

L. R. BLACKMORE.
WRENCH.
APPLICATION FILED AUG. 12, 1908.

923,617.

Patented June 1, 1909.

2 SHEETS—SHEET 1.

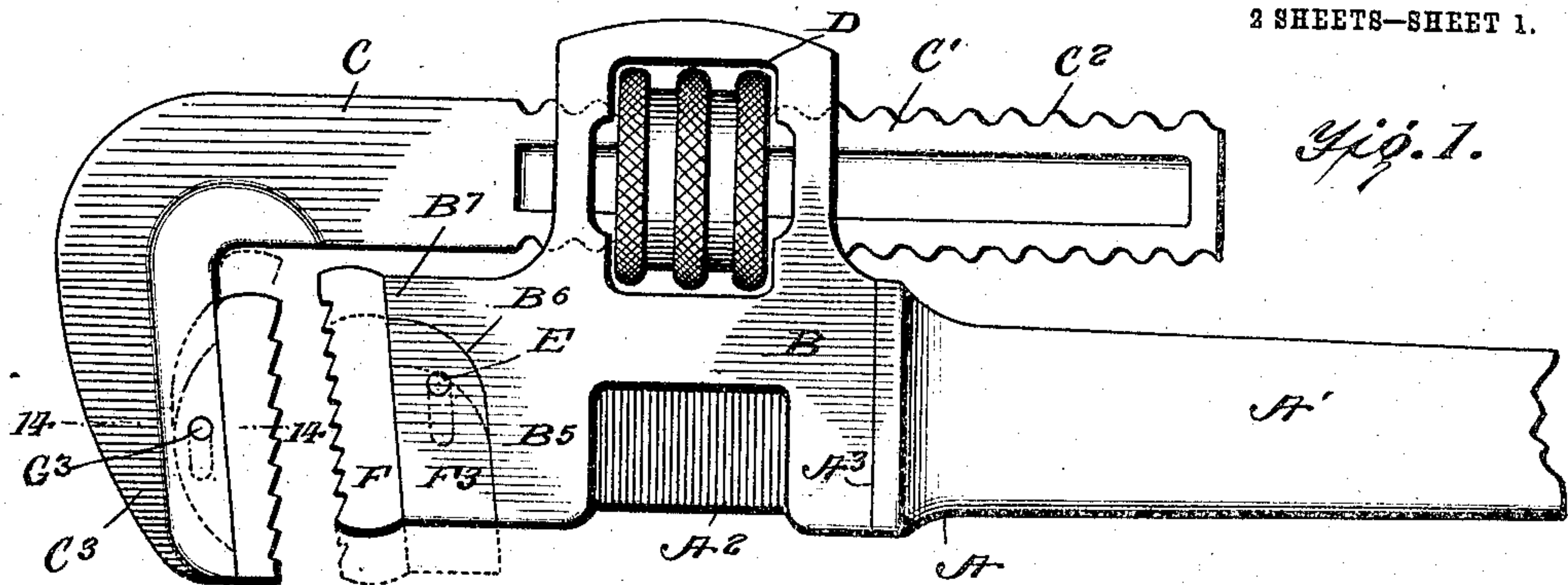


Fig. 2.

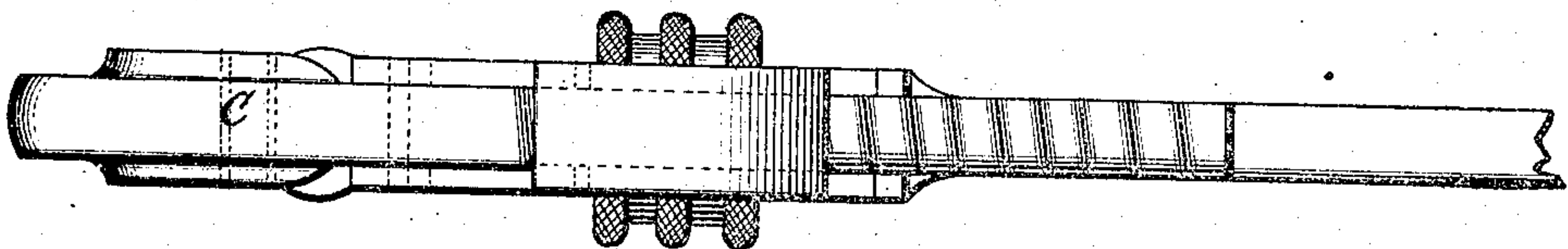


Fig. 3.

