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L. W. & F. E. BANEY & J. OSTERHOLT.

DRILL.

APPLICATION FILED JUNE 6, 1905.

Fig. 1

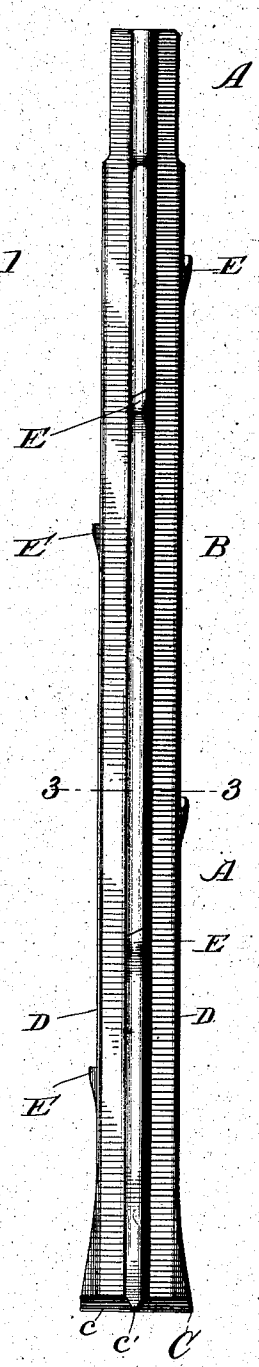

Fig. 2

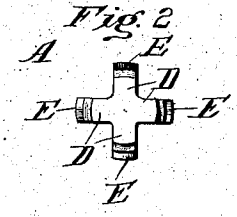

Fig. 3

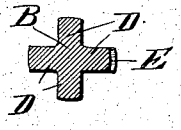

Fig. 4

WITNESSES:

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UNITED STATES PATENT OFFICE.

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DRILL.

No. 815,002. Specification of Letters Patent. Patented March 13, 1906.

Application filed June 6, 1905. Serial No. 263,925.

To all whom it may concern:

Be it known that we, LEWIS W. BANEY, FRANK E. BANEY, and JOHN OSTERHOLT, citizens of the United States, and residents of Platteville, in the county of Grant and State of Wisconsin, have made certain new and useful Improvements in Drills, of which the following is a specification.

Our invention is an improvement in drills; and it consists in certain novel constructions and combinations of parts hereinafter described and claimed.

In the drawings, forming a part hereof, Figure 1 is a front elevation of our improvement. Fig. 2 is a top plan view. Fig. 3 is a section on the line 3 3 of Fig. 1, and Fig. 4 is a bottom plan view.

In the practical application of our invention we provide a drill A, comprising a shank B, provided with quadrantly-arranged ribs or wings D, and a bit C, comprising oppositely-disposed cutting-blades *c c'* on the ends of the ribs. Upon the ribs are arranged a series of lugs E, projecting outwardly from the ribs and obliquely placed with respect to the longitudinal center of the shank. The lugs are spirally arranged with respect to the drill, forming a right-hand spiral. The ribs D are sloped outwardly adjacent to the cutting-blades, and the said blades occupy the full width of the rib, while the lugs project to a lesser extent. In operation the lugs move the debris on the cutting-blade outward in a manner somewhat similar to the vanes of an auger.

In using a drill as ordinarily constructed it must be removed from the hole at frequent intervals in order that the debris may be scraped out. The cuttings form a hard ring back of the bit and cause considerable friction on the shank even when water is used. With our improvement the turning of the drill to the right causes an outward movement of the debris, the stroke of the drill assisting this movement, each lug moving the debris outward to a sufficient extent that it may be engaged by the succeeding lug on the next stroke.

While we have described our invention as applied to a drill having a shank provided with quadrantly-arranged ribs, we do not limit ourselves to this construction, as it is evident that more or less ribs might be used or even a plain shank. Our invention in its broadest sense comprises a drill-shank having a series of projecting lugs spirally arranged on the shank.

It will be evident from the description that our device is simple in construction, inexpensive, and is very durable and that by its use a great saving of time and labor is effected, since the drilling may be carried on continuously without stopping to remove the waste and without the use of water.

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

A drill adapted for reciprocating and rotating motion and having a series of ribs extending longitudinally parallel to each other and laterally at an angle to each other and flaring outwardly at their lower ends and provided at said ends with cutting edges, the said ribs being provided on their outer edges with a series of lugs arranged spirally and each lug having its upper side inclined to the direction of length of its respective rib and sloping from said upper edge inwardly to merge at its lower end with the outer edge of the rib, all substantially as described, whereby upon the outward movement of the drill, the said lug will tend to move the waste or detritus outwardly and will not retard the inward movement of the drill, the lugs forming no projection laterally beyond the side faces of their respective rib, all substantially as and for the purpose set forth.

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Witnesses:
ROY DENNIS,
FRANK M. DYER.