(No Model.)

G. W. KINSER.

DRILL CHUCK.

No. 498,797. Patented June 6, 1893.

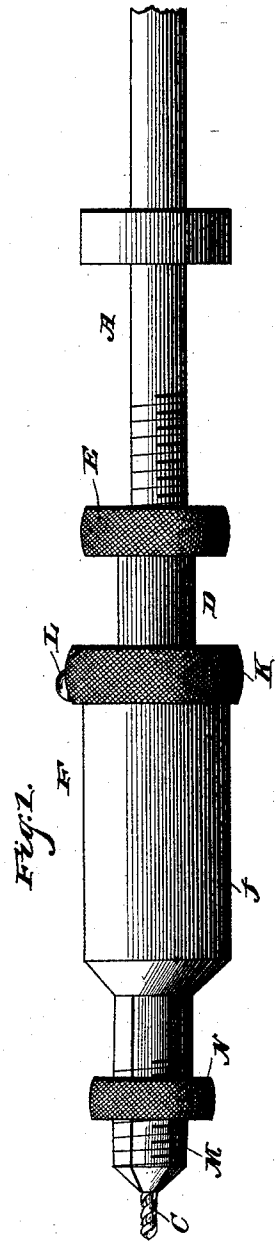

Fig. 1.

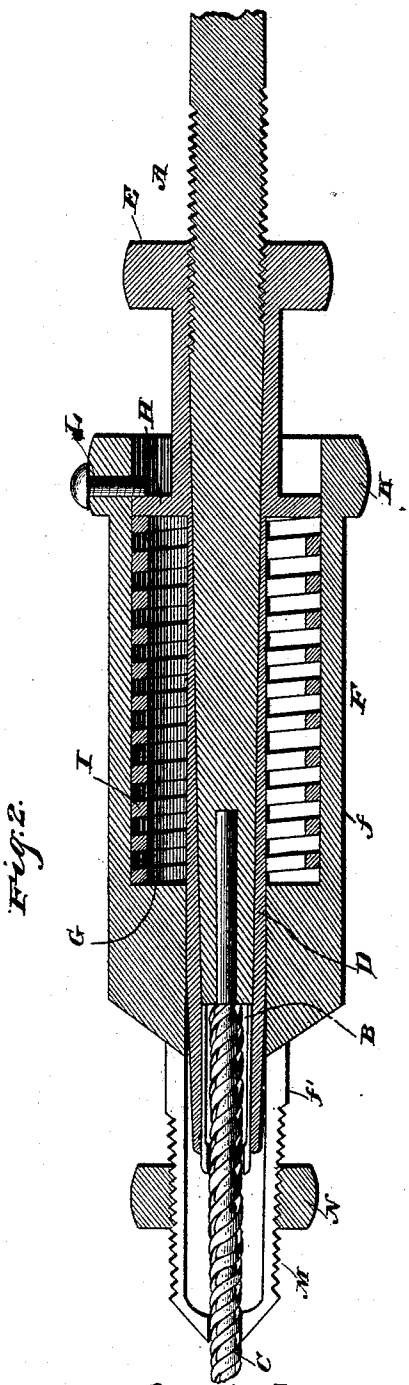

Fig. 2.

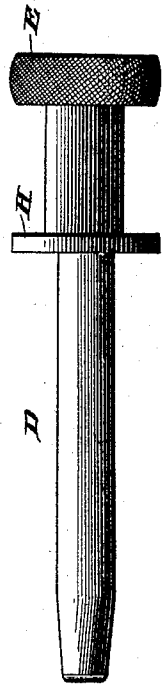

Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE W. KINSER, OF PLATTSMOUTH, NEBRASKA.

DRILL-CHUCK.

SPECIFICATION forming part of Letters Patent No. 498,797, dated June 6, 1893.

Application filed November 14, 1892. Serial No. 451,976. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. KINSER, a citizen of the United States, residing at Plattsmouth, in the county of Cass and State of Nebraska, have invented a new and useful Drill-Chuck, of which the following is a specification.

