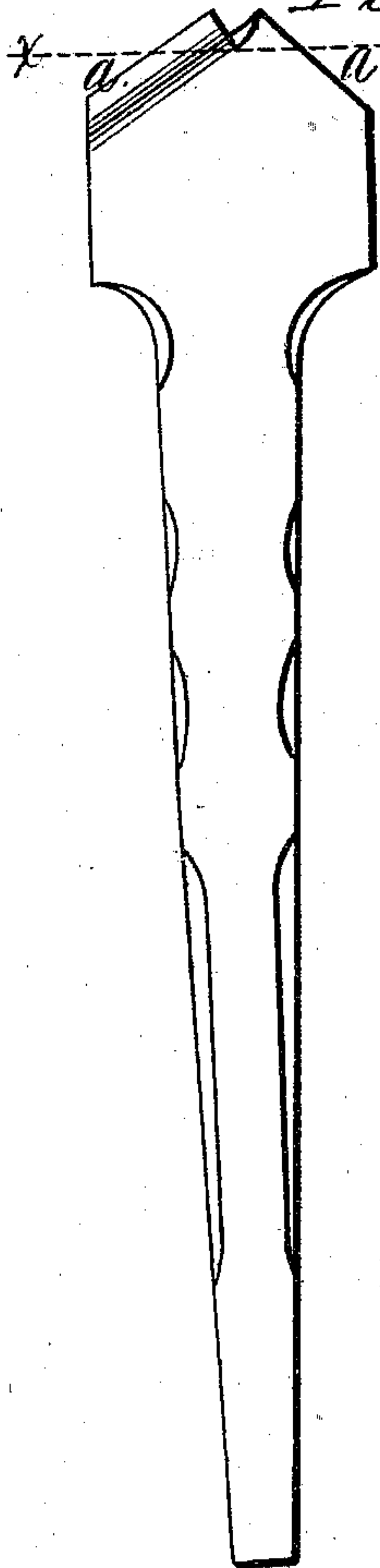


Fig. 3.

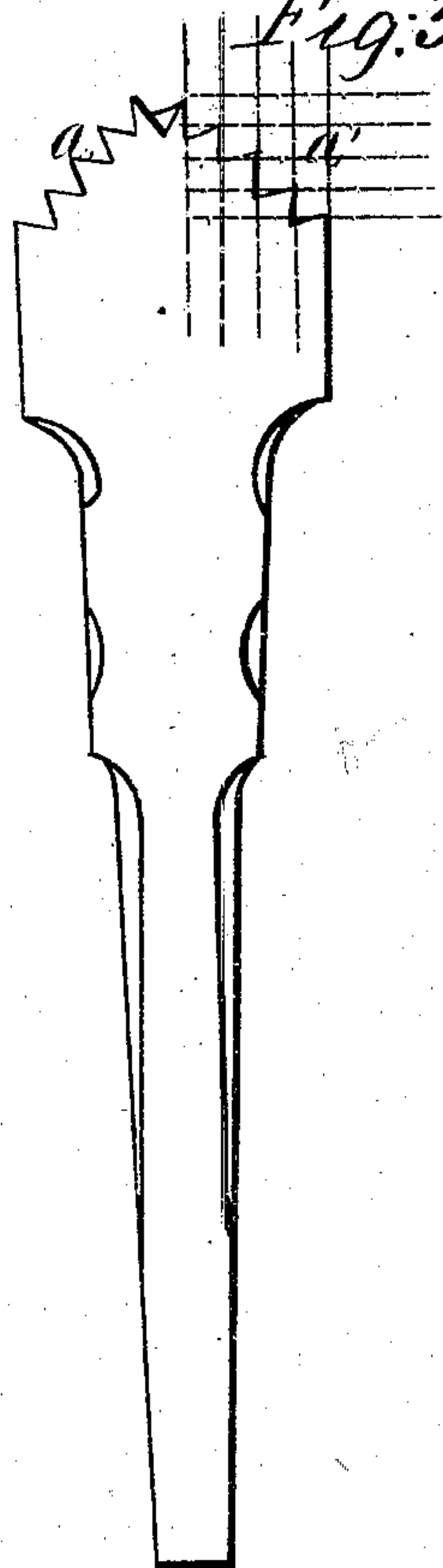
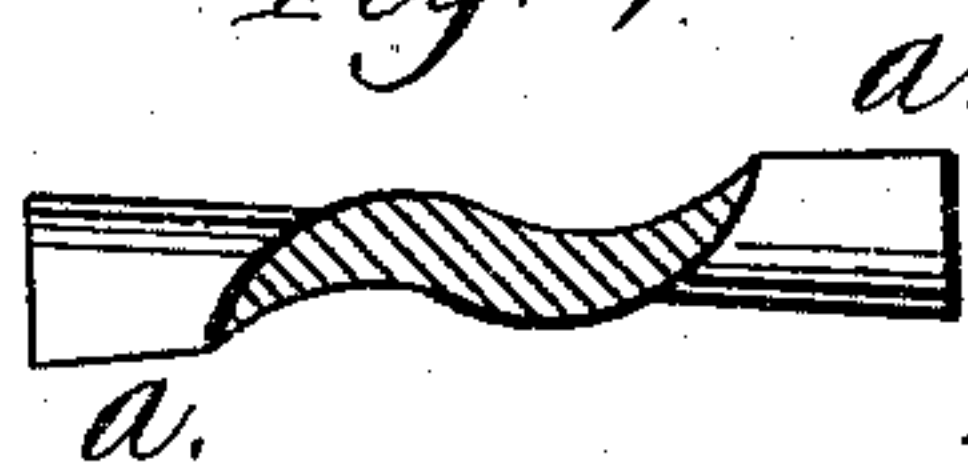


