

J. REIF, JR.  
WRENCH.

APPLICATION FILED JUNE 8, 1908.

899,805.

Patented Sept. 29, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

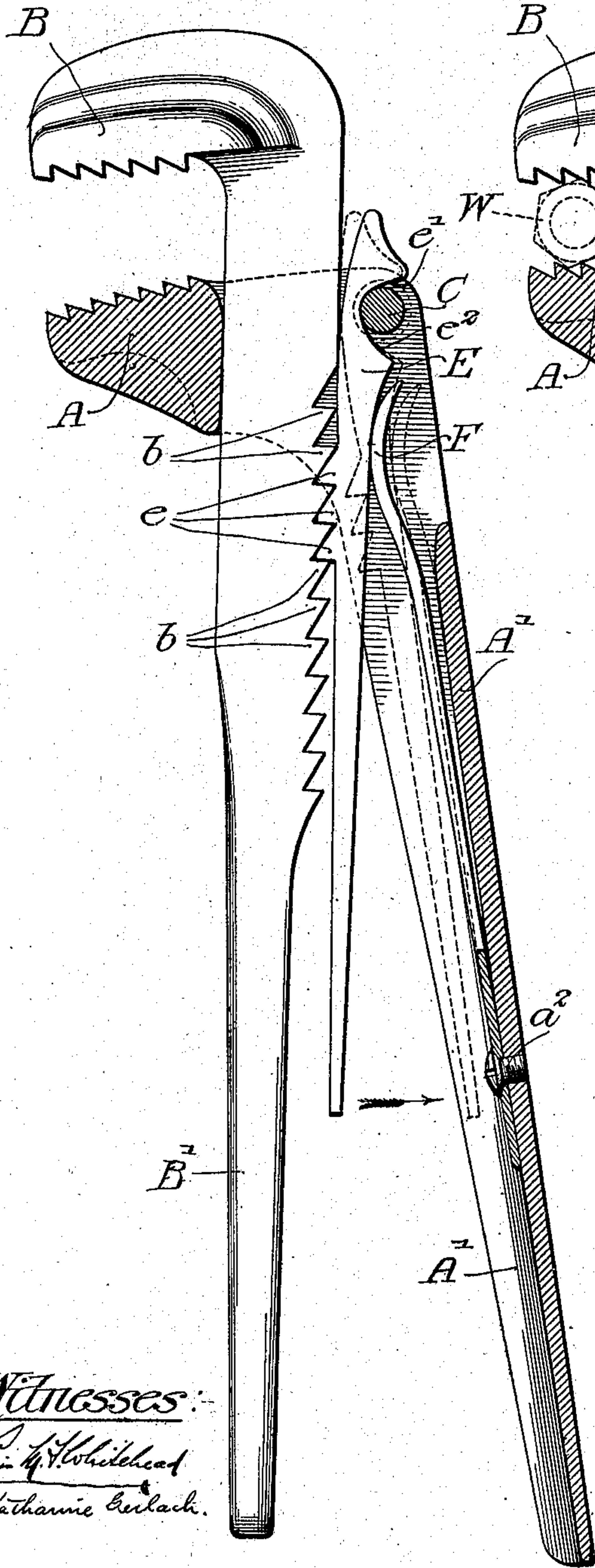


Fig. 2.