My invention relates to improvements in drill-chucks, the objects in view being to provide simple and effective means for guiding or supporting light or flexible drill-bits while in operation to prevent vibration and deflection.

Further objects and advantages of my invention will appear in the following description and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings: Figure 1 is a side view of a drill-chuck embodying my invention. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a detail view of the clamping-sleeve, detached.

A represents the spindle, provided at its free terminal with a socket, B, the sides of which are split to adapt the socket to bits of different sizes.

C represents the bit.

The end of the spindle, adjacent to the bit-socket is tapered, and over the same and extending backward beyond the end of the socket fits the clamping-sleeve, D, provided at its rear end with a female thread to engage the male thread, *d*, upon the spindle. This sleeve is provided at its rear extremity with a milled collar, E, whereby it may be turned upon the spindle to loosen or tighten the bit-socket. Fitting around the sleeve, D, is a tubular guide, F, comprising a body-portion, *f*, and a reduced tip, *f'*. Between the body-portion and the reduced tip is a shoulder, G, and fixed upon the clamping-sleeve, near its rear end, is a stop-collar, H, and between the shoulder G and the collar, H, within the body-portion of the guide, is arranged the actuating-spring, I, which normally holds the guide pressed forward as shown in full lines in Fig. 1.

The guide, F, is provided at its rear end with a milled-ring, K, and a set-screw, L, which extends through the shell of the body-portion and engages the stop-collar to prevent the guide from being removed from the spindle, and to limit the forward movement of the guide by the spring. The tip, *f'*, which in all positions of the guide projects beyond the extremity of the bit-socket, is split, and the tapered male screw, M, is engaged by a milled nut, N, whereby the tip may be contracted to fit, loosely, the bit which is held in the socket.

In operation, the guide may be allowed to rotate with the spindle, in which case the tip being held by the actuating spring near the free end of the bit will prevent excessive vibration thereof, or, in fine or particular work, the guide may be held stationary by the hand of the operator and moved forward or backward, as required, to hold the bit properly centered and steady. The stop-collar which is fixed to the sleeve fits snugly in the bore of the body-portion of the guide, and the bore of the reduced tip corresponds with the size of the sleeve, whereby the latter fits snugly therein, and hence, the guide is held firmly in place, and while capable of free sliding or longitudinal movement is free from vibration. The sleeve being exteriorly the same diameter throughout enables the guide to be slid forward to the limit of its movement without allowing vibration of the guide.

Changes in the form, proportion and the minor details of construction may be resorted to without departing from the principles or sacrificing any of the advantages of this invention.

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

1. The combination with a drill-chuck, of a guide slidably mounted upon the spindle of said chuck, to be moved longitudinally thereupon, and provided with a reduced forwardly extending tip, the bore of which is equal in size to the drill-bit to fit the same, and adapted to be arranged at any point thereof, substantially as specified.

2. The combination with a drill-chuck, of a tubular guide rotatably mounted upon the spindle of said chuck and capable of longitudinal movement thereupon, and a reduced tubular tip carried by said guide, to fit and slide upon the bit, whereby it may be arranged at any desired point thereof, substantially as specified.

3. The combination with the spindle and the sleeve fitting thereupon, of a tubular guide slidably mounted upon the sleeve and provided with a reduced tip to engage the bit, and an actuating-spring arranged within the guide and attached at one end to the sleeve, substantially as specified.

4. The combination with the spindle, and the clamping-sleeve fitting thereupon and provided with a stop-collar, of a tubular guide having a body-portion whose bore is equal in diameter to the stop-collar, and also having a reduced tip whose bore is equal in size to the sleeve, and an actuating-spring surrounding the sleeve, within the body-portion, and bearing at one end against said stop-collar and at the other end against a shoulder between the body-portion and the reduced tip of the guide, substantially as specified.

5. The combination with the spindle having a split-socket, and a clamping-sleeve fitting thereon, of a slidable, spring-pressed guide fitting upon the sleeve and provided with a reduced, split tip, and a nut engaging a male screw upon the tip, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

GEORGE W. KINSER.

Witnesses:
ROBERT B. WINDHAM,
GEORGE M. SPURLOCK.