

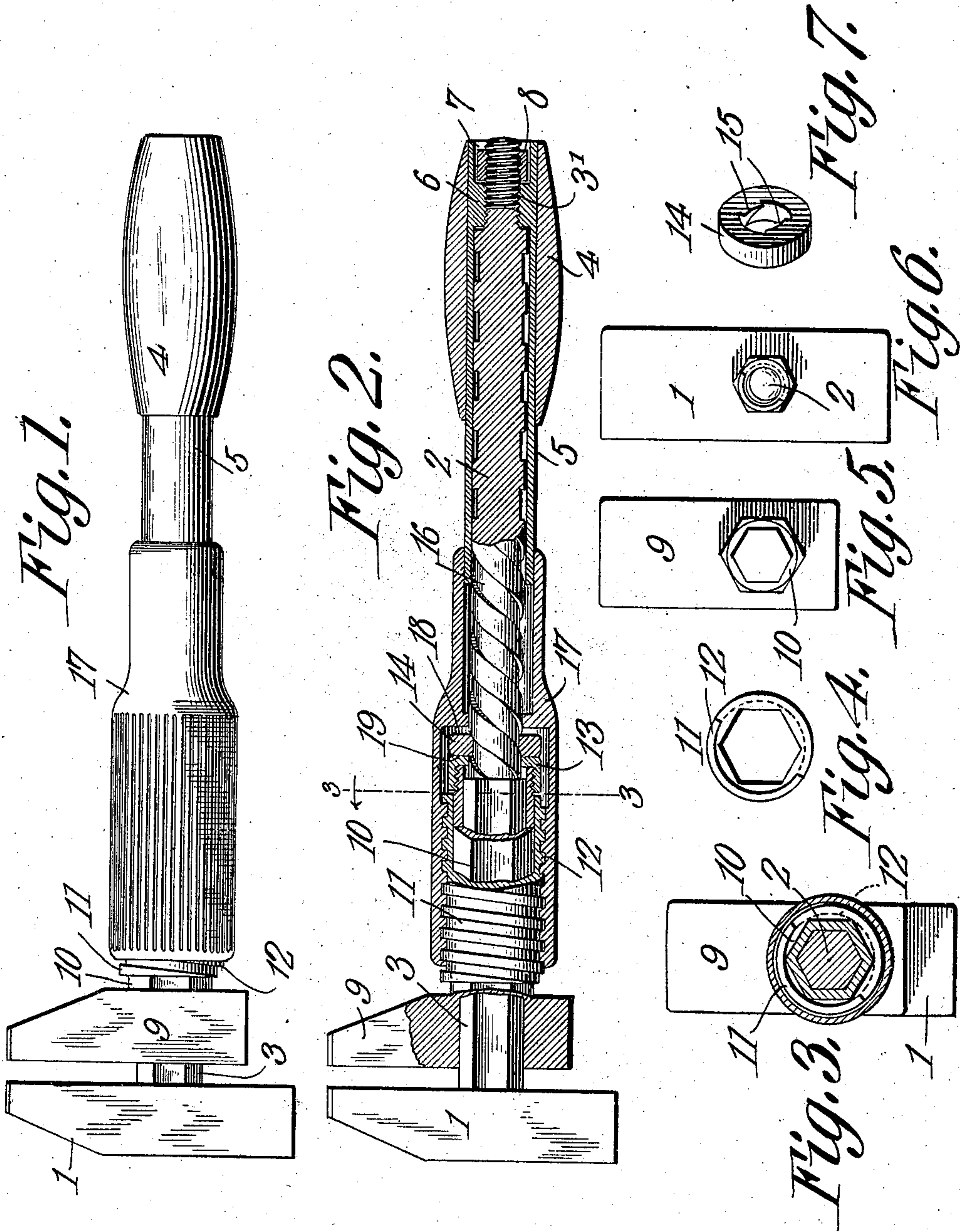
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J. E. JENSON.

WRENCH.

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WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN E. JENSON, OF MINNEOTA, MINNESOTA.

## WRENCH.

No. 847,581.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed September 26, 1906. Serial No. 336,309.

*To all whom it may concern:*

Be it known that I, JOHN E. JENSON, a citizen of the United States, residing at Minneota, in the county of Lyon and State of Minnesota, have invented a new and useful Wrench, of which the following is a specification.

The present invention relates to a wrench of the quick-action type in which the movable jaw is capable of being quickly and readily moved longitudinally of the shank of the wrench for adjusting the jaws of the latter to a nut, bolt, or the like, and then securely clamped by suitable fastening means.

The invention has for one of its objects to improve and simplify the construction and operation of wrenches of this character, so as to render them durable, reliable, and efficient and capable of tightly gripping an object with a minimum expenditure of effort on the part of the user.

