C. R. FORBES.
ROCK DRILL BIT.
APPLICATION FILED JUNE 9, 1913.

1,094,063. Patented Apr. 21, 1914.

Fig. I.

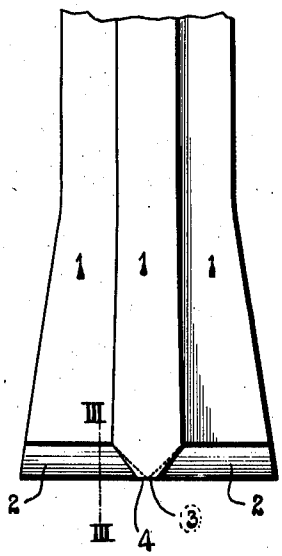


Fig. II.

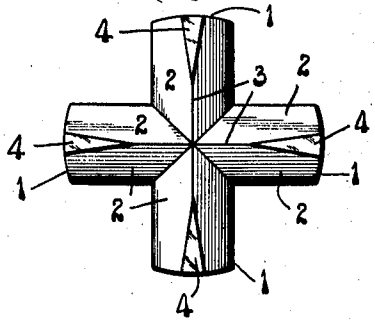
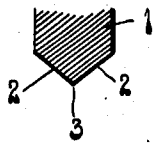


Fig. III.



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UNITED STATES PATENT OFFICE.

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ROCK-DRILL BIT.

1,094,063. Specification of Letters Patent. Patented Apr. 21, 1914.

Application filed June 9, 1913. Serial No. 772,538.

To all whom it may concern:

Be it known that I, CARROLL R. FORBES, a citizen of the United States of America, residing at Rolla, in the county of Phelps and State of Missouri, have invented certain new and useful Improvements in Rock-Drill Bits, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to rock drill bits of the radial wing or cross type. Bits of this kind as usually constructed have their wings tapered or beveled longitudinally at their ends to provide sharp edges which extend along the wings from the axis of the bit to the outer edges of the wings. In the use of such bits, the preponderance of wear is at the outer edges of the wings, due to the severest drilling action being performed nearest the wall of the hole formed by the drill bit. The period of serviceability of bits of this kind when made with tapering edges extending to the outer edges of the wings, as heretofore, has been dependent upon the durability of the material present at the outer edges of the wings of the bits. The wings of the bits being tapered longitudinally of the bit to the outer edge of the wings so that the wings are thin at such edges, the material at the outer edges of the wings has worn away rapidly, and the outer edge portions of the wings soon become rounded and ineffective for any considerable period.

My invention has for its object to so construct a rock drill bit of the radial wing type as to render the outer edges of the wings of the bit more durable by so forming the ends of the wings as to prevent rapid wearing away of the outer edges of the wings, thereby enhancing the period of serviceability of the drill bit and the speed at which a hole may be produced in the use of the bit.

Figure I is an elevation of my drill bit with a portion of its shank broken off. Fig. II is a view looking at the cutting end of the bit. Fig. III is a cross section taken on line III—III Fig. I.

In the drawings: 1 designates the radial wings of my bit which extend outwardly from a common axis. These wings have inclined faces 2 at their ends extending longitudinally of the bit and converging toward each other from the sides of the wings, the said inclined faces preferably coming together adjacent to the axis of the bit to produce sharp edges 2, similar to those in the well known radial wing rock drill bits.

The ends of the wings of my bit are formed with flattened portions 4 which extend from the outer edges of the wings, the flattened portions being widest at the outer edges of the wings and narrowing toward the axis of the bit as clearly seen in Fig. II. By providing my bit with the flattened portions 4 I furnish the wings of the bit with a greater amount of wear resisting material at their ends, and adjacent to their outer edges, than is present in the old and common form of radial wing bits, and, as a result of so doing, I have produced a bit which will, owing to the greater amount of material present to be worn away at the outer edges of its wings, perform its functions more lastingly and operate at a greater speed for a given length of time than drill bits of the same type as heretofore made.

I claim:—

1. A radial wing drill bit having its wings tapered longitudinally, the said wings being flattened at their ends adjacent their outer edges.

2. A radial wing drill bit having its wings tapered longitudinally, the said wings having flattened faces extending from their outer edges toward the axis of the bit; said flattened faces being widest at the edges of the wings and narrowing toward the axis of the bit.

C. R. FORBES.

In the presence of—
E. CLARK,
E. B. LINN.