(No Model.)

D. KIDNEY & A. VERBOORT.

RATCHET DRILL.

No. 411,664. Patented Sept. 24, 1889.

Fig. 1.

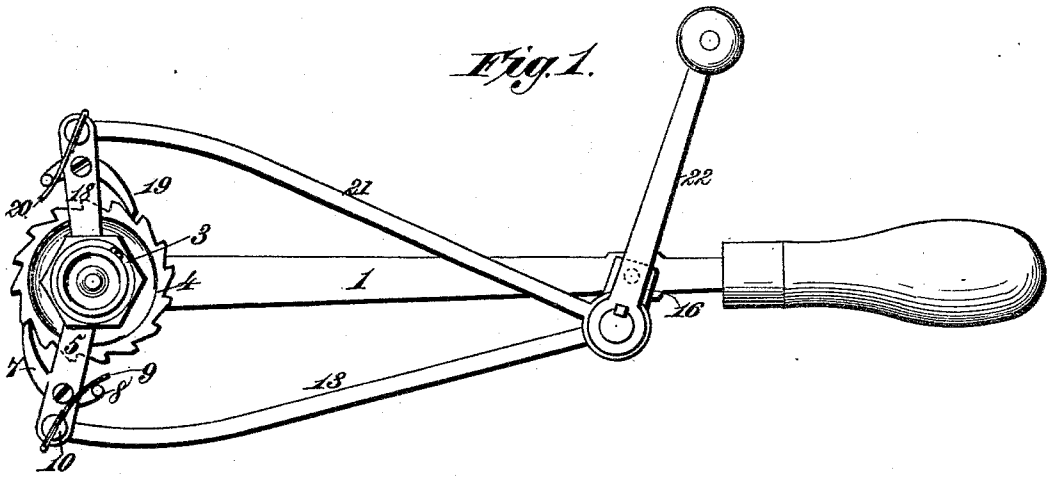


Fig. 2.

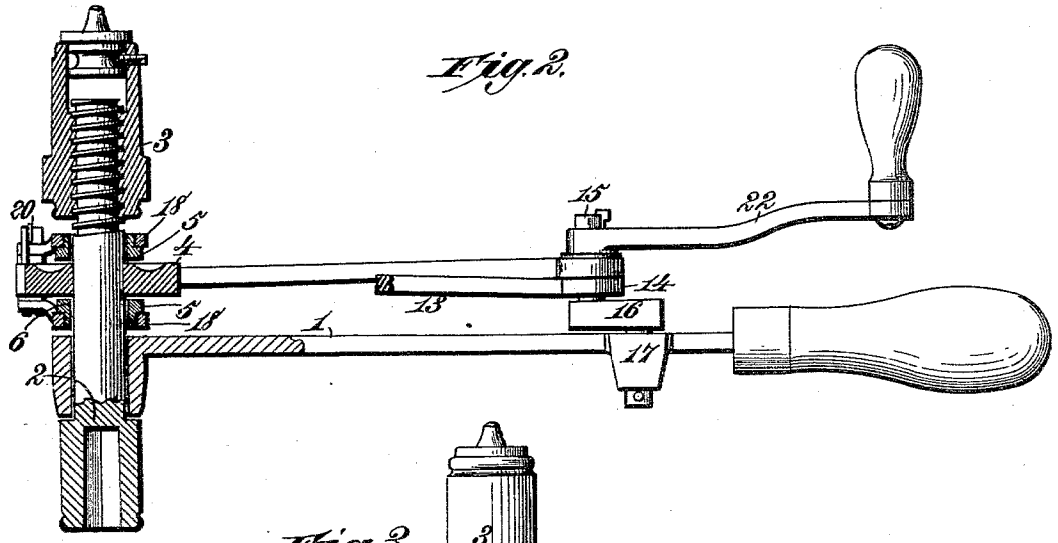
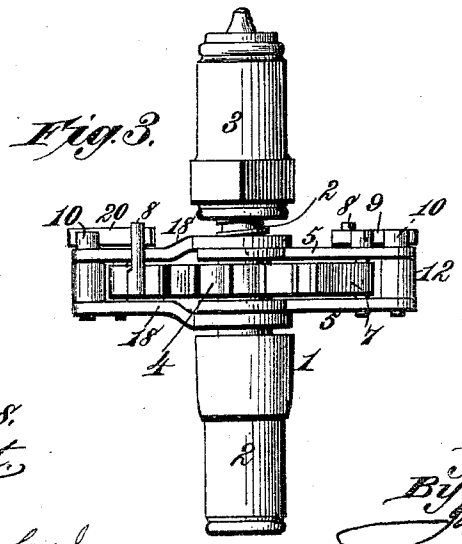


Fig. 3.