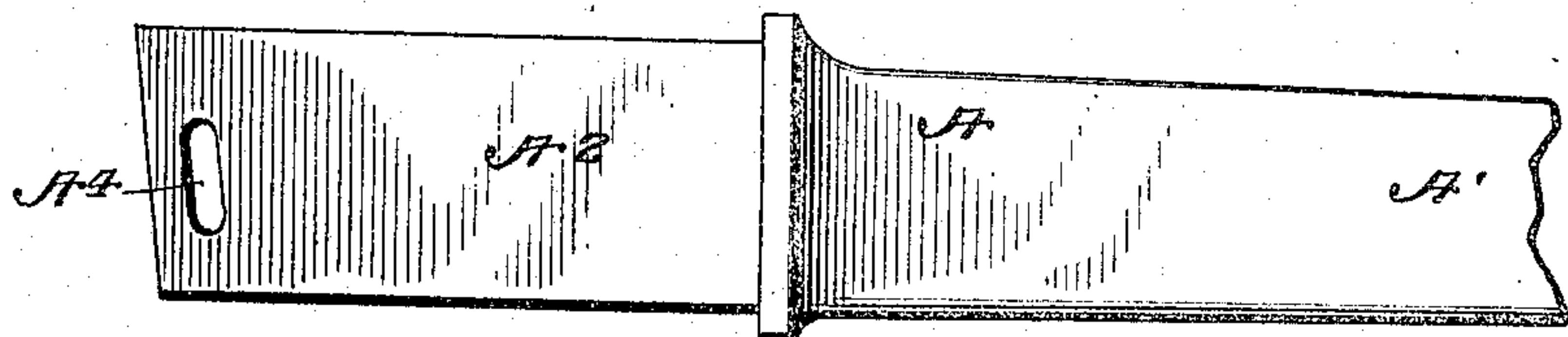


Fig. 4.

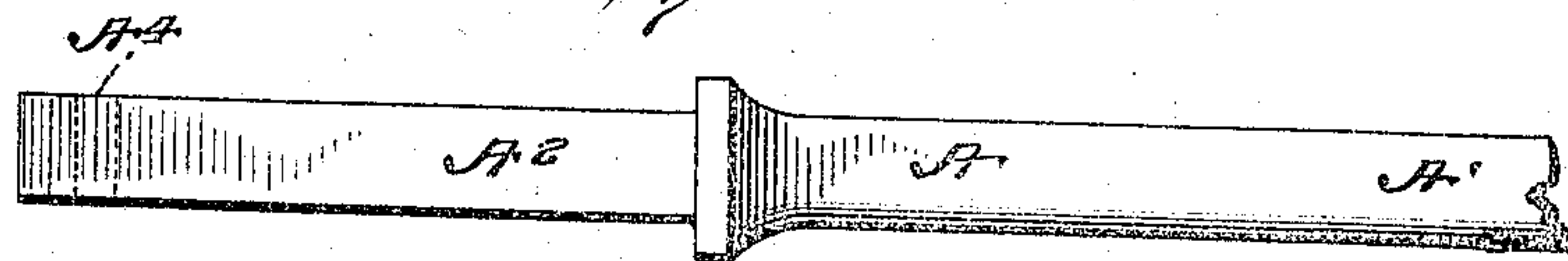


Fig. 5.



Fig. 6.



WITNESSES

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2 SHEETS—SHEET 2.

