

C. H. AMIDON.
Bit-Brace.

No. 210,075.

Patented Nov. 19, 1878.

Fig. 2.

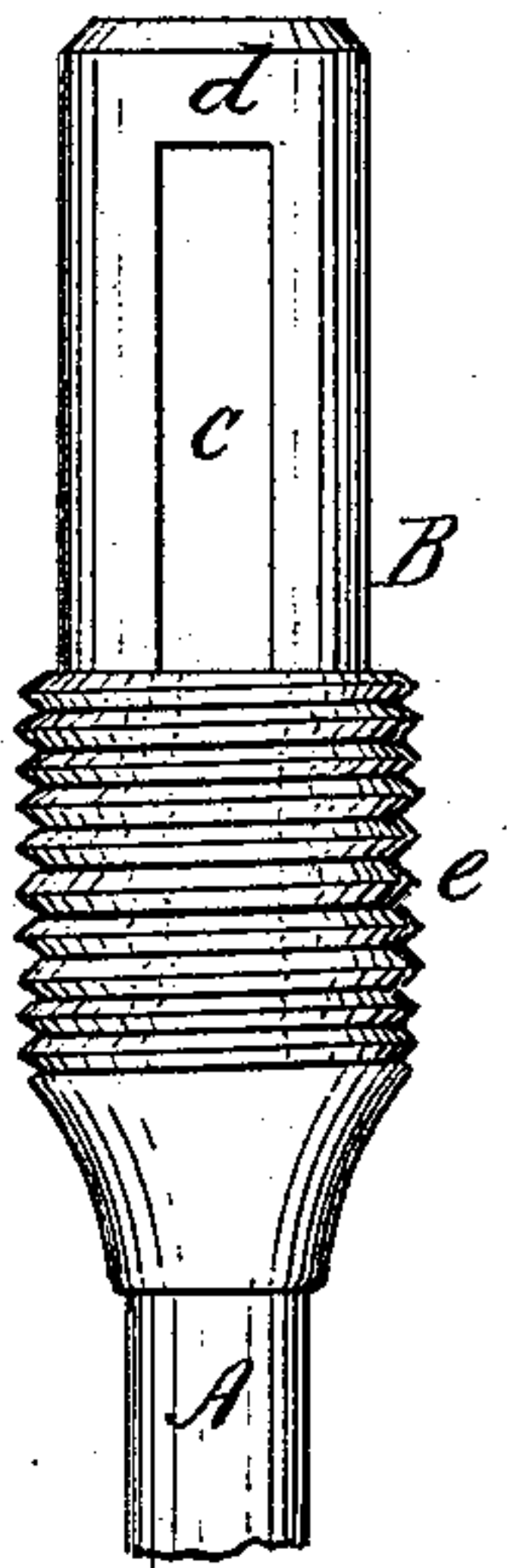


Fig. 1.

