

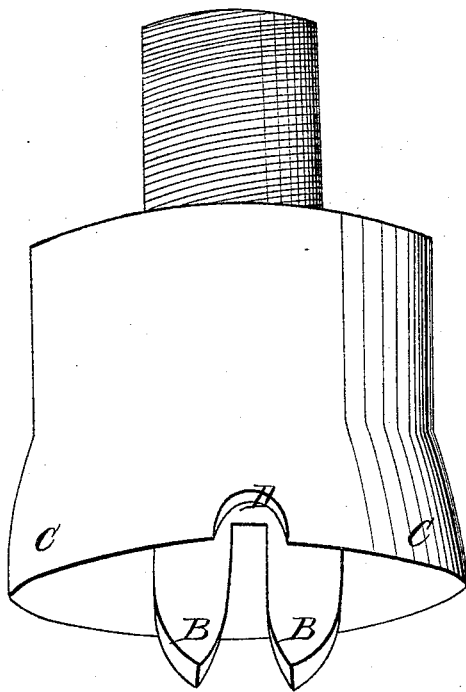
*J. C. Dickey,*

*Rock Reamer.*

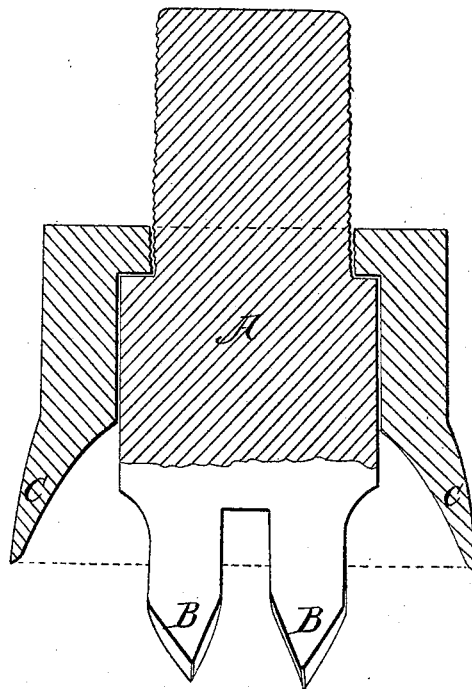
*N<sup>o</sup> 48,914.*

*Patented July 25, 1865.*

*Fig. 1.*



*Fig. 2.*



*Witnesses;*

*Gustave Dietrich*  
*M. M. Wingate*

*Inventor,*

*Julius C. Dickey.*

# UNITED STATES PATENT OFFICE

JULIUS C. DICKEY, OF SARATOGA SPRINGS, NEW YORK.

## IMPROVEMENT IN ROCK-DRILLS.

Specification forming part of Letters Patent No. 48,914, dated July 25, 1865.

*To all whom it may concern:*

Be it known that I, JULIUS C. DICKEY, of Saratoga Springs, in the county of Saratoga and State of New York, have invented a new and Improved Mode of Constructing Rock-Drills for Boring Artesian Wells; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure 1 is a perspective view, and Fig. 2 a longitudinal cross-section.

The drill A, Fig. 2, I make with one or more of the drill-bits, B B, and make said bits nearly as long as the diameter of the reamer C, so as to make the wear on the reamer less than it would be if the bits were made otherwise.

The slot or opening D, Fig. 1, made in reamer C furnishes an outlet for the pulverized rock from the bottom of the drill.

The drill A, Fig. 2, is made to screw into the reamer C, and is also secured in the reamer by the drill-rod, which is screwed onto the drill above the reamer.

The drill-bits and reamer may be sharpened separately by means of a die made to conform to the form of the bits and reamer.

By making the drill and reamer separately I am enabled to sharpen them without the use of a die for that purpose, and to adjust the reamer in its relation to the drill.

I also contemplate making the drill-bits B separately and securing them together by a bolt passing through them, the said bolt being secured in its proper place by the inside sides of the reamer C. In most cases I make a permanent central drill-bit on the end of the drill or drill-rod, and secure on either side of said central drill-bit one or more adjustable drill-bits, as aforesaid, in which case a shoulder or recess is made on either side of the cen-

tral drill-bit, and the adjustable or side drill-bits are secured to the side of the central drill-bit under this shoulder and in this recess. By making the drill-bits separate from the reamer, as in this case, I am enabled to use a greater number of drill-bits in combination with the reamer, and therefore make a much more efficient tool for boring wells than could be made without this combination, it being found by experiment that when a drill-bit is made with permanent side cutters there is great difficulty in sharpening the drill without expensive machinery, and the drill in such a case soon becomes inefficient. Besides, also, when a drill-bit is made with permanent side cutters there is no way of adjusting the bit and cutters so as to make them work together efficiently in all cases, as when the rock is very hard the bit may wear much faster than the side cutters, and therefore destroy in a great measure the efficiency of the drill.

By having the drill-bits B entirely surrounded by the reamer C, I am enabled to make a more efficient tool than could be otherwise made, and one that can be brought into practical use.

When the reamer is sharpened its circular cutting-edge is forced outward and made the size of the well to be bored, so that the well will be uniform in size.

The drill and reamer are rotated in the well in any usual manner.

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

The combination of the drill A with the adjustable reamer C, substantially as described and set forth.

JULIUS C. DICKEY.

Witnesses:

M. M. LIVINGSTON,  
GUSTAVE DIETERICH.