

May 26, 1953

C. GOULD

2,639,638

TOGGLE-ACTUATED CARRIAGE BOLT WRENCH

Filed June 18, 1952

Fig. 1.

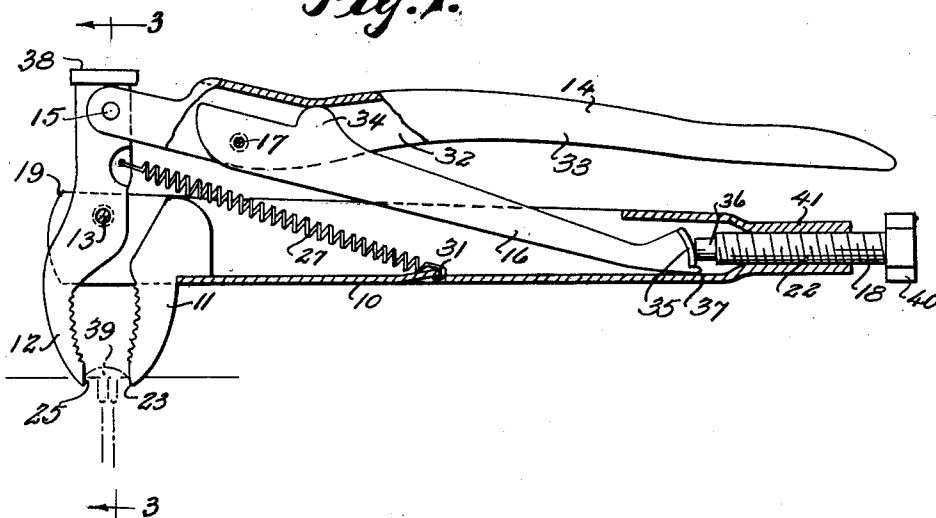


Fig. 2.

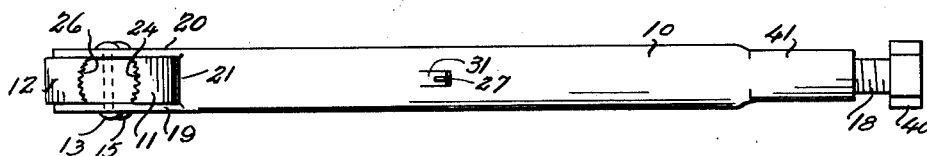
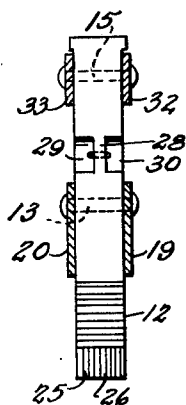


Fig. 3.



INVENTOR.
Clarence Gould
BY *Victor J. Evans & Co.*

ATTORNEYS

UNITED STATES PATENT OFFICE

2,639,638

TOGGLE-ACTUATED CARRIAGE BOLT
WRENCH

Clarence Gould, Council, Idaho

Application June 18, 1952, Serial No. 294,114

3 Claims. (Cl. 81—84)

1

The purpose of this invention is to provide a wrench for gripping a round head bolt and particularly the head of a carriage bolt which is comparatively thin and which is substantially embedded in material through which the bolt extends, and in particular a pair of vertically positioned arcuate gripping jaws actuated by an adjustable toggle action and wherein one of the jaws is provided with a head so that the jaws may be driven into material around a round head.

The purpose of this invention is to provide means for holding a round head bolt as a nut is tightened on or removed from the threaded end of the bolt.

Carriage bolts, which are provided with square sections under the head are normally embedded in wood with rotation of the bolt prevented by the square section. However, after bolts of this type have been used for some time nuts on the threaded ends corrode and the wood wears around the square sections so that the bolt turns with the nut and it is difficult to tighten or remove the bolt. With this thought in mind this invention contemplates a wrench having substantially parallel gripping jaws positioned perpendicular to a handle, with one of the jaws pivotally mounted in the handle and actuated with a toggle action and with two arcuate ends of the jaws pointed toward a center positioned between the jaws.

The object of this invention is, therefore, to provide means for shaping and mounting a pair of gripping jaws whereby the jaws may be clamped over a comparatively thin round head of a carriage bolt to facilitate tightening a nut on the bolt or to facilitate removing the nut.

Another object of the invention is to provide a carriage bolt head gripping wrench that is adapted to be used without changing the design of the head of a carriage bolt.

A further object of the invention is to provide a carriage bolt head gripping wrench which is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a substantially hollow handle having a stationary jaw fixedly mounted in one end, a movable jaw pivotally mounted in the handle and positioned to coact with the stationary jaw, a spring positioned in the handle for urging the movable jaw away from the stationary jaw, toggle acting levers for clamping the movable jaw against an object positioned against the stationary jaw and a screw threaded into the handle for adjusting the position of the toggle acting levers.

Other features and advantages of the invention

2

will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a longitudinal section through the carriage bolt wrench with parts broken away and with parts shown in elevation.

Figure 2 is a view looking upwardly toward the under side of the wrench.

Figure 3 is a cross section through the head of the wrench taken on line 3—3 of Fig. 1.

