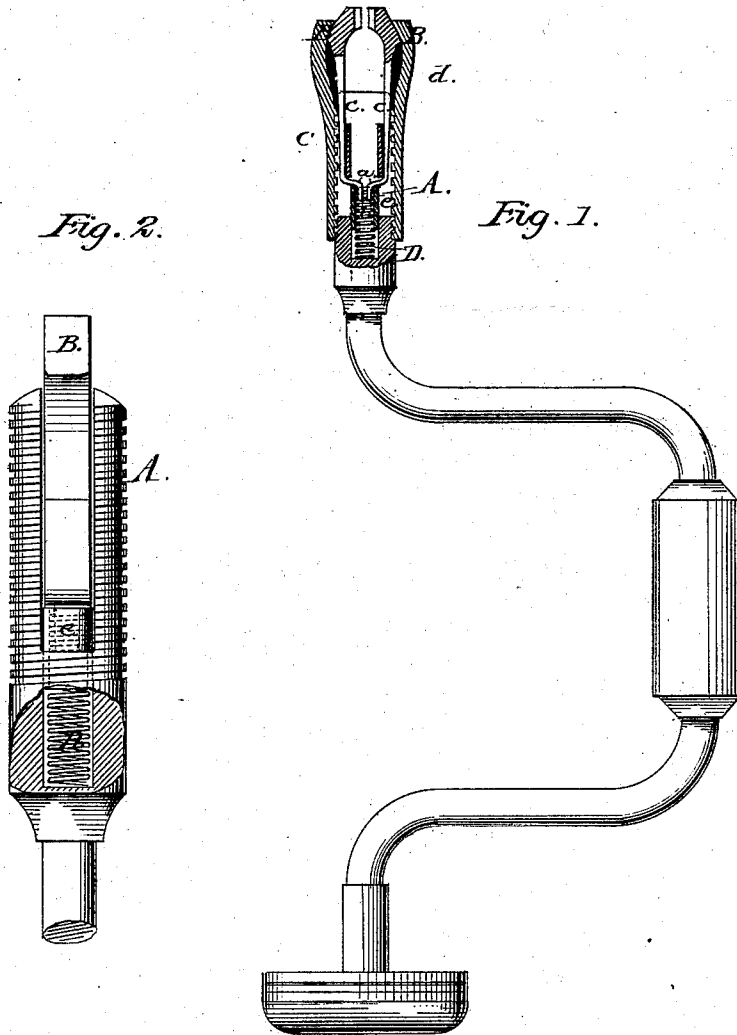


(No Model.)

H. L. STEVENS.
Bit Brace.

No. 229,197.

Patented June 22, 1880.



Witnesses:
M. Kaib
Amos Williams

Inventor:
Henry L. Stevens
per Edw. W. Downes
Attly.

UNITED STATES PATENT OFFICE.

HENRY L. STEVENS, OF MILLER'S FALLS, MASSACHUSETTS, ASSIGNOR TO
MILLER'S FALLS COMPANY, OF SAME PLACE.

BIT-BRACE.

SPECIFICATION forming part of Letters Patent No. 229,197, dated June 22, 1880.

Application filed March 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, HENRY L. STEVENS, of Miller's Falls, in the county of Franklin and Commonwealth of Massachusetts, have invented a new and useful Improvement in Bit-Braces, of which the following is a full and true description and specification.

This invention relates to instruments for holding boring and analogous tools in the condition in which they are usually purchased, and without any previous fitting to the instrument or to the holder, and is an improvement on the Barber bit-brace.

In my drawings, Figure 1 is an elevation of my brace, partly broken away. Fig. 2 is an enlarged view of the bit-stock, broken away to exhibit the spring and the tube which partly incases it.

The instrument or holder consists of a central rod or piece, A, in the drawings accompanying this, slotted longitudinally to receive the two jaws B B. A sleeve-nut, C, is made to fit the screw-thread upon the periphery of the two parts which form the socket, and acts to close the jaws upon the tool. The socket is bored to receive a helical spring, D, for the purpose of opening the jaws.

All these parts and their relative position to and operation with each other will be readily understood by a skilled mechanic.

The jaws B B are constructed with their inner faces below the projection *c* straight, and with their lower ends terminating in the angles *a* and short tangs *b*. The outer faces of the jaws are made inclined or wedge-shaped at the upper ends, where they are operated upon by the sleeve-nut C.

The upper ends of the jaws are heavier than the lower parts, and when placed with the tangs *b* together their upper ends will be a considerable distance apart. It is of great advantage in an instrument of this kind to have the jaws automatically opened, and this is effected by the coiled spring D.

The spring D, in its application to the jaws B, together with the hollow cylinder *e*, which partly incases it, has a double function—viz., to steadily press the said jaws upward and, guided by the inclined guides, outward, and at

the same time, by the contraction of its diameter in elongating axially, to close the tangs *b* together, as their angles bear against the partly-closed upper edge of the hollow cylinder as a fulcrum, and thus open the said jaws. When the hollow cylinder is not used there is a tendency in the spring to move laterally with reference to its axis, and thus give away a part of its force.

In braces of this kind heretofore made the tangs of the jaws have entered simply into the end of the spring and rested on it; but there has always been an inconvenience attending this mode, for the pressure upon the coil, when the jaws were compressed at the top and forced down on the spring, was unequal and unsteady, being only on the two points where the tangs rested, and almost invariably as the jaws were forced together the spring would yield one side more than the other, and one of the jaws would stand higher than the other. My invention is to correct this, to give them a uniform square bearing on the spring, and to keep it straight, steady, and continuously in position.

I place upon the upper part of the spring, extending down about one-half its length when in its position in the socket, a small metallic hollow cylinder, *e*, just large enough through nearly its entire length to admit the spring freely, but near the top on the inside is a shoulder, against which the spring bears evenly.

The jaws B B are inserted in the longitudinally-slotted socket, their tangs *b b* being inserted into the end of the hollow cylinder *e*.

The sleeve-nut is cast long, and its surface milled or roughened, to afford a good grasping-surface for the hand to force the jaws upon the tool and hold it firmly. Its internal diameter is enlarged and made tapering at its upper end, *d*, to fit the taper of the jaws.

The operation of this instrument is as follows: The sleeve-nut C is screwed upon the slotted socket with the jaws in position, their tangs resting in the cylinder *e*, and, pressed up by the spring D, they are open to receive the shank of a bit or other tool, when the nut C is screwed down and closes the jaws, its

internal tapering surface striking upon the inclined faces of the jaws and pressing them together and drawing them down into the socket.

5 I do not claim anything patented to Wm. H. Barber, in his original patent of May 24, 1864, nor in his reissue of February 6, 1872; but

What I do claim is—

The hollow cylinder *e*, applied upon the 10 spring to restrain it and to hold in a steady and even position the jaws of a bit-brace.

HENRY L. STEVENS.

Witnesses:

BETIE M. STEVENS,
GEORGE E. ROGERS.