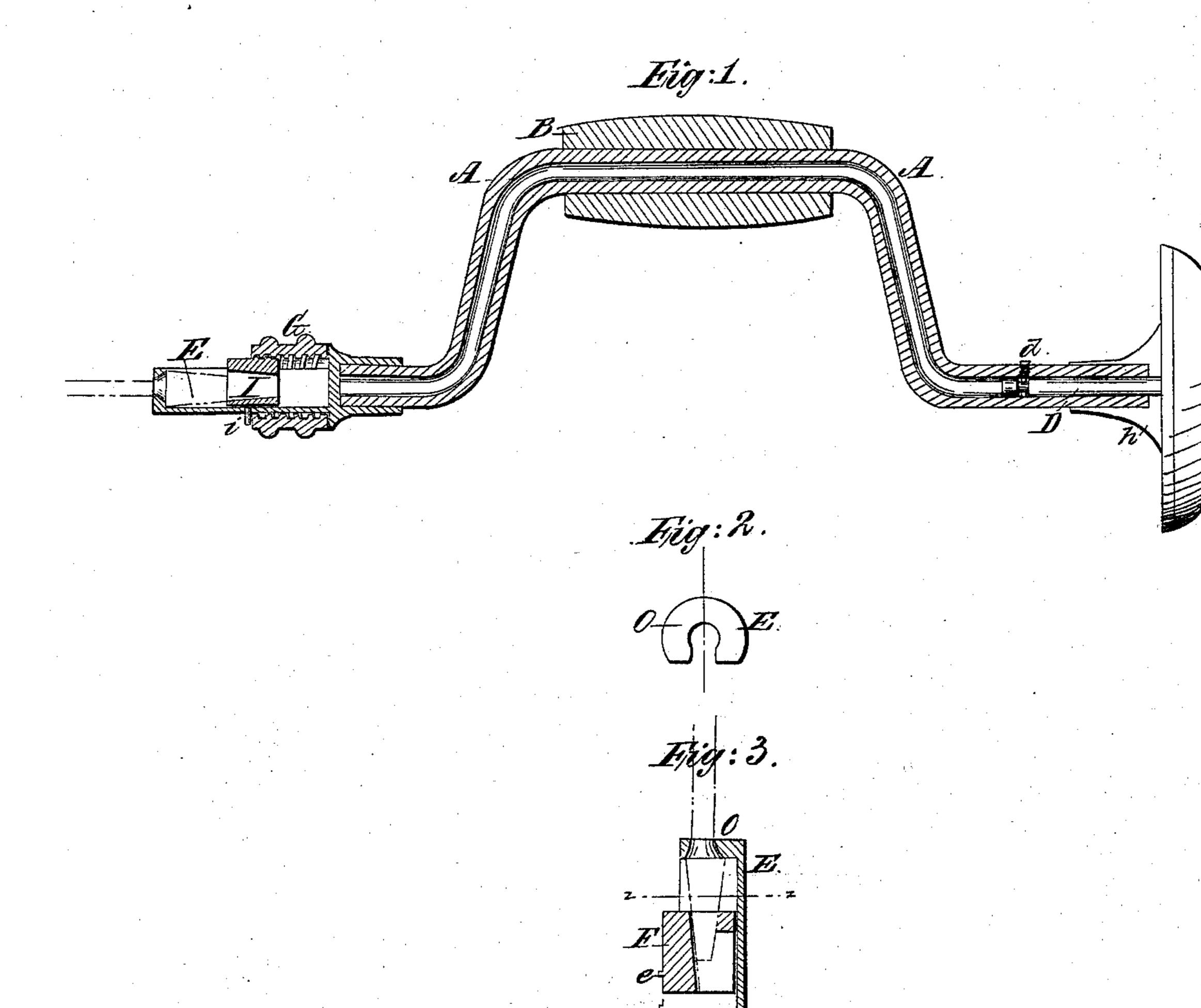
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Bit Stock,

143,302,

Patented June 28, 1864.



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United States Patent Office.

