

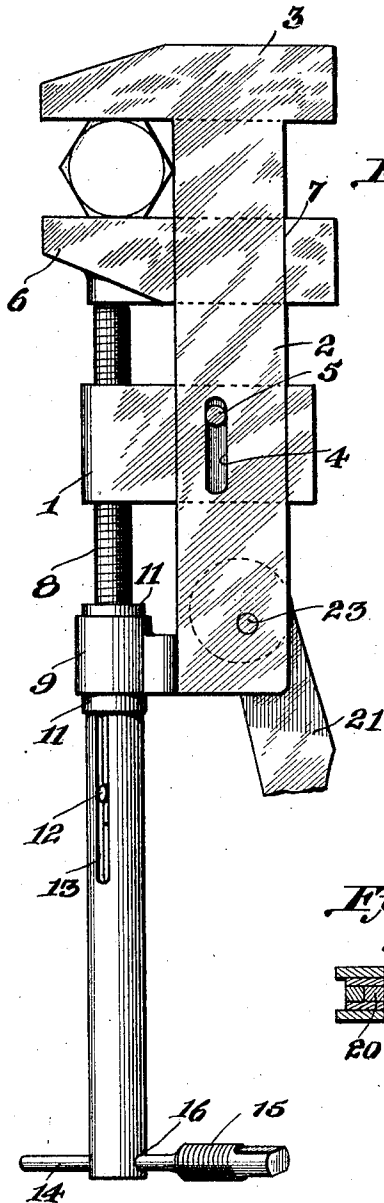
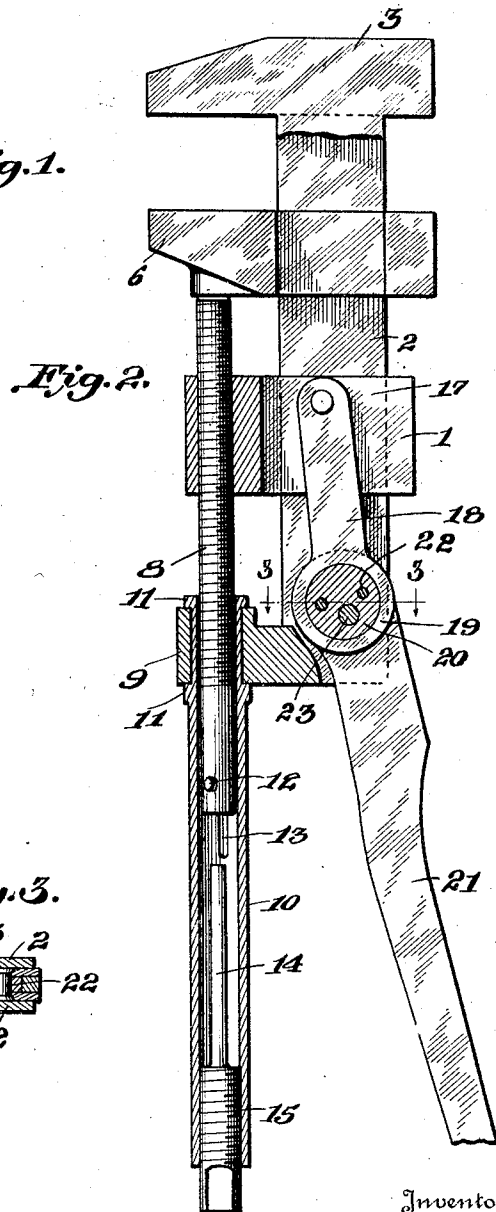
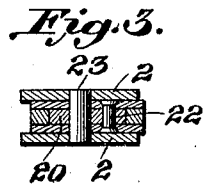
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WRENCH

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UNITED STATES PATENT OFFICE.

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WRENCH.

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This invention relates to wrenches and has for its object to provide a wrench of simplified construction which employs a threaded bolt or the like for bringing the jaws of the wrench to an approximate clamping position and a link and eccentric for causing the final clamping action.

