(No Model.)

T. H. ANNABLE.

DRILL BIT OR SIMILAR TOOL.

No. 578,805. Patented Mar. 16, 1897.

Fig. 1.

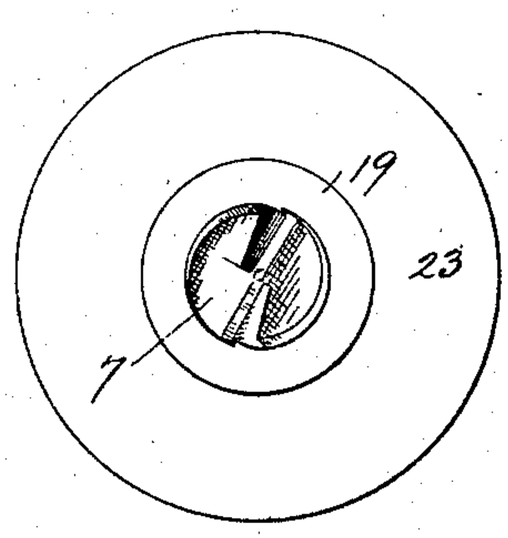


Fig. 2

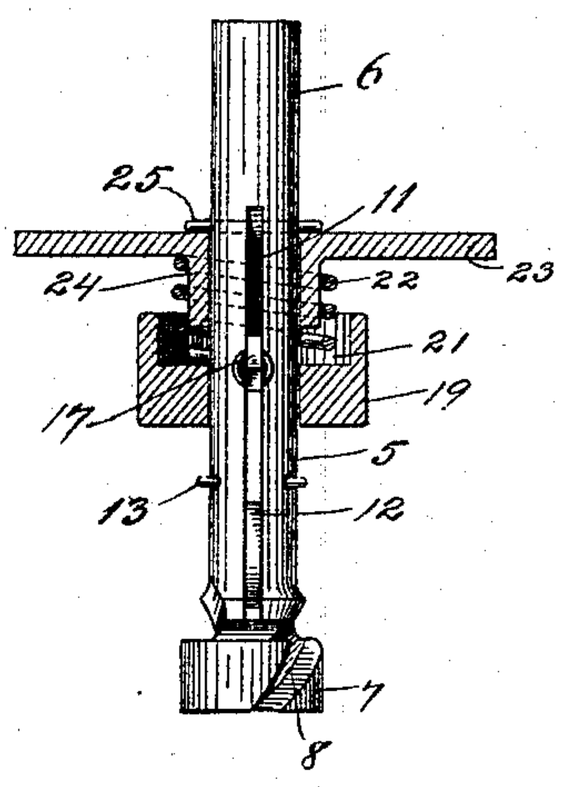


Fig. 3

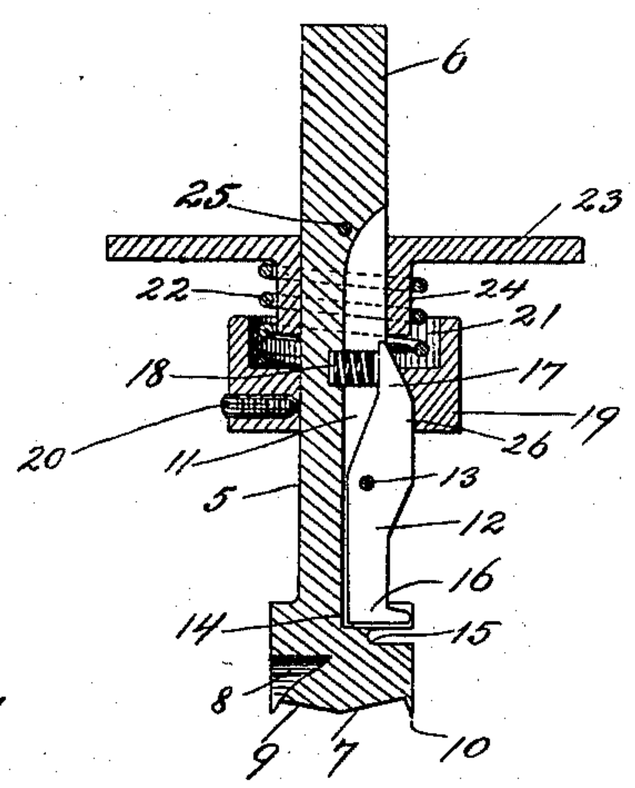
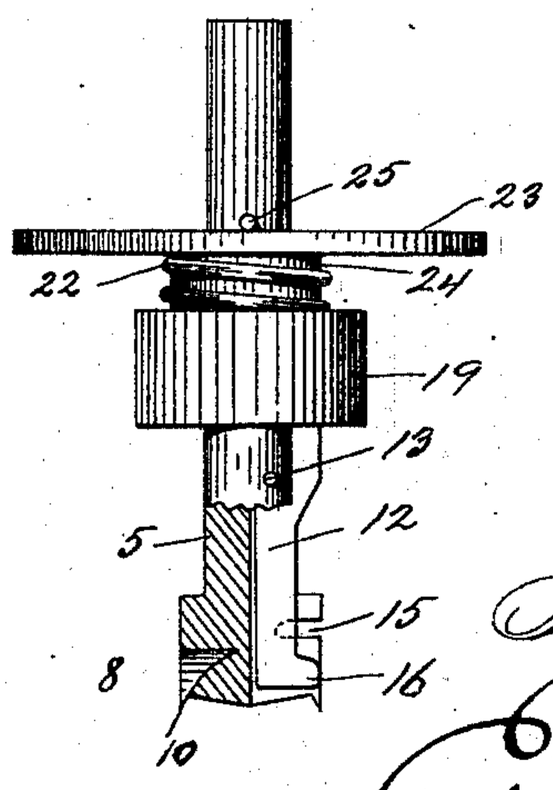


Fig. 4



WITNESSES

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ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS H. ANNABLE, OF ATTLEBOROUGH, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO EDWIN E. HALE, OF SAME PLACE.

DRILL-BIT OR SIMILAR TOOL.

SPECIFICATION forming part of Letters Patent No. 578,805, dated March 16, 1897.

Application filed June 2, 1896. Serial No. 593,977. (No model.)

To all whom it may concern:

Be it known that I, THOMAS H. ANNABLE, a citizen of the United States, and a resident of Attleborough, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Drill-Bits or Similar Tools, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts.

This invention relates to drill-bits and similar tools; and the object thereof is to provide an improved tool or bit which is simple in construction and operation and which is also provided with means whereby a hole when formed by the drill or bit may be enlarged or reamed out at the sides thereof, a further object being to provide a tool of this class whereby the holes formed in stone slabs and similar articles may be enlarged for the purpose of securing bolts or pins therein.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is an end view of my improved tool; Fig. 2, a sectional side view thereof; Fig. 3, a central vertical section thereof, and Fig. 4 a sectional side view showing a modified form of construction.

In the practice of my invention I provide a drill or bit 5, which is preferably cylindrical in form and which is provided with an end 6, whereby it may be secured to a stock, brace, or other instrument.

The drill or bit 5 is provided with a drill-head 7, which is preferably of the form shown, being provided on its opposite sides with two spiral slots or grooves 8, at the bottoms of which are formed cutting edges 9, and around the bottom thereof is an annular cutting edge 10.

The head 7 is preferably much larger in diameter than the shaft or body portion of the bit or drill, and formed in said shaft or body portion is a longitudinal slot 11, in which is mounted a lever 12, which is pivotally supported therein by means of a pin or bolt 13, and the slot 11 is carried downwardly into the upper portion of the drill-head 7, as shown at 14, and formed on one side of said drill-head is a transverse slot 15, with which the longitudinal slot 11 in the shaft or body portion of the drill or bit communicates.