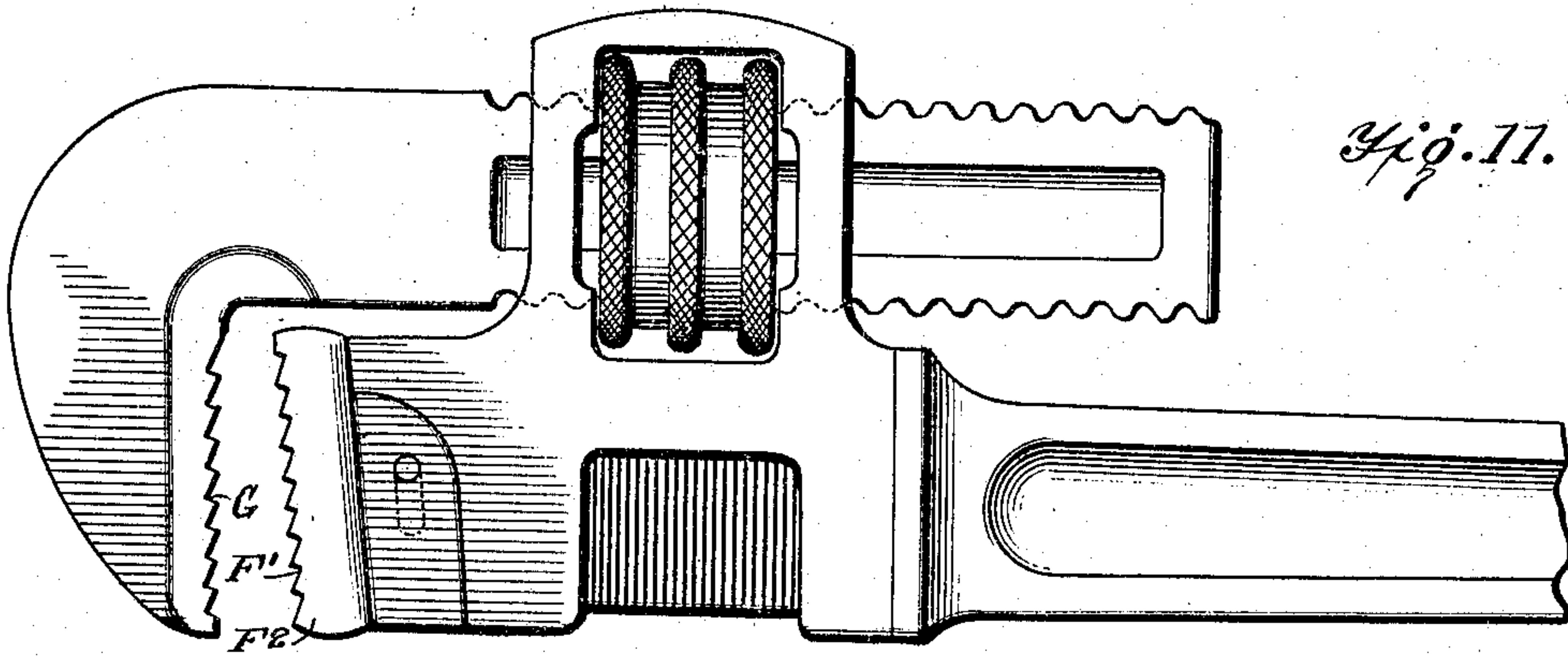


Fig. 11.

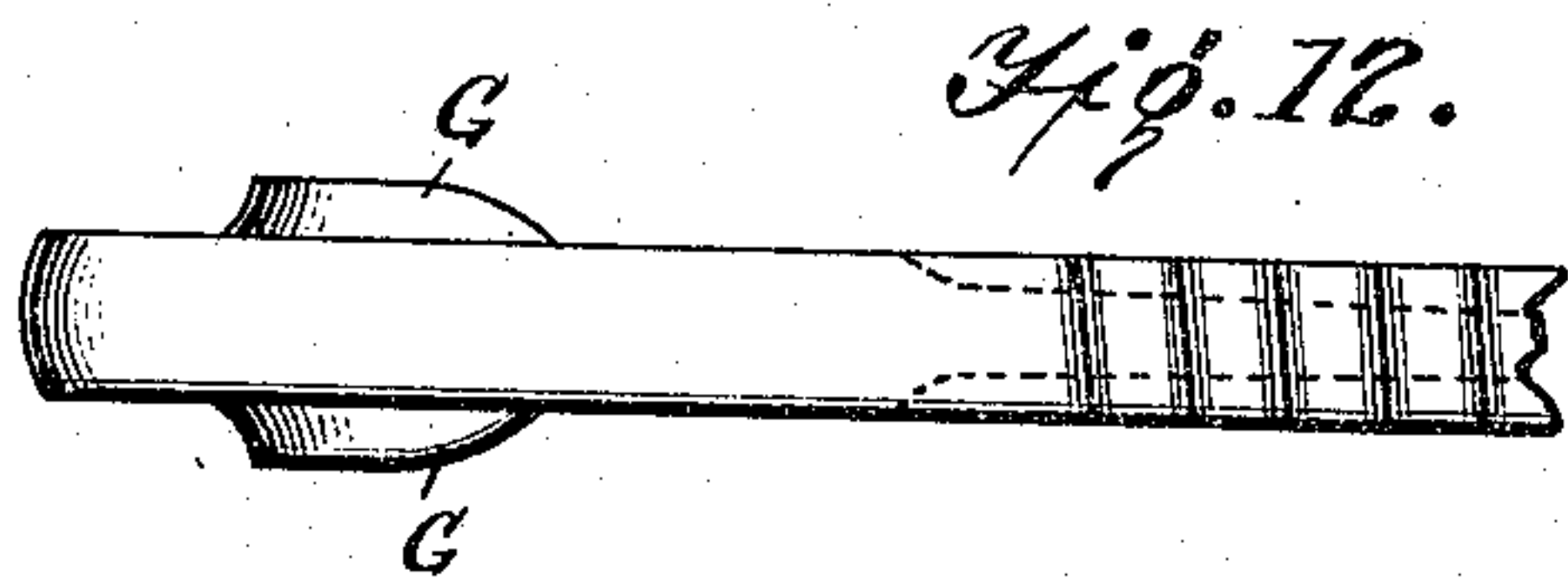


Fig. 12.