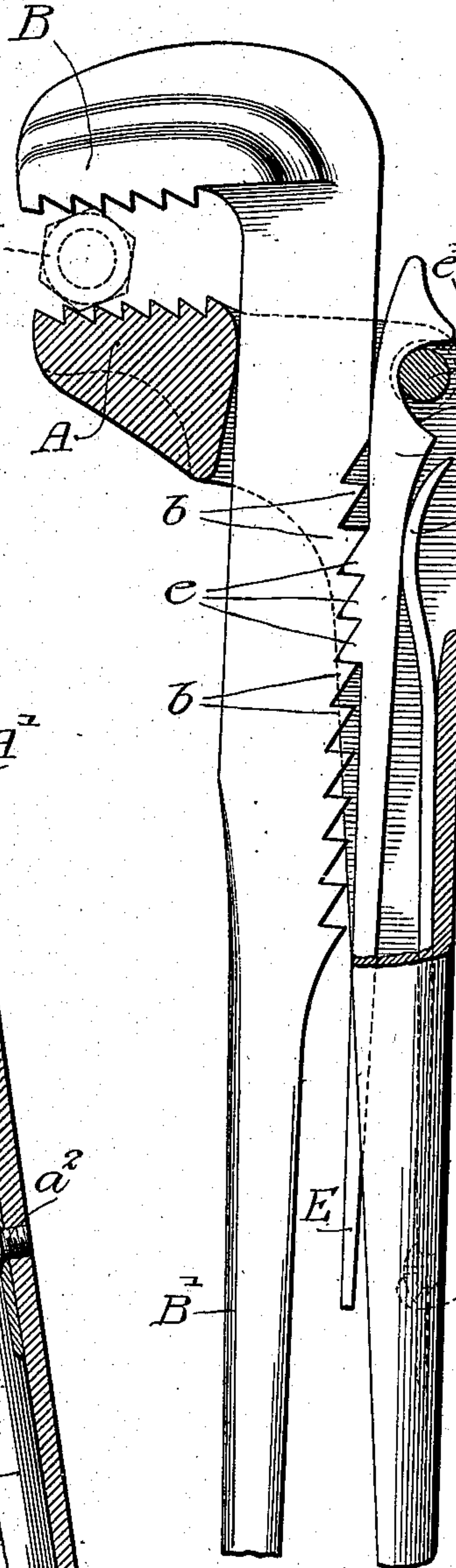
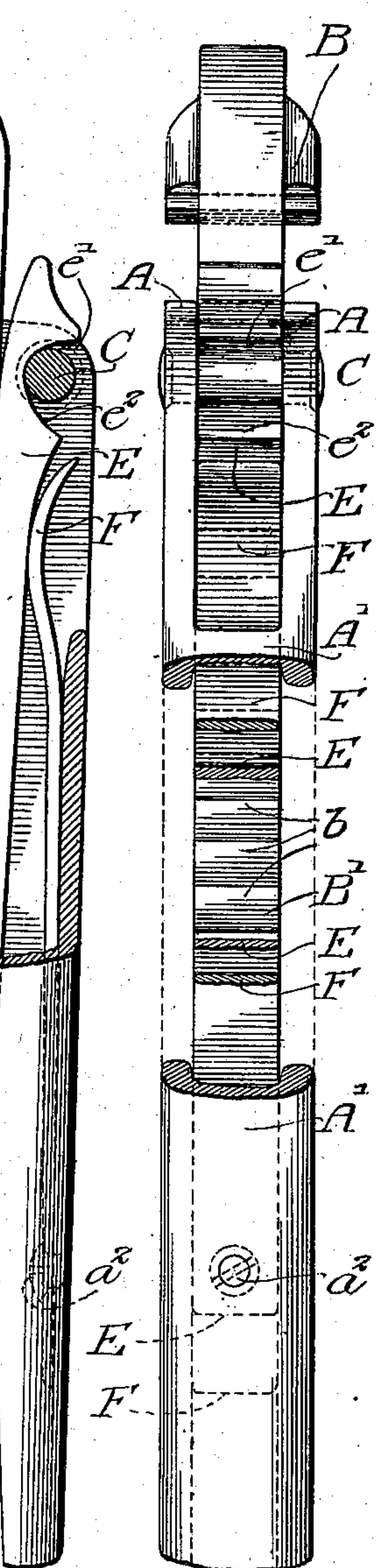


Fig. 3.



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Inventor:

*Joseph Reif Jr.*  
*By: Perin & Fisher*  
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WRENCH.

