

W. R. LEESON.
Spanner or Wrench.

No. 208,105.

Patented Sept. 17, 1878.

Fig. 1.

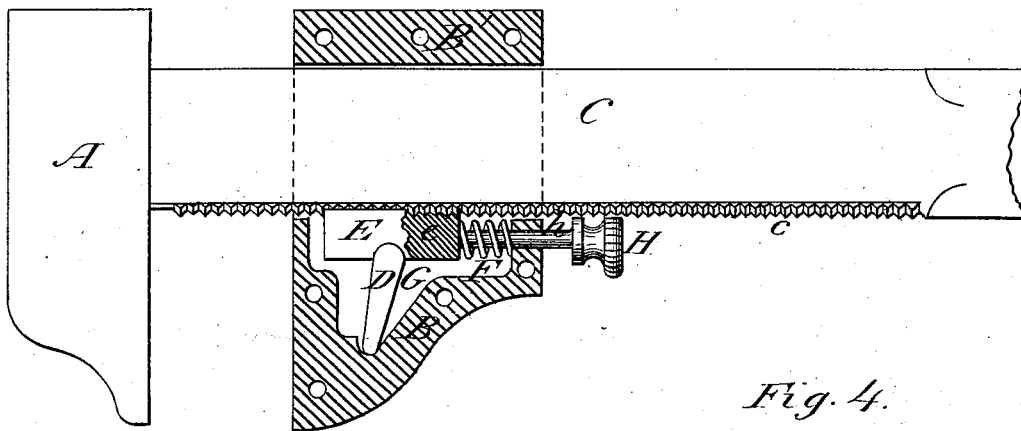


Fig. 4.

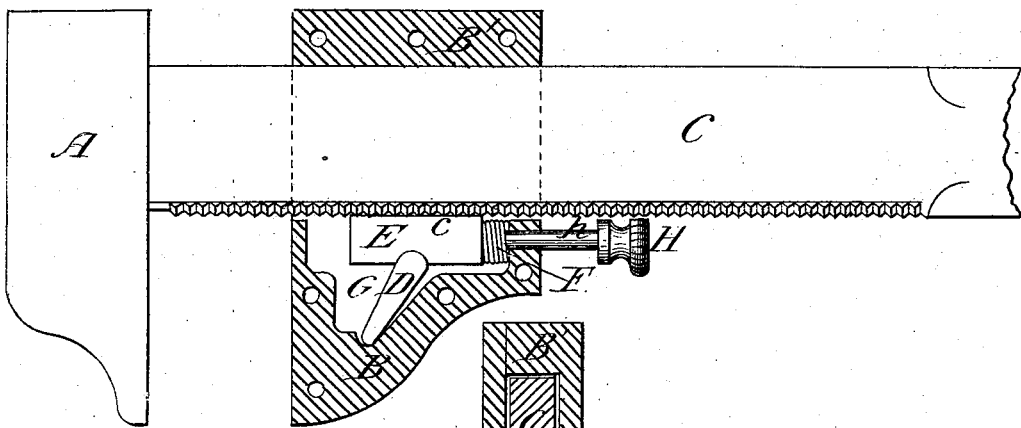
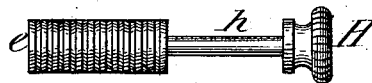


Fig. 3.

Attest:

John C. Kemm
Chas. A. Pettit

Inventor:

Wm. R. Leeson
By Wm. L. Allen

UNITED STATES PATENT OFFICE.

WILLIAM R. LEESON, OF BRIDGEWATER, ENGLAND.

IMPROVEMENT IN SPANNERS OR WRENCHES.

Specification forming part of Letters Patent No. **208,105**, dated September 17, 1878; application filed July 9, 1878.

To all whom it may concern:

Be it known that I, WILLIAM ROBERT LEESON, of Bridgewater, in the county of Somerset, England, have invented a new and useful Improvement in Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification.

My invention relates to adjustable spanners or monkey-wrenches; and consists in the employment (preferably in combination with the other devices hereinafter described) of a sort of toggle-bar, so applied between the movable jaw and the shank or handle as to cause the latter to be firmly griped, so that on pressure being applied to the said jaw in a direction tending to open or move it away from the fixed jaw the gripe becomes tighter, and the movable jaw is more securely held the greater the pressure upon it, without preventing the said jaw being freely moved in the opposite direction. A sliding block or bolster is applied between the end of the toggle-bar and the shank or handle of the spanner or wrench to distribute the pressure of the bar over a larger surface of the shank or handle, the face of this block and the edge of the shank along which it slides being serrated to insure a firm bite and prevent slipping. A spring is applied to keep the toggle-bar up to its work, so that the bolster shall instantly gripe the shank and its teeth engage with those of the shank, so as to hold the jaw immovable immediately pressure comes upon it, as in the act of turning a nut or other object. A spring is not absolutely necessary, although it is preferable to use it, as the serrations of the bolster and the shank will be caused to engage if, in the act of pushing the movable jaw up to its work, a slight pressure is kept upon the releasing-knob with the thumb. A releasing-rod, terminating in a knob, is attached to the sliding block or bolster to enable the spring to be compressed and the bolster and toggle to be drawn back away from the shank until the teeth of the bolster are freed from those of the shank, to allow the movable jaw to be slid back a sufficient distance from the fixed jaw to take a nut or other object of any desired size.

