J. Sheffield,

Expanding Rock Drill.

No. 45,869. Patented Jan. 10, 1865.

Fig. 1

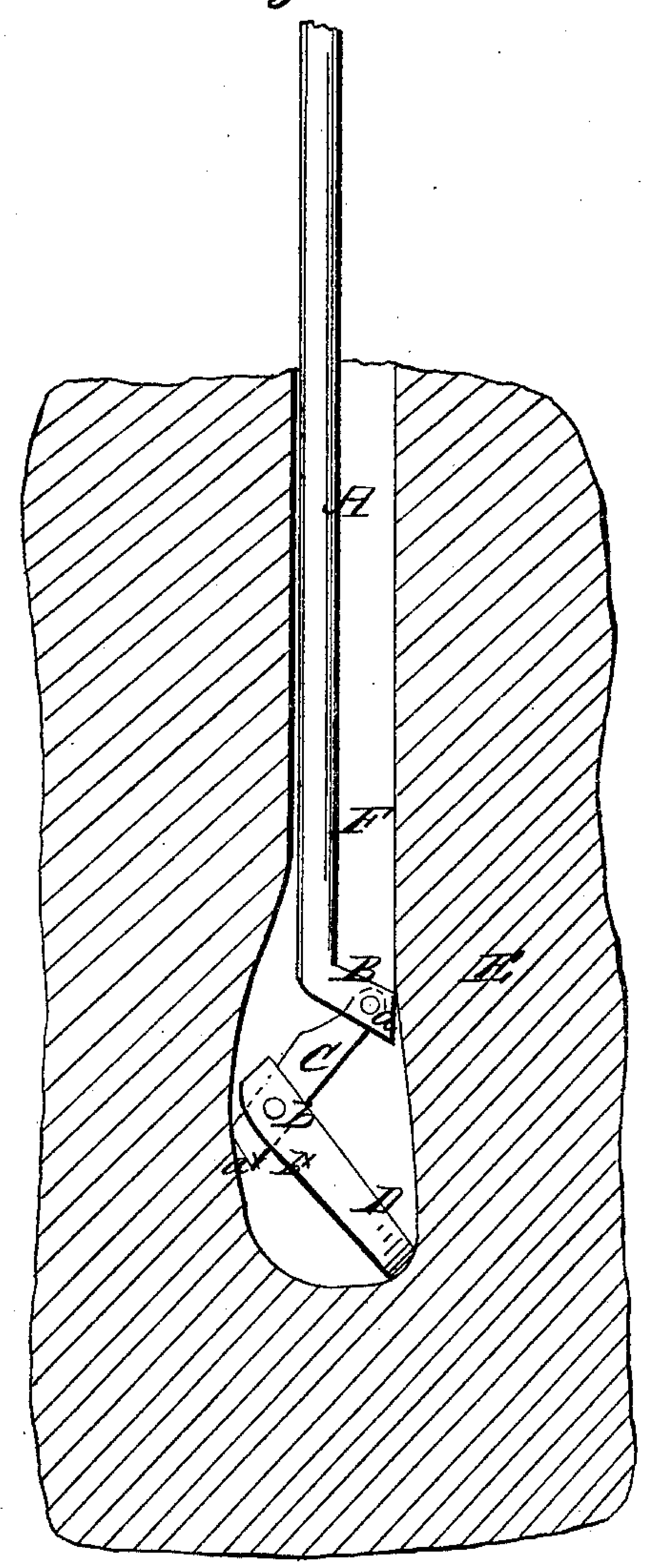
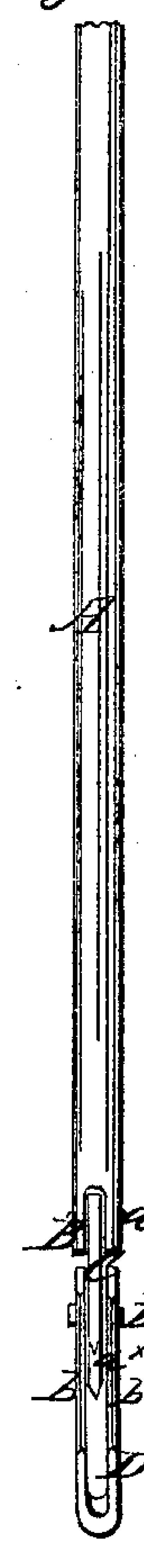


Fig. 2.



Witnesses.

Theo Tusch
C L Topliff

Inventor:

John Seffield
per Munn & Co
attys

UNITED STATES PATENT OFFICE.

JOHN SHEFFIELD, OF PUTNEYVILLE, NEW YORK.

IMPROVEMENT IN DRILLS FOR BORING WELLS.

Specification forming part of Letters Patent No. **45,869**, dated January 10, 1865.

To all whom it may concern:

Be it known that I, JOHN SHEFFIELD, of Putneyville, in the county of Wayne and State of New York, have invented a new and Improved Drill for Boring Artesian Oil-Wells; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of my invention shown applied to its work; Fig. 2, a detached elevation of the same, showing an edge view of the cutters.

Similar letters of reference indicate like parts.

This invention has for its object the constructing of a drill in such a manner that it will be capable of expanding and enlarging the bore or shaft of an Artesian well at its bottom.

The invention is more especially designed for enlarging the bottoms of oil-wells so as to open more veins than the ordinary bore or shaft will intersect, and cause the well to be more productive than it otherwise would be.

A represents the shaft or rod to which my improved drill is attached. The lower end of this rod is bent or curved so as to have an oblique arm, B, as shown clearly in Fig. 1. This arm is slotted longitudinally to receive the upper end of a bar, C, which is secured in B by a pivot, *a*.

The lower end of the bar C is beveled at both sides to form a chisel-edge, $a^{\times}$, and it is fitted in the upper end of a bar, D, which is constructed of a single piece, and bent or doubled, as shown clearly in Fig. 2, the bar C being fitted between the two sides or parts of D and secured therein by a pivot, *b*. The edges of the two parts of the bar D at its outer side are beveled to form sharp or chisel edges, $b^{\times}$, the upper parts of said edges being slightly rounded where they cross the bar C, as shown in Fig. 1.

From this description it will be seen that when the drill is inserted into the bore or shaft and the lower end of the bar D comes in contact with the bottom of the well the cutting-edges of the bars C D will be forced outward, and as the drill is operated the bore or shaft of the well at its bottom is enlarged. This will be fully understood by referring to Fig. 1, in which E represents a vertical section of a well, F being the shaft or bore.

Thus by this simple implement I am enabled to enlarge the bottoms of oil-wells and render the same much more productive than they otherwise would be, in consequence of the enlarged area of the bottom intersecting and tapping more veins than could be reached and intersected by the bore or shaft above the enlargement.

I claim as new and desire to secure by Letters Patent—

A drill for Artesian wells, composed of the chisel-bars C D and bent or oblique arm B of the drill-rod A, connected together by pivots, and arranged substantially as and for the purpose herein set forth.

JOHN SHEFFIELD.

Witnesses:
CHAS. R. HAVEN,
W. S. THROOP.