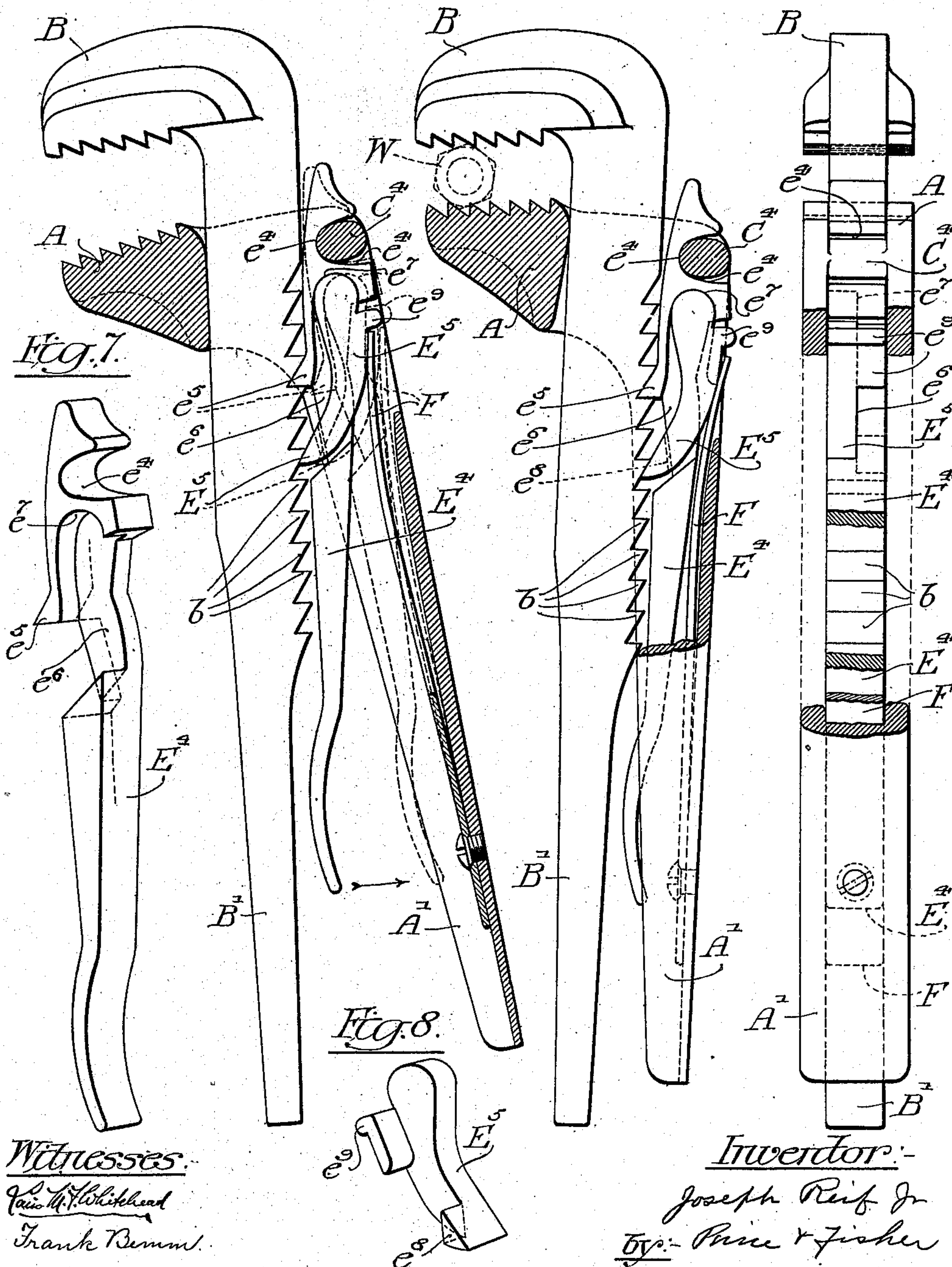
899,805.

2 SHEETS—SHEET 2.

Fig. 4.

*Fig. 5.*

*Fig. 6.*



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# UNITED STATES PATENT OFFICE.

JOSEPH REIF, JR., OF HEBRON, INDIANA.

## WRENCH.

No. 899,805.

Specification of Letters Patent.

Patented Sept. 29, 1908.

Application filed June 8, 1908. Serial No. 437,267.

*To all whom it may concern:*

Be it known that I, JOSEPH REIF, Jr., a citizen of the United States, and a resident of Hebron, in the county of Porter and State of Indiana, have invented certain new and useful Improvements in Wrenches, of which I do declare the following to be a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

An example of the type of wrench to which my invention more particularly relates, is illustrated in Letters Patent No. 883,237, granted to me March 31, 1908.

The invention consists in the various features of novelty hereinafter described, illustrated in the accompanying drawing and particularly pointed out in the claims at the end of this specification.

