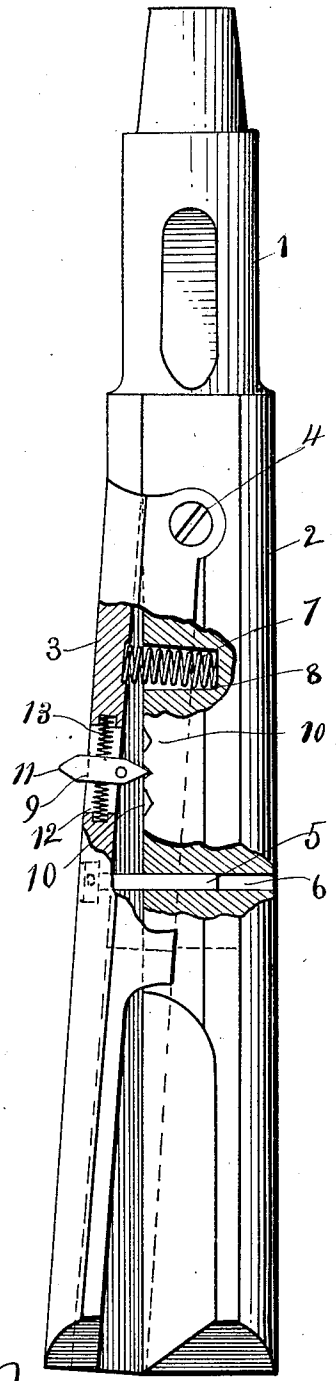
H. W. ENGLISH & M. A. BYRON.

UNDER DRILLING BIT.

APPLICATION FILED NOV. 19, 1912.

1,067,416. **Patented July 15, 1913.**



WITNESSES

L. Cloud Newman.

J. H. Sherwood

INVENTORS

H. W. English

and M. A. Byron,

By Francis N. Hoyt

Attorney

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARRY WHITE ENGLISH AND MARCUS A. BYRON, OF ELECTRA, TEXAS.

UNDER-DRILLING BIT.

1,067,416. Specification of Letters Patent. Patented July 15, 1913.

Application filed November 19, 1912. Serial No. 732,335.

To all whom it may concern:

Be it known that we, HARRY W. ENGLISH and MARCUS A. BYRON, citizens of the United States, residing at Electra, in the county of Wichita and State of Texas, have invented certain new and useful Improvements in Under-Drilling Bits; and we do hereby 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 and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in well drilling bits in which the bit opens and closes, allowing easy passage of bit through well casing and opening after passing through casing to working position, drilling a hole large enough to insert same sized casing as that through which the bit has passed, and the objects of our invention are to dispense with the use of under reamers, to reduce labor, time and expense of drilling, to permit the drilling of a more perfect hole than the under reaming methods and to permit the insertion of more casing in using the under drilling bit than is possible with the under reaming method.

An essential object of the present invention resides in the means employed in connection with the sectional bit whereby a pivoted lever or gib is carried by one of the pivoted arms of the bit and so positioned relative thereto as to form an automatic lock against the heavy body of steel which the bit is composed of, the outer end of said lug being adapted to normally assume a position at right angles to the length of the bit and bear against the inner wall of casing by tilting against the action of springs connected therewith to automatically permit the movement of the drill in either direction through the casing.

To these ends and to such others as the invention may pertain, the same consists in the novel construction and in the peculiar arrangement of parts, all as will be more fully hereinafter described, shown in the accompanying drawings and then specifically defined in the appended claims.

The invention is clearly illustrated in the accompanying drawing, in which we have shown in side elevation, with parts broken away, an under drilling bit embodying our invention.

Reference now being had to the details of the drawings by numeral, 1 designates the upper section of the bit.

The legs of the drill consist of the section 2 which is formed integral with and forms a part of the bit proper and the pivoted member 3 which is pivotally attached to the fixed member 2 by a transverse screw 4. A guide bolt or bar 5 having one of its ends secured to the movable member 3 of the bit passes loosely through a transverse opening 6, formed in the member 2 and is movable therein, as the pivoted parts of the bit are moved toward or away from one another, thus serving as a guide for the bit.

7 is a spring seated within a transverse opening or pocket 8 provided for its reception, the office of this spring being to normally throw the cutting lower edge of the bit outward as indicated in the drawing. The pivoted member 3 of the bit is provided at a point slightly above but adjacent to its longitudinal center with a longitudinal slot within which is pivoted a lug or lever 9. The lever is held in a position to prevent the legs of the bit from approaching each other through the medium of said lever which, when in a locked position, projects at right angles from and has its inner end in contact with the inner face of the stationary leg 2. When the casing of the well comes in contact with the outer projecting end 11 of the lever, the latter will tilt and its inner end will be allowed to enter one of the notches 10 formed in the inner face of said leg 2 which will allow the two legs to move toward each other.

Upon either side of the lug 9 are provided tension springs 12 and 13, the ends of the springs opposite to those which are attached to the lug being seated within chambers provided for their reception, the said springs serving to normally hold the lug in horizontal position or locking position, yet permitting the bit to be moved freely either up or down in the hole of the casing surrounding it.

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

1. An under drilling bit comprising two legs, one stationary and the other pivoted thereto, a spring holding the legs apart, a spring-pressed lever mounted upon the

pivotal leg and normally locking the legs apart, its inner end normally engaging the fixed leg, said lever after it is tilted allowing the legs to be moved toward each other, as set forth.

2. An under drilling bit comprising two legs, one stationary and the other pivoted thereto, a spring holding the legs apart, the pivotal leg having a slot therein, a lever extending through the slot and pivoted to the walls thereof, springs bearing against the lever and the end walls of said slots and tending to normally hold the lever so as to lock the legs apart, the ends of the lever projecting beyond the opposite edges of the leg to which it is attached, the inner edge of the fixed leg having notches in which the inner end of the lever is adapted to swing as the latter is tilted to allow the legs to move toward each other, as set forth.

3. An under drilling bit comprising two legs, one stationary and the other pivoted thereto, a spring holding the legs apart, the pivotal leg having a slot therein, a lever extending through the slot and pivoted to the walls thereof, springs bearing against the lever and the end walls of said slots and tending to normally hold said lever so as to lock the legs apart, the ends of the lever projecting beyond the opposite edges of the leg to which it is attached, the inner edge of the fixed leg having notches in which the inner end of the lever is adapted to swing as the latter is tilted to allow the legs to move toward each other, and a guiding member attached to the pivotal leg and engaging a slot in the fixed leg, as set forth.

In testimony whereof we hereunto affixed our signatures in the presence of two witnesses.

HARRY WHITE ENGLISH.
MARCUS A. BYRON.

Witnesses:
J. P. HIVICK,
R. L. EEDS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."