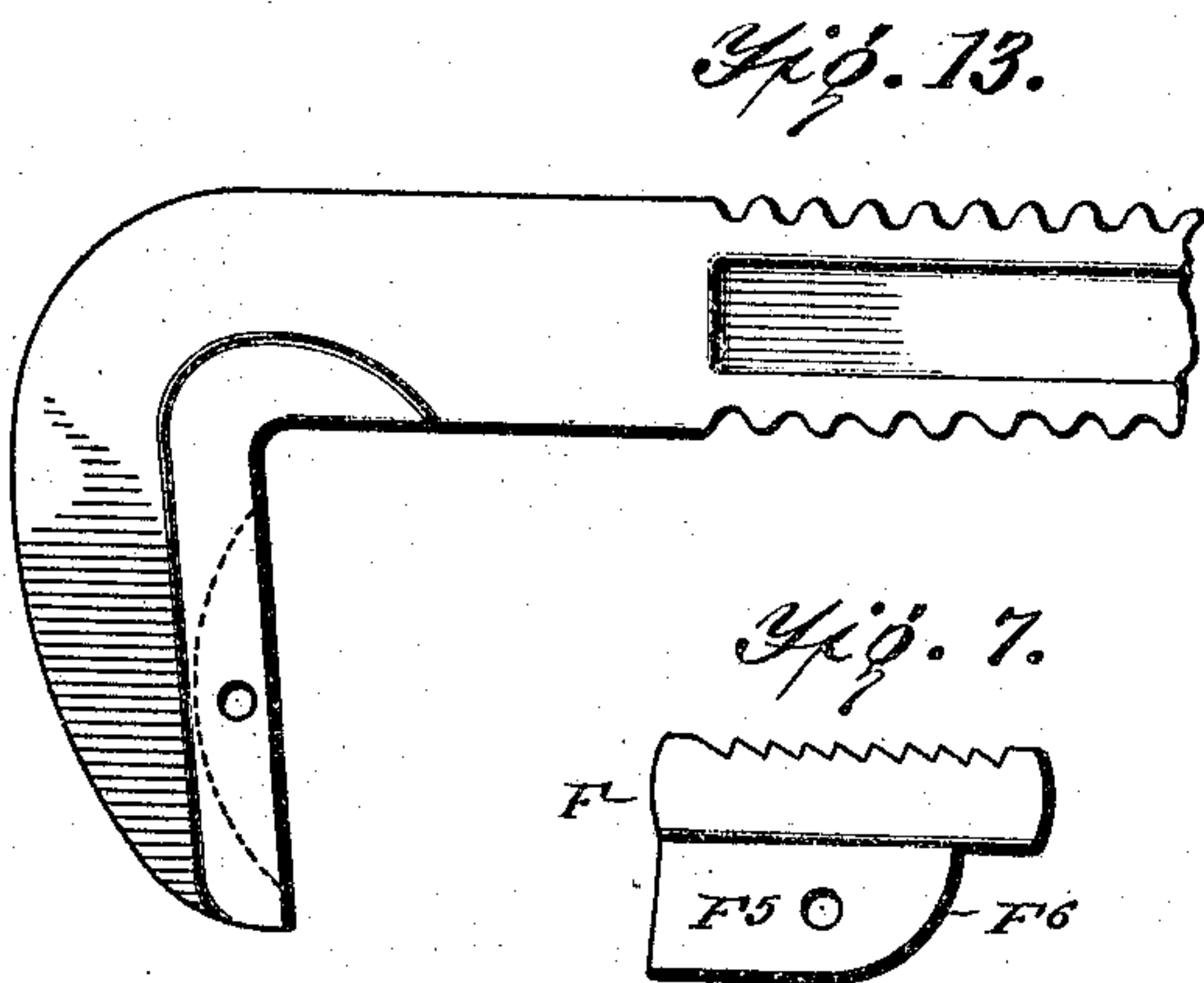


Fig. 13.

