A. D. CHAPMAN.

ADJUSTABLE WRENCH.

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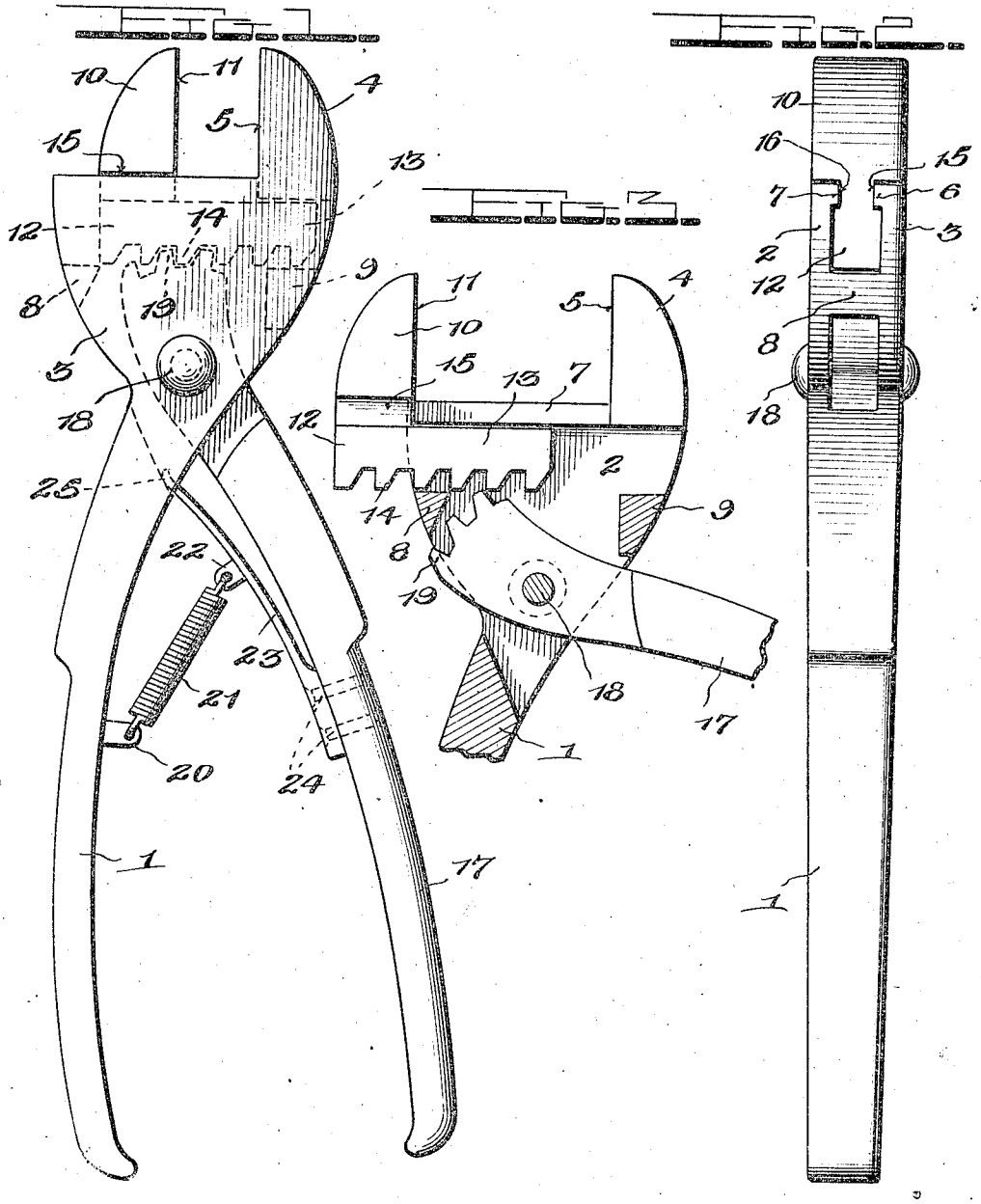
Patented Nov. 30, 1915




Witnesses

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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE WRENCH.

1,162,136. Specification of Letters Patent. Patented Nov. 30, 1915.

Application filed July 19, 1915. Serial No. 40,765.

*To all whom it may concern:*

Be it known that I, ARTHUR D. CHAPMAN, a citizen of the United States, residing at Celina, in the county of Mercer and State of Ohio, have invented certain new and useful Improvements in Adjustable Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to adjustable wrenches and pliers, and more particularly to those comprising a head having relatively movable jaws and a handle with provision for closing the jaws upon the article to which the device is to be applied by swinging the handle, in the direction in which the article is to be turned, and for opening the jaws by swinging the handle in the reverse direction.

Another object of this device is to provide means whereby by swinging the operating handle a predetermined distance, the same may be disengaged from the movable jaw, and the jaw may be adjusted with respect to said operating handle to secure various widths of adjustments.

A further object of the invention is to provide a device of this character which is simple and durable in construction, inexpensive to manufacture, and one which will be very efficient in operation.

With these and numerous other objects in view, my invention consists of the certain novel features of construction, combination and arrangement of parts which will be herein referred to and more particularly pointed out in the specification and claim.

In the accompanying drawings: Figure 1 is a front elevation of my improved device; Fig. 2 is a side elevation; and Fig. 3 is a central vertical section showing the jaws distended.