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UNITED STATES PATENT OFFICE.

DAN KIDNEY AND ALBERT VERBOORT, OF DEPERE, WISCONSIN.

RATCHET-DRILL.

SPECIFICATION forming part of Letters Patent No. 411,664, dated September 24, 1889.

Application filed April 29, 1889. Serial No. 309,083. (No model.)

To all whom it may concern:

Be it known that we, DAN KIDNEY and ALBERT VERBOORT, citizens of the United States, residing at Depere, in the county of Brown and State of Wisconsin, have invented new and useful Improvements in Ratchet-Drills, of which the following is a specification.

Our invention relates to ratchet-drills; and the purpose thereof is to provide simple and easily-operated means to impart a practically continuous rotary movement to the drill in place of the intermittent partial rotation produced by a reciprocating ratchet-lever, whereby a material economy in time and labor is effected.

It is our purpose, also, to provide a simple, inexpensive, and easily-operated combination of parts for the purpose set forth, which shall be capable of easy operation in all positions and under any circumstances.

The invention consists to these ends in the several novel features of construction and new combinations of parts, hereinafter set forth and claimed.

Referring to the accompanying drawings, Figure 1 is a plan view illustrating our invention. Fig. 2 is a central section partly in elevation. Fig. 3 is a front elevation of the same parts.

In the said drawings, the reference-numeral 1 designates a straight shank or handle, upon the end of which is rigidly mounted a collar, forming the seat or bearing for the drill-stock 2. This stock projects some distance above the bearing and receives the threaded socket-bearing 3, by which the drill is fed forward. These parts may be of any preferred construction.

Upon the drill-stock above its bearing is mounted a ratchet-wheel 4, rigid with the stock. Loosely mounted upon the stock is a yoke-lever 5, one arm lying upon each side of the ratchet and having an eye 6, embracing the drill stock or spindle. Between the arms of the yoke is pivoted a pawl 7, upon the tail of which is formed a pin 8, rising above the lever-arm and engaging a leaf-spring 9, by which the nose of the pawl is thrown into mesh with the teeth of the ratchet. Upon the outer end of the yoke-lever is placed a pin 10, which passes through the eye 12, formed upon the end of a pitman or reciprocating arm 13, the other end of said arm having an eye 14, engaging a wrist-pin 15, which is carried by a crank 16, journaled in a box 17 upon the handle 1.

Similarly mounted upon the drill-stock is a second yoke-lever 18, the arms thereof engaging said stock above and below the arms of the like lever 5. A pawl 19 is pivoted between the arms of this second lever and thrown by a spring 20 into the teeth of the ratchet upon the other side of the drill-stock, both pawls being push-pawls. The lever 18 is vibrated by a pitman 21, similar in all respects to that already described and actuated by the crank 16. The springs acting upon the pawls may be set in slots in the projecting ends of the pivot-pins 10 in the ends of the yoke-levers. A crank 22 is keyed upon the projecting end of the wrist-pin 15, having a suitable handle, whereby revolution may be given to the crank.

The drill being adjusted in position, the operation of the crank by which both pitmen are simultaneously thrown forward and retracted produces alternate action of the pawls, one pushing while the other is moving back for another engagement with the ratchet-wheel, thereby producing practically a continuous rotation of the drill.

What we claim is—

1. The combination, in a ratchet-drill, of a handle, a drill-stock having a ratchet-wheel, a pair of pawl-carrying yoke-levers journaled on the drill-stock, a revolving crank journaled on the handle and having an eccentric wrist-pin, two rigid pitmen secured to the wrist-pin and respectively connected with the yoke-levers, and a crank-handle revolving above the pitmen at one side of the drill-stock to continuously revolve the crank in one direction, substantially as described.

2. The combination, in a ratchet-drill, of a handle, a drill-stock having a ratchet-wheel, a pair of pawl-carrying yoke-levers journaled on the drill-stock, a revolving crank journaled on the handle and having an eccentric

wrist-pin projecting upward therefrom, two pitmen secured to the wrist-pin and respectively connected with the yoke-levers, and a crank-handle rigidly attached to the wrist-pin and revolving above the pitmen at one side of the drill-stock to continuously revolve the crank and wrist-pin in one direction, substantially as described.

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

DAN KIDNEY.
ALBERT VERBOORT.

Witnesses:
E. J. TRIANE,
J. SCHLEGEL.