Referring now to the drawing wherein like reference characters denote corresponding parts the improved carriage bolt wrench of this invention includes a handle 10, a stationary jaw 11 fixedly mounted in the handle, a movable jaw 12 pivotally mounted in the handle by a pin 13, a hand lever 14 pivotally mounted by a pin 15 on the upper end of the movable jaw 12 and a coacting toggle arm 16 pivotally connected to the lever 14 by a pin 17 and adjustably held against a cap screw 18.

The handle 10 is channel-shaped in cross section having a back with extended flanges 19 and 20, and having a slot 21 through which the jaws 11 and 12 extend at one end and a tubular section 22 in which the cap screw 18 is threaded, as shown in Fig. 1, at the opposite end.

The stationary jaw 11 is fixedly mounted in the handle and the point 23 of the lower arcuate end having teeth 24 on the inner surface, extends inwardly toward a center positioned between the jaws. The movable jaw 12 is similarly shaped with a point 25 at the arcuate lower end having teeth 26 on the inner surface inclined inwardly toward a center between the jaws whereby with the points of the jaws extended inwardly they are urged into gripping relation with a head of a bolt as they are driven into material in which the bolt is positioned.

A spring 27, which is attached to a web 28 between recesses 29 and 30 in the upper end of the movable jaw 12 is connected, at the opposite end to a finger 31 extended from the back of the handle 10 whereby the movable jaw is urged into a releasing position in relation to an object gripped between the jaws, as it is released by the toggle acting levers.

The hand lever 14 is also channel-shaped in cross section having side flanges 32 and 33 and, as illustrated, the flanges straddle the upper end of the movable jaw 12 whereby they are pivotally connected to the jaw with the pin 15.

The toggle arm 16 which is positioned with one end extended into the hand lever 14 and the other into the handle, is pivotally mounted in the hand lever with pins 17. The arm 16 is also provided with a projection 34 that is positioned to engage

3

the inner surface of the hand lever 14, and an arcuate flange 35, at the opposite end, which engages a pin 26 on the end of the cap screw 18. The arcuate flange 35 is provided with an extension 37 which forms a stop to limit outward movement of the arm.

The upper end of the movable jaw 12 is provided with a head 38 and with the points of the jaws positioned over a head, such as the head 39, of a carriage bolt, the head 38 may be struck with a tool, such as a hammer, whereby the points of the jaws are driven into the surface of material around the head of the bolt to facilitate gripping the head with the jaws.

With the jaws in position the hand lever 14 is forced downwardly, to the position shown in Fig. 1 whereby the teeth 24 and 26 of the jaws are forced into gripping relation with the head of the bolt. The relative positions of the jaws are adjusted by the cap screw 18 which is provided with a head 40 and which is threaded into a tubular section 41 at the end of the handle 10.

It will be understood that modifications, within the scope of the appended claims may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. A wrench comprising a substantially hollow handle, channel shaped in cross section, a stationary jaw mounted in one end of the handle and extending outwardly of the handle at right angles to the longitudinal axis of the handle, a movable jaw pivotally mounted in the handle and positioned outwardly of the stationary jaw so as to move within an arc with relation to the longitudinal axis of the handle so that when it is in gripping relation to the stationary jaw it will extend at right angles to the longitudinal axis of the handle to coact with the stationary jaw, resilient means urging the movable jaw away from the stationary jaw, toggle acting levers pivotally connected to the movable jaw and extended into the handle for forcing the movable jaw into gripping relation with an object positioned between the jaws, and means for adjusting the position of said toggle acting levers.

2. A wrench comprising a substantially hollow handle, channel shaped in cross section, a stationary jaw mounted in one end of the handle and extending outwardly of the handle at right angles to the longitudinal axis of the handle, a movable

4

jaw pivotally mounted in the handle and positioned outwardly of the stationary jaw so as to move within an arc with relation to the longitudinal axis of the handle so that when it is in gripping relation to the stationary jaw it will extend at right angles to the longitudinal axis of the handle to coact with the stationary jaw, resilient means urging the movable jaw away from the stationary jaw, toggle acting levers pivotally connected to the movable jaw and extended into the handle for forcing the movable jaw into gripping relation with an object positioned between the jaws, and a cap screw threaded in the end of the handle and positioned to engage one end of one of said toggle acting levers for adjusting the distance between the gripping jaws.

3. In a wrench, the combination which comprises a substantially hollow handle, channel-shaped in cross section, a stationary jaw mounted in one end of the handle and extending outwardly of the handle at right angles to the longitudinal axis of the handle, a movable jaw pivotally mounted in the handle and positioned outwardly of the stationary jaw so as to move within an arc with relation to the longitudinal axis of the handle so that when it is in gripping relation to the stationary jaw it will extend at right angles to the longitudinal axis of the handle to coact with the stationary jaw, a spring connected to the movable jaw and handle for urging the movable jaw away from the stationary jaw, said movable jaw having a head positioned to receive a hammer blow on the upper end, a hand lever pivotally mounted on the upper end of the movable jaw and positioned to extend over the handle, a toggle arm pivotally mounted in the hand lever and extended into the handle, and a cap screw threaded in the end of the handle and positioned to engage the toggle arm for adjusting the gripping positions of the jaws.

CLARENCE GOULD.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
1,489,458	Petersen	Apr. 8, 1924
1,631,916	Chambers	June 7, 1927
1,823,494	Jacobs	Sept. 15, 1931
2,519,630	Boyer	Aug. 22, 1950
2,563,267	Petersen	Aug. 7, 1951
2,599,676	Wagner	June 10, 1952