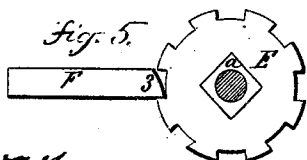
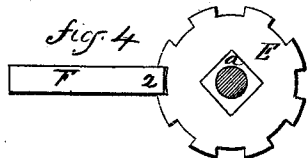
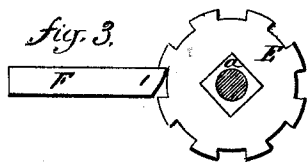
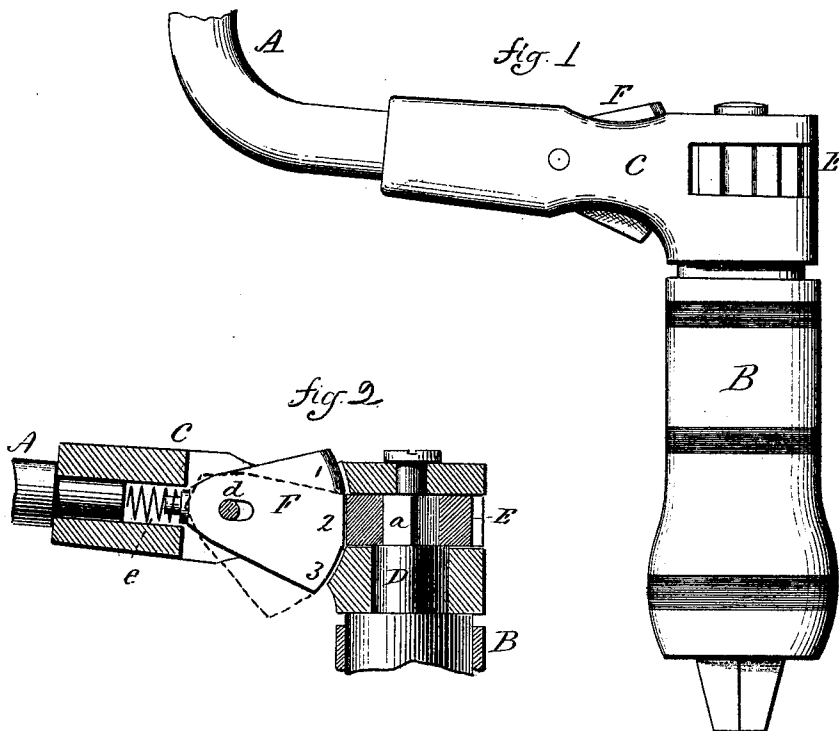


F. P. PFLEGHAR.  
BIT-BRACE.

No. 175,151.

Patented March 21, 1876.



Witnesses  
J. H. Chumney  
Wm. A. Conington.

Frank P. Pleghar  
By Atty. J. H. Earle  
Inventor

# UNITED STATES PATENT OFFICE.

FRANK P. PFLEGHAR, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO  
WILLIAM A. IVES & CO., OF SAME PLACE.

## IMPROVEMENT IN BIT-BRACES.

Specification forming part of Letters Patent No. **175,151**, dated March 21, 1876; application filed  
January 4, 1876.

*To all whom it may concern:*

Be it known that I, FRANK P. PFLEGHAR, of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Bit-Braces; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, side view; Fig. 2, central section; Figs. 3, 4, 5, diagrams illustrating the operation.

This invention relates to an improvement in bit-braces, the object being to adapt the brace to a ratchet operation, so that the crank of the brace may be partially turned, and turn the socket with it, and, then returning the crank for a second hold, the socket will remain stationary; and the invention consists in constructing the socket and crank so that the crank will be free to turn independent of the socket, and with a toothed or ratchet wheel attached to or forming a part of the socket at the bearing in the crank, combined with a pawl in the crank, made adjustable to three positions—one to allow the crank to be turned freely in one direction and engage the socket in the other; a second to leave the crank free in the opposite direction to the first, and engage accordingly; and a third which will engage the socket and crank, so that they turn together in both directions, all as more fully hereinafter described.

A is the crank of the brace, and B the socket, which may be of any of the usual constructions, so as to engage the tool placed within it, and which is to be turned. The crank terminates over the socket in a head, C. In this head the socket is hung upon a bearing, D, so as to turn freely therein. The head is slotted transversely, and into this a ratchet, E, is placed, and made fast to the pin *a* of the socket. This ratchet E is formed with square-shouldered teeth, as shown in Figs. 3, 4, and 5. F is a pawl hung upon a

pivot, *d*, in a vertical recess in the head of the crank, and so that the axis of the pivot *d* is at right angles to the axis of the socket, and the pawl slotted, so as to have a slight movement on the pivot *d*, and in rear of the pawl a spring, *e*, is arranged, the tendency of which is to force the pawl toward and into connection with the ratchet E. The face of the pawl toward the ratchet has upon it three surfaces, 1 2 3, the surface 1 being that seen in Fig. 3, which is beveled, so as to allow the crank to turn freely to the left, and the pawl escape from notch to notch in so turning; but when turned to the right the pawl will engage the notch in the ratchet, as seen in Fig. 3, and cause the socket to turn with the crank. The second division 2 of the face is square, or at right angles, and so as to engage in one of the notches of the ratchet, and rigidly engage the socket and crank, so that the socket and crank will turn together as one in both directions. The third portion 3 is the reverse of the first, so that the brace will turn free to the right and engage the socket when turned to the left; but the order of these surfaces may be changed without in any sense changing this invention. The adjustment from one section to the other is made by simply raising or lowering the pawl, as indicated in broken lines, Fig. 2.

I claim—

The combination, in a bit-brace, of the crank and socket, the socket hung in a bearing in the head C of the crank, so as to turn freely therein, the ratchet E, in connection with or a part of the said socket, and the adjustable pawl F, hung in the said head, and relatively to the ratchet E, and constructed with the three working surfaces, one for turning the socket to the right, another for turning the socket to the left, and a third for rigidly engaging the crank and socket, substantially as described.

FRANK P. PFLEGHAR.

Witnesses:

JOHN E. EARLE,  
CLARA BROUGHTON.