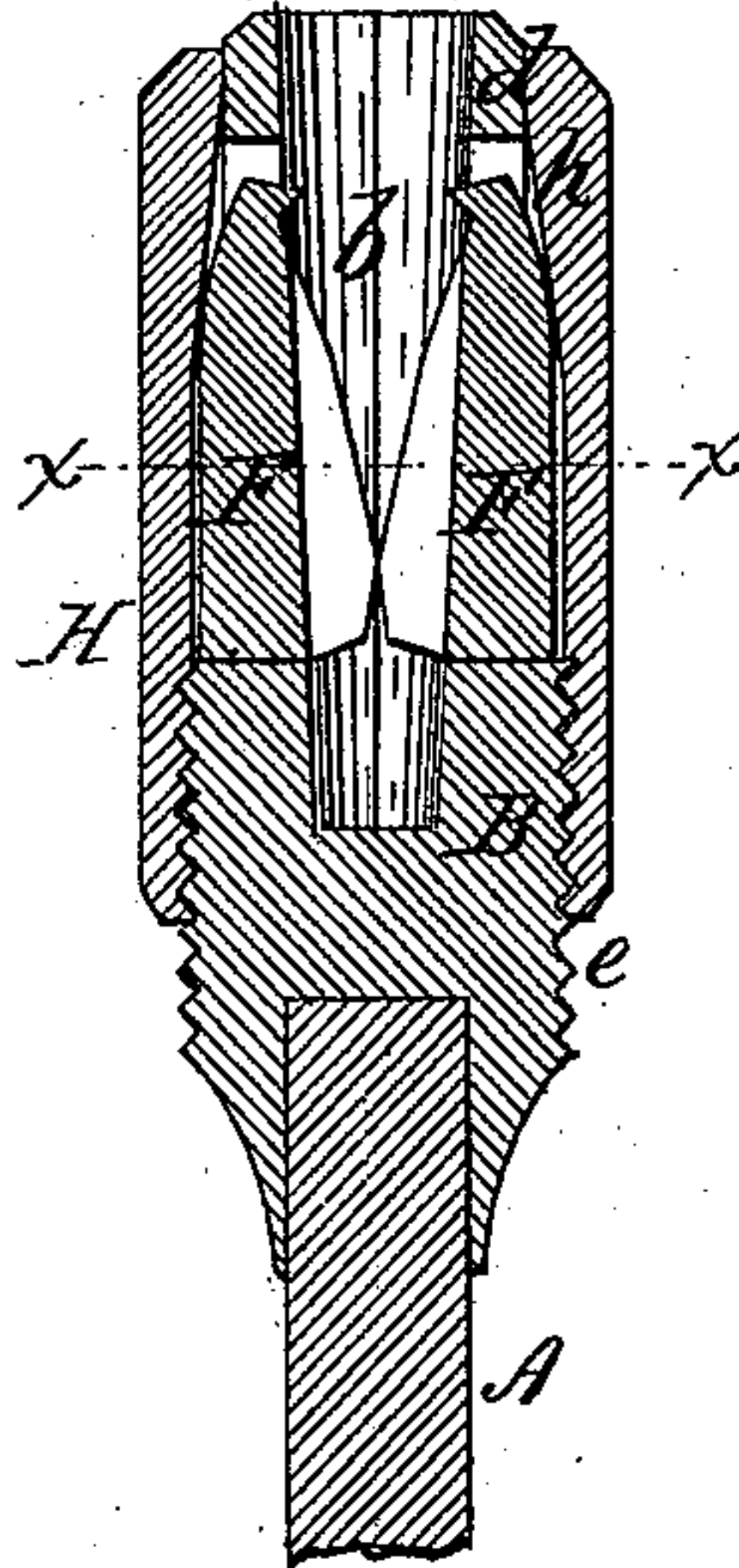


Fig. 3.

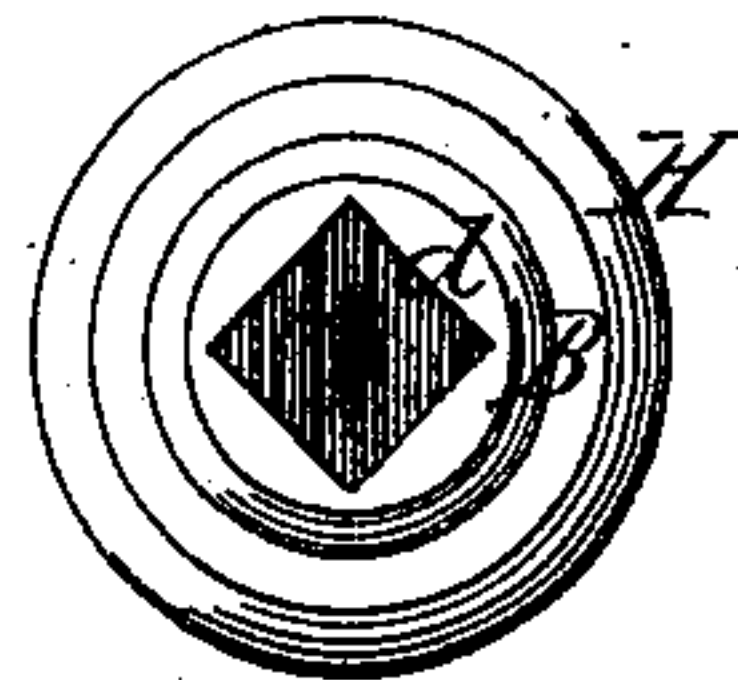


Fig. 5.



Fig. 4.

