

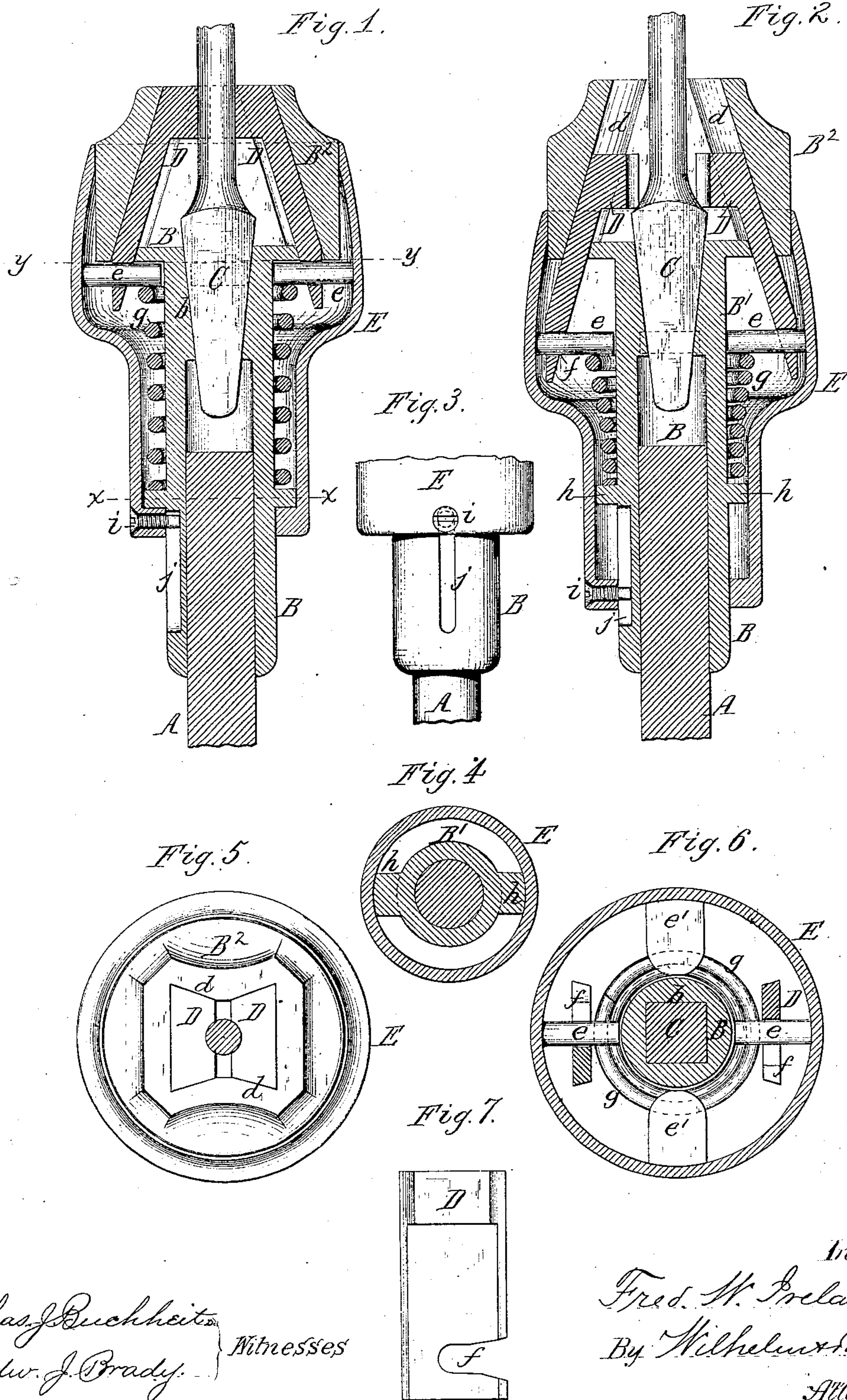
(No Model.)

F. W. IRELAND.

BIT BRACE.

No. 246,513.

Patented Aug. 30, 1881.



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UNITED STATES PATENT OFFICE.

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BIT-BRACE.

SPECIFICATION forming part of Letters Patent No. 246,513, dated August 30, 1881.

Application filed April 11, 1881. (No model.)

To all whom it may concern:

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

This invention relates to that class of bit-braces in which the socket is provided with
10 two sliding jaws, between which the bit is clamped.

The object of my invention is to produce a simple and durable brace of this character in which the clamping-jaws can be quickly opened
15 and closed; and my invention consists of the particular construction of the parts whereby the bit is held in the socket, and whereby the clamping-jaws are opened and closed, as hereinafter fully set forth.

20 In the accompanying drawings, Figure 1 is a sectional elevation of my improved bit-brace, showing the clamping-jaws closed. Fig. 2 is a similar view, showing the clamping-jaws open. Fig. 3 is a fragmentary elevation at right angles to Fig. 1. Fig. 4 is a horizontal section
25 in line *x x*, Fig. 1. Fig. 5 is an end view of the brace. Fig. 6 is a section in line *y y*, Fig. 1. Fig. 7 is an elevation of one of the clamping-jaws at right angles to Fig. 1.