Figure 1 is a view partly in side elevation and partly in vertical section of a wrench illustrating my invention, the jaws being shown in open position. Fig. 2 is a view similar to Fig. 1, but showing the jaws of the wrench in closed position. Fig. 3 is a view in rear elevation, parts being broken away for the purpose of better illustration. Figs. 4, 5, and 6 are views corresponding to Figs. 1, 2, and 3, but showing a modified form of the invention. Fig. 7 is a detail perspective view of the latch bar. Fig. 8 is a detail perspective view of the pivoted tooth of the latch bar.

A designates what may be termed the stationary jaw that is carried at one end of the handle A', and B designates what for convenience may be termed the movable jaw that is carried at the corresponding end of the handle B'. The stationary jaw A is preferably formed integral with its handle A' and, similarly, the movable jaw B is preferably formed integral with its handle B'. That portion of the handle A' adjacent the jaw A is formed with a chamber through which passes the handle B' of the jaw B and between the walls of the chambered portion of the handle A' extends a pivot pin C. Intermediate between the pivot pin C and the rear edge of the jaw handle B' is placed what for convenience I designate a latch bar E, the front face of this latch bar being provided with teeth *e* adapted to engage corresponding teeth *b* formed on the rear edge of the handle B'. The back portion of the latch bar E is provided with an open, curved seat or socket *e'* to receive the pivot

pin C and upon the back of the latch bar E bears the free end of a spring F, the opposite end of this spring being secured to the handle A', as more particularly shown at *a*<sup>2</sup> in Fig. 1 of the drawing. The spring F serves to hold the teeth *e* of the latch bar E in normal engagement with the teeth *b* of the handle bar B' and also serves to force the jaws A and B normally apart, so as to readily receive the pipe, nut or like article to which the wrench is to be applied. When it is desired to vary the distance apart of the jaws A and B the free or handle end of the latch bar E will be moved from the position shown by full lines to the position shown by dotted lines in Fig. 1, when the teeth *e* being out of engagement with the teeth *b* the handle B' can be moved to any desired position.

When the wrench is to be used, its jaws A and B will be set over the article to be turned, as, for example, the hexagonal nut W shown in Fig. 2, and the handles will be drawn together until the jaws firmly close upon the nut or other article. As the jaws A and B are forced against the nut or like article W there is, of course, a tendency to spread the jaws apart, and as the jaw B recedes from the jaw A it carries with it the latch bar E. As the latch bar E is thus moved outward, the inclined portion *e*<sup>2</sup> of its seat or socket *e'* is drawn beneath the pivot pin C and tends to more effectively draw the jaw B towards the jaw A, as the handles A' and B' are closed.

My improved wrench is exceedingly simple in construction and the parts can be readily cast and quickly assembled by unskilled labor. When the several parts are to be assembled, the latch bar E will be first set within the chambered portion of the handle A', with the seats *e'* opposite the pivot pin C; and the handle B' will then be passed through the chambered portion of the handle A' between the latch bar E and the stationary jaw A.

In the preferred form of my invention, which is that illustrated in Figs. 4—8 of the drawings, the stationary and movable jaws are substantially the same in construction as in the form of the invention hereinbefore described. In this preferred form of my invention the latch bar E<sup>4</sup> has a socket *e*<sup>4</sup> at its upper end to receive the pivot pin C<sup>4</sup> which in this form of the invention is preferably formed integral with the upper portion of



the handle A' of the jaw A and the latch bar E<sup>4</sup> is shown as provided with a movable tooth E<sup>5</sup> (preferably pivoted to the latch bar) and with a stationary tooth e<sup>5</sup> formed integral with the latch bar, both of the teeth E<sup>5</sup> and e<sup>5</sup> being adapted to engage with the teeth b at the back of the handle B' of the jaw B. The latch bar E<sup>4</sup> is shown as formed with a cut-away space e<sup>6</sup> through which the free end of the tooth E<sup>5</sup> will extend and with a socket e<sup>7</sup> in which the rounded upper end of the pivoted tooth E<sup>5</sup> will center. As shown, the tooth E<sup>5</sup> is provided with a stud or offset e<sup>8</sup> near its lower end and with an offset e<sup>9</sup> adjacent its upper end to limit the pivotal movement of the stud. The pivoted tooth E<sup>5</sup> is so disposed with relation to the tooth e<sup>5</sup> that when one of these teeth (for example, e<sup>5</sup>) is in engagement with a tooth b of the handle B', the other tooth (for example, E<sup>5</sup>) will be about midway between the interdental spaces of the teeth. The advantage of this arrangement is, that the teeth b at the back of the handle B' may be formed very coarse or at a considerable distance apart, and yet permit of a comparatively close adjustment of the handle B'. This is advantageous for the reason that the teeth b can thus be much more conveniently cast than would be possible if the teeth were very close together. When it is desired to release the teeth e<sup>5</sup> and E<sup>5</sup> from the teeth b, the handle E<sup>4</sup> will be turned to the position shown by dotted lines in Fig. 4. The spring F, by bearing upon the back of the pivoted tooth E<sup>5</sup>, will insure that its tooth shall engage with one of the teeth b, even when the tooth e<sup>5</sup> is midway between the teeth b. For example, if the handle B' be drawn downward, the point of the tooth E<sup>5</sup> will snap into the interdental space immediately above it, at the time that the tooth e<sup>5</sup> is about midway of the back of one of the teeth b.

