

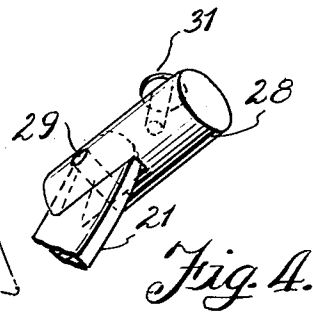
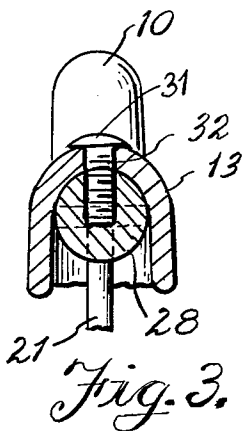
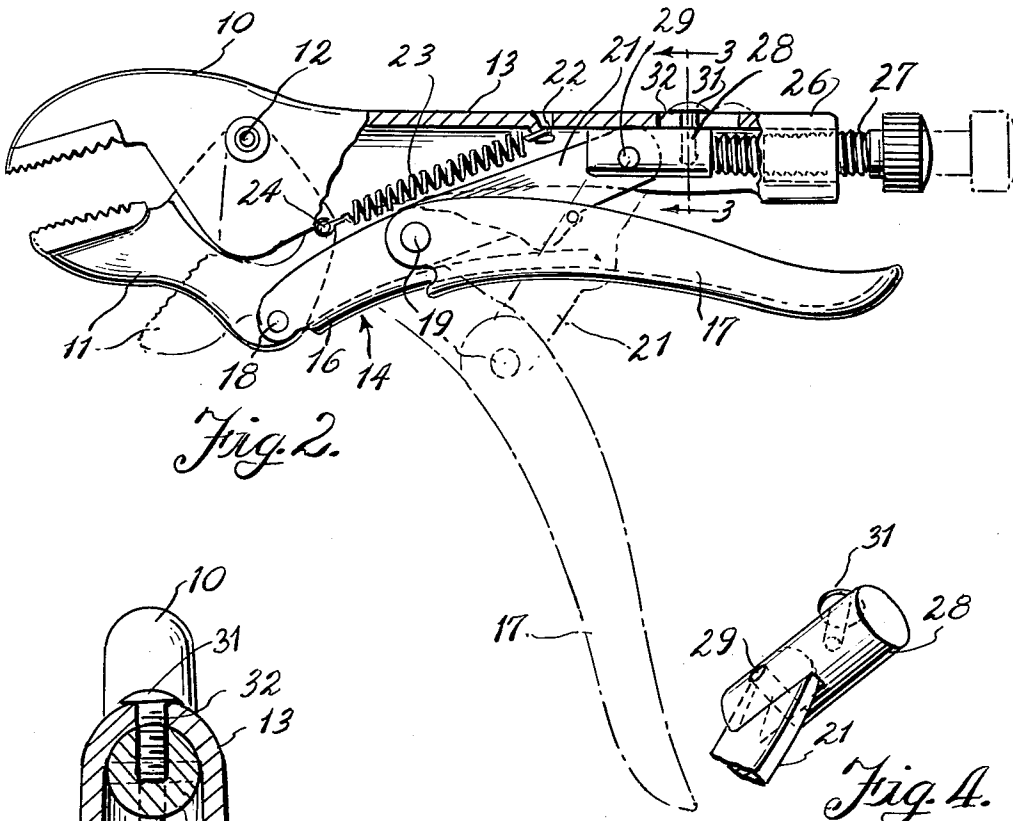
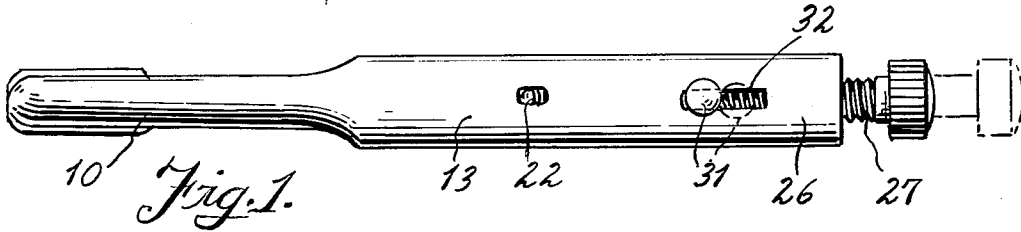
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JAW-ADJUSTING MEANS FOR TOGGLE-ACTUATED PIVOTED JAW WRENCH

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2,714,828

JAW-ADJUSTING MEANS FOR TOGGLE-ACTUATED PIVOTED JAW WRENCH

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3 Claims. (Cl. 81-84)

My invention relates to wrenches and more particularly to the types which are generally known as toggle wrenches.

Wrenches of this type generally comprise a stationary jaw, a relatively movable jaw which is capable of being adjusted towards said stationary jaw, and a toggle arrangement effective to multiply the gripping pressure of the jaws.

One of the objects of my invention is the provision, in a wrench of the character set forth, of improved means for adjusting the fulcrum position of the toggle link so as to vary the adjustment of the movable jaw relative to the stationary jaw.

