L. G. Marshall,

Expanding Rock Drill.

No. 48,819 Patented July 18, 1865.

Fig: 1

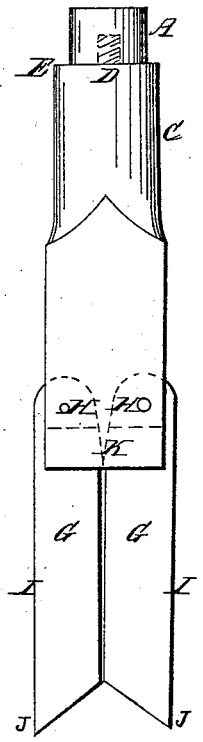


Fig: 2.

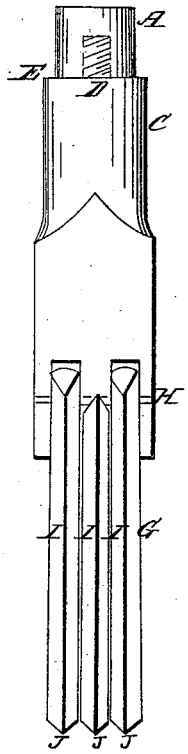


Fig: 3

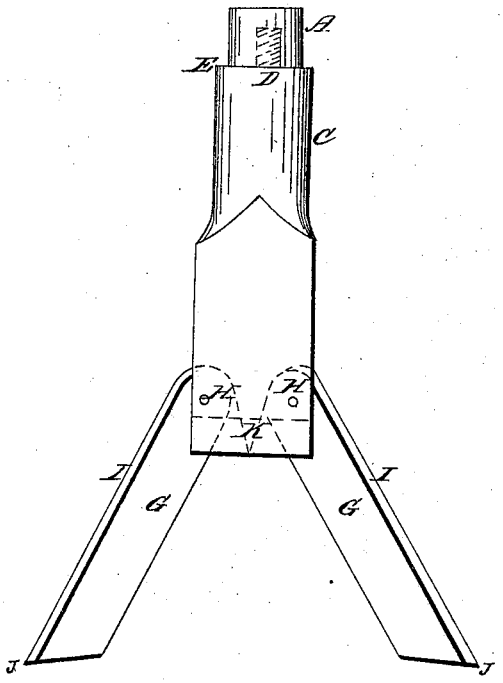
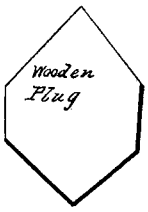


Fig: 4



Witnesses.

Daniel Reigart
A. Parker.

Inventor.

Loomis G. Marshall
By his Attorney—
S. Franklin Reigart.

UNITED STATES PATENT OFFICE.

LOOMIS G. MARSHALL, OF MOKENA, ILLINOIS.

IMPROVEMENT IN DRILLS.

Specification forming part of Letters Patent No. **48,819**, dated July 18, 1865.

To all whom it may concern:

Be it known that I, LOOMIS G. MARSHALL, of Mokena, Will county, State of Illinois, have invented new and useful Improvements in Chambering-Drills for Widening Cavities in Oil-Wells; and I do hereby declare the following to be an 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 drills working on pivots, with their cutting-edges on their front and back faces, and flat incline bottoms, so as to cut upward and form a chamber when required to open the fissures of rocks that are frequently beyond the main bore of the well, for the purpose of facilitating and increasing the flow of the oil when an oil-fissure cannot otherwise be reached, though within a few inches of the main opening or bore of the well, this invention being an improvement on my pivoted chambering-drill patented in 1863.

Figure 1 represents a side view of the drill; Fig. 2, a front or back view, showing the cutting-edges. Fig. 3 shows a side view of the drill expanded with its cutting-edges.

A represents the rod with a female screw, into which the drill-stem C, with the male screw D and shoulder E, is attached.

G G are the expansion drills attached to the stem C by pivots H. These drills have flat incline bottoms, so that the points J J spread and work outward. Their sides or front and back faces have three or more angular cutting-edges, I, each edge being a separate drill to cut upward as the bottom spreads and works outward. These drills may be made solid or in three pieces, each piece having its own cutting-edge I. The tops of these drills G work on the pivots H in a socket-joint, the tops being rounding, and the bottom of the stem C being concave for the round tops of the drills to work close, and by the shoulder E to take off the jar of the drill from the pivots H. A tapering point, K, projects downward between the tops of the drills, forming the lower part of the socket-joint, to brace the tops of the drills as they spread outward and to receive the jar.

When I desire to chamber above the bottom of the well I drive down a double cone-shaped wooden plug into the well to the place I want to chamber out. I then work my drill onto the top of the wooden cone and widen the well to form the chamber required, as shown at Fig. 4. The object of making these chambers is to open more fissures in the rocks, as the oil-fissures prove to be more vertical than horizontal, and sometimes extend but a few inches beyond the main bore.

What I claim as my invention, and desire to secure by Letters Patent, is—

The construction and combination of the pivoted drills, having front and back cutting-edges and flat incline bottoms for chambering and cutting outward and upward, as herein described.

LOOMIS G. MARSHALL.

Witnesses:
J. FRANKLIN REIGART,
EDM. F. BROWN.