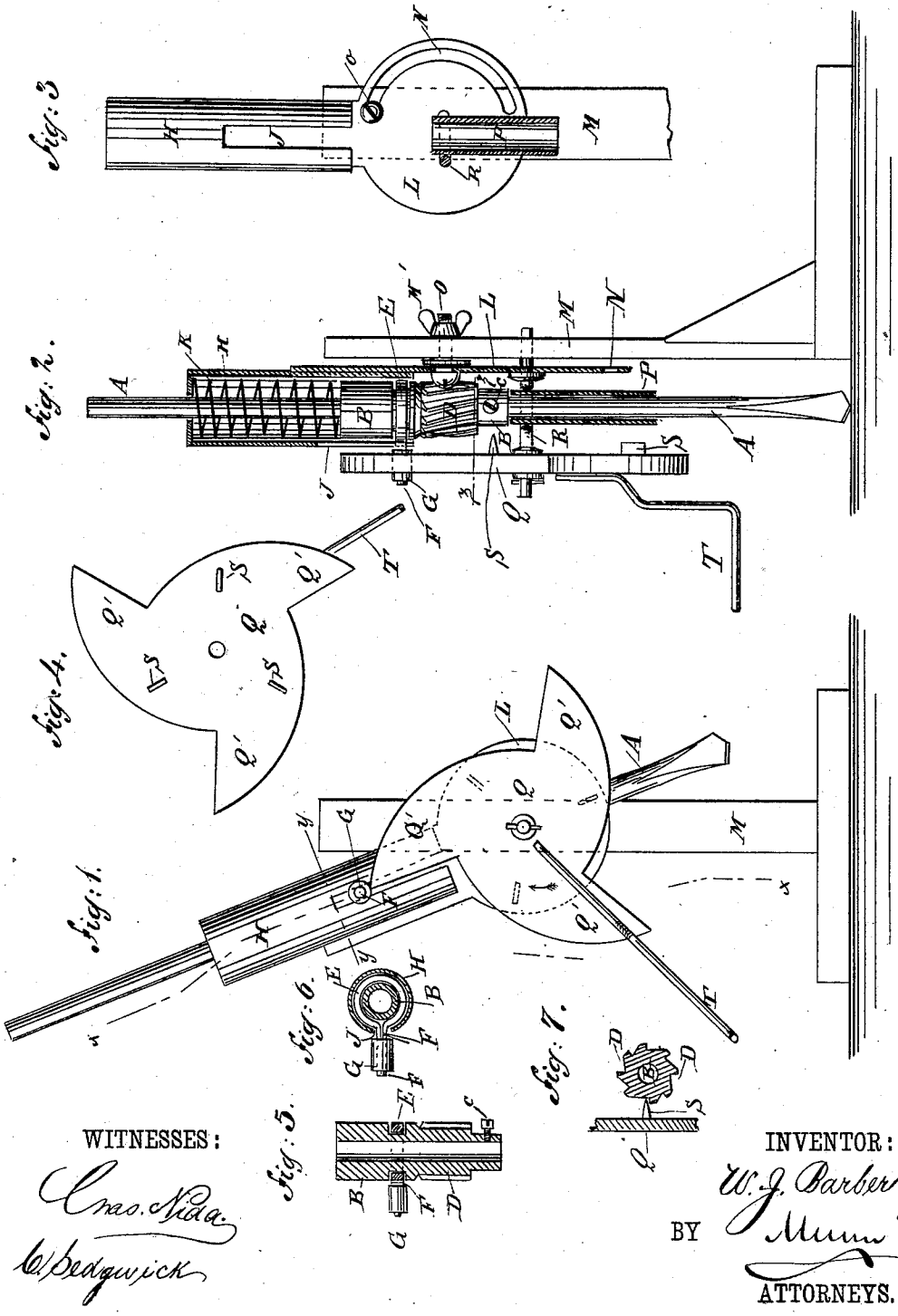
(No Model.)

W. J. BARBER.

ROCK DRILL.

No. 255,237. Patented Mar. 21, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

WILLIAM J. BARBER, OF COVINGTON, INDIANA.

ROCK-DRILL.

SPECIFICATION forming part of Letters Patent No. 255,237, dated March 21, 1882.

Application filed August 23, 1881. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JAY BARBER, of Covington, in the county of Fountain and State of Indiana, have invented a new and Improved Rock-Drill, of which the following is a full, clear, and exact description.

The object of my invention is to provide a new and improved prospecting-drill, which is simple in construction, light, durable, can be transported very readily, and can be operated conveniently by one man.

