Nov. 21, 1939. A. R. BUNTING 2,181,012

ADJUSTABLE WRENCH

Filed March 31, 1938 2 Sheets-Sheet 1

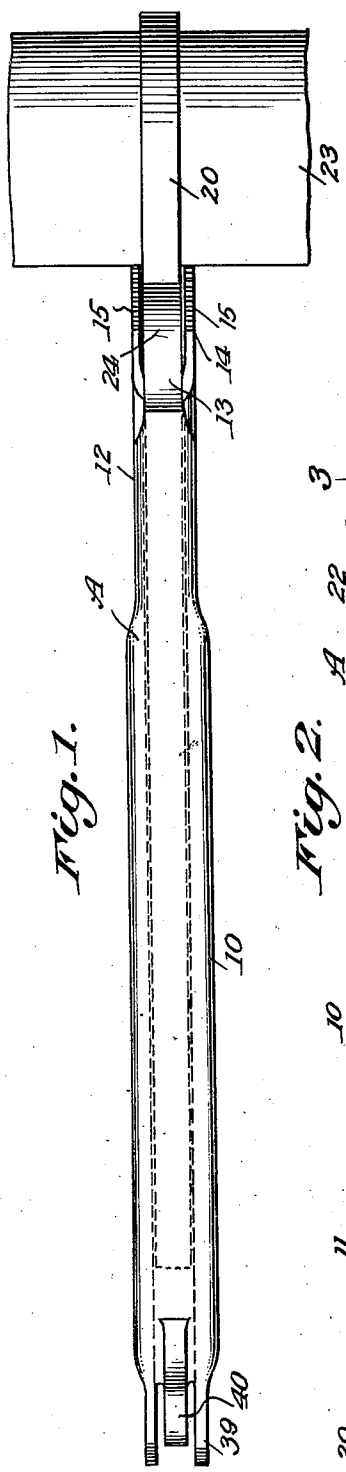


Fig. 1.

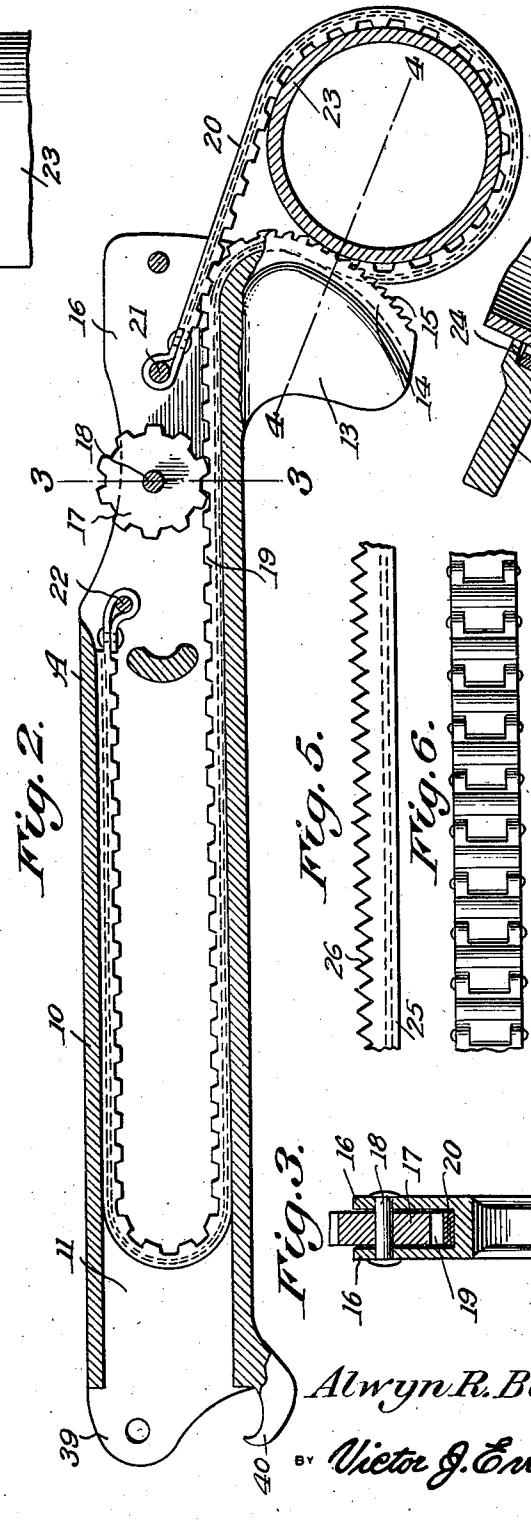


Fig. 2.

