

No. 684,037.

Patented Oct. 8, 1901.

F. P. BATES.
WRENCH.

(Application filed Oct. 9, 1900.)

(No Model.)

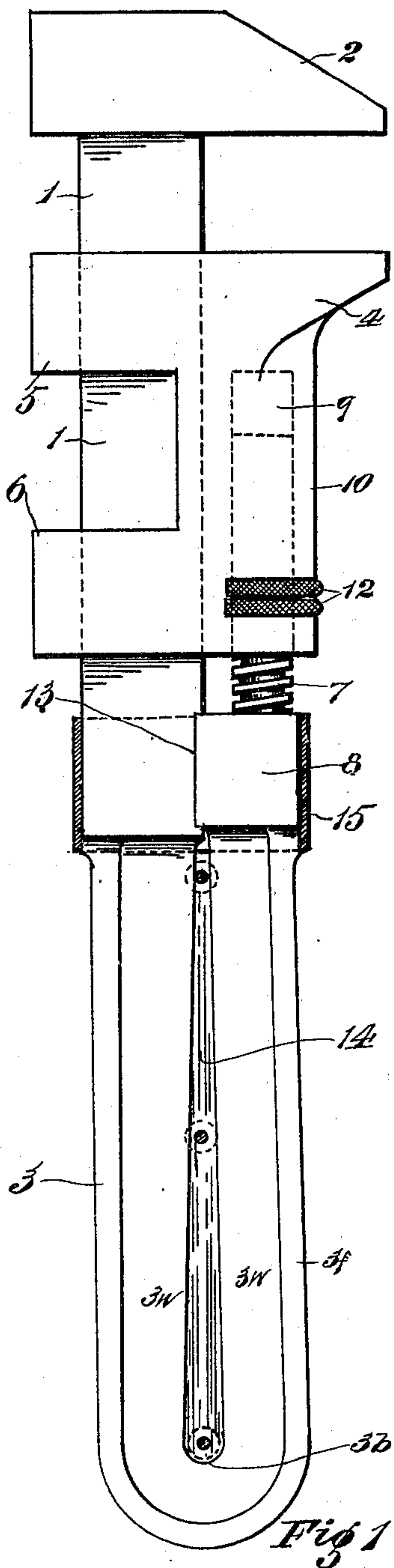


Fig 1

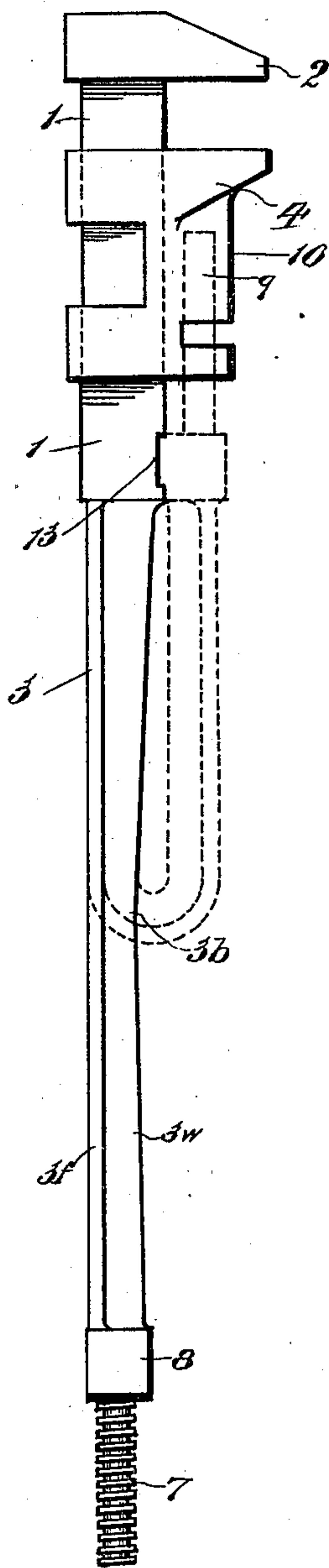


Fig 3

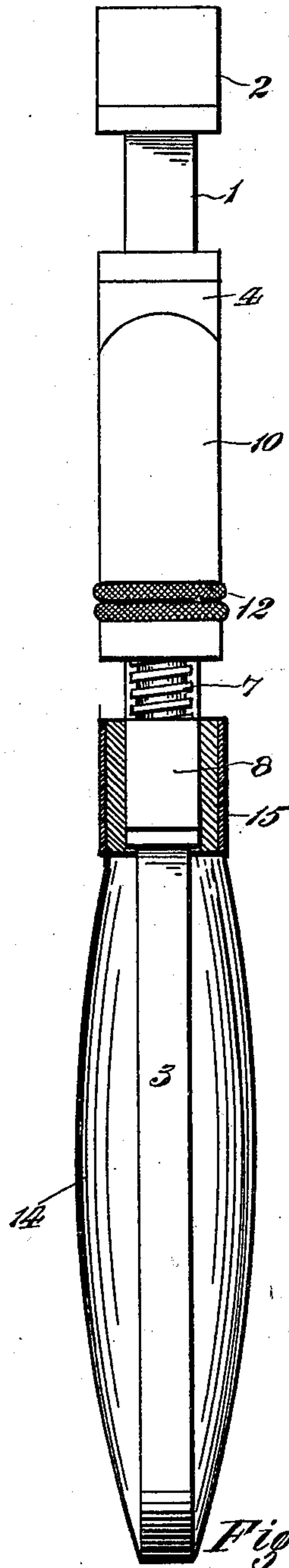


Fig 2

Witnesses
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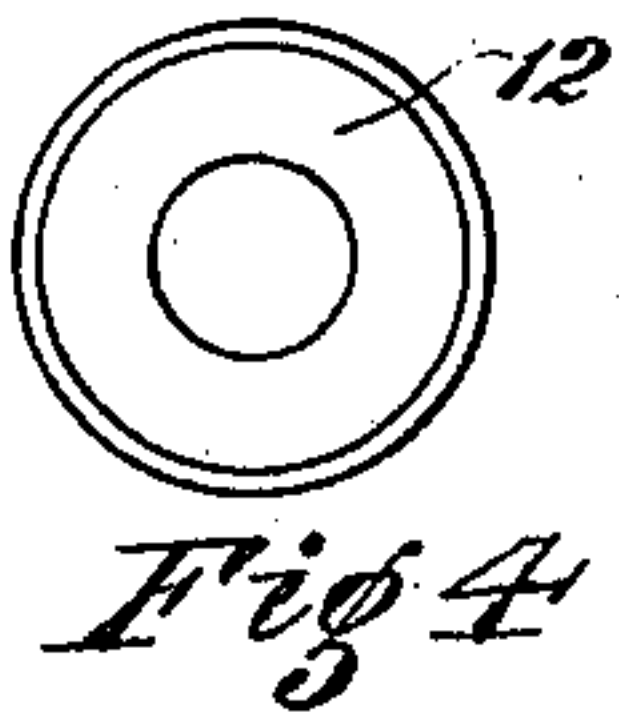


Fig 4

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UNITED STATES PATENT OFFICE.

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WRENCH.

SPECIFICATION forming part of Letters Patent No. 684,037, dated October 8, 1901.

Application filed October 9, 1900. Serial No. 32,488. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN P. BATES, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Wrenches, of which the following is a specification.

My invention relates to new and useful improvements in wrenches; and it consists in a peculiar form of construction of the same, and will be hereinafter more fully described, and particularly pointed out in the claims.

The object of my invention is to construct a simple and durable wrench having the least possible number of loose parts or separate parts; and a further object of this invention is to construct the main portion of said wrench in one integral piece from a single piece of metal. I attain these objects by means of the construction of wrench illustrated in the accompanying drawings, in which similar numerals of reference designate like parts throughout the several views.

