J. BOULIEU.

WRENCH.

APPLICATION FILED SEPT. 30, 1909.

972,052. Patented Oct. 4, 1910.

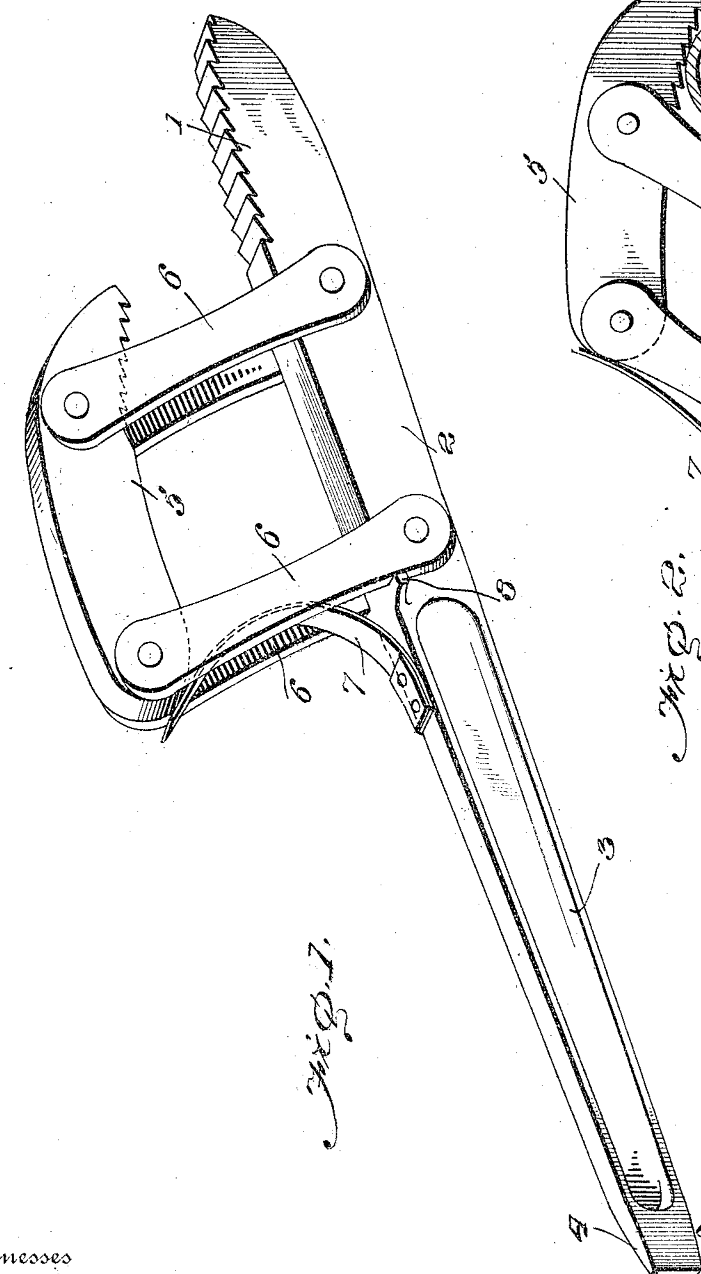

Fig. 1.

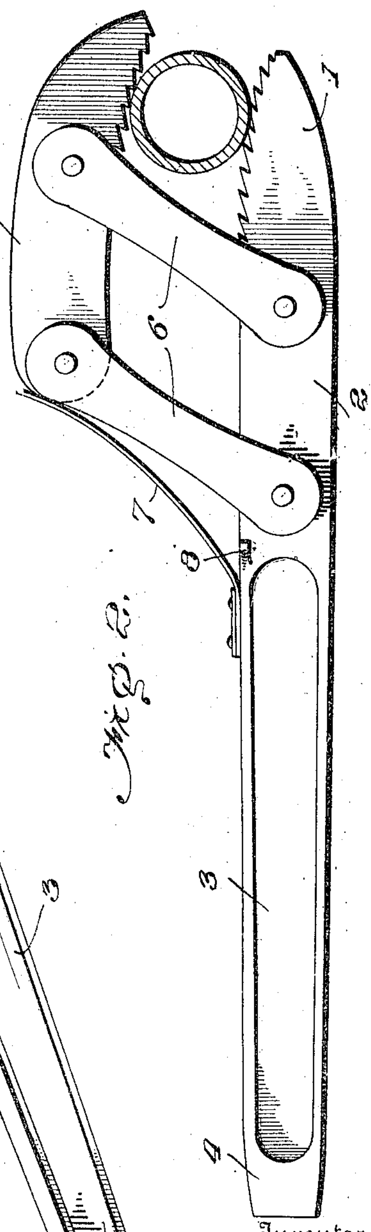

Fig. 2.

Witnesses

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JOHN BOULIEU, OF SAULT STE. MARIE, MICHIGAN, ASSIGNOR OF ONE-HALF TO JAMES R. RYAN, OF SAULT STE. MARIE, MICHIGAN.