Another object of my invention is the provision of improved means, in a wrench construction of the character set forth, providing a movable fulcrum for the toggle link, the said means being economical to manufacture and highly efficient in operation.

Other and further objects and advantages of my invention will become apparent from the following description when considered in connection with the accompanying drawings in which:

Fig. 1 is a top plan view of a wrench in accordance with my invention;

Fig. 2 is an elevational view of the said wrench with certain parts thereof being broken away to show details of construction;

Fig. 3 is a cross sectional view on an enlarged scale and taken substantially on line 3-3 of Fig. 2; and

Fig. 4 is a perspective view of a detail of construction.

Referring to the drawings my invention comprises a fixed jaw 10 and a movable cooperating jaw 11 pivoted in connection therewith as at 12. The fixed jaw 10 is formed in integral rigid relation on the forward end of a channel shaped handle member 13 which may be assumed to be formed from pressed sheet metal but of course may be otherwise formed. An operating lever generally indicated by 14 is formed of two sections 16 and 17 in pivoted relation, with the forward section 16 being pivotally connected to the movable jaw 11 as at 18 and the lever section 17 being pivotally connected to the section 16 as at 19. The operating lever sections are of channel form in section in facing relation to the handle member 13. A toggle link 21 is pivotally secured at one end to the operating lever 14 at a pivotal connection 19 of sections 16 and 17, the other end of the said toggle link being connected to the handle member 13 as will be hereinafter described. As will be seen clearly by reference to Figs. 1 and 2 the handle member 13 has a lug 22 struck out inwardly thereof to provide a hook for receiving one end of a coiled tension spring 23, the other end of said tension spring being anchored in an aperture 24 in the movable jaw 11, the spring serving normally to urge the movable jaw 11 in a direction away from the stationary jaw 10.

The rearward end portion of the handle member 13 terminates in a circular portion 26 to receive a threaded bushing which is welded therein, the said bushing co-

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operating with an adjusting screw 27 received therein. Received within the handle member 13 is a slide member 28 which may be cylindrically formed as illustrated in Figs. 3 and 4 and bifurcated at one end to receive one end of the toggle link 21 which is pivotally connected to said slide member as by a pin 29 passing through registering perforations in the furcations and end of the toggle link 21. The slide member 28 is retained within the handle portion by a headed rivet or screw 31 secured in a drilled aperture in said slide member, the said rivet or screw passing through a longitudinal slot 32 in the handle member 13. It will be apparent that this arrangement provides for limited longitudinal movement of the slide member 28 within the handle member 13 and without any liability of the said slide member becoming disconnected from the said handle member.

The end of the adjusting screw 27 is adapted to abut against the rearward end of the slide member 28, an abutting relationship being constantly maintained as a result of the tension of the spring 23 which normally urges the movable jaw 11 and operating lever 14 to the open position indicated by the broken lines as will be clearly seen by reference to Fig. 2. It will be apparent that adjustment of the fulcrum position of the toggle link 21 may be readily adjusted by rotation of the screw 27 to advance or retract the same relative to the handle member 13 as indicated by the solid and broken lines in Fig. 2.

The rivet or screw 31 or any other suitable means is preferably formed with a wide flat head, the underside of the head preferably conforming to the outside contour of the handle member 13 and the top surface of the head being smooth and free of burrs so that when the tool is held in the hand and pressure is applied on the respective handle member there is no liability of injuring the operator's hand.

Various changes coming within the spirit of my invention may suggest themselves to those skilled in the art. Hence, I do not wish to be limited to the specific embodiments shown and described or uses mentioned, but intend the same to be merely exemplary, the scope of my invention being limited only by the appended claims.

I claim:

1. In a wrench of the type having an elongated channel shaped handle portion provided with a stationary jaw at the forward end thereof, a movable jaw mounted on said handle portion and arranged to cooperate with the stationary jaw to grip an article, a toggle for operating the movable jaw comprising an operating lever pivotally engaged at the forward end thereof to the movable jaw and a toggle link pivotally engaged at the ends to the handle portion and said operating lever intermediate the ends thereof, the operating lever extending longitudinally adjacent the handle portion in spaced relation thereto and arranged to be squeezed by a hand engaging the handle portion and lever to lock the toggle, the handle portion having a lug engaged by one end of a spring, the opposite end of said spring engaging the movable jaw, the improvement which comprises means for adjusting the pivotal connection of the toggle link longitudinally of the handle portion comprising a longitudinally movable screw at the rear end of the handle portion, a slide member carried within said channel shaped handle portion and pivotally connected at one end to said toggle link, the opposite end of said slide member abutting the inner end of said screw, said slide member being movable longitudinally by rotation of said screw, said channel shaped handle portion having a longitudinal slot therein, and a headed member passing through said slot and secured to said slide member for retaining the same within said handle portion while permitting longitudinal sliding movement thereof.

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2. The invention as defined in claim 1 in which the head of said headed member conforms substantially to the contour of the said handle portion.

3. The invention as defined in claim 1 in which the slide member is substantially cylindrical and one end thereof is bifurcated to receive one end of said toggle link.

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