In describing my invention I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which the numeral 1 designates a handle of the ordinary plier type which has extending from one end a pair of oppositely spaced side plates which are triangular in shape and are designated by the numerals 2 and 3. These side plates 2 and 3 have projecting from one end of the extremities thereof an integral stationary jaw 4 which is of the usual type, having a work engaging face 5 as clearly shown in the drawings.

The side plates 2 and 3 of the handle 1 have at their outer extremities laterally inwardly projecting ribs 6 and 7 which extend transversely across the same for a purpose to be hereinafter more fully described. These side plates are held in spaced relation with each other by spacing lugs or supports 8 and 9 which are formed integrally with said side plates and are positioned a short distance below the ends of the extremities thereof.

This adjustable wrench and plier is provided with a movable jaw 10 which is substantially similar in structure to the stationary jaw 4 and has a coacting work engaging face 11 formed thereon. The lower portion of the movable jaw 4 which is designated by the numeral 12 projects laterally therefrom as shown at 13 and has formed on the lower edge of the said lower portion a series of ratchet teeth 14. These ratchet teeth 14 are sloped slightly at one side as clearly shown in Fig. 3 of the drawings so that they may securely and firmly coact with the part of this device that is adapted for engagement therewith.

Upon opposite sides of the movable jaw 10 are formed transversely extending notches 15 and 16 which are adapted for sliding engagement with the ribs 6 and 7 on the extremities of the side plates when this movable jaw is in position, whereby the said jaw is adapted to slide transversely between the side plates 2 and 3, and will be held securely therebetween by reason of the coaction with the notches, and ribs formed on said jaw and plates. This movable jaw is operated by means of an operating lever 17 which is of the usual plier type and corresponds in general outline of construction to the handle 1. This lever 17 is fulcrumed adjacent its upper end between the side plates 2 and 3 of the handle 1 as shown at 18. The outer extremity of the said lever has formed thereon a plurality of teeth 19 which are adapted for engagement with the teeth 14 on the lower portion of the movable jaw 10. This operating lever 17 is so positioned and fulcrumed with respect to the handle 1 between the said plates 2 and 3 that upon movement of the same, the teeth 19 thereon will coact with the teeth 14 on the lower end of the movable member and move the same backward and forward with

respect to the stationary jaw 4. This operating lever 17 may also be thrown out of engagement with the teeth 14 when moved to the position shown in Fig. 3 of the drawings.

On the inner side of the handle 1 of this device is formed a lug 20 which is adapted to securely hold one end of a coil spring 21 which is positioned between the said handle and the operating lever. The other end of the coil spring 21 is firmly held in a lug 22 projecting from a spring 23 which is securely riveted as shown at 24 to the inner face of the operating lever 17. By this spring actuating means it will be obvious that upon swinging the operating lever 17 outward, a constant tension will be maintained thereon to return the same to its normal position, a short distance from the handle 1. This normally spaced distance between the handle and the operating lever, is maintained by the end of the spring 23 engaging the handle 1 as shown by the numeral 25 in Fig. 1 of the drawings.

In the operation of this device, it is necessary when the parts are assembled as shown in Fig. 1 of the drawings merely to move the operating lever 17 with respect to the handle 1 whereby on account of the coaction between the end of said operating lever and the movable jaw of this device, the said movable jaw will be moved transversely across the top of the end plates of the handle 1, toward the stationary jaw on said end plates. This inward movement will be against the tension of the spring 23 on the operating lever 17, and upon release of the handle and said lever, the same will return to its normal position. It is obvious that the work engaging faces 5 and 11 of the jaws of this device would be easily engaged with different sized nuts, etc., to which this device is applicable for use.

Another important feature of this invention is that the operating lever 17 may be swung outwardly from the handle 1 to the position as shown in Fig. 3 of the drawings, whereby the teeth 19 on the end of the same will be withdrawn from engagement with the teeth on the movable jaw, whereby said jaw may be slidably adjusted between the extremities of the end plates 2 and 3, so that when the teeth on the end of the operating lever again coact therewith, an entirely different adjustment may be obtained, to widen or decrease the adjustability of the movable jaw with respect to the stationary one. When the operating lever 17 is in position to disengage its coacting end from the movable jaw, the coil spring 21 between the handle and said lever will be expanded and will exert a constant tension upon the said lever to return the same to its normal position.

From the foregoing description of the construction of my improved device, the manner of applying the same to use and the operation thereof will be readily understood, and it will be seen that I have provided a simple, inexpensive and efficient means for carrying out the objects of the invention.

I claim as my invention:

An adjustable jaw wrench comprising a handle having a pair of triangular-shaped side plates formed at one end, a stationary jaw projecting from one end of the extremity of said plates, laterally inwardly projecting ribs on said extremities, integral spacing supports between the side plates spaced a short distance below the ends of the extremities of the same, a movable jaw having a projecting lower portion adapted to slide transversely between the side plates, transversely extending notches on opposite sides of said jaw to engage the ribs on said side plates, teeth on the edge of the lower portion of said jaw, an operating lever fulcrumed adjacent one end between the side plates, a flat metal spring secured at one end on said lever and having its free end bearing against the handle, a coiled spring connected at one end to said flat spring and at the other to the said handle, and teeth on said fulcrumed end of the lever adapted for coaction with the teeth on the lower portion of the jaw to move said jaw upon operation of the lever.

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

ARTHUR D. CHAPMAN.

Witnesses:
CLARENCE D. RICE.
BESSIE M. COPELAND.