It is manifest that the precise details of the construction above set out may be varied without departure from the spirit of the invention, and that features of the invention may be employed without its adoption as an entirety.

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

1. A wrench of the character described, comprising a stationary jaw having a handle provided with a chamber adjacent said jaw, a movable jaw provided with a handle extending through said chamber, a pivot pin carried by said stationary jaw and a latch bar having an open seat or socket and interposed between said pivot pin and the handle of said movable jaw, said latch bar being provided with means for adjustably holding the handle of the movable jaw.

2. A wrench of the character described, comprising a stationary jaw having a han-

dle that is chambered adjacent said stationary jaw and provided with a pivot pin at the back of said chambered portion, a movable jaw provided with a handle extending through the chamber of said stationary jaw handle, a latch bar provided upon one side with means for engaging the movable jaw handle and provided upon its opposite side with a socket having an inclined portion to engage the pivot pin and a spring for normally holding said latch bar in engagement with the movable jaw handle.

3. A wrench of the character described, comprising a stationary jaw having a handle that is chambered adjacent said stationary jaw and is provided with a pivot pin at the back of said chambered portion, a movable jaw provided with a handle passing through said chamber of the stationary jaw handle and having teeth upon its rear edge, and a latch bar provided upon one side with teeth to engage the movable jaw handle and provided upon its opposite side with an open socket to receive the pivot pin on the stationary jaw handle, said latch bar having a raised, inclined portion at one side of said pivot pin to engage said pin as the jaws are closed.

4. A wrench of the character described comprising two jaws pivoted and adjustable with respect to each other, one of said jaws having an extension or handle provided with teeth, and a latch bar provided with a plurality of teeth to engage the teeth on said jaw extension, one of the teeth of the latch bar being yielding whereby the latch bar may be adjusted along said jaw extension or handle at points less than the distance between its teeth.

5. A wrench of the character described comprising two jaws pivoted and adjustable with respect to each other, one of said jaws having a handle or extension provided with teeth upon its rear edge, and a latch bar provided with a plurality of teeth to engage the teeth on the rear edge of said jaw extension, one of the teeth of said latch bar being pivoted with respect to the other whereby the latch bar may be adjusted along said jaw extension or handle at points less than the distance of its teeth.

6. A wrench of the character described comprising two jaws pivoted and adjustable with respect to each other, one of said jaws having an extension or handle provided at its rear edge with teeth and a pivoted latch bar provided with a plurality of teeth to engage the teeth on said jaw extension, one of the teeth of said latch bar being pivoted to said bar.

7. A wrench of the character described comprising two jaws pivoted and adjustable with respect to each other, one of said jaws having an extension or handle provided with teeth and a latch bar provided with a



plurality of teeth to engage the teeth on said jaw extension, said latch bar having a socket and one of the teeth of said latch bar being pivotally mounted within said socket, said  
5 teeth serving to adjustably hold said latch bar upon said jaw extension or handle.

8. A wrench of the character described comprising two jaws pivoted and adjustable with respect to each other, one of said jaws  
10 having a chambered part adjacent thereto and the other of said jaws being provided

with an extension or handle slidable through said chambered part, said extension or handle being provided at its rear edge with teeth, and a latch bar provided with a plu- 15  
rality of teeth to engage the teeth on said jaw extension, one of the teeth of the latch bar being yielding.

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Witnesses:

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