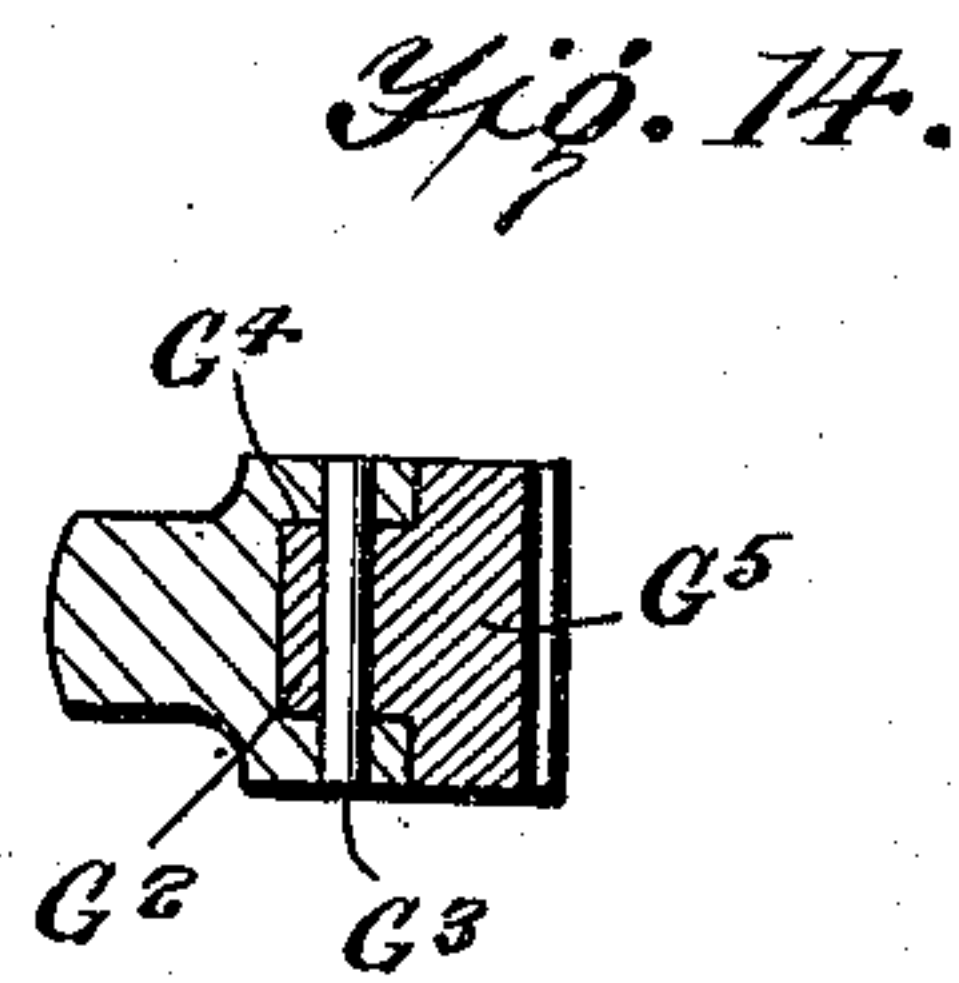


Fig. 14.

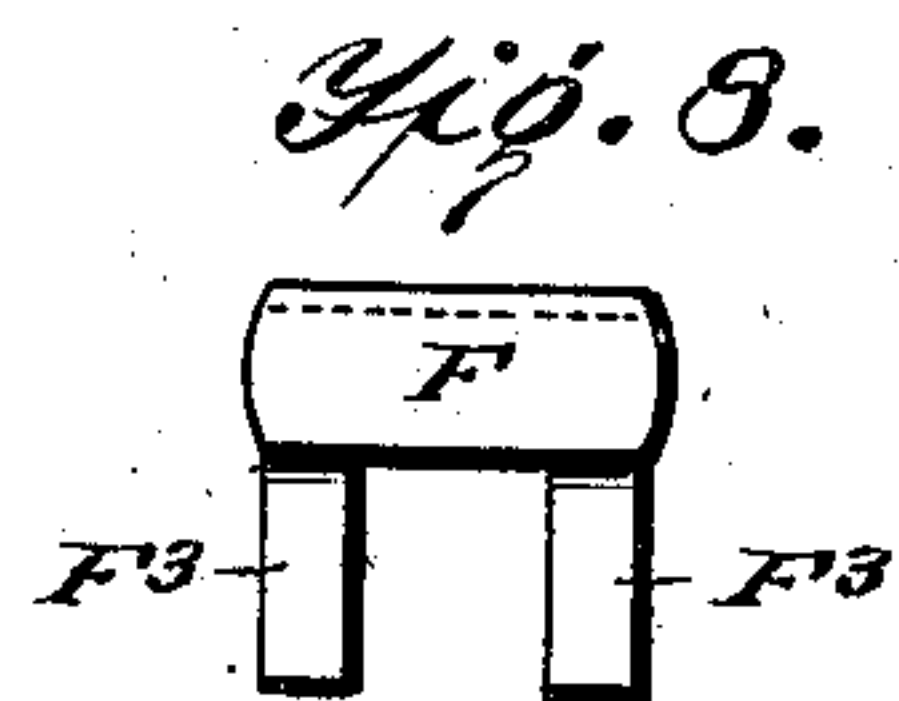


Fig. 8.