The invention consists in a drill held adjustably in a stock having its lower end grooved spirally, and provided with a loose ring with a projection resting on a cam-wheel pivoted to a suitable frame, also carrying an adjustable circular plate provided with a tubular casing for a pressure-spring and the drill-stock, which plate is also provided with a tubular guide on the same diametrical line with the casing, and for the purpose of guiding the drill. The cam-plate is provided on its inner surface with studs, which enter the spiral grooves of the stock when the cam-wheel rotates, thereby rotating the stock and the drill held therein.

In the accompanying drawings, Figure 1 is a longitudinal elevation of my improved rock and coal drill. Fig. 2 is a longitudinal sectional elevation of the same on the line *x x*, Fig. 1. Fig. 3 is a longitudinal elevation of the casing and frame, parts being shown in section. Fig. 4 is an inner elevation of the cam-wheel. Fig. 5 is a longitudinal sectional elevation of the drill-stock. Fig. 6 is a cross-sectional view of the casing and drill-stock on the line *y y*, Fig. 1. Fig. 7 is a horizontal sectional view of the drill-stock on the line *z z*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The drill A, which may have any suitable cutting-edge at the lower end, is passed longitudinally through a drill-stock, B, and is held in this stock by means of a binding-screw, *c*, by means of which the drill can be adjusted in the stock. The lower end of the stock B is provided with spiral grooves D, forming spiral ridges, and above these spiral grooves the stock is provided with a loose collar, E, provided with a projection, F, on which an anti-friction sleeve, G, is loosely mounted. The stock B is passed into a cylindrical casing, H, provided with a longitudinal slot, J, in which the projection F can move longitudinally. A spiral spring, K, surrounds the drill A and rests against the upper apertured end of the casing H and against the upper end of the stock B. The casing H is attached to a plate, L, pivoted to a standard, M, or any other suitable frame, and provided with a circular or segmental slot, N, through which a screw, *o*, passes through the standard M, and is provided at its inner end with a winged nut, M′, by means of which the plate L can be locked in any desired position. A guide-tube, P, for the drill A is on the same diametrical line with the casing H, but projects from the opposite end of the plate L, to which it is attached in some suitable manner.

A cam-wheel, Q, provided with a series of cams, Q′, is journaled on the end of a shaft, R, which also forms the pivot for the plate L. The cam-wheel Q is provided on its inner surface with a stud, S, for each cam Q′, and is also provided with a crank-handle, T.

The standard M or other frame may be fastened to a base, or may be supported by a tripod or similar device.

The operation is as follows: The cam-wheel Q is turned in the direction of the arrow, Fig. 1, thereby raising the stock B and the drill A held therein and compressing the spring K. When the cam slides from under the projection F the spring K forces the stock B and the drill A downward, causing the lower end of the drill to cut more or less deeply into the rocks, &c. This is repeated every time a cam Q′ raises the stock B. Every time the stock B is raised a tooth, S, will enter one of the spiral grooves D, and will turn the stock, and consequently the drill A held therein, a short distance. As the depth of the drill-hole increases the drill must gradually be lowered—that is, it must be adjusted to project a greater distance from the stock B.

The within-described drill is simple in construction, light, can be operated and transported easily, &c., and all these advantages make it especially adapted to prospecting.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the drill A, of the

stock B, provided with spiral grooves D, the loose ring E, provided with a projection, F, and the cam-wheel Q, provided with studs S, substantially as herein shown and described, and for the purpose set forth.

2. The combination, with the drill A, of the stock B, provided with spiral grooves D, the loose ring E, provided with a projection, F, the spring K, the casing H, and the cam-wheel Q, provided with a series of studs, S, substantially as herein shown and described, and for the purpose set forth.

3. The combination, with the drill A, of the stock B, the casing H, the adjustable plate L, the cam-wheel Q, the projection F of the drill-stock, and the standard M, substantially as herein shown and described, and for the purpose set forth.

4. The combination, with the drill A, of the stock B, the casing H, the adjustable plate L, the tubular guide P, the projection F of the stock, the cam-wheel Q, and the frame or standard M, substantially as herein shown and described, and for the purpose set forth.

5. The combination, with the drill A, of the stock B, the casing H, the plate L, provided with a slot, N, the screw *o*, the nut M′, the tubular guide P, the projection F of the stock B, the cam-wheel Q, and the standard or frame M, substantially as herein shown and described, and for the purpose set forth.

6. In a frame for a drill, the combination, with the frame or standard M, of the pivoted adjustable plate L, the casing H, and the tubular guide P, substantially as herein shown and described, and for the purpose set forth.

WILLIAM JAY BARBER.

Witnesses:
C. H. GWYNN,
CHAS. BERGDAHL.