A further object of the invention is the provision of a member attached to the movable jaw of the wrench, which serves as a grip, whereby the operator can quickly adjust the movable jaw by a simple longitudinal movement and clamp or unclamp the jaw by a simple rotary movement.

A further object of the invention is to provide a clamping member which during movement of the movable jaw of the wrench rides freely along the shank of the latter and which is adapted to be clamped in fixed position relative to the shank when the movable jaw is locked.

With these objects in view, and others, as will appear as the nature of the invention is better understood, the invention comprises the various novel features of construction and arrangement of parts, which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawing, which illustrates one of the embodiments of the invention, Figure 1 is a plan view of the wrench. Fig. 2 is a view showing parts of the wrench partially in section and in elevation. Fig. 3 is a transverse section on the line 3-3 of Fig. 2. Fig. 4 is an end view of a threaded sleeve mounted on the hollow shank of the movable jaw. Fig. 5 is an end view of the movable jaw, taken from the shank side. Fig. 6 is a similar view of a fixed jaw. Fig. 7 is a perspective view of the clamping-nut or clutch member.

Corresponding parts in the several figures are indicated throughout by similar characters of reference.

Referring to the drawing, 1 designates the fixed jaw of the wrench, which is of the usual construction and provided with a shank 2, having a hexagonal or equivalent cross-section for about a third of its length at the jaw end 3, and a round cross-section throughout the rest of its length, the round portion of the shank being cut with a square thread of comparatively coarse pitch. The extremity of the shank 2 is reduced and provided with a thread 3' for receiving the wooden or other sleeve-shaped handle 4. The handle 4 is lined with a metallic sleeve 5, having an internal shoulder 6, that is tapped to screw on the thread 3'. The shoulder 6 is set in a slight distance from the outer end of the sleeve to form a socket 7 for receiving the jam-nut 8, that screws on the thread 3' and binds against the shoulder 6. By this means the sleeve on the handle 4 is rigidly secured to the shank of the wrench.

The movable jaw 9 is provided with a tubular shank 10, which has a bore corresponding to the cross-section on the hexagonal portion 3 of the main shaft, so as to have a working fit therewith. Independent rotary movement of the jaws is thus prevented, while at the same time permitting relative longitudinal adjustment. Assembled around the shank 10 of the movable jaw is a sleeve 11, having a bore corresponding to the exterior of the hollow shank 10, which latter is also angular on its exterior and preferably hexagonal. The sleeve 11 is provided with a thread 12 of substantial proportion and of any suitable pitch. The threaded sleeve 11 is almost the same length as the hollow shank 10 and is retained in position thereon by a nut 13, shaped somewhat like a ferrule and having threaded engagement on the end of the shank 10 of the movable jaw. The length of the sleeve 11 is such that a slight clearance is provided between one end and the nut 13 and between the other end and jaw 9, so as to permit of a limited longitudinal movement of the sleeve on the shank of the movable jaw. In some cases, however, the sleeve as a separate part may be dispensed with and the thread 12 provided directly on the shank 10.

The mechanism for permitting the movable jaw to have a quick longitudinal action and for quickly clamping the said jaw to any



adjusted position comprises a circular clamping nut or clutch member 14, Figs. 2 and 7, having short threads or projections 15, that engage the groove 16 of the coarse thread on the main shank 2, and a clamping-sleeve 17, arranged in coöperative relation with the member 14. The pitch of the groove 16 and the working fit between the parts 15 of the member 14 and the said groove 16 are such that the nut is capable of being moved bodily along the shank 2 without offering any undue resistance. The clamping-nut or clutch member 14 is confined between two transverse gripping-walls arranged on opposite sides thereof and formed one by the stop-nut 13 and the other by the internal annular shoulder 18, provided on the clamping-sleeve 17. The walls 18 and 19 and member 14 form a sort of clutch device, whereby the movable jaw can be locked in any position. The clamping-sleeve 17 is internally threaded at one end to engage the threads 12 of the sleeve 11, and by turning the clamping-sleeve 17 in one direction the shoulder or wall 18 is drawn into frictional engagement with the member 14, and the latter is moved into engagement with the wall 19, thereby firmly clamping the member 14 in a fixed position, so that the jaw 9 will be immovable. By unscrewing the clamping-sleeve 17 a turn or so the member 14 is disengaged, so that the movable jaw can be freely moved along the shank 2 in one direction or the other. During the movement of the movable jaw in either direction the member 14 is also moved along the shank, the axial movement thereof being accompanied by a rotary movement due to the thread 16. Since the member 14 cannot be moved along the shank 2 without an accompanying rotary movement, it is obvious that the clutching of the said member between the walls 18 and 19 will prevent its rotation, and hence its axial movement. The thrust from the movable jaw 19 while the wrench is used contributes in a large measure to clamp the member 14, since the thrust tends to urge the nut 13 tighter against the said member. The end of the clamping member 17 opposite from the threaded portion thereof is prolonged and disposed in telescoping relation to the metal sleeve 5 of the handle, which is also prolonged. By having these two parts telescoped in this manner the shank 2 is incased. The exterior surface of the clamping member is corrugated, milled, or otherwise formed to afford a gripping-surface for the hand. By means of a clamping or clutching device of the character described the adjustment of the movable jaw is accomplished by gripping the clamping member 17 in one hand while holding the handle 4 in the other, and then moving the gripping member so as to open the jaw for spanning a nut, for instance. The