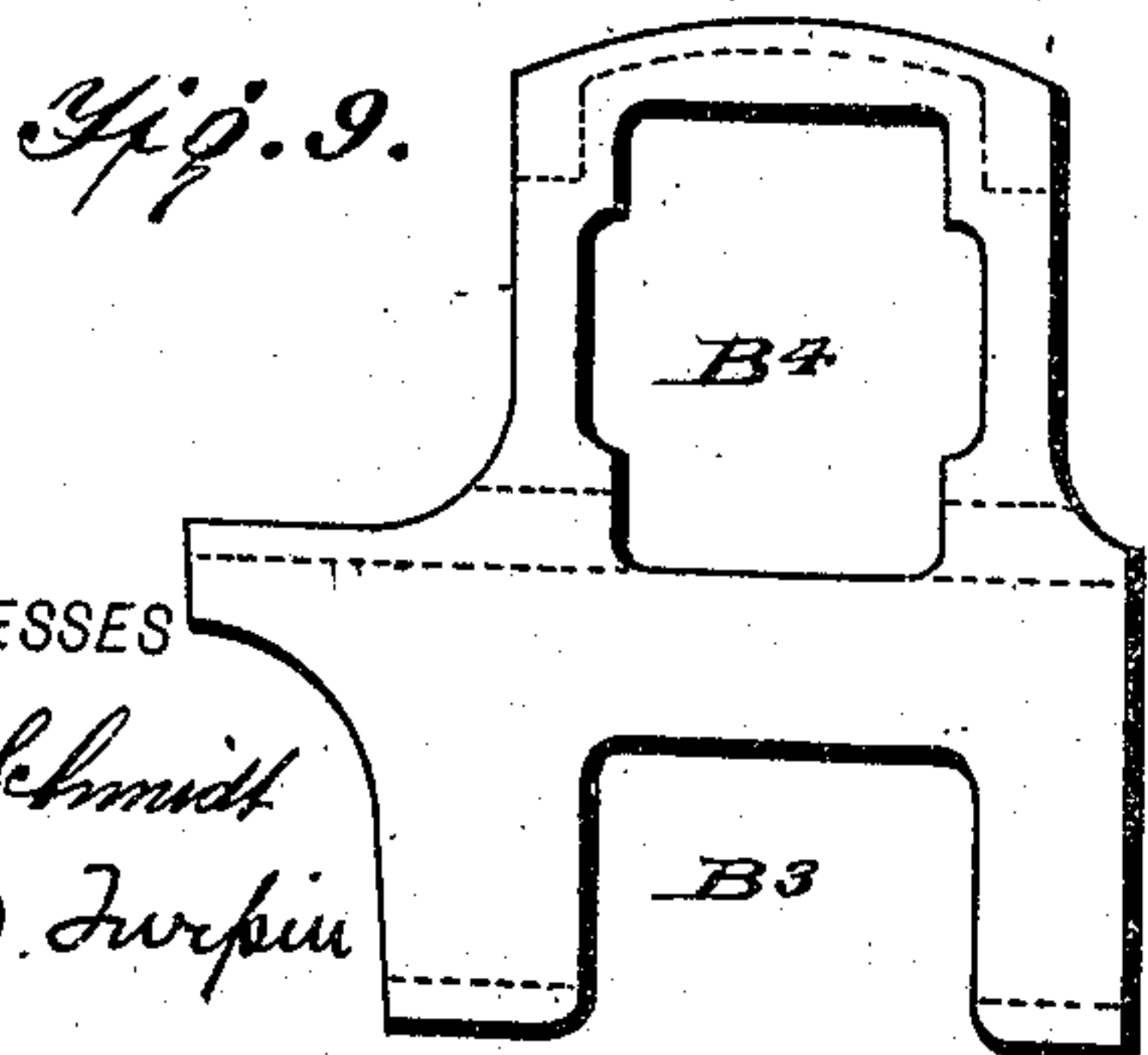


Fig. 9.