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM W. GRIER AND ROBERT H. BOYD, OF HULTON, PENNSYLVANIA.

IMPROVED DRILL-BIT.

Specification forming part of Letters Patent No. 47,812, dated May 23, 1865.

To all whom it may concern:

Be it known that we, W. W. GRIER and R. H. BOYD, of Hulton, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Bit or Drill for Boring and Drilling Coal, Stone, Iron, and Similar Substances; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an isometric perspective view of a drill or bit; Fig. 2, a side or plan view of the same; Fig. 3, a side or plan view of a similar drill having serrated lips; and Fig. 4 is a transverse section taken on the line of xx , Fig. 2.

The nature of our invention consists in making a drill having an open center or notch at its extreme central point, and also in giving to the cutting-lips serrated edges.

To enable others skilled in the art to construct and use our invention, we will proceed to describe it.

Fig. 1 represents a plain drill or bit having two curved cutting-lips, $a a$, (the faces of which stand at an angle of about forty degrees, more or less) to the axial line of the body of the bit. At the central point of the bit we cut a V-shaped notch or recess, as shown in the various figures, instead of the point or spur usually made on such instruments. The curve of the cutting-lips is more clearly shown in the transverse section shown by Fig. 4.

Fig. 3 represents a bit or drill constructed on the same general plan of the one above described, and having its lips serrated or notched, as shown. It will be observed that the serrations there shown have their boundary lines standing nearly at right angles to each other and forming a series of lines nearly perpendicular or longitudinal in one direction, and in the other nearly horizontal or transverse,

as shown in red lines in Fig. 3, although it is obvious that this form may be varied somewhat without departing from the spirit of our invention. If desired, the points may be armed with diamonds or other hard substances to render them more efficient and durable.

The form of bit shown in Fig. 3 we have found by experiment to be the most effective instrument known to us for boring or cutting into coal, and we especially intend these instruments for that purpose, in connection with a coal-mining machine invented by us, and for which Letters Patent have been heretofore granted to us. These instruments are specially useful, also, for boring or drilling stone, iron, and all similar substances. The body of the bit should be made flat, or nearly so, and of sufficient thickness to give it the requisite strength for boring hard substances. They may be made with a stem, as here shown, when intended for use in an ordinary stock or mandrel, or they may be made with a short thick shank having a screw-thread cut thereon for securing it firmly in position and properly attaching it to tool or machine with which it is to be used; but these are mere mechanical details which constitute no part of our invention, and may of course be varied as desired or as found necessary to adapt it to the various positions or conditions in which it is to be used.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A drill or bit having the notch or recess at its central point, as above described, in combination with the serrated cutting-lips $a' a'$, substantially as shown and described.

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