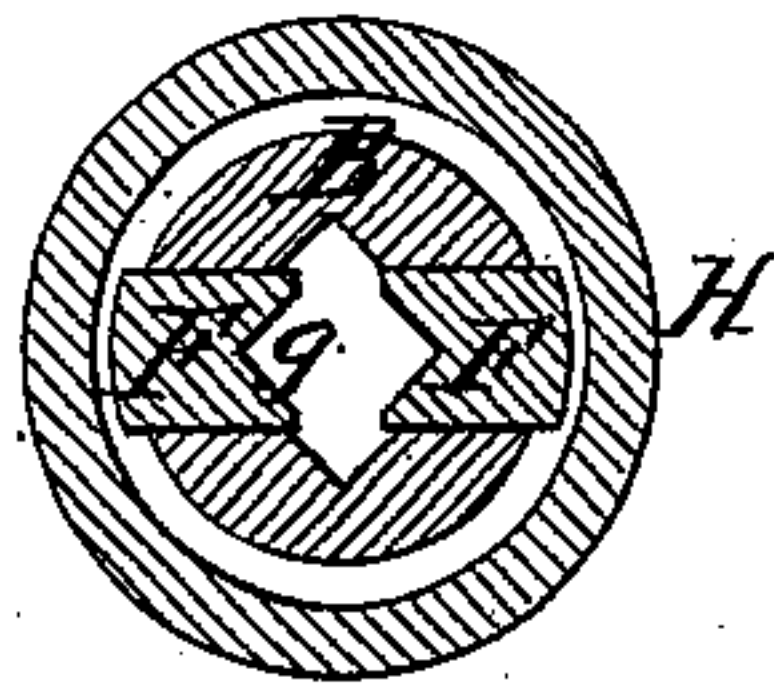


Fig. 6.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN BIT-BRACES.

Specification forming part of Letters Patent No. 210,075, dated November 19, 1878; application filed September 26, 1878.

To all whom it may concern:

Be it known that I, CHARLES H. AMIDON, of the city of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Bit-Braces, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates to that class of bit-braces in which the socket is provided with a diametrical slot, which contains a pair of clamping-jaws, which are opened and closed by means of a sleeve-nut, for securing and releasing the bit.

My invention consists of the particular construction of the socket portion of the brace and concomitant parts, so as to cause the bit to be firmly secured in the socket and to be quickly centered, and at the same time enable the device to be cheaply manufactured, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a sectional elevation of the socket portion of a bit-brace containing my improvements. Fig. 2 is an elevation thereof with the sleeve-nut and clamps removed. Fig. 3 is an end view thereof. Fig. 4 is a horizontal section in line *x x*, Fig. 1. Fig. 5 is a side elevation of one of the clamps. Fig. 6 is a face view thereof.

Like letters of reference designate like parts in each of the figures.

A represents the end of the brace, of ordinary and well-known construction; and B, the socket portion thereof, provided with a rectangular socket, *b*, in which the bit is secured. *c* is a slot or mortise extending diametrically through the socket portion B, and diagonally through the socket *b* thereof. The slot *c* is arranged at a short distance from the end of the portion B, so as to leave at said end a ring or annular end portion, *d*, entire. *e* is a screw-thread formed on the lower enlarged part of the socket portion B.

F F are two clamping-jaws arranged loosely in the slot *c*. These jaws are made tapering toward their upper ends, where they are provided with a sharp transverse edge, *f*, adapted to firmly gripe the shank of the bit. The lower portions of the adjacent faces of the jaws F are constructed with V-shaped de-

pressions *g*, for engaging against the square shank of the bit. The jaws F are so constructed that the lower portions of their backs will project slightly beyond the surface of the socket portion B, while the upper portions of their backs are curved inwardly and depressed below the surface of the portion B.

H is the sleeve by which the jaws F are opened and closed. It is provided at its lower end with an internal screw-thread, engaging with the thread *e* of the portion B. The upper end *h* of the sleeve H is constructed slightly converging or conical on its inner side, so that the sleeve, as it is screwed down, bears with its conical end *h* upon the curved backs of the clamps F, and compresses the upper ends thereof, while by a reverse movement of the sleeve the clamps are released.

The annular portion *d* of the socket portion B, above the slot *c*, serves to guide the shank of the bit into the socket *b*, and also holds the jaws F in place without any special fastening device, and relieves the jaws from strains in turning the bit.

In clamping the shank of a bit, the edges *f* of the jaws F impinge against two opposite edges of the shank, and firmly secure the same in the socket.

All the parts of my improved bit-brace are easily made and readily put together, thereby producing a very efficient and serviceable brace at comparatively small expense.

I claim as my invention—

In a bit-brace, the combination, with the socket portion B, provided with a diametrical slot, *c*, having an annular end, *d*, of two clamping-jaws, F, provided with transverse edges *f*, adapted to seize the shank of the bit, V-shaped depressions *g* in the lower portions of their faces, and having the upper portions of their curved backs depressed below the surface of the portion B, and a screw-sleeve, H, provided with a converging end, *h*, substantially as shown and described.

CHARLES H. AMIDON.

Witnesses:

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