WRENCH.

972,052. Specification of Letters Patent. Patented Oct. 4, 1910.

Application filed September 30, 1909. Serial No. 520,249.

To all whom it may concern:

Be it known that I, JOHN BOULIEU, citizen of the United States, residing at Sault Ste. Marie, in the county of Chippewa and State of Michigan, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention comprehends certain new and useful improvements in tools, and the invention has for its object a simple, durable and efficient construction of wrench which will adapt itself in a ready and expeditious manner to a wide range of adjustments without the necessity of any manual adjustment of the parts, the same being so arranged that it will quickly and tightly grip the work, no matter what the character or size of the same may be, within the limits of the tool.

With this and other objects in view as will more fully appear as the description proceeds, the invention consists in certain constructions, arrangements and combinations of the parts that I shall hereinafter fully describe and claim.

For a full understanding of the invention, reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a perspective view of a wrench constructed in accordance with my invention; and, Fig. 2 is a side elevation thereof.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

Referring to the drawing, the numeral 1 designates the relatively stationary jaw of my improved wrench, the same being formed preferably integral with a shank 2 having flat and parallel opposite sides, the said shank terminating in a handle portion 3, the extremity of which is preferably so shaped that it may form a screw driver as indicated at 4. 5 designates the relatively movable jaw. This jaw is connected to the shank 1 by means of two pairs of links 6 which are pivotally connected at their ends to the movable jaw and shank respectively and at opposite sides thereof as clearly illustrated in the drawing. It is to be particularly noted that the toothed opposing edges or work-engaging faces of the jaws 1 and 5 are correspondingly curved, the toothed edge of the stationary jaw being convex, while the toothed edge of the jaw 5 is concave, said last named jaw thereby having a somewhat hooked formation. By this exact character of the jaws and construction and arrangement of the parts, the toothed edges of the respective jaws will maintain a substantially parallel relation to each other in the adjustments of the wrench, so as to securely engage a nut or the like, no matter what the size of the same may be within the limits of the adjustability of the tool.

In the present embodiment of the invention, a plate spring 7 is secured at one end to the rear or upper edge of the shank 2, the free end of said spring bearing upon the rear end of the relatively movable jaw 5 so as to press the same into engagement with the work. It is to be understood that this spring is not for the purpose of holding the jaws in a position to tightly grip the work after they have engaged the same, as the formation of the connection between the jaws will perform this operation without any spring. The spring is mainly for the purpose of moving the jaw 5 into engagement with the work, and may be omitted if desired.

In order to hold the movable jaw 5 from swinging upwardly beyond the limit of its opening movement, the shank 2 is formed with oppositely extending lugs or nibs 8 adapted to abut against the rear edges of the rearmost pair of links 6. These stops or lugs 8 guard the operator from injury to his fingers from the movable jaw dropping back beyond a predetermined position, and also keep the movable jaw at a proper stopping point.

Among the advantages which may be mentioned for my improved wrench are the following: The wrench needs no adjustment but immediately adjusts itself to grip any size or shape of pipe or nut, answering all the purposes of a pipe wrench or monkey wrench without the necessity of any manual adjustment before applying the jaws to the work. The spring 7 insures the permanent holding of the movable jaw when using the wrench in close quarters, where it will obviously answer the purpose of a ratchet wrench.

From the foregoing description in connection with the accompanying drawing, the operation of my improved wrench will be

apparent. In the practical use of the device, it is only necessary to use one hand. By simply setting the movable jaw up against the nut or pipe and drawing the handle toward the operator, the wrench will take hold and the harder one pulls, the tighter it will grip.

Having thus described the invention, what is claimed as new is:

1. The herein described wrench, comprising a shank provided with a relatively stationary jaw and a handle, a relatively movable jaw, and two pairs of links pivotally connected at their ends to the opposite sides of the movable jaw and shank respectively, the shank being provided on opposite sides with laterally projecting stop lugs designed to engage the rear edges of one pair of links.

2. The herein described wrench comprising a shank provided with a relatively stationary jaw and a handle, a movable jaw, links pivotally connecting the movable jaw to the shank, and a plate spring connected at one end to the rear edge of the shank, the free end of the spring bearing against the rear end of the movable jaw.

3. The herein described wrench, comprising a shank provided with a relatively stationary jaw and a handle, and a relatively movable jaw, two pairs of links pivotally connected at their ends to the opposite sides of the movable jaw and shank respectively, the shank being provided on opposite sides with laterally projecting stop lugs adapted to engage the rear pair of links to limit the swinging movement of the movable jaw in one direction, and a plate spring connected at one end to the rear edge of the shank just in rear of and between said lugs, the free end of the spring bearing against the rear end of the movable jaw.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN BOULIEU. [L. S.]

Witnesses:
ALICE BOULIEU,
J. H. NEWHOUSE.