The toggle-bar, the sliding block or bolster, and the spring are contained wholly within a cavity in the movable jaw, inclosed by a covering-plate. The toggle-bar is in a position almost perpendicular to the shank or handle of the wrench, and the outward pressure on the movable jaw tends to bring it more nearly toward the perpendicular position, the length of the bar, however, being such that it cannot quite assume this position, and, being confined within the jaw, the result of this tendency is that the shank or handle is firmly griped, as above mentioned. The end of the toggle-bar is received in a groove in the back of the sliding block or bolster, to keep the parts in their proper relative positions.

In using the spanner the jaws are opened by pulling the movable jaw and the releasing-knob, so as to compress the spring and release the gripe of the toggle-bar and bolster from the shank. By retaining hold of the releasing-button the jaw may now be drawn out to a distance greater than the size of the nut or object required to be acted upon, and, the knob being now let go, the jaw may be slid up to grasp the nut or other object, in which position it is immediately fixed immovably by the toggle-bar and bolster gripping the shank or handle.

In the drawing, Figure 1 represents an adjustable spanner or monkey-wrench, the movable jaw being drawn in section, in order to exhibit the devices of my invention. In this figure the compression-bolster, which is also represented partly in section, is shown as engaged in the teeth on the shank or handle. Fig. 2 shows a similar view of the same spanner, with toggle-bar and bolster drawn back and released from the teeth of the handle by pulling the releasing-knob and the movable jaw in opposite directions. Fig. 3 represents a cross-section of the spanner on line 1 1 of Fig. 1, showing the curved adjoining surfaces of shank and bolster. Fig. 4 is a separate top view of bolster, showing teeth on a bolster at right angles to its sides.

The same letters of reference indicate the same parts in all these figures wherever they occur.

Referring to the drawing, A is the fixed

jaw, B the movable jaw, and C the shank or handle, of the wrench or spanner. The jaw A is fixed to the shank or handle C, and the movable jaw B is fitted to slide along the said shank or handle, as usual. D is the toggle-bar; E, the compression bolster or block, and F the spring bearing against the said bolster, all of these being contained in a cavity, G, formed in the movable jaw B. H is the releasing-knob, attached to the bolster E by a rod, *h*, sliding through a hole in the jaw B. The ends of the toggle-bar D are rounded or semi-cylindrical, and they are received in corresponding rounded recesses, the one at the bottom of cavity G, and the other in the back of the bolster E, so that it may work freely between the two positions shown in Figs. 1 and 2. The shank or handle C is preferably slightly rounded at the lower edge, or it may be flat, and this edge is serrated or provided with inclined or saw-shaped teeth *c* along that edge for a sufficient distance; and the adjacent surface *e* of the bolster E is correspondingly hollowed or otherwise shaped and serrated to engage with the teeth or serrations *c* on the handle. It should be understood that the serrations are, for the sake of clearness, shown in the annexed drawings on an exaggerated scale. In practice they would be much finer or smaller and closer together. The spring F may be a spiral or other spring, as preferred.

The movable jaw B is at all times free to

slide along the handle toward the fixed jaw A; but immediately any pressure comes upon it tending to force it away from the fixed jaw, the shank or handle C is, by the action of the toggle, immediately gripped between the compression-bolster E and the back part, B', of the movable jaw, which is thus securely fixed.

The movable jaw B can only be slid away from the jaw A when the bolster E is drawn back by pulling the knob H and the jaw B in opposite directions, so as to disengage the teeth *c* of the said bolster from the teeth *c* of the handle C, as shown in Fig. 2.

It will be obvious that in the wrench or spanner the toggle-bar D may be used without the compression-bolster, provided the end of the toggle-bar which is to engage with the serrations of the wrench-handle be correspondingly serrated. In this case the spring would bear against the toggle.

Having thus described my invention, what I claim as new is—

In a wrench, the combination, with movable jaw B and toothed handle C *c*, of the toggle D, serrated bolster E *e*, spring F, and handle H *h*, as and for the purpose specified.

The above specification of my invention signed by me this 23d day of April, 1878.

WILLIAM ROBERT LEESON.

Witnesses:

GEORGE RICKS,
CHARLES BELLINGER.