The lower end of the lever 12 is provided with an outwardly-directed reaming-head 16, and said lever is provided with an upwardly-directed arm 17, between which and the inner back wall of the slot 11 is mounted a spring 18, which is adapted to force the upper end of said lever outwardly and the head 16 thereof inwardly.

Secured centrally of the shaft of the drill or bit is a cylindrical head 19, which is held in place by a set-screw 20, and formed in the upper side thereof, around the shaft of the drill or bit, is an annular chamber 21, in which is mounted a spiral spring 22, and above said spring is a disk or plate 23, which is movably mounted on the shaft of the drill or bit and which is provided with a depending tubular sleeve 24, which is also inclosed by the spring 22, and passing transversely through the shaft of the drill or bit, above said disk or plate, is a pin 25, which limits the upward movement thereof.

Formed in one side of the inner wall of the cylindrical head 19 is a slot 26, which is adapted to receive the upper end of the lever 12 or the arm 17 thereof, and the wall of said slot is upwardly and inwardly inclined, and the outer side of the arm 17 of the lever 12 is similarly formed, and when the disk or plate 23 is depressed the sleeve 24 strikes upon the outer surface of the arm 17 and forces it inwardly against the operation of the spring 18, and this movement forces the cutting-head 16 of the lever 12 outwardly, and said lever constitutes the reamer by which the hole or opening is enlarged or the side walls thereof cut out.

The operation will be readily understood from the foregoing description when taken in connection with the accompanying drawings and the following statement thereof. It will be understood that the drill or bit is to be connected with a brace or stock in the usual manner and operated similar to other devices of this class, and when the hole has been properly formed and it is desired to cut out the side walls thereof and enlarge the same the disk or plate 23 is depressed in any de-

sired manner, either by pressing thereon with the fingers or otherwise, and this operation throws the cutting-head 16 of the lever 12 outwardly, and said cutting-head enlarges the hole or opening or reams out the side walls thereof, as will be readily understood.

It will be apparent that the cutting-head 16 may be of any desired shape, and in Fig. 4 I have shown a slightly-modified form of construction in which the vertical slot through the drill-head into which the reaming-head of the lever 12 projects is extended entirely through said drill-head, and by means of this construction the side walls of the hole or opening may be cut out adjacent to the bottom thereof. When the hole has been properly reamed out or enlarged, the pressure on the disk or plate 23 is removed, and the spring 22 raises the same, and the spring 18 throws out the upper end of the lever 12 and withdraws the reaming-head 16 thereof, and the drill-head may then be removed from the hole, as will be readily understood.

This device is simple in construction and operation and comparatively inexpensive, while being perfectly adapted to accomplish the result for which it is intended, and it is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A drill or bit comprising a shaft on the lower end of which is formed a drill-head, said shaft being provided in one side with a longitudinal slot which extends downwardly into said head, a lever pivotally mounted in said slot, and provided at its lower end with a reamer-head which extends into the slot formed in the drill-head, and means connected with the shaft of the drill for throwing out the lower end of said lever, and the reamer-head while the drill or bit is in operation, consisting of a head mounted on said shaft, and a movable spring-supported plate mounted above said head, and said plate being provided with a depending sleeve or collar which is adapted to force the upper end of said lever inwardly, substantially as shown and described.

2. A drill or bit comprising a shaft on the lower end of which is formed a drill-head, said shaft being provided in one side with a longitudinal slot which extends downwardly into said head, a lever pivotally mounted in said slot, and provided at its lower end with a reamer-head which extends into the slot formed in the drill-head, and means connected with the shaft of the drill for throwing out the lower end of said lever, and the reamer-head while the drill or bit is in operation, consisting of a head mounted on said shaft, and a movable spring-supported plate mounted above said head, and said plate being provided with a depending sleeve or collar which is adapted to force the upper end of said lever inwardly, and said shaft and lever being provided with a spring which is adapted to force the upper end of said lever outwardly, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 29th day of May, 1896.

THOMAS H. ANNABLE.

Witnesses:
C. GERST,
C. B. RHEDES.