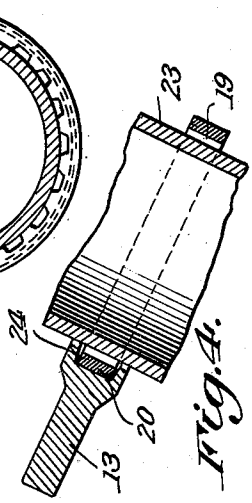


Fig. 4.

Fig. 5.

Fig. 6.

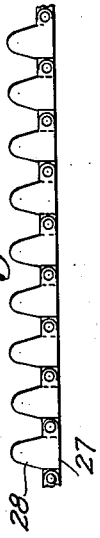


Fig. 7.

Fig. 3.

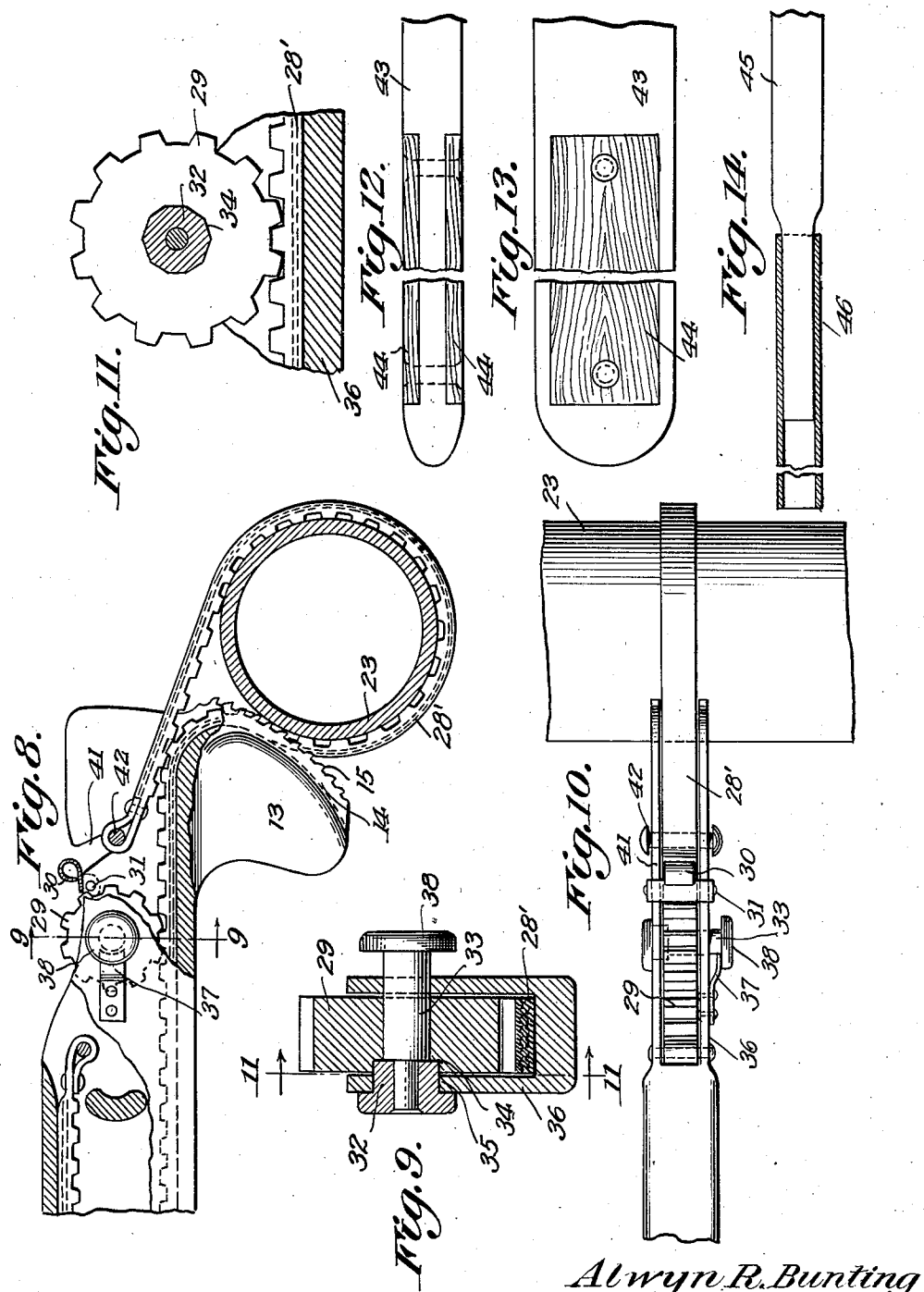
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ADJUSTABLE WRENCH

