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2,569,581

JAW ADJUSTING MEANS FOR SLIDABLE SIDE JAW WRENCHES

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Fig. 1.

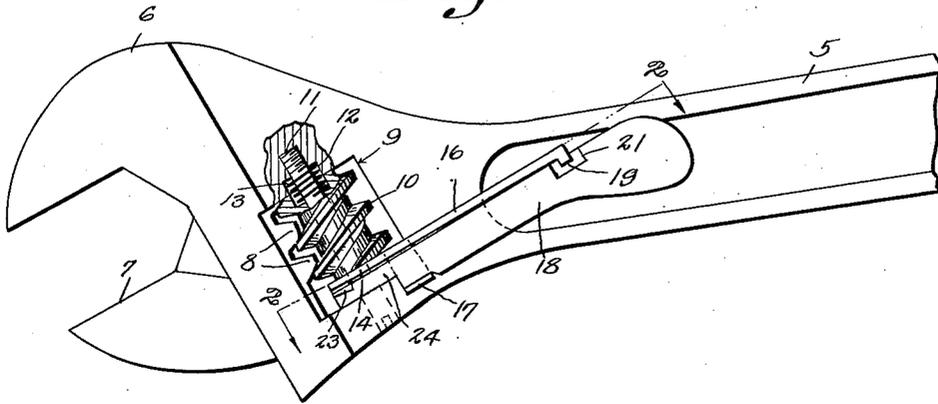


Fig. 2.

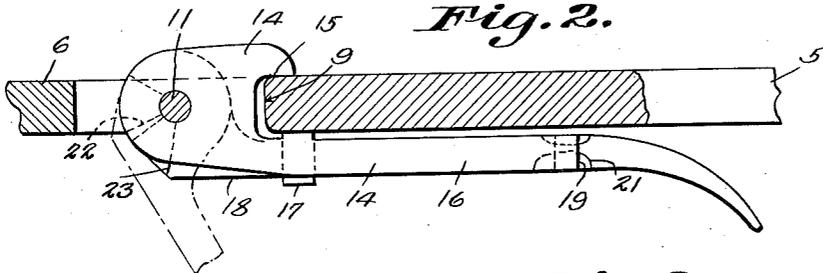


Fig. 4.

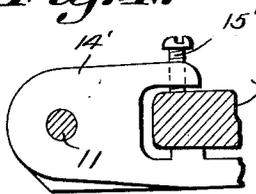


Fig. 3.

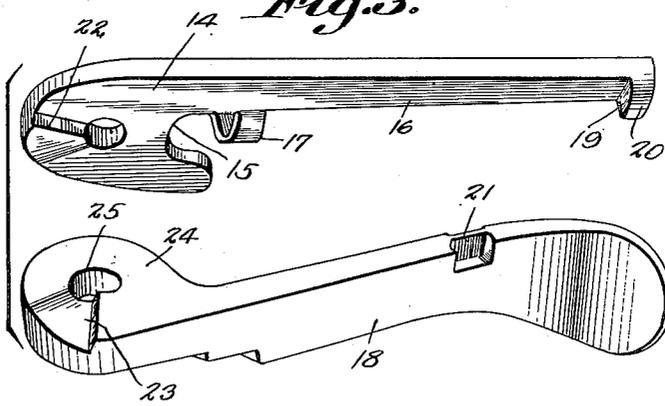
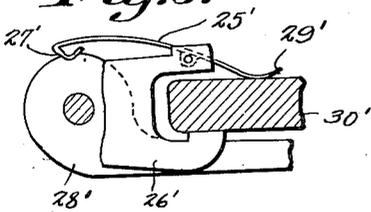


Fig. 5.



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JAW ADJUSTING MEANS FOR SLIDABLE SIDE JAW WRENCHES

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1 Claim. (Cl. 81—165)

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This invention relates to wrenches, and more particularly to wrenches of the sliding jaw type.

The primary object of the invention is to provide means for further tightening the jaws of a wrench on its work, beyond the negligible pressure obtained when the helical jaw adjusting gear of the wrench has been tightened by hand with the ordinary sliding jaw wrench, on a nut or bolt or other object with which the wrench may be used, even though the nut, bolt or object may be distorted to such a degree as to offer wrench engaging surfaces which the usual sliding jaw wrench cannot properly grip.

An important object of the invention is to provide a device of this character which may be readily mounted on the usual sliding jaw wrench having a helical jaw adjusting gear, eliminating the necessity of making extensive alterations in the wrench construction to mount the device.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

Referring to the drawing

Figure 1 is a side elevational view of a wrench equipped with an attachment, constructed in accordance with the invention.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1.

Fig. 3 is a view illustrating the elements of the attachment, as separated.

Fig. 4 is a fragmental sectional view illustrating a modified form of attaching means for the device.

Fig. 5 is a fragmental sectional view of a further modified form of attaching device.

