

J. ZILLIOX.
WRENCH.
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Fig. 1.

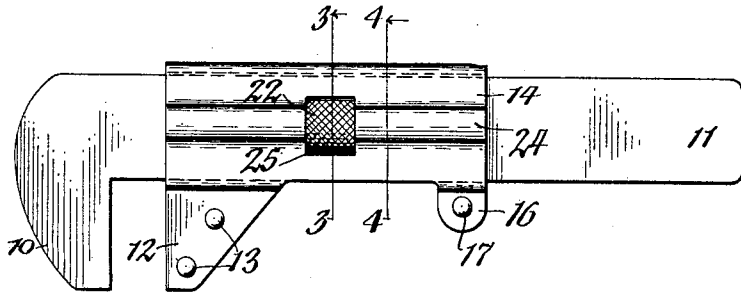
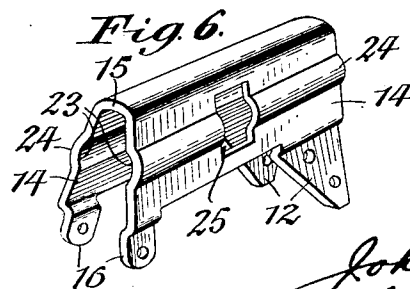
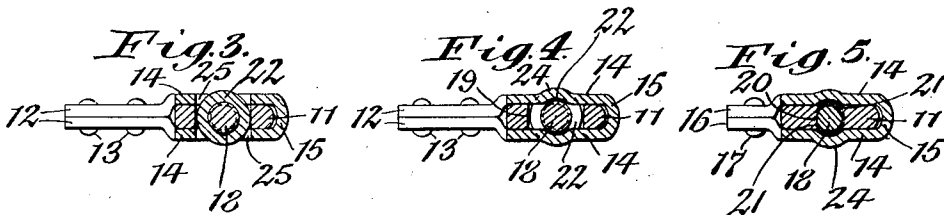
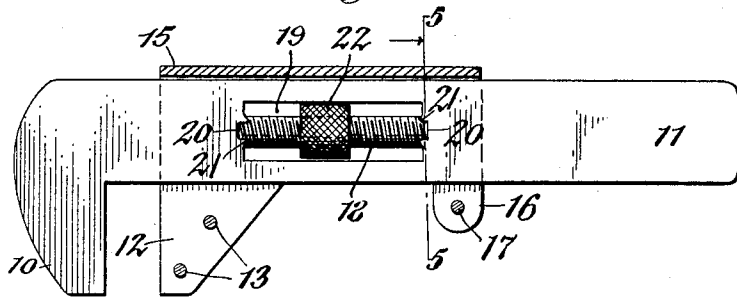


Fig. 2.



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To all whom it may concern:

Be it known that I, JOHN ZILLIOX, a citizen of the United States, residing in Orchard Park, in the county of Erie and State of New York, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to a wrench and has for its objects the production at low cost of a wrench which is very strong and durable, which has few parts and is not liable to get out of order.

In the accompanying drawings: Figure 1 is a side elevation of a wrench embodying my improvements. Fig. 2 is a longitudinal section of the same. Figs. 3 and 4 are cross sections on the correspondingly numbered lines in Fig. 1. Fig. 5 is a cross section on line 5—5, Fig. 2. Fig. 6 is a perspective view of the carriage or sleeve which supports the movable jaw of the wrench showing the condition of the same preparatory to being applied to the bar which carries the fixed jaw.

Similar characters of reference refer to like parts throughout the several views.

10 represents a relatively fixed jaw of the wrench and 11 a longitudinal supporting bar which carries the fixed jaw at its front end while the rear end of the same forms the handle of the wrench. This jaw consists of a single section or ply and the same and the bar are preferably formed integrally by cutting or stamping the same out of a sheet of metal of suitable thickness such as steel, whereby the same can be produced and finished by one operation.

The relatively movable jaw which faces the fixed jaw is constructed of two sections or plies 12, 12, which are arranged side by side and connected by rivets 13, or other suitable means.

The movable jaw is carried by a carriage which slides on the supporting bar and which comprises two side plates 14, 14 arranged on opposite sides of the bar and a web 15 connecting the outer longitudinal edges of the side plates and engaging the outer longitudinal edge of the bar. The sections of the movable jaw are arranged at the inner front corners of the side plates so that the rivets of this jaw indirectly con-

nect these plates at their front ends while the inner rear corners of these plates are provided with lugs 16 which are connected with each other on the inner longitudinal edge of the supporting bar by means of a rivet 17, as shown in Figs. 1, 2 and 5, or by any other suitable means.

The side plates, web and rear lugs of the carriage and the two sections of the movable jaw are cut or stamped out of a single sheet of metal such as steel. In the assembled condition of the parts the movable jaw sections are pressed toward each other, and the lugs 16 are likewise pressed toward each other underneath the supporting bar so that these jaw sections and lugs engage each other, respectively, and produce in effect with the carriage a tubular body which slides on the bar.

