

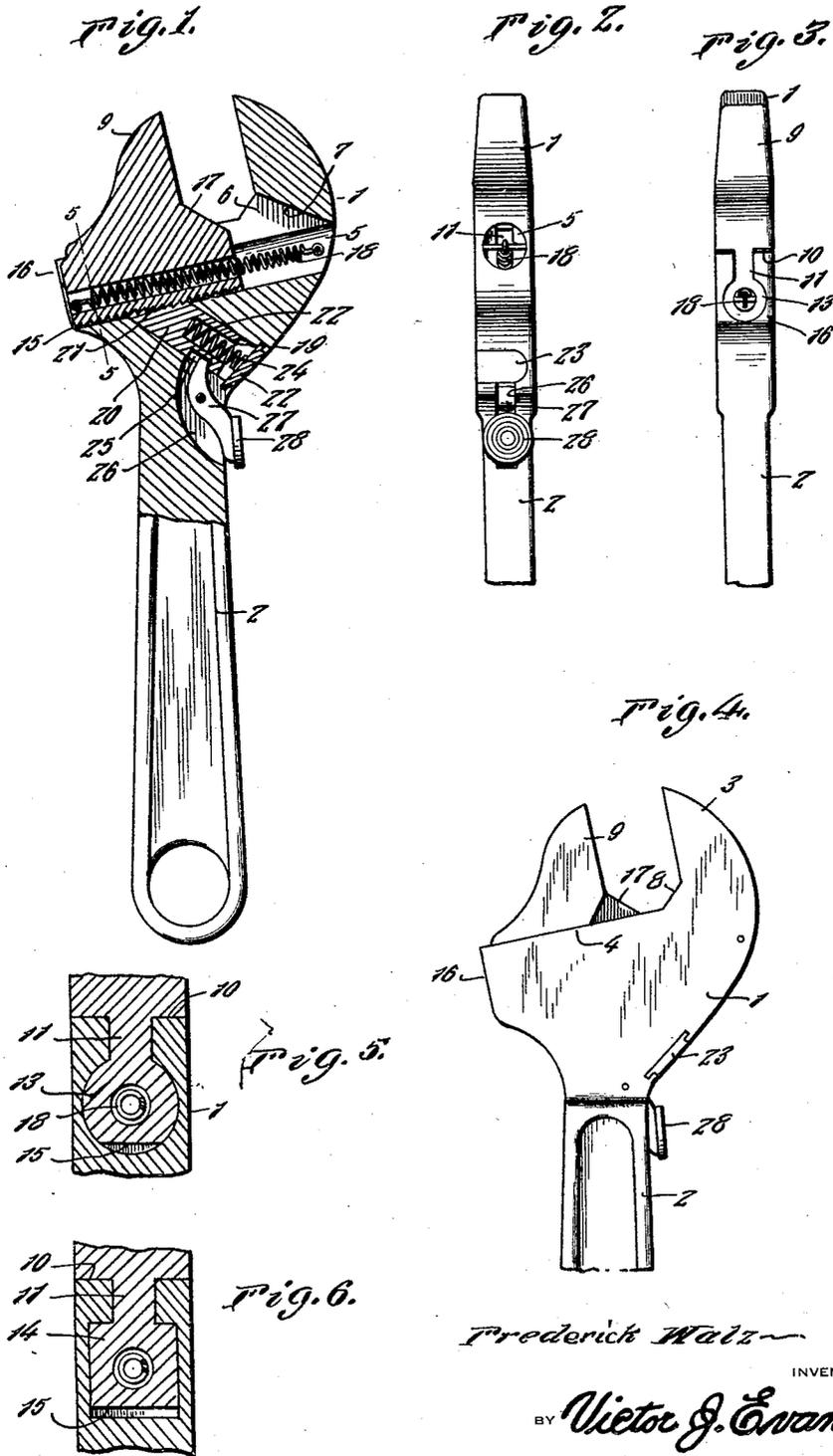
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ADJUSTABLE WRENCH

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ADJUSTABLE WRENCH

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My present invention has reference to an adjustable wrench and is particularly directed to an improved type of adjustable wrenches wherein a spring impelled slidable jaw is attached to but removably locked in adjusted position by a spring influenced locking latch, the engagement between the locking latch and the slidable jaw being such as to entirely relieve the springs associated therewith from strain and likewise the locking engagement between these elements being such that when in locking position the said elements become what may be termed unitary.

A further object is the provision of a wrench with an adjustable jaw which is adapted to be locked in set position against accidental movement; wherein the movable jaw may be automatically adjusted with respect to the stationary jaw, and further wherein the wrench may be caused to ratchet over the article engaged between the jaws.

A further object is the provision of a wrench of this character wherein the shank of the movable jaw is effectively guided through the head of the wrench, and spring influenced toward the stationary jaw carried by the head, and wherein a toothed spring influenced locking latch is arranged for slidable movement in the head to engage with the teeth of the movable jaw, said locking latch being arranged at an angle of approximately 45 degrees with respect to the plane of the toothed surface of the movable jaw whereby the active end of the locking latch may be provided with more teeth than is ordinary and likewise whereby the binding engagement between the latch and the teeth of the movable jaw, together with the contact of the walls of the openings through which the said locking latch and the movable jaw are guided will hold the movable jaw adjusted with respect to the stationary jaw, regardless of the pressure exerted therebetween, and further wherein a thumb actuated lever moves the locking latch from engagement with the movable jaw.

To the attainment of the foregoing, the invention consists in the improvement as hereinafter described and definitely claimed.

In the drawings:

Figure 1 is a side elevation of the improvement with parts in section.

Figure 2 is an edge view of the outer portion thereof.

Figure 3 is a similar view looking toward the opposite edge.