Figure 1 is a side elevational view of a wrench embodying my invention and showing the wood filling of the handle portion thereof in dotted lines for the purpose of more clearly illustrating the construction of the tang portion of said wrench. Fig. 2 is an edge or front view of the same. Fig. 3 is a reduced side elevational view of the wrench, showing the form of the tang portion thereof in full lines and also showing the form in which said tang is first forged; and Fig. 4 is a view showing the traversing nut of the wrench.

The wrench is or may be of the usual well-known type and is composed of the main member 1, having the fixed or permanent jaw 2, the handle or tang portion 3, and the sliding jaw 4, provided with the retaining-bands 5 and 6, formed integral on said jaw 4 and which encircle the rectangular portion of the main member 1 to guide said jaw 4 and to preserve its alinement with the fixed jaw 2 at all points throughout its scope of adjustment. The jaw 2 is formed integral on the end of the rectangular portion of the main member 1, and the opposite end of said member is prolonged to form the handle-tang portion 3 and the screw portion 7, and the said jaw 2, main member 1, tang 3, and the screw

7 are forged or otherwise formed in one integral straight or unbent piece. The tang or handle portion 3 is preferably of a T-section, having its flange 3^f formed on the outer edge of the web 3^w, and the said web is reduced in depth at its center portion or bend 3^b for the purpose of reducing the area of resistance of the section at such point or bend and to facilitate the operation of bending said tang 3 at such point.