Referring to the drawing in detail, the reference character 5 indicates a wrench handle which is provided with the usual stationary jaw 6 at one end thereof, which jaw is provided with the usual guideway in which the slidable jaw 7 of the wrench operates.

One edge of the slidable jaw is formed with teeth 8 that extend into the opening 9 formed in the stationary jaw and in which the usual helical slidable jaw adjusting gear 10 operates, the gear 10 operating on the shaft 11 which extends centrally through the opening 9.

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As shown, the helical adjusting gear 10 is formed with a recess in one end thereof, which recess aligns with the recess 12 formed in the stationary jaw, providing a housing for the coiled spring 13 which is so constructed that it will urge the adjusting gear 10 in one direction, or in a direction opposite to the direction of rotation of the gear, when it is being moved to close the jaws of the wrench.

The attachment comprises a plate 14 which is provided with an opening through which the shaft 11 extends, the plate being also provided with the notch 15 which is of a width to fit over one edge of the opening 9 to grip a portion of the wrench section of which the stationary jaw 6 forms a part, thereby securing the plate 14 against pivotal movement. Extending from the plate 14, is the arm 16 which is provided with a downwardly and laterally extended finger 17 spaced from the lower side of the arm 16, providing a space, into which the lever 18 which cooperates with the plate and arm in accomplishing the purpose of the invention, moves.

Formed at the free end of the arm 16, is the wedge-shaped lug 19, the lug 19 providing a shoulder at one end, and a curved or inclined surface 20. The lever 18 is provided with a notch 21 in the outer surface thereof, which notch accommodates the lug 19, when the lever 18 is moved to the position as shown by Fig. 1 of the drawing, thereby holding the lever in its set or active position.

Formed on the lower surface of the plate 14 is the wedge-shaped enlargement 22 that provides a cam surface which cooperates with the inclined bottom of the recess 23 disposed in the upper surface of the head 24 formed at one end of the lever 18. The head 24 is provided with an opening 25 that aligns with the opening of the plate 14, for the reception of the shaft 11, so that the lever 18 may pivot thereon.

It might be stated that the enlargement 22 and recess 23 are so arranged that when the lever 18 is pivoted laterally, or away from the handle of the wrench, the wedge-shaped enlargement and recess of the plate 14 and lever 18, will move to allow the helical jaw adjusting gear 10, to move outwardly or to a position towards the plate 14 by the action of the spring 13.

When the helical jaw adjusting gear 10 has been moved and tightened by hand in the usual way, and it is desired to further tighten the slidable jaw, the lever 18 is swung inwardly, or

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to a position adjacent to the handle 5 of the wrench. This movement causes the inclined bottom of the recess of the lever 18 to move under the wedge shaped enlargement of the plate 14 to separate the plate and lever, wedging the gear 10 against the teeth 8 of the slidable jaw, to its maximum gripping position to the end that a firm grip may be had with the wrench, on a distorted nut or bolt which could not be gripped by the usual sliding jaw wrench.

In the form of the invention as shown by Fig. 4 of the drawing, the plate 14' is provided with a cut out portion which permits it to be fitted over one edge of a wrench much in the same manner as the plate 14 as shown by Fig. 1. In this form of the invention, a set screw 15' is provided and extends through a threaded opening in the plate, where it is set tightly against the wrench. This structure is one which may be readily and easily positioned, and will secure the plate to the wrench. In the form of the invention as shown by Fig. 5 of the drawing, a spring arm 25' is connected with the plate 26' which corresponds to the plate 14 of the showing illustrated by Fig. 1 of the drawing. The spring 25' is formed with an inwardly curved end 27' that fits in a recess formed in one edge of the lever 23' which corresponds with the lever 18 as shown by Fig. 1.

The spring 25' is formed with a curved end 29' that engages the main portion of the wrench to cause the plate 26' to closely engage the wrench, the wrench in the present showing being indicated by the reference character 30'.

From the foregoing it will be seen that due to the construction shown and described, I have provided an attachment for a wrench whereby the usual helical jaw adjusting gear may be moved to obtain an exceptionally fine adjustment, after the gear has been tightened by hand in the usual way.

Having thus described the invention, what is claimed is:

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In a wrench, a handle, a stationary jaw having a gear opening formed at one end of the handle, a slidable jaw cooperating with the stationary jaw in gripping an object, teeth on the slidable jaw extending into the gear opening, a shaft extending through the gear opening, a helical adjusting gear mounted on said shaft, cooperating with the movable jaw teeth in moving the movable jaw with respect to the stationary jaw, a plate having a notch fitted over one edge of the gear opening, a cam on one surface of the plate, an arm extending from the plate in parallel relation to the handle, said plate resting against one end of the adjusting gear, a lever having a head portion provided with an opening in which said shaft extends, for pivotally mounting the lever thereon, said head portion having a cam surface cooperating with the cam surface of the plate in moving the plate and adjusting gear inwardly, the lever effecting rotation of said head portion and relative rotation of the cooperating cam surfaces, whereby said movable jaw is moved to its approximate gripping position on an object.

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