clamping member is then shifted longitudinally in the opposite direction, so that the jaws 1 and 9 will engage the opposite side of the nut. The clamping member is next rotated until the member 14 is firmly clamped. The movable jaw will then be positively locked and held immovable until the member 17 is again unclamped. Briefly, then, the adjusting of the wrench and locking of the same is accomplished first by a longitudinal movement of the clamping member 17 and next by a rotary movement. It will thus be seen that the action of the wrench is quick and simple both in adjusting it to the nut and unfastening the same therefrom.

What is claimed is—

1. A wrench comprising a fixed jaw, a shank connected therewith having a coarse thread of quick pitch, a movable jaw guided on and prevented from rotation by the shank, a clamping member movable longitudinally of the shank and rotatably mounted on the movable jaw, a nut inclosed by the said member and engaging the thread of the shank, a means connected with the movable jaw and against which the nut is clamped by the said member for holding the nut in fixed position to lock the movable jaw, and a handle on the shank.

2. A wrench comprising a fixed jaw, a shank connected therewith having a thread of quick pitch, a movable jaw having a shank sleeved on the first-mentioned shank, a nut at the end of the shank of the movable jaw and engaging the thread of the first shank to receive a rotary movement therefrom, and a sleeve connected with the movable jaw by lost-motion connection for clamping the said nut against rotation.

3. A wrench comprising a fixed jaw, a shank connected therewith which is provided with a coarse thread of quick pitch, a nut threaded on the shank to move freely thereon, a movable jaw, and a member movable longitudinally to quickly adjust the movable jaw and rotatable for clamping the said nut and jaw together and in fixed relation to the shank.

4. A wrench comprising a fixed jaw, a shank connected therewith, a nut threaded on the shank to move freely thereon, a movable jaw, a non-rotatable sleeve connected with the movable jaw and exteriorly threaded throughout its length, and a clamping member threaded to the said sleeve and surrounding the nut for clamping the latter in fixed position and for releasing the nut to adjust the said movable jaw.

5. A wrench comprising a fixed jaw, a shank having a threaded portion, a nut engaging the said portion, a movable jaw having a hollow shank movable on the first shank, an exteriorly-threaded sleeve mounted on the hollow shank to have a limited longitudinal movement, and a clamping member thread-



ed to the said sleeve and having a shoulder arranged to engage the nut to hold the same in fixed position and prevent movement of the movable jaw.

5 6. A wrench comprising a fixed jaw, a shank having a thread of quick pitch, a movable jaw having a hollow shank sleeved on the first-mentioned shank, a threaded sleeve movably mounted on the hollow shank, a  
10 stop-nut for retaining the sleeve in position, a clamping-sleeve having a threaded engagement with the threaded sleeve, and a nut engaging the thread of the first-mentioned shank and arranged to be clutched between  
15 the stop-nut and clamping-sleeve.

7. A wrench comprising a fixed jaw, a shank having a thread of quick pitch, a movable jaw on the shank having a transverse gripping-wall, a sleeve connected with the  
20 movable jaw to move therewith and to have an independent rotary movement, a transverse wall on the sleeve, and a nut engaging the thread of the shank and arranged between the said transverse walls to be gripped  
25 thereby for holding the movable jaw stationary.

8. A wrench comprising a fixed jaw, a

shank connected therewith having a thread of quick pitch, a nut movable along the said thread and having flat parallel sides, a movable jaw, and clutching devices connected  
30 with the movable jaw which are adapted to be moved toward or away from each other to engage or disengage the sides of the said nut.

9. A wrench comprising a fixed jaw, a  
35 shank connected therewith having a threaded portion of round cross-section and an unthreaded portion of angular cross-section, a movable jaw guided on the angular portion of the shank and held from rotation thereby,  
40 a nut engaging the threaded portion of the shank for preventing movement of the movable jaw, a clamping member connected with the movable jaw for gripping and releasing the said nut, a handle, and a sleeve secur-  
45 ing the handle to the shank and arranged in telescoping relation to the clamping member.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN E. JENSON.

Witnesses:

O. L. DORR,  
E. B. LELAND.