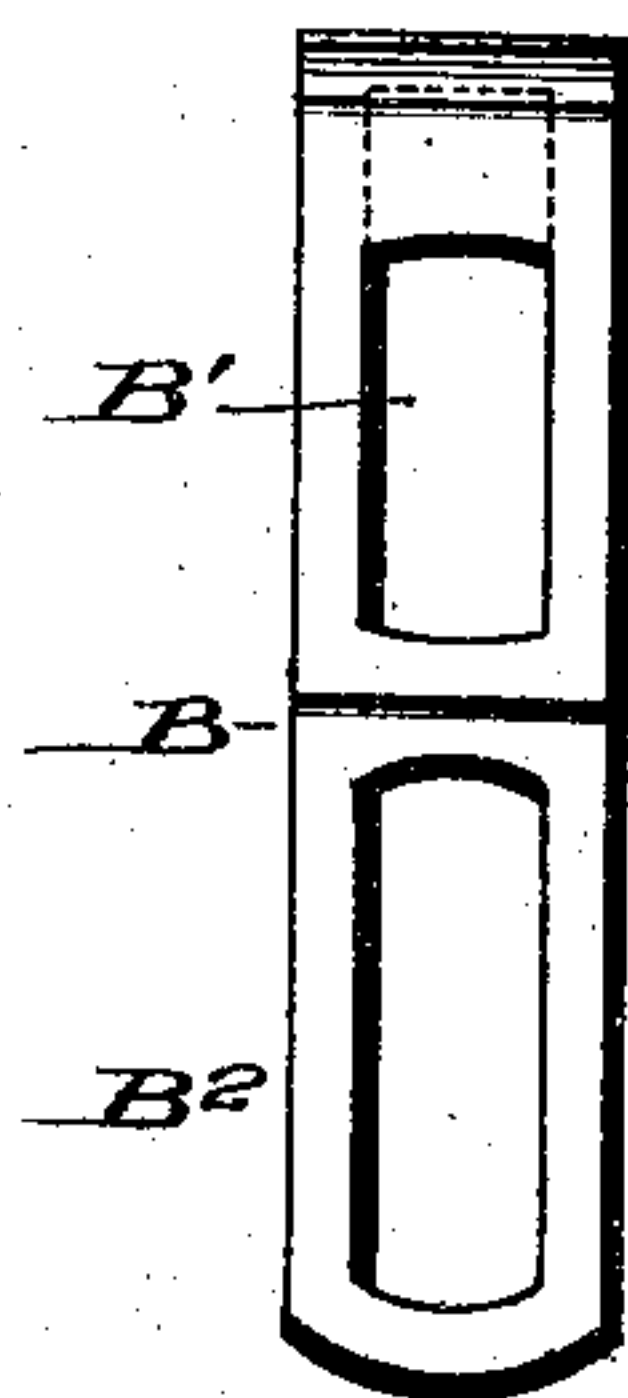


Fig. 10.

WITNESSES

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UNITED STATES PATENT OFFICE.

LAWRENCE R. BLACKMORE, OF ARLINGTON, NEW JERSEY.

WRENCH.

No. 923,617.

Specification of Letters Patent.

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Application filed August 12, 1908. Serial No. 448,254.

To all whom it may concern:

Be it known that I, LAWRENCE R. BLACKMORE, a citizen of the United States, residing at Arlington, in the county of Hudson and State of New Jersey, have invented an Improvement in Wrenches, of which the following is a specification.

This invention is an improvement in wrenches, particularly in pipe wrenches, and consists in certain novel constructions and combination of parts as will be hereinafter described and claimed.

In the drawings Figure 1 is a side elevation, and Fig. 2 is a top plan view of a wrench embodying my invention, a portion of the handle being broken away in both figures. Figs. 3 and 4 are respectively side and edge views of the wrench bar, a portion of the handle being broken away. Fig. 5 is a side view, and Fig. 6 an end view of the rocking jaw. Fig. 7 is a side view, and Fig. 8 an end view of the sliding jaw. Fig. 9 is a side view, and Fig. 10 an end view of the wrench frame. Fig. 11 is a side view, partially broken away, of a wrench in which the jaw on the adjusting bar is fixed instead of rocking, as shown in Fig. 1. Fig. 12 is an edge view, and Fig. 13 a side view partly broken away of the adjusting bar shown in Fig. 11, and Fig. 14 is a detail cross section on about line 14—14 of Fig. 1.

The wrench as shown, comprises a wrench bar A having a handle portion A¹, and what for convenience of reference I term a head A² the latter projecting beyond a shoulder A³ which forms a stop for the wrench frame B when applied to the head A², as shown in Fig. 1.

The longitudinal frame B is shown in detail in Figs. 9 and 10, and has upper and lower longitudinal openings B¹ and B², the latter fitting over the head A² of the wrench bar A. The upper opening B¹ is above the wrench bar and receives the shank C¹ of the adjusting bar C.

The longitudinal opening B² is intersected by a transverse opening B³ to lighten the frame, and the opening B¹ is intersected by the transverse openings B⁴ which receive the serrated nut D which screws upon the threaded portion C² of the adjusting bar and operates to adjust the bar C to the size of the pipe or other object to be turned.

Near its extremity, the head A² is provided with a transverse slot A⁴ which preferably inclines slightly to a line at a right angle to

the direction of length of the wrench bar and receives a cross pin E which holds the sliding jaw F to the shank A² and yet permits the said jaw to slide between the positions shown in full and dotted lines in Fig. 1. This jaw F has a serrated face F¹, the body portion F² which abuts the end of the head A², the latter being inclined, as shown in Fig. 3, and the jaw F also has the rearwardly projecting lug F³ which lap on opposite sides of the front end of the head A² as will be understood from Figs. 1, 2 and 8 of the drawings.

The front end of the frame B is conformed at its lower portion at B⁵ to the inclined face F⁵ of the jaw F and at its upper portion is curved at B⁶ to conform to the curved face F⁶ on the lugs F³ of the jaw F.

It will be noticed that the upper portion of the front end of the frame B extends at B⁷ to the end of the head A² and operates as a reinforcement to the back bearing of the upper portion of the jaw F when the latter is in the full line position, shown in Figs. 1 and 11 of the drawings. By the described construction, it will be noticed that the frame B is held upon the head A² by the pin E which also operates to secure the sliding jaw movably to the head A² of the wrench bar so that the parts may be readily assembled and, they may be conveniently taken apart whenever desired simply by the application and removal of the pin E. This construction of the wrench bar with the removable frame carrying the adjusting bar is also important, in that it provides for making the different parts of any suitable metal and for restoring any parts when worn, without necessitating the replacing of all the parts of the wrench.

