

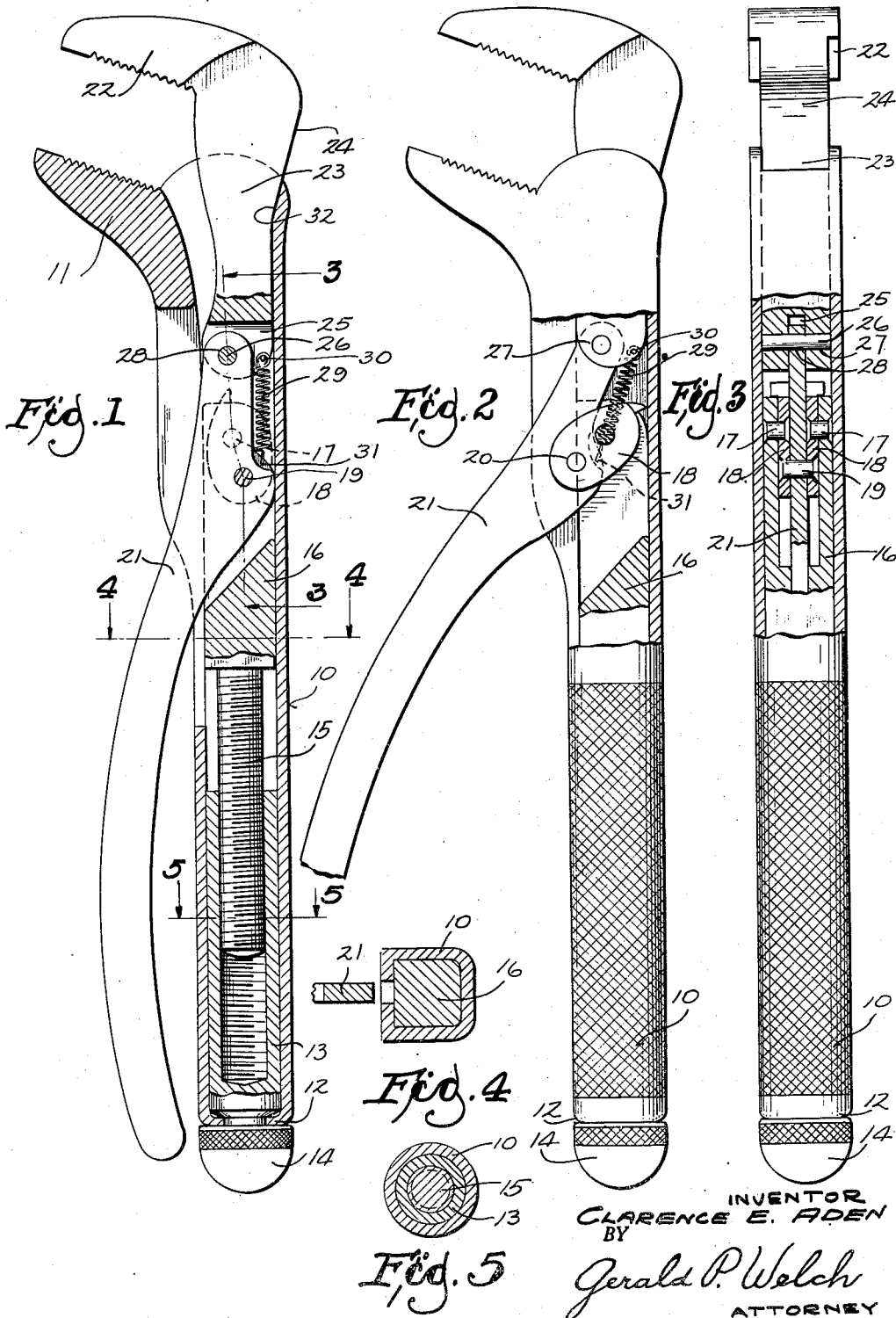
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TOGGLE-ACTUATED, PIVOTED JAW WRENCH

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UNITED STATES PATENT OFFICE

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TOGGLE-ACTUATED, PIVOTED
JAW WRENCH

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2 Claims. (Cl. 81-88)

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This invention relates to improvements in wrenches, and more particularly to a novel wrench having lever means for increasing the grip of its jaws.

An object of the invention is to provide a device of the type which will include simple lever means for augmenting the holding pressure of the wrench jaws.

Another object of the invention is to provide a device of the type which will have a simple mechanism employing a relatively small number of parts and having a high potential of efficiency in securing a wrench grip of relatively high pressure.

Other and further objects of the invention will appear as the description proceeds, reference being had to the accompanying drawing, in which:

Fig. 1 is a side view partly in section and partly in elevation of the wrench with lever closed.

