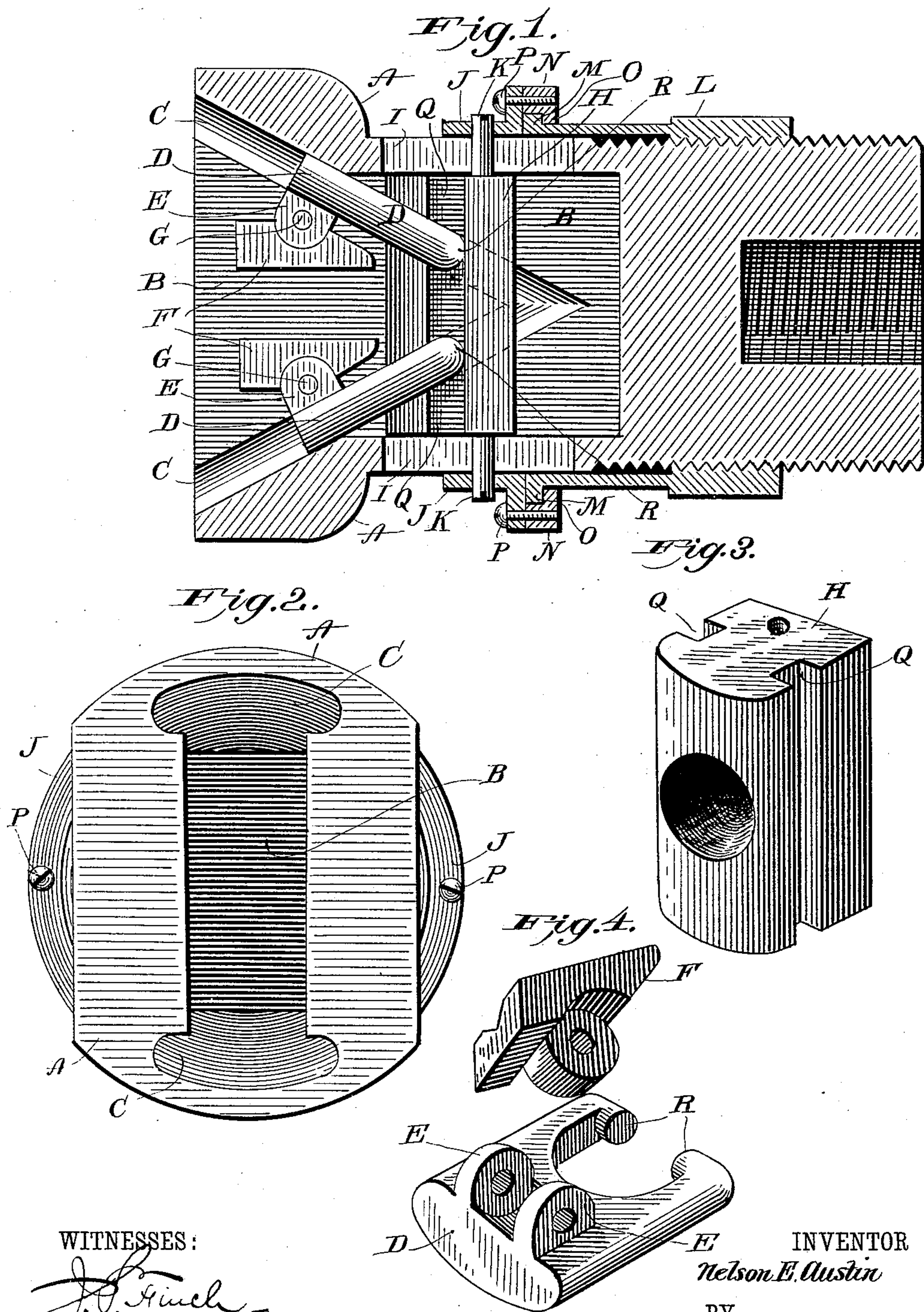


(No Model.)

N. E. AUSTIN.  
DRILL CHUCK.

No. 444,586.