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Patented Nov. 21, 1939

2,181,012

UNITED STATES PATENT OFFICE

2,181,012

ADJUSTABLE WRENCH

Alwyn R. Bunting, Portsmouth, Va.

Application March 31, 1938, Serial No. 199,257

2 Claims. (Cl. 81—64)

The invention relates to an adjustable wrench and more especially to an adjustable, automatic pressure and pressure releasing wrench.

The primary object of the invention is the provision of a wrench of this character, wherein an encircling grip can be had on a piece of work and through frictional contact the work can be held, the wrench being adjustable so as to accommodate work of different sizes and is assured of a positive and secure grip to avoid slippage in the use of such wrench.

Another object of the invention is the provision of a wrench of this character, wherein leverage may be had to hold a piece of work, the wrench being designed for heavy duty purposes and is adaptable for gripping tubes, rods, pipes or the like, the wrench being susceptible of flexibility to conform to irregular surfaces of a piece of work to be gripped thereby.

A further object of the invention is the provision of a wrench of this character, wherein the construction thereof is novel in its entirety and a maximum grip can be had on a piece of work for the holding thereof.

A further object of the invention is the provision of a wrench of this character, which is simple in its construction, readily and easily adjusted, thoroughly reliable and efficient in operation, easy of application and removal on and from work, possessed of maximum strength and durability and is inexpensive to manufacture.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawings, which disclose the preferred and modified forms of embodiment of the invention and pointed out in the claims hereunto appended.

In the accompanying drawings:

Figure 1 is a top plan view of a wrench constructed in accordance with the invention and applied to work.

Figure 2 is a longitudinal sectional view thereof.

Figure 3 is a sectional view on the line 3—3 of Figure 2.

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary edge elevation of a modified form of gripping element.

Figure 6 is a fragmentary plan view showing a further modification.

Figure 7 is a fragmentary side or edge elevation thereof.

Figure 8 is a fragmentary vertical longitudinal sectional view showing a modified form of wrench.

Figure 9 is an enlarged transverse sectional view on the line 9—9 of Figure 8.

Figure 10 is a fragmentary plan view of the modification shown in Figure 8.

Figure 11 is an enlarged sectional view taken on the line 11—11 of Figure 9.

Figure 12 is a fragmentary plan view of the handle end of the wrench shown in Figure 8.

Figure 13 is a side view thereof.

Figure 14 is a fragmentary horizontal sectional view showing a modified form of handle end involving a handle extension.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings in detail, particularly Figures 1 to 4 inclusive, illustrative of the preferred embodiment of the wrench constituting the present invention, A designates generally the wrench and involves an elongated opposite flattened faced body 10 of tubiform to provide a longitudinal runway 11 therethrough and opening through opposite ends of the same. The end portion 12 is slightly contracted and is formed with a curvilinear lobe 13 projecting on a curvature from the said body to provide a stationary work engaging jaw 14 having a serrated work engaging or gripping face 15 for positive grip on contact with work.

The lobe-carrying end portion of the body 10 is built with spaced parallel cheeks 16 with the space therebetween opening remotely from the lobe 13 and within such space to be disposed between the said cheeks 16 is a rack pinion 17, its axle 18 being suitably journaled in the cheeks and the pinion is exposed for finger engagement beyond the cheeks. This pinion 17 meshes with rack teeth 19 formed on a flexible gripping tape 20 which has one end releasably anchored at 21 between the cheeks 16 and at one side of the pinion 17 while the other end of such tape is permanently anchored at 22 between the cheeks at the opposite side of the pinion 17, the tape being movable through the body 10 and that portion exposed or remaining outside of the said body and adjacent to the jaw 14 can embrace or encircle a piece of work, such as a pipe 23 or the like, and on manipulation of the pinion 17 this embracing stretch or extent of the said tape 20 will firmly grip the work for the holding thereof. The jaw 14 at the face 15 has a guideway therein as at 24 for the counterseating of the looped

stretch of the tape 20 therein particularly when embracing or encircling the work.