DANIEL P. FOSTER, OF SHELBURNE FALLS, MASSACHUSETTS.

IMPROVEMENT IN BRACE OR BIT STOCKS.

Specification forming part of Letters Patent No. 43,302, dated June 28, 1864.

To all whom it may concern:

Be it known that I, DANIEL P. FOSTER, of Shelburne Falls, Franklin county, and State of Massachusetts, have invented a new and useful Improvement in Braces to be Used for Boring; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

Figure 1 represents the implement shown in section longitudinally. Fig. 2 is an end view of that part in which the bit is secured. Fig. 3 is a longitudinal vertical section of the same, and of the sliding block or chuck working therein, taken in the line x x, Fig. 2; and Fig. 4 is a transverse section taken in the line of zz, Fig. 3.

The nature of my invention consists, first, in constructing the body or stem of the brace of a matallic tube; and, secondly, it consists in a novel device for holding the bits securely in the brace.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

A represents the body or stem of the brace, which is made of a metallic tube bent to the required form, as shown in Fig. 1. Midway upon this stem is mounted the handle B in the usual manner. It is also provided with the ordinary head C, which has a stem or spindle, D, which enters the upper end of stem A, where it is secured by the small screw d, the end of which engages in the circumferential groove near the end of D. The head C is also provided with a projecting collar, h, fitting over the end of A, as shown, which serves to relieve the spindle D of any side strain, and also to keep dirt, &c., from getting into the joint. The lower end of A has secured rigidly to it a socket-piece, E, for receiving and holding the shank of the bit. This piece E is cylindrical upon its exterior surface, as shown in Figs. 2 and 4, while its interior is cast or otherwise made hollow, and of a square or quadrangular form, as shown in Fig. 4, with one of its walls or scribed, I get a much lighter brace, contain-

sides cut away. The lower end of E is provided with a cap, o, which has a circular conical opening at its center, from which opening a passage, slightly smaller in diameter, is cut to the open side of E, as clearly shown in Fig. 2. Within the hollow of E is fitted a sliding chuck, F, which projects on that side where the face of E is cut away, so as to form the arc of a circle coinciding with the circumference of E, the two thus forming a perfect cylinder. The projecting face of F is provided with a screw-thread, e, projecting therefrom, as shown in Figs. 2, 3, and 4. A ferrule or short tube, G, is slipped on over E and shoved up against the shoulder thereon, as shown in Fig. 1. This ferrule or nut G is held in its place by the pin i, Fig. 1, and is provided on its inner surface with a screwthread, into which the thread e on chuck F engages. The nut G has one or more circular projections on its surface, which projections are milled or otherwise roughened, by which means it is more securely grasped and turned when desired. When the parts are thus in position, the square end of the bit is inserted in the hole in the center of chuck F, the latter being lowered to the position in red in Fig. 3 for that purpose, and the shank of the bit is then shoved into the circular opening in the cap o, as shown in red lines in Figs. 1 and 3, after which the nut G is turned in the proper direction, by which means the chuck F, and with it the bit, is shoved outward until the shoulder or enlargement on the shank of the bit impinges against the converging walls of the circular opening in the cap o, where it is securely held. As the square hole in the chuck F is located at its center, coinciding or in line with the opening in cap o, it follows that the bit when thus inserted is not only securely held in place and prevented from turning, but is also self-centering. By these means a large or small bit can be inserted or released with equal facility, and in all cases, if the bit be true, the simple act of securing it by turning the nut G will also center it perfectly.

By making the stem A of a tube, as de-

ing but little more than half the usual amount of metal, and that so disposed as to yield the greatest amount of strength, thus forming a light, strong, and neat tool.

Having thus described my invention, what I claim as new, and desire to secure by Letters

Patent, is—

1. Making the stem or body of a brace of a tube, substantially as shown.

2. Securing the bit to the brace by means of the cap o, chuck F, and nut G, as shown and described.

In witness whereof I have hereunto set my hand.

DAN. P. FOSTER.

Witnesses:

H. C. COATES, C. F. FOSTER.