In order to practice my invention, I first construct the main portion 1, having the permanent jaw 2, the tang 3, which is at least double the length of that of the usual handle-tang, the screw 7, and the head 8 thereof, all of which elements are forged or otherwise formed, as by casting, in one integral straight piece. I next form the threads on the screw-shank 7, and a screw-way 9 is drilled or otherwise formed in the head 10 of the sliding jaw 4, and said way is made parallel with the face of the member 1 and of a diameter sufficiently large to permit the free entrance of the screw 7 when the end of the latter is brought opposite to it. A transverse slit is now cut or otherwise formed in the head 10 at right angles with the center line of said screw-way and is of a depth and width sufficiently large to permit the entrance of the screw-nut 12, which latter is of a disk form and has its outer edge milled in the usual manner. The nut 12 is drilled centrally and threaded to receive the screw-threads of the screw 7. I next apply the jaw 4 on the member 1 with the face of the said jaw directed toward the face of the fixed or permanent jaw 2. I now bend the tang 3 upon itself till the end of the screw 7 enters the screw-way 9 of the sliding jaw 4. I now place the nut 12 in position in the nut-receiving slit formed in the head 10 ready to receive the end of the screw 7 and still further bend the tang 3 upon itself till fully bent into the desired form and till the screw-head 8 has entered the recess 13, formed in the edge or face of the member 1, at which time the screw 7 has fully entered the nut 12, which is continuously turned as the bending of the tang proceeds, and the said recess 13 is provided for the purpose of receiving the end thrust of the jaw 4 through the screw 7, thereby releasing the tang of all thrust and securing a rigid slid-

ing jaw 4, which is desirable. Wood fillings 14, dressed into the desired form, as shown in dotted lines in Fig. 2, are riveted or otherwise secured to the handle-tang of the wrench, and a band 15 surrounds the ends of said wood fillings and the head end 8 of the screw 7, by which means the tang is reinforced and the tang is made more rigid.

Having thus fully described this my invention, what I claim as new and useful, and desire to cover by Letters Patent of the United States therefor, is—

1. A wrench composed of a fixed jaw, tang and screw members, all formed in one single integral piece, and wherein the screw is formed on the end of the prolonged handle-tang, which tang is bent around upon itself bringing said screw into position.

2. A wrench having a main member divided into three integral elements and composed of a fixed jaw end, a screw end, and an intermediate handle-tang member, and provided with a traversing jaw member, said intermediate tang member being bent around upon itself to bring said screw member into position.

3. A wrench having a main member divided into three elements, all forming a single integral piece, and composed of a jaw end, a screw end, and an intermediate handle-tang member, which latter member is gradually reduced toward its central portion, substantially as and for the purpose set forth.

4. A wrench having a main member composed of a jaw end, a screw end, and an intermediate handle-tang member, said tang member having a T-formed section and having the web of said T-section gradually reduced toward its central portion to a point intermediate between its ends, substantially as and for the purpose set forth.

5. The combination with a wrench com-

posed of a main member having a fixed end jaw, and a sliding jaw on said main member, of a tang portion formed integral on the end of said main member, and a screw formed integral on the end of said tang portion, which tang portion, after placing said jaw in position on said main member, is bent around upon itself till the screw end thereof loosely enters the screw-way of the sliding jaw and till said screw is parallel with the line of the face of said main member.

6. The combination with a wrench composed of a main member having a rectangular portion, a fixed jaw formed integral thereon and a screw-head-receiving recess formed in the face of the rectangular portion of said main member, and a sliding jaw loosely mounted on said main member, of a tang portion formed integral on the end of said main member, a screw-head and a screw formed integral on the end of said tang portion, said screw-head between said tang portion and said screw; and said tang portion, after placing said loose jaw in position on said main member, is bent around upon itself till the end of the screw thereof enters the screw-way of said sliding jaw and the screw-nut, and is still further bent till the head of said screw enters and is lodged in the screw-head-receiving notch and till the said screw is parallel with the face of the main member, and means for securing said screw in proper position, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANKLIN P. BATES.

Witnesses:

THOMPSON R. BELL,
WM. O. MOREK.