From Figures 1 and 2 of the drawings it is apparent that proper leverage can be had on the work in the use of the wrench and that the latter will firmly and positively grip the same, the rack teeth 19 at the gripping stretch of the tape 20 enables gripping contact with the work, the jaw 14 coacting with this loop or encircling stretch of said tape when gripping the work.

In Figure 5 of the drawings there is shown a slight modification, wherein the tape, a portion being indicated at 25, has formed saw-like teeth 26 thereon.

In Figures 6 and 7 of the drawings there is shown a slight modification, wherein the tape is made up of a plurality of pivotally connected links 27, these having the rounded nibs 28 constituting gripping teeth.

In Figures 8 to 11 of the drawings there is shown a modified form of wrench, wherein the rack toothed tape 28' meshing with the rack pinion 29 is adjusted by the latter. A retaining latch 30 is pivoted at 31 for removably securing one end of the tape anchored. Coacting with the pinion 29 is a locking shoulder 32 fast to and carried by the axle 33 for said pinion. This axle is laterally displaceable so as to move the lock shoulder 32 into and out of locking positions at 34 and 35, respectively, with the pinion 29 and body 36 of the wrench, the axle 33 being acted upon by a leaf spring 37 carried by the body 36 to hold the shoulder 32 in locking position. The axle has formed therewith a push button head 38 so that it can be manually moved to release the shoulder 32 and unlock the pinion 29.

The body 10 and also the said body 36 is of elongated formation for effective leverage in the use of the wrench and at the hand gripping end are perforated ears 39 and a hook 40, respectively, the latter being usable for prying purposes while the ears can be used for hanging of the wrench upon a nail or the like when not in use or for fulcrum purposes during the use of the hook 40 as a prier.

This latch 30 swings over seats 41 provided in the cheeks of the body 36 for accommodating the anchoring element 42 for holding one end of the tape 28, the seats 41 being inclined in a direction to avoid the possibility of the slipping out of the element 42 therefrom when the tape 28 is embracing a piece of work.

In Figures 12 and 13 of the drawings there is shown a slight modification of the invention, wherein the handle end 43 of the wrench has in opposite flat faces thereof wood inserts 44 constituting grip surfaces on said handle end to avoid the slipping of the hand when manipulating the wrench.

In Figure 14 of the drawings there is shown a further modification of the invention, wherein the handle end 45 has telescoped thereon a handle extension 46, being releasable therefrom and increases the leverage of the wrench.

The wrench of the construction before set forth is serviceable for light and heavy duty performances and the work engaged thereby will be positively and firmly held and gripped, the wrench active as an adjustable, automatic pressure and pressure releasing wrench.

What is claimed is:

1. A wrench of the kind described comprising an elongated body forming a lever having a runway longitudinally therethrough, a flexible gripping tape having the ends thereof joined with the lever for movement of said tape within the runway and looping said tape beyond one end of said lever, rotatable means fitting the lever and engaging the tape between its joined ends for bodily moving said tape and increasing or decreasing the loop formation thereof, means coacting with the last-named means for releasably locking said means, a lobe formed with the lever and having a curved serrated work-engaging face next to the loop formation of said tape beyond the end of the lever, said first-named means including a toothed pinion, and rack teeth formed on said tape and engaged by the said pinion.

2. A wrench of the kind described comprising an elongated body forming a lever having a runway longitudinally therethrough, a flexible gripping tape having the ends thereof joined with the lever for movement of said tape within the runway and looping said tape beyond one end of said lever, rotatable means fitting the lever and engaging the tape between its joined ends for bodily moving said tape and increasing or decreasing the loop formation thereof, means coacting with the last-named means for releasably locking said means, a lobe formed with the lever and having a curved serrated work-engaging face next to the loop formation of said tape beyond the end of the lever, said first-named means including a toothed pinion, rack teeth formed on said tape and engaged by the said pinion, and means for releasably joining one end of the tape with the said lever.

ALWYN R. BUNTING.