Figure 4 is a side elevation of the construction disclosed by Figures 2 and 3.

Figure 5 is a sectional view approximately on the line 5-5 of Figure 1.

Figure 6 is a similar view but illustrating a slightly different form of shank for the movable jaw.

The head or body of the improvement is indicated by the numeral 1, and is approximately centrally formed with a handle extension 2. The head, at one of its ends, is formed with a jaw extension 3.

The head is formed with a longitudinally extending key hole slot, which is indicated by the numeral 5.

The key hole slot passes entirely through the head 1, and the inner face of the stationary jaw 3 is cut angularly, as at 7, at its juncture with the restricted passage 6 of the said key hole opening. The inner portion of the active face of the stationary jaw 3 is arranged at an opposite angle to the wall 7, as indicated by the numeral 8.

The movable jaw, which cooperates with the stationary jaw 3, is indicated by the numeral 9. The inner wall or shoulder 10 of the movable jaw 9 rests on the head 1. The inner edge of the movable jaw 9 is centrally and integrally formed with a shank, the portion 11 whereof, which extends from the jaw being narrow, and the outer portion being widened. In the preferred embodiment of the improvement the end 13 of the shank is round in cross section but in Figure 6 the said widened end is of square or rectangular formation, as indicated by the numeral 14. The outer edge of the part 13 of the shank is toothed, in each instance, as at 15. Of course, the shank snugly engages with the walls provided by the key hole opening but such engagement is not sufficient to prevent the free sliding of the movable jaw through said opening. A stop element 16 may be provided for limiting the outward movement

of the movable jaw with respect to the head 1.

The lower corner at the active face of the movable jaw 9 is cut angularly, as at 17, to contact with the angle wall 7 of the stationary jaw 3 when the jaw 9 is brought against the jaw 3.

The widened portion of the shank of the movable jaw is centrally formed with a round opening through which there is received and in which there is secured one end of a comparatively light but durable helical spring 18, the second end of the said spring being received in the passage 5 and having its end secured to the wall provided by said passage adjacent to the outer end of the stationary jaw 3.

The head 1, on the edge thereof provided with the stationary jaw 3, and adjacent to its juncture with the handle 2, is bored or otherwise provided with an opening 19 that communicates with the passage 5. This opening 19 is arranged at an angle of approximately 45 degrees with respect to the plane of the longitudinal walls provided by the key hole opening, and likewise at a similar angle with respect to the head 1. Slidably received in the opening 19 there is a locking latch 20. The outer or active end of this latch is arranged at an angle and is toothed, as at 21. The angle active face of the locking latch affords a comparatively wide toothed surface and the teeth 21 are, of course, designed to coengage with the teeth 15 of the shank of the movable jaw. The opening 19 is closed by a removable plate 22, and the locking latch is formed with a socket 23 in which is received a comparatively light but strong and durable helical spring 24.

The spring influenced locking latch 20 is formed with a notch 25 that is in line with an opening 26 between one side of the handle and the head. In the opening 26 there is pivoted an actuating lever 27 whose active end is received in the notch 25. The lever, as disclosed by Figure 1 of the drawings, is curved, and the outer end thereof is provided with an opening head or button 28.

As stated, the spring which influences the slidable jaw and the spring which influences the locking latch are light, and as a consequence a pressure upon the head or button 28 of the actuating lever to bring the latching lock out of engagement with the teeth of the slidable jaw, and a rapid jerk by the operator gripping the handle 2 of the wrench will cause the slidable jaw to move away from the stationary jaw, and a quick release of the actuating lever will cause the spring of the locking latch to influence the same to engagement with the teeth of the movable jaw. When an article is received between the jaws it is merely necessary for the operator to exert a quick pressure against and release of the actuating lever to permit of the movable jaw sliding away from such obstacle so that

the wrench can ratchet thereover. When the locking latch is in active engagement with the toothed shank of the movable jaw 9 both of the springs 18 and 24 are relieved of any tension when the wrench is turned to perform its function. When in such position the engagement between the locking latch and the shank of the movable jaw is what may be termed unitary, that is, these parts are effectively locked together, and by virtue of the contacting engagement of these elements with the walls of the openings in which they are received no undue pressure is exerted thereagainst, while the accidental movement of the movable jaw away from the stationary jaw is absolutely and effectively prevented.

I am aware that various details of construction may be varied through a comparatively wide range without departing from the principles of this invention and I, therefore, do not wish to be limited to the precise details of construction as herein set forth and hold myself entitled to make such changes therefrom as will not depart from the spirit of the invention or sacrifice any of the advantages thereof as expressed in the appended claim.

Having described the invention, I claim:

A wrench of the character described comprising a handle having a relatively wide end portion constituting a head, a fixed jaw projecting from one end of the head, said head having a longitudinal key-hole slot, a movable jaw slidably mounted on said head for adjustment toward and away from the fixed jaw, said movable jaw including a shank movable within the key-hole slot and having a longitudinal bore therethrough, a stop plate for limiting the outward movement of said movable jaw and also closing the bore in said head, a coil spring having one end secured within the key-hole slot and its other end secured within the bore of the movable jaw to shift the latter in one direction, teeth formed on the lower edge of said shank, said head having an opening arranged at an angle of approximately 45 degrees with relation to said slot and communicating with the latter and opening at one side of the head, a toothed locking bar slidably within the opening and adapted to engage the teeth of the shank to hold the movable jaw fixed in a given position, a plate closing the last mentioned opening, said bar having a longitudinal bore, a spring arranged within the bore and bearing against the last mentioned plate and exerting an inward pressure against said locking bar, said bar having a notch, a finger operated lever pivoted on the handle and projecting within the notch to retract the locking bar as described.

In testimony whereof I affix my signature.
FREDERICK WALZ.