(No Model.)

C. M. LINDHOLM.

DRILL.

No. 526,577. Patented Sept. 25, 1894.

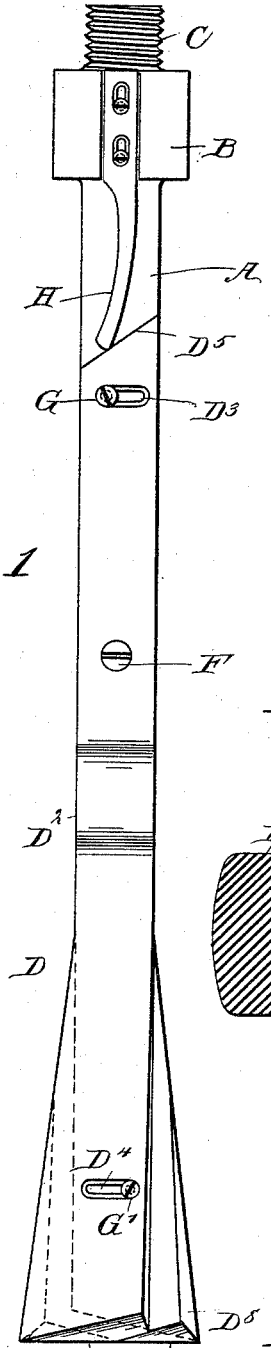

Fig. 1

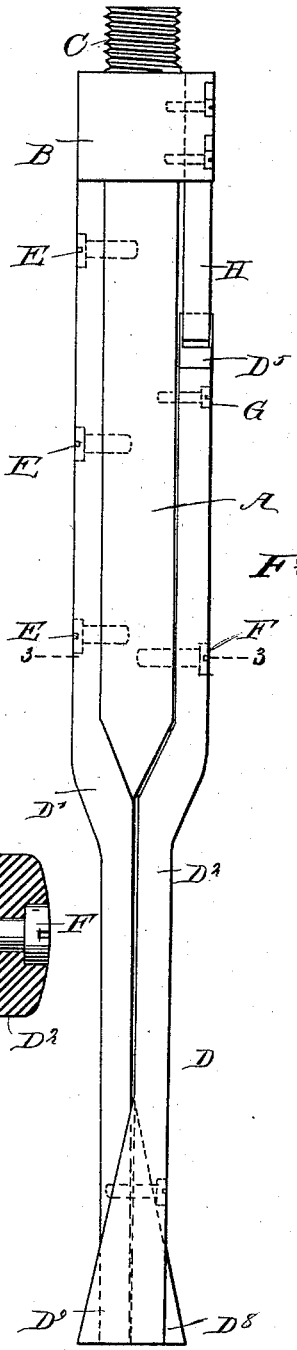

Fig. 2

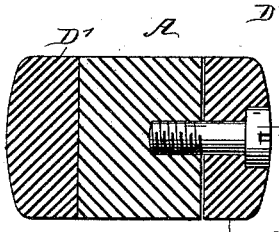

Fig. 3

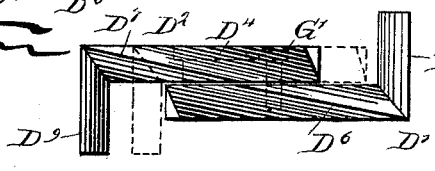

Fig 4

WITNESSES:

J. a. Bugbee

S. Sedgwick

INVENTOR

C. M. Lindholm

BY

Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLIE M. LINDHOLM, OF RANCHO, TEXAS.

DRILL.

SPECIFICATION forming part of Letters Patent No. 526,577, dated September 25, 1894.

Application filed November 22, 1893. Serial No. 491,673. (No model.)

To all whom it may concern:

Be it known that I, CHARLIE MANDUS LINDHOLM, of Rancho, in the county of Gonzales and State of Texas, have invented a new and Improved Drill, of which the following is a full, clear, and exact description.

The invention relates to deep well sinking apparatus, and its object is to provide a new and improved drill which is simple and durable in construction, very effective in operation, and arranged to automatically expand in the bottom of the well below the tubing, to cut a hole sufficiently large for the tubing without requiring a second drilling or reaming process.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement. Fig. 2 is an edge view of the same. Fig. 3 is an enlarged sectional plan view of the same on the line 3—3 of Fig. 2; and Fig. 4 is an enlarged inverted plan view of the bit.

The improved drill is provided with a shank A, preferably made of iron and formed at its upper end with a head B, from which extends the threaded offset C, adapted to screw into the drill rods in the usual manner. On the shank A is held the bit D, composed of the two parts D′ and D^2, of which the part D′ is fastened by screws E or other means to the said shank A. The other bit part D^2 is mounted to turn on a bolt or stud F, attached to the shank A near the lower end thereof, the shank being inclosed between the bit parts and the said drill part D^2 is formed near its upper and lower ends with slots D^3 and D^4, engaged by screws G and G′ respectively, secured to the shank A and the drill part D′ respectively, so as to properly guide the bit part D^2 when the same swings on its pivot F. The two parts of the bit overlap each other at their lower ends, as shown in Fig. 4, whereby the bit is rendered very strong, as one part acts as an abutment and as a stay for the other.

The extreme upper end of the bit part D^2 is formed with the bevel D^5 on which presses the free end of a spring H secured to the head B. The lower ends of the drill parts D′ and D^2 are formed with the cutting edges D^6 and D^7 respectively formed by beveling the front and rear faces of the lower ends of the drill parts, and the said edges D^6 and D^7 form a continuous diagonal line at the time the pivoted bit part D^2 is pressed into its outermost position by the action of the spring H, as is plainly illustrated in the drawings, with especial reference to Fig. 4.

When the lower end of the bit section D^2 is pressed inward, as is the case at the time the drill descends through the tubing, then the two cutting edges D^6 and D^7 are out of alignment (see dotted lines in Fig. 4), and as soon as the lower end of the bit has passed below the tubing the spring H will press on the upper end of the pivoted part D^2 so as to press the lower cutting part outward, to increase the width of the entire cutting edge of the bit. The cutting ends of the bit parts are also provided with the beveled offsets D^8 and D^9.

It will be seen that by this construction of drill a very large opening or hole can be drilled below the tubing, so that the tubing can be readily driven down without requiring an enlargement of the drilled hole, as is the case with drills now constructed for deep well sinking apparatus.

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

1. A drill comprising a shank, and two bit parts arranged on opposite sides thereof, so as to inclose the shank between them, one of the said bit parts being rigidly secured to the shank, and the other having a pivotal connection therewith, the cutting edges of the bit parts being essentially flush with one another, substantially as described.

2. A drill comprising a shank, a bit section rigidly secured to the shank on one side thereof, another bit section pivoted to the

shank on the other side thereof, the bit sections being provided at their front ends with cutting edges that are essentially flush with one another, the rear end of the pivoted bit section being provided with a bevel, and a spring secured to the shank and engaging the said bevel, substantially as described.

3. A drill, comprising a shank, a bit section rigidly secured to the shank, another bit section pivoted to the shank and having a slot and pin connection with the rigid bit section, substantially as described.

CHARLIE M. LINDHOLM.

Witnesses:
WILLIAM T. DAVIS,
SAMUEL W. MAGEE.