The adjusting bar has a jaw portion C³ depending in front of the jaw F and provided with a serrated jaw face. This serrated jaw face may be a fixed part G, as shown in Figs. 11 and 12, or the serrated jaw G⁵ may be supported to slide in connection with the jaw portion C³ of the adjusting bar as shown in Figs. 1 and 14. In this construction, the jaw G⁵ whose serrated face opposes the serrated face of the jaw F is provided on its inner side with a rib G² which rocks in a recess G⁴ in the jaw portion of the adjusting bar C and is held thereto by a cross pin G³, as will be understood from Figs. 1 and 14 of the drawing.

By the described construction, the face of the sliding jaw which is arranged at about an angle of 85° to the wrench bar and by the construction shown in Fig. 1 in which two

sliding jaws are opposed to each other and in which the jaw G³ is capable of a sliding action, I provide for releasing the wrench from the pipe immediately whenever desired and avoid the locking of the wrench on the pipe as commonly experienced with other wrenches.

It will be noticed that the wrench frame is fitted on the end of the wrench bar, and is arranged at its upper end below the upper or head end of the bar, the latter thus having an extension beyond the wrench frame. The jaw is carried and movable on such extension of the bar, and has means to bear on both the frame and the bar. As shown, the jaw is provided with side plates which lap along the opposite sides of the extension of the wrench bar so they may bear at their lower edges against the upper edge of the wrench frame, the jaw sliding transversely across the head end of the wrench bar, as shown and before described.

What I claim is:—

1. A wrench comprising a wrench bar having a handle portion, a head at one end thereof and a shoulder at the base of the head and having the extremity of said head inclined and provided adjacent the said extremity with a correspondingly inclined slot, a wrench frame fitting over the head and abutting at one end against the shoulder at the base thereof, and having its other end recessed at its lower portion to a point in rear of the slot in the wrench head, and the upper portion of said end extending to the extremity of the wrench head whereby to reinforce the jaw bearing at such point, the wrench frame having a portion projecting above the wrench bar and provided with a longitudinal opening for the reception of an adjusting bar and with transverse openings for an adjusting nut, a sliding jaw having a body portion abutting the end of the wrench head, and side lugs lapping alongside said head and fitting within the recessed end of the wrench frame, a cross pin securing said jaw slidably to the wrench head, an adjusting bar and its nut held in the wrench frame, said bar being provided with a jaw portion, and a sliding jaw carried by the jaw portion, substantially as set forth.

2. The combination in a wrench, with a wrench bar having a head and a shoulder at the base thereof and having its extremity inclined and provided adjacent thereto with a correspondingly inclined slot, a wrench frame fitting over the head and abutting at one end against the shoulder at the base

thereof and having its other end recessed to a point in rear of the slot, and a jaw abutting the inclined end of the wrench head and having the side lugs fitting in the recesses afforded by the recessing of the end of the wrench frame, all substantially as set forth.

3. A wrench comprising a wrench bar having a head, a wrench frame fitting over the wrench bar, a jaw and its fastening means applied to the head and securing the frame thereon, an adjusting bar having a cooperating jaw, and means securing said bar adjustably to the frame, substantially as set forth.

4. A wrench comprising a wrench bar, a wrench frame slipped over the bar, a jaw and a pin holding the jaw to the bar and fastening the frame to the bar, substantially as set forth.

5. A wrench comprising a wrench bar having a stop shoulder and a head beyond the same, a wrench frame slipped over the head of the wrench bar and against the shoulder, a jaw, and a pin securing the said jaw to the end of the bar head and fastening the frame to the said head, substantially as set forth.

6. The improvement in wrenches herein described comprising a wrench bar, a wrench frame slipped over the end of the wrench bar and arranged at its upper end below the upper or head end of the bar, and a jaw carried by the portion of the wrench bar extending beyond the wrench frame, and slidable transversely along such extension of the bar, and having means to bear on both the frame and bar, substantially as set forth.

7. A wrench bar, a wrench frame fitting thereon and having its upper edge arranged below the upper or head end of the wrench bar, the latter having an extension beyond the wrench frame, and a jaw having side plates lapping along the opposite sides of such extension of the wrench bar, whereby they may bear against the wrench frame, and means securing the jaw slidably to the wrench bar, substantially as set forth.

8. The improvement in wrenches herein described comprising a wrench bar, a wrench frame fitted on the wrench bar and arranged at its upper end below the upper or head end of the bar, and a jaw carried by the portion of the wrench bar extending beyond the wrench frame, and movable thereon and having means to bear on both the bar and frame.

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Witnesses:

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M. N. McMILLIN.