(No Model.)

W. R. CLARKSON.

BIT BRACE.

No. 301,339. Patented July 1, 1884.

FIG. 1.

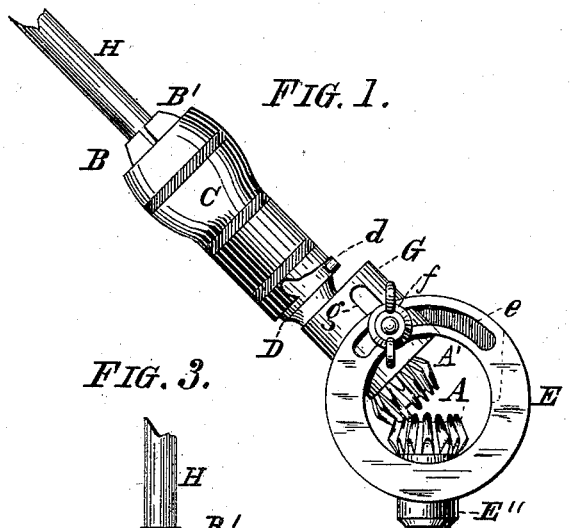


FIG. 2.

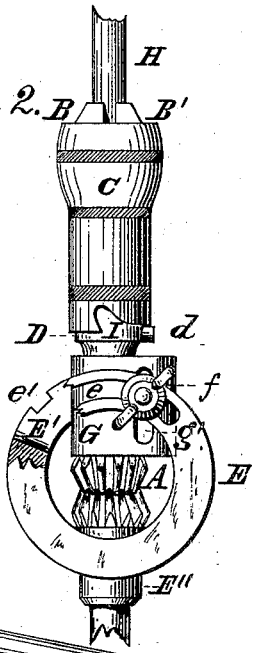


FIG. 3.

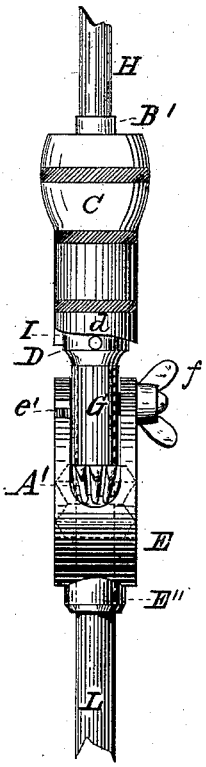


FIG. 4.

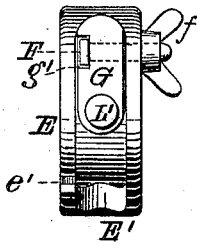
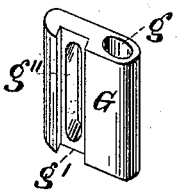


FIG. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM R. CLARKSON, OF BUFFALO, NEW YORK.

BIT-BRACE.

SPECIFICATION forming part of Letters Patent No. 301,339, dated July 1, 1884.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. CLARKSON, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Bit-Braces; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My present invention has general reference to improvements in bit-braces; and it consists, essentially, in the novel and peculiar combination of parts and details of construction, as hereinafter first fully set forth and described, and then pointed out in the claim.

In the drawings already mentioned, which serve to illustrate my said invention more fully, Figure 1 is a side elevation of my improved bit-brace. Fig. 2 is a similar view of a portion of the same. Fig. 3 is a front elevation, and Fig. 4 a plan. Fig. 5 is a perspective view of the spindle-bearing G.

Like parts are designated by corresponding letters of reference in all the figures.

This bit-brace consists, essentially, of the usual sweep, L, terminating on its upper end in a bevel-pinion, A, securely affixed to the end of said sweep, said pinion being located in an annulus, E, having the boss E″, forming, as it were, the journal or bearing for the said sweep. This annulus E consists of a ring having in its periphery a slotted aperture, E′, and in its face a similar aperture, *e*, the former being adapted to receive the spindle-bearing G, and the latter to receive the bolt F, by means of which said spindle-bearing is secured within the slotted aperture E′. The spindle-bearing G, Fig. 5, consists of an oblong piece having, longitudinally, an aperture, *g*, for the reception of the spindle L′, Fig. 4, a groove, *g′*, for the reception of the head, and a slotted aperture, *g″*, for the passage of the shank of the screw-bolt F, said spindle-bearing being inserted into the slotted aperture E′ in the annulus E in such a manner that when occupying the position shown in Fig. 1 the aperture *g* will be in line of the central line of the sweep L. The spindle L′ carries on its end, or rather is formed in one piece with, the so-called "socket" D, being that portion of the brace receiving the jaws B B′, said jaws being actuated by means of a nut, C, in any well-known and desirable manner, my improvements in bit-braces, as herein disclosed, being applicable to nearly all, if not all, the different constructions of chucks and analogous appliances for holding the bit. In the present instance I have, for the purpose of an example, illustrated that device for which Letters Patent of the United States were granted to me on the 11th day of March, 1884, consisting of a nut, C, having in the periphery of its lower portion an inclined or cone-shaped portion, I, Fig. 2, operating in conjunction with a fixed abutment, *d*, in a manner readily comprehended.

To the end of the spindle L′ is fixed a bevel-pinion, A′, which pinion is a duplicate of the one, A, fixed to the end of the sweep L, the said pinions being so shaped that when the center line of the spindle L′ coincides with that of the sweep L, as illustrated in Fig. 2, said pinions connect the two spindles in the manner of a clutch or coupling, while as soon as the spindle-bearing G is moved so as to bring said two spindles out of line, said pinions act in the manner of gear-wheels, as shown in Fig. 1.

It is now perfectly plain that, in virtue of the adjustability of the spindle-bearing G with reference to the annulus E and the sweep L, the chuck for holding the bit H may be placed at any angle to the center line of said sweep L within the compass of the slot-hole E′ in said annulus E, and that, therefore, holes may be bored with this bit-brace at any angle to the sweep, thus accomplishing with my present bit-brace all that may be attained by the angle-brace and by the ratchet-brace, and that changes from one position or angle to the other may be made by simply unscrewing the thumb-nut *f* of the bolt E, then swinging the chuck and bit into the desired position, and, finally, securing the spindle-bearing G by the said thumb-nut *f*, as described.

In the periphery of the annulus E there is a notch, *e′*, to enable the insertion of the bolt F into its proper position.

I am aware of patents numbered 150,108, of April 21, 1874, and 18,282, of September 29,

1857, and I do not claim such constructions of bit-stocks, broadly.

Having thus fully described my invention, I claim as new and desire to secure to me by Letters Patent of the United States—

The bit-brace herein described, consisting of the sweep L, having the pinion A, the annulus E, having the apertures E′ *e* and boss E″, the spindle-bearing G, engaging the annulus, and having apertures *g*, groove *g′*, and slot *g″*, the bolt F, passed into the slot *e*, with its shank engaging the groove *g′*, and having the thumb-nut *f*, and the spindle L′, provided with pinion A′, seated in the aperture *g*, the whole constructed and arranged to operate as shown and described.

In testimony that I claim the foregoing as my invention I have hereto set my hand in the presence of two subscribing witnesses.

WM. R. CLARKSON.

Attest:

MICHAEL J. STARK,

AL. STARK.