30 Like letters of reference refer to similar parts in the several figures.

A represents the end of the bent bar of the brace, which may be of any ordinary and well-known construction.

35 B represents the socket portion, which is secured to the end A of the brace-bar in a well-known manner.

40 *b* represents a tapering square opening formed in the inner contracted part, B', of the socket portion B, for the reception of the square tang C of the brace.

45 D D are the clamping-jaws, which are arranged in inwardly-diverging ways or grooves *d* in the outer enlarged part, B², of the socket portion B. The ways *d* are preferably made of dovetail form in cross-section, to confine the jaws D against movement except in the longitudinal direction of the ways. The clamping-jaws D are arranged on opposite sides of the
50 bit, and their heads or outer enlarged ends are formed to firmly grasp the shank of the bit.

E represents a sleeve which surrounds the

socket portion B. The outer enlarged part of the sleeve slides on the enlarged part B² of the socket portion, and is provided with two inwardly-projecting pins, *e*, which engage in
55 openings *f* in the lower ends of the jaws D, which latter project below the bottom of the enlarged outer part, B², of the socket portion. By raising or lowering the sleeve E the jaws
60 are correspondingly raised or lowered in their inclined ways, and the heads of the jaws caused to approach each other or to recede from each other. The pins *e* are preferably cast with the sleeve E, and the openings *f* in the jaws are
65 made in the form of open slots, so that the pins can be engaged in these openings by turning either the sleeve or the socket on its axis.

g is a spiral spring which surrounds the inner contracted part, B', of the socket portion,
70 and which rests with its inner end upon projecting lips or shoulders *h*, formed on the part B', and bears with its outer end against the pins *e* and lugs *e'*, formed in the sleeve E. The spring *g* tends, therefore, to retain the sleeve
75 E in its outermost position, and the jaws D, which follow the movements of the sleeve, are thereby held in a closed position. The inner contracted portion of the sleeve E surrounds the spring *g*, and has its inner end turned inward against the inner contracted part, B', of
80 the socket portion below the projecting lips *h*. The sleeve E is prevented from turning on the socket portion by a pin or screw, *i*, which is secured to the sleeve E, and projects into a longitudinal groove or recess, *j*, formed in the surface of
85 the inner contracted part, B', of the socket portion.

The parts are readily put together by first inserting the spring *g* into the cavity of the sleeve E, which is readily accomplished by
90 screwing the spring down over the inwardly-projecting pins *e*, then inserting the socket portion into the sleeve by screwing the socket portion down into the spring, the outwardly-projecting lips *h* engaging between the threads of
95 the spring, then engaging the slots *f* of the clamping-jaws with the pins *e* of the sleeve E, and finally securing the latter against rotary movement by inserting the pin *i*. When the
100 parts are so put together the jaws D will be readily opened by depressing the sleeve E, as shown in Fig. 2, whereby the spring *g* is compressed. Upon releasing the sleeve E the re-

action of the spring *g* will return the sleeve to its former position and close the jaws *D*.

Instead of casting the pins *e* on the sleeve *E*, they may be secured thereto by screw-threads or otherwise, when the openings *f* in the jaws *D* need not be slotted, and the rotatory movement of the sleeve will be prevented by the engagement of the pins *e* in the openings *f* of the jaws without the aid of the pin *i*.

10 I claim as my invention—

1. The combination, with a socket portion, *B*, provided with a tang-seat, *b*, and inwardly-diverging ways *d*, which penetrate the enlarged head of the socket portion *B*, of sliding jaws *D*, 15 arranged in said ways, and confined thereby both on their inner and outer sides, and a sliding sleeve, *E*, surrounding the socket portion and connected with the inner ends of the jaws, which latter are closed and opened by the movements of the sleeve, substantially as set forth. 20

2. The combination, with the socket portion *B*, provided with a tang-seat, *b*, and inwardly-diverging ways *d*, penetrating the head of the socket portion *B*, of sliding jaws *D*, arranged 25 in said ways, a sliding sleeve, *E*, surrounding the socket portion and connected with the inner ends of the jaws, and a spring, *g*, tending to retain the sleeve and the jaws connected

therewith in a closed position, substantially as set forth. 30

3. The combination, with the socket portion *B*, provided with inwardly-diverging ways *d* and sliding jaws *D*, arranged in said ways, and constructed with openings *f* at their inner ends, of the sliding sleeve *E*, provided with pins *e*, projecting into the openings *f* of the jaws, projecting lips *h*, formed on the socket portion *B*, and a spring, *g*, interposed between the lips *h* and the pins *e*, substantially as set forth. 35

4. The combination, with the socket portion *B*, provided with inwardly-diverging ways *d* and sliding jaws *D*, arranged in said ways, and constructed with openings *f* at their inner ends, of the sliding sleeve *E*, provided with pins *e*, projecting into the openings *f* of the jaws, projecting lips *h*, formed on the socket portion *B*, a spring, *g*, interposed between the lips *h* and the pins *e*, and a pin, *i*, secured to the sleeve *E* and projecting into a longitudinal groove, *j*, formed in the socket portion *B*, substantially as set forth. 40 45 50

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Witnesses:

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