(No Model.)

N. E. AUSTIN.

DRILL CHUCK.

No. 457,393. Patented Aug. 11, 1891.

Fig. 1.

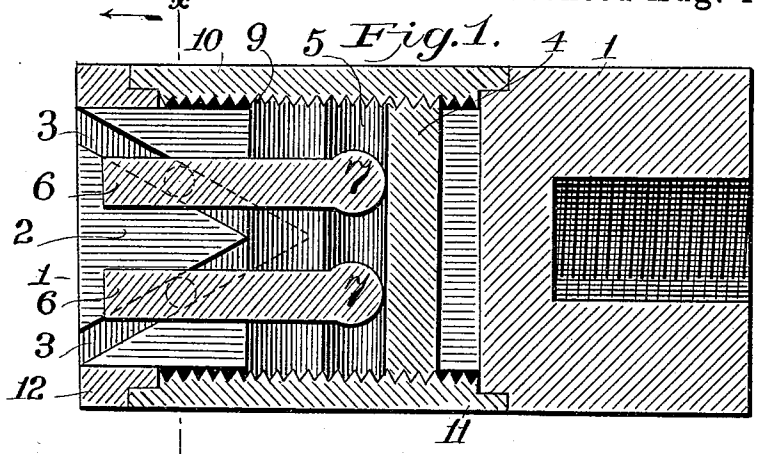


Fig. 2.

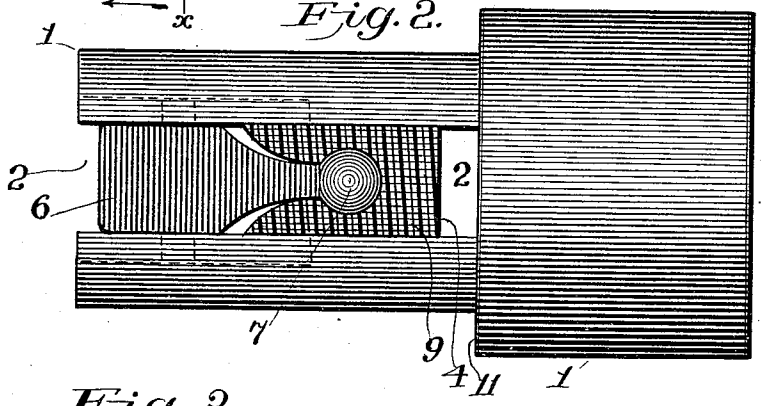


Fig. 3.

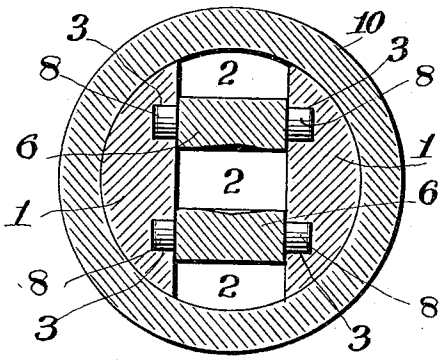
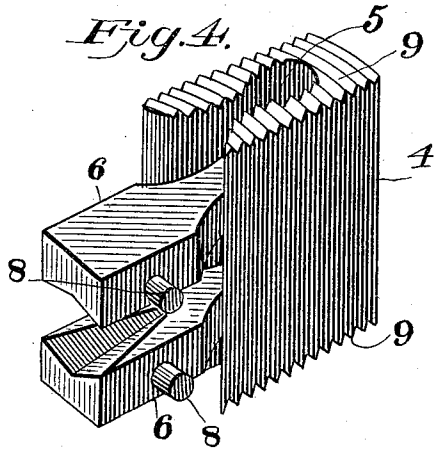


Fig. 4.



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UNITED STATES PATENT OFFICE.

NELSON E. AUSTIN, OF DANBURY, CONNECTICUT.

DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 457,393, dated August 11, 1891.

Application filed January 6, 1891. Serial No. 376,879. (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 relates to certain new and useful improvements in drill-chucks, and will be best understood by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of my improvement; Fig. 2, a plan view with the sleeve and the retaining-ring removed; Fig. 3, a section at the line *x x* of Fig. 1, and Fig. 4 a detail perspective of the jaw-carrier block with the jaws arranged therein.

Similar letters denote like parts in the several figures.

1 is the chuck-head, having a recess 2, within the side walls whereof are inclined ways 3.

4 is the jaw-carrier block within the recess 2 and having a free sliding movement therein, and having a socket 5 extending therethrough from top to bottom.

6 are the jaws, having balls 7 formed on their heel ends, adapted to fit within the socket 5, so that said jaws will have a free sliding movement, after the manner of a pin-and-socket connection.

8 are pins which extend laterally from the jaws within the inclined ways 3, so that it will be readily understood that the forward and backward sliding movement of the carrier-block will cause the jaws to distend and contract, respectively. The top and bottom of the carrier-block extend beyond the head of the chuck, as shown at Fig. 1, and are screw-threaded, as shown at 9, and an interiorly-threaded sleeve 10 encircles said head and engages with the threaded carrier. The rear of said sleeve abuts against the shoulder 11 on the chuck-head, while a ring 12, secured around the forward end of the head, serves to retain the sleeve. The sleeve being thus held as against forward and backward movement it follows that when the same is turned around the jaw-carrier block will be actuated forward or backward, as the case may be.

It will be obvious that the above-described construction renders the chuck exceedingly strong and simple, and, moreover, a great advantage resides in the fact that the chuck may be taken apart, cleaned, and put together in a very few minutes.

The connection of the jaws to the carrier-block by a ball and socket is immaterial, and I do not wish to be limited by this feature, because a sliding connection between said jaws and block is all that is necessary, and I have shown a ball-and-socket connection simply because I am thereby enabled to afford a construction readily assembled. Three or four jaws may be used, if desired, the carrier-block being suitable-shaped to accommodate them.

I do not wish to be understood as claiming the feature of opening and closing the jaws by connecting the latter with inclined ways in the chuck-head, since this is fully shown in my Letters Patent No. 438,135, dated October 14, 1890, and No. 440,255, dated November 11, 1890, the gist of my present invention resting in the broad idea of actuating the jaw-carrier by means of the threaded sleeve, the latter being stationary as to lengthwise movement.

I claim—

1. In a drill-chuck wherein the jaws are carried by a block and are opened or closed by means of inclined ways in the chuck-head, the combination, with the jaw-carrier capable of a free lengthwise movement within the chuck-head and projecting beyond the latter and exteriorly threaded, of the interiorly-threaded sleeve adapted to engage with said threaded carrier and stationary as to lengthwise movement, substantially as set forth.

2. In a drill-chuck, the combination of the recessed head having inclined ways, the jaw-carrier block within said recess and having

a threaded portion extending beyond said head, the jaws carried by said block and having a connection with said ways, and the interiorly-threaded sleeve around said head and engaging said threaded block, said sleeve being stationary as to lengthwise movement, substantially as set forth.

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

NELSON E. AUSTIN.

Witnesses:
JABEZ AMSBURY,
GEORGE E. IVES.