D. A. NEWTON.

Bit-Stocks.

No. 144,123. Patented Oct. 28, 1873.

Fig. 1

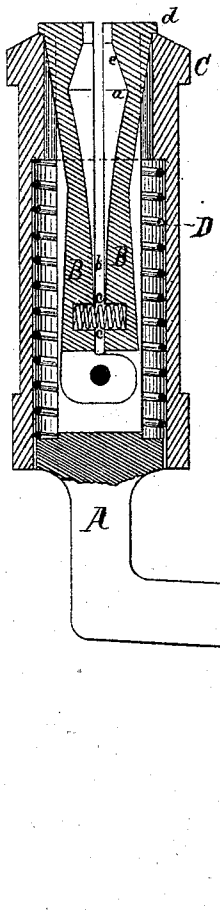
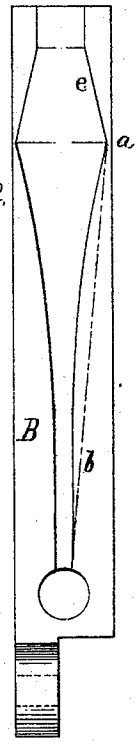


Fig. 2.



WITNESSES:

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D. APPLETON NEWTON, OF NEW YORK, N. Y.

IMPROVEMENT IN BIT-STOCKS.

Specification forming part of Letters Patent No. **144,123**, dated October 28, 1873; application filed September 16, 1873.

To all whom it may concern:

Be it known that I, D. APPLETON NEWTON, of New York city, in the county and State of New York, have invented an Improvement in Clamping Mechanism for Bit-Stocks, of which the following is a specification:

The object of my invention is to provide a convenient and efficient means of holding bits having shanks of different shapes or tapers firmly and rigidly in the bit-stock.

In the drawing, Figure 1 is a vertical section of the entire bit-holding device, and Fig. 2 is a detached view of my improved grasping jaws or clamps.

This invention is designed as an improvement on the bit-stock patented by B. S. Hildreth, February 1, 1870, which construction of sleeve I have shown; and consists in an improved construction of the clamping-jaws which grasp the bit-shank, as hereinafter more particularly described.

Great difficulty has heretofore been experienced in obtaining a bit-stock that would firmly hold bits having shanks of different tapers, and several complicated devices have been invented to produce this result by making the jaws conform to the taper of the bit-shank, and thereby grasp it throughout its length.

After careful study and numerous experiments, I have discovered that the bit-shank will be firmly held in position if it binds against, or is grasped by, the jaws at two separate points, and that this object may be accomplished by means of jaws which move from a common or fixed center by forming the faces of the groove made on the inner surface of such jaws in a peculiar manner, which I will proceed to describe by reference to the drawings.

A represents that portion of the bit stock or brace to which the clamping mechanism is attached, having a vertical slot cut therein, for the reception of the jaws B B. These jaws B B have heretofore been made with the faces of their grooves forming a straight line from the point *a* to the point *b*, in order that such face may bear upon as much of the surface of the bit-shank, throughout its length, as possible; but I make such groove with the face thereof, from the point *a* to the point *b*, crowning, so as to form a segment of a circle, as shown in Figs. 1 and 2.

These jaws may be fastened in position by a rivet passing through the stock and through holes made in their ends, so as to form a fixed center or axis on which to move toward and from each other, or may be held in the slot of the stock in any convenient manner.

C is a sleeve which is slipped down over the jaws and the slotted end of the stock A, so as to confine or press such jaws together, they being actuated to open by the spring *c* inserted near their lower ends. Surrounding the slotted stock A and jaws B B is a spiral spring, D, which finds a bearing on the inner surface of the sleeve C and tends to thrust it toward the end of the bit-stock, and consequently press the jaws together. The jaws B B have projecting lips *d* on their outer ends which prevent the sleeve from slipping off the stock, but the sleeve has a downward play sufficient to allow the jaws to be thrown open by the spring *c*, wide enough to receive the bit-shank.

Other styles of sleeve for pressing the clamping-jaws together may be used, such as forming a screw-thread on the stock A and a corresponding thread on the inner surface of the sleeve, as I do not intend to limit myself to any particular means of pressing the jaws together.

It will be seen from the foregoing description that when the sleeve is drawn down the jaws B B will open for the introduction of the bit-shank, and when the sleeve is again thrust toward the end of the stock A the jaws will be pressed together against the intervening bit-shank, and, in consequence of the faces of the grooves in the jaws being crowning, or of different incline between the points *a* and *b*, they will bear against the side of the bit-shank at some point near its lower end until its shoulder strikes the upper portion of the jaw at *e*, thus forming two independent bearings at different parts of the shank, which will hold it firmly in position and prevent any shaking or looseness.

I claim—

A bit-stock having jaws with the faces of their grooves formed crowning between the points *a* and *b*, substantially as shown and described.

D. APPLETON NEWTON.

Witnesses:

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