Patented Jan. 13, 1891.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

NELSON E. AUSTIN, OF DANBURY, CONNECTICUT.

## DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 444,586, dated January 13, 1891.

Application filed May 27, 1890. Serial No. 353,360. (No model.)

*To all whom it may concern:*

Be it known that I, NELSON E. AUSTIN, a citizen of the United States, residing at Danbury, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Drill-Chucks; and I 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.

My invention has reference to drill-chucks, and has for its object to provide a very simple device of this description wherein the action of the jaws shall be positive; and with these ends in view my invention consists in the details of construction and combination of elements, such as will be fully hereinafter set forth, and then specifically designated by the claims.

In the accompanying drawings, Figure 1 is a sectional elevation of my improvement; Fig. 2, a front elevation of the chuck-head with the jaws and jaw-carriers removed; Fig. 3, a detail perspective of the slide-block, and Fig. 4 a detail perspective of a jaw and jaw-carrier in detached condition.

Similar letters denote like parts in the several figures of the drawings.

A is the chuck-head, recessed at B and having inclined ways C at the top and bottom of said recess.

D are the jaw-carriers, adapted to slide freely within the ways and provided with ears E, arranged in pairs. F are the jaws, which are pivoted between said ears by a pin G.

H is a slide-block capable of a free movement within the chuck-head lengthwise thereof.

I are elongated slots within the chuck-head and leading into the recess B, respectively above and below the top and bottom of the slide-block.

J is a ring encircling the chuck-body, and K are pins passed through said ring into said slide-block, whereby the two are secured together.

The tail end of the chuck-body is threaded and a threaded sleeve L is run thereon, the sleeve having on its outer end an annular shoulder M.

N is a ring provided with a shoulder O,

which extends behind the shoulder M, said ring being fastened to the ring J by screws P.

The ring N acts merely as a means for connecting the ring J and sleeve L, and at the same time permits the rotation of the latter, and I therefore do not wish to be limited to any particular means for effecting this result, it being essential only that the sleeve should be swiveled to the ring J.

Q are vertical grooves in the sides of the block H.

The rear ends of the jaws are forked, as shown at R, the ends of the forks extending within said grooves on opposite sides of said block. By thus connecting the block and jaws it will be seen that when the former slides back and forth the jaws will be carried thereby, while at the same time the latter will be permitted to converge and diverge.

The operation of my improvement is as follows: When the sleeve is retracted, the slide-block will be drawn back, thereby causing the jaw-carriers to converge owing to the travel of the latter in the inclined ways, and the jaws will therefore be brought together to clamp the drill, and the converse will happen when the sleeve is advanced.

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

1. In a drill-chuck, the combination of the recessed head having inclined ways, the carriers adapted to slide within said ways, the jaws pivoted to said carriers, the slide-block to which said carriers are connected, and means for operating said block, substantially as set forth.

2. In a drill-chuck, the combination of the recessed head having inclined ways, the block adapted to slide longitudinally within said head, the jaw-carriers arranged to slide within said ways and having connection with said block, whereby they are carried and are permitted to have a free vertical movement, a threaded sleeve running on the rear end of the chuck-body, and means for properly connecting said sleeve and block, substantially as set forth.

3. In a drill-chuck, the combination of the slide-block capable of a longitudinal reciprocation within the chuck-head, the jaw-car-

riers secured to said block except as to vertical movement, and the jaws pivoted to said block, substantially as shown and described.

4. The combination of the jaw-carriers having their rear ends forked, with the slide-block provided with vertical grooves within which the ends of said forks extend, substantially as set forth.

5. The combination of the recessed chuck-head having inclined ways, the carriers adapted to slide within said ways and having forks at their rear ends, the jaws pivoted to said carriers, the slide-block having vertical grooves on opposite sides, within which

the said forks extend, the annular ring around the chuck-body, the screws passed within said ring and slide to secure them together, the threaded sleeve on the rear end of the chuck-body, and means for swiveling said sleeve to the ring, substantially as hereinbefore set forth.

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

NELSON E. AUSTIN.

Witnesses:

J. HOWARD TAYLOR,

NORMAN HODGE.