Fig. 2 is a side view partly in elevation and partly in section with the lever open.

Fig. 3 is a sectional view taken on line 3-3 of Fig. 1.

Fig. 4 is a cross sectional view taken on line 4-4 of Fig. 1.

Fig. 5 is a view on line 5-5 of Fig. 1.

Referring more particularly to the drawing, the numeral 10 refers to the main body of the wrench carrying the obliquely disposed fixed jaw 11, the said body 10 being crimped at its lower end at 12 to provide a journal for the internally threaded sleeve 13 and integral knurled knob 14. The internally threaded sleeve 13 is engaged with the screw 15 which is fixed to the internal slideable member 16 which carries a pair of pivot elements 17 engaged with a pair of toggle elements 18 which latter are joined by an axle 19 journaled at 20 in the handle 21. A moveable jaw 22 has the shank 23 rearwardly tapered at 24 thereof and having a central slot 25 of the lower end thereof. A pin 26 is journaled at 27 of the shank 23 and also is connected pivotally with the handle 21 within the aperture at 28 thereof. A coiled tension spring 29 is pinned at 30 within the slot 25 of the shank 23 and connects the latter with the handle 21 at 31 thereof. The internally threaded sleeve 13 is round in cross section as shown in Fig. 5, whereas the slideable member 16 and the body 10 surrounding it are square in cross section as shown in Fig. 4.

In use, a rotation of the knob 14 will adjust the proximity of jaw 22 with that of the stationary jaw 11. This should be done with the

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handle 21 in open position as shown in Fig. 2. When the handle 21 is closed against the body 10, this action will pull said handle around the pivot point at 17 on the toggle links 18 and draw down the moveable jaw 22 with the force of the added leverage provided by the handle member 21 using the toggle links 18 as a dead center pivot point. The coiled spring 29 tends to keep the handle 21 normally in close proximity to the body 10 of the wrench. As the shank 23 is pulled inwardly into body 10 the tapered portion at 24 bears increasingly against the portion at 32 interiorly of body 10 with the result that the moveable jaw 22 is forced inwardly toward the fixed jaw 11. This action will augment the purchase of the jaws upon an object gripped therebetween when the handle member is forced inwardly by the grip of the user.

It will be understood that the device is capable of many modifications in structure and design, without departing from the spirit of the invention, within the scope of the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:

1. A wrench including a casing having a square bore within one end for a portion of its length merged into a round bore for its remaining length terminating in a reduced annulus, an internally threaded sleeve bottomed by an integral knob having a reduced portion therebetween journaled in said annulus, a fixed jaw extending laterally from the squared open end of said casing, a moveable jaw opposed thereto, a shank square in cross-section integral with said moveable jaw received for longitudinal movement in the square bore of said casing, a tapered enlargement of the rear edge of said moveable jaw shank adapted to bear against the inside back of said casing as the shank and jaw are drawn inwardly, a longitudinally movable body within said casing, a lever handle endedly pivotally connected with said shank, a pair of toggle plate links arranged in parallel relation pivotally connected with said movable body and adjacent their opposite ends with said handle member as a pivotal fulcrum for the latter, screw means on said movable body engaged with said interiorly threaded sleeve whereby manual manipulation of said knob will cause longitudinal movement of said body in said casing, a heel on said lever adjacent its fulcrum point, and a coiled tension spring connecting said heel with said shank for normally urging said lever handle toward said casing.

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2. In a wrench of the character described, a tubular body open at one end, a fixed jaw angularly disposed thereon, a movable jaw, a shank integral therewith slidable within said tubular member, bifurcations on the inner end of said shank, a lever endedly pivoted between said bifurcations, a plug movable longitudinally within said tubular body, end bifurcations on said plug adjacent said shank, a pair of toggle plates pivoted to said plug bifurcations interiorly thereof, and means pivoting said lever to and between said toggle plates at a point spaced from said shank and said plug pivots.

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REFERENCES CITED

The following references are of record in the file of this patent:

4		
UNITED STATES PATENTS		
Number	Name	Date
1,026,270	Leonard -----	May 14, 1912
1,121,229	Cappabianco -----	Dec. 15, 1914
1,325,402	Humphris -----	Dec. 16, 1919
1,401,956	Bounell -----	Jan. 3, 1922
1,697,535	McGill -----	Jan. 1, 1929
1,725,301	Plante -----	Aug. 20, 1929
1,875,736	Johnson -----	Sept. 6, 1932
2,397,239	Brown -----	Mar. 26, 1946
FOREIGN PATENTS		
Number	Country	Date
420,678	France -----	Nov. 30, 1910

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