The means for adjusting the carriage lengthwise of the supporting bar are constructed as follows:

18 represents a longitudinal adjusting screw or screw rod arranged lengthwise in a longitudinal slot 19 in the bar and secured thereto so as to be incapable of turning relatively to the bar. The preferred means for accomplishing this purpose consists in providing the bar at the ends of the slot 19 with notches or recesses 20 and securing opposite ends of the adjusting screw in these notches by pressing or swaging the metal of the bar at the sides of the notches so as to form lips 21 which engage the sides of the adjusting screw and prevent the same from escaping laterally from said notches as well as holding said screw against rotation.

On this screw is mounted an adjusting screw nut 22 which when turning moves lengthwise of the bar owing to the threaded connection between the same and said screw. The screw is somewhat larger in diameter than the thickness of the bar and projects laterally into longitudinal grooves 23 formed on the inner side of the carriage plates by forming outwardly projecting longitudinal beads 24 on these plates. The beads not only provide the necessary clearance for the carriage relatively to the adjusting screw but the same also stiffens the wrench and improves the appearance of the same.

On the central parts of the carriage plates

and intersecting the clearance grooves 23 are two openings 25 which receive diametrically opposite sides of the adjusting screw nut. Upon turning the latter in one direction or the other the engagement of either of its ends with the corresponding ends of the openings 25 in the side plates will cause the carriage to travel lengthwise of the bar and its jaw to move toward or from the fixed jaw. The screw nut is turned for this purpose by engaging its opposite sides by the fingers, the periphery of the screw nut being knurled to insure a good grip of the fingers thereon.

In the manufacture of this wrench the screw rod carrying the screw nut is first mounted on the bar, then the carriage with its side plates spread apart, as shown in Fig. 6, is passed over the bar, screw rod and nut, then the side plates of the carriage are pressed toward each other until they are arranged parallel on opposite sides of the bar, and then the connecting rivets are applied to the jaw sections and lugs of the side plates, thereby completing the wrench.

It will be noted that this wrench consists of a minimum number of parts and when assembled the same produces a wrench which is very efficient and not liable to get out of order.

I claim as my invention:—

1. A wrench comprising a shank provided with a longitudinal slot and a jaw, a carriage slidable lengthwise on said shank and having a jaw and an opening, a screw threaded rod arranged lengthwise in said slot and secured to said shank, and a screw nut working on said rod and projecting through the opening of said carriage.

2. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws and provided with a longitudinal slot, a carriage slidable lengthwise on said bar and carrying the other jaw, an adjusting screw arranged lengthwise in said slot and secured at its opposite ends to said bar, and a rotatable screw nut arranged on said rod and engaging with said carriage so as to be capable of turning independently thereof but compelled to move lengthwise therewith.

3. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws and provided with a longitudinal slot and with notches at opposite ends of said slot, a carriage slidable lengthwise on said bar and carrying the other jaw, an externally screw threaded adjusting rod arranged with its ends in said notches while its intermediate part is arranged in said slot, and a rotatable screw nut mounted on said rod and engaging with said carriage.

4. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws and provided with a longitudinal slot

and with notches at opposite ends of said slot, a carriage slidable lengthwise on said bar and carrying the other jaw, an externally screw threaded adjusting rod arranged with its ends in said notches while its intermediate part is arranged in said slot, the sides of said notches being pressed to form lips which confine the ends of the rod against lateral displacement from said notches, and a rotatable screw nut mounted on said rod and engaging with said carriage.

5. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws and provided with a longitudinal slot, and with notches at opposite ends of said slot, a carriage slidable lengthwise on said bar and carrying the other jaw, an externally screw threaded adjusting rod arranged with its ends in said notches while its intermediate part is arranged in said slot, the ends of said rod being reduced, and the sides of said notches being pressed to form lips which engage with the reduced ends of the rod and hold the same against turning and also against lateral displacement from said notches, and a rotatable screw nut mounted on said rod and engaging with said carriage.

6. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws, a carriage carrying the other jaw and having two side plates arranged on opposite sides of said bar and a web connecting corresponding longitudinal edges of said plates and arranged adjacent to one of the longitudinal edges of said bar, said plates being provided with outwardly extending longitudinal beads forming internal grooves, an adjusting screw rod rigidly mounted lengthwise on said bar and having its opposite sides projecting into said grooves, and a rotatable screw nut arranged on said rod and engaging with said carriage.

7. A wrench comprising two jaws, a longitudinal bar connected with one of said jaws, a carriage carrying the other jaw and having two side plates arranged on opposite sides of said bar and a web connecting corresponding longitudinal edges of said plates and arranged adjacent to one of the longitudinal edges of said bar, said plates being provided with outwardly extending longitudinal beads forming internal grooves and with openings extending across said grooves between the front and rear ends thereof, an adjusting screw rod rigidly mounted on said bar and projecting laterally into said grooves, and a rotatable screw nut arranged on said rod and projecting into said openings.

8. A wrench comprising a front jaw composed of a single section, a rear jaw composed of two sections, a longitudinal bar formed integrally with said front jaw, a carriage slidable lengthwise on said bar and having two side plates each of which has one

of the rear jaw sections formed integrally therewith at the front end of the plate and adjacent to the inner longitudinal edge of the bar, lugs arranged on the rear ends of the side plates adjacent to the inner edge of the bar and formed integrally with the plates, means connecting the sections of the rear jaw, means connecting said lugs of the side plates, a web connecting said side plates adjacent to the outer longitudinal edge of said bar, and means for adjusting said carriage lengthwise of said bar.

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