(No Model.)

J. W. A. GULLICK.

STONE DRILL.

No. 456,951. Patented Aug. 4, 1891.

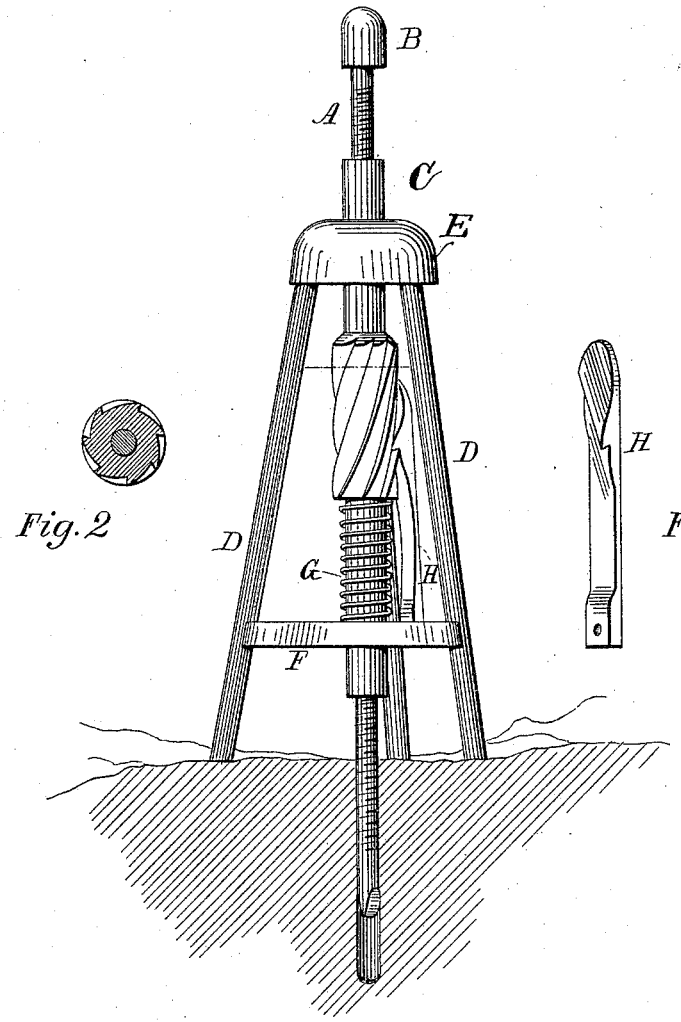

Fig. 1

Fig. 2

Fig. 3

Witnesses:
Jno. B. Ray
R. B. Ray.

Inventor,
James W. A. Gullick

UNITED STATES PATENT OFFICE.

JAMES W. A. GULLICK, OF CALIFORNIA, ARKANSAS.

STONE-DRILL.

SPECIFICATION forming part of Letters Patent No. 456,951, dated August 4, 1891.

Application filed April 13, 1891. Serial No. 388,777. (No model.)

To all whom it may concern:

Be it known that I, JAMES W. A. GULLICK, a citizen of the United States, residing at California, in the county of Madison and State of Arkansas, have invented certain new and useful Improvements in Stone-Drills; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This improvement consists of a drill A, with a protection-cap B, which drill passes through the hollow cylinder C, both drill and cylinder having screw-threads for the purpose of raising or lowering the drill in the cylinder and holding it to its place. In the center of the cylinder and occupying about one-third of its length are raised spiral flanges or cams, one edge of which is perpendicular to the cylinder, which flange or cam gradually extends back to the base of the next flange or cam, and so on around the cylinder. The cylinder is supported and held in place by a frame of three or more upright pieces D D D, which uprights are attached to a shoulder-cap E, through which the cylinder passes down and through the guide and support F, in which a spiral spring G rests, and is loosely coiled around the lower part of the cylinder. The upper end of the spiral spring is attached to a washer, which surrounds the cylinder at the base of the flanges or cams.

Attached to the guide and support is a spring H, which extends up to the flanges or cams, which spring has a catch on the upper part so shaped as to fit into the flange or cam, so that when the cap on top of the drill is struck the drill and cylinder are forced down and the lower part of the drill comes in contact with the rock, and the catch at the head of the upright spring, being then at the top of the flange or cam, passes immediately into the next flange or cam. When the action of the spiral spring from below forces the drill and cylinder up, the catch of the upright spring, being in the next spiral flange or cam, causes at each blow a slight turn of the drill.

The drill may be stayed in the hollow cylinder by other fastenings than the screw, such as the wedge, the set-screw, &c.

The frame and other attachments may be constructed of either metal or wood, and the feet or lower parts of the frame may be so made by lengthening, shortening, or otherwise as to be operated on unequal surfaces, or even in a horizontal position, which positions may be maintained for the drill by additional frame-work or supports as necessity may require; also, this drill and its working principles may be attached to any power or to any class of machinery for the purpose of boring, drilling, sinking shafts, &c.

What I claim is—

A stone-drill comprising the drill A, protection-cap B, cylinder C, upright pieces D D D, shoulder-cap E, guide F, spiral spring G, and upright spring H, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES W. A. GULLICK.

Witnesses:

W. H. DALE,

R. B. RAY.