A further object of the invention resides in the provision of a wrench which is caused to grip the work with a pressure varying with the amount of force applied to the lever of the wrench.

Another object of the invention consists in the provision of a detachable handle for turning the adjusting screw and which may be telescoped within a portion of the wrench.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawings, in which:

Figure 1 is a side elevation of the wrench;

Fig. 2 is a view similar to Fig. 1, parts being broken away to show details of construction; and

Fig. 3 is a section taken on line 3—3 of Fig. 2.

Referring to the drawings more in detail the numeral 1 designates a guide or base portion for the working parts of the wrench. This base 1 is provided with a groove or depression on each side thereof in which are seated the extensions 2 of the jaw 3. These extensions 2 extend downwardly from each side of the jaw 3 and are slotted as indicated by the numeral 4 for the reception of a pin or pins 5 which are fixed within the grooves of the base portion. It will thus be seen that the jaw 3 is guided, through the medium of the extensions 2, on the base portion 1 and is limited in its movement by the ends of the slots 4.

Interposed between the extensions 2 and between the base portion 1 and jaw 3 is the second jaw 6. This jaw is provided with a groove 7 in each side wall for the reception of the extensions 2 by which it is guided in its sliding movement toward and from the jaw 3. For the purpose of making an approximate adjustment of the jaws with respect to the work, I have provided a screw-bolt 8 which is threaded in the base portion 1 and which extends freely through an opening in the lateral arm 9 of the extensions 2. In the present embodiment of the invention

this screw is operated by means of a tube 10 which is swiveled in the arm 9 by means of the flanges 11 and which is splined to the screw bolt by means of the pin and slot connection indicated by the numerals 12 and 13 respectively.

By rotating the tube 10 in its bearing on the arm 9 it will be apparent that the screw-bolt 8 will be moved longitudinally through the base portion 1 and thus move the jaw 6 in the manner desired. In order to facilitate operation of the tube 10 I have provided a handle as indicated by numeral 14 although any other desired type of handle may be employed. This handle is provided with screw-threads 15 by means of which it may be secured within the tube 10, and the tube is provided with openings 16 for the reception of the handle 14 when in use. It will of course be understood that while I have shown a screw-bolt and related parts for adjusting the jaw 6, the latter might also be adjusted by means of an ordinary nut such as is common in this type of wrench.

The final movement of the jaws 3 and 6 to clamping position is caused by the construction which I will now describe.

Pivoted to the base portion 1 within the slot 17 thereof is a link 18 provided with an eccentric strap 19 for cooperation with an eccentric 20. This eccentric is rigidly connected to the lever 21 by means of pins 22 and the lever 21 is pivoted between the extensions 2 of jaw 3 as indicated by the numeral 23.

In the operation of the wrench it will be understood that the jaw 6 is first adjusted to its approximate position with respect to the work. Force applied to the lever 21 will then operate the eccentric 20 so as to force the extensions 2 downwardly with respect to the base portion 1 and thereby draw the jaw 3 into clamping position with respect to the jaw 6. Obviously, the greater the force applied to the lever 21 the greater will be the clamping action of the jaws 3 and 6 upon the work.

From the foregoing description taken in connection with the accompanying drawings it will be apparent that I have devised a simple yet reliable and durable construction of wrench which is readily adjustable to the work to which it is to be applied and

which is caused to grip the work by the turning moment applied to the handle or lever of the wrench.

In accordance with the patent statutes I have described what I now believe to be the best embodiment of the invention, but I do not wish to be understood thereby as limiting myself or the scope of the invention, as many changes and modifications may be made without departing from the spirit of the invention; all such I aim to include in the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

15 1. A wrench including a base portion, a pair of jaws movably mounted with respect to said base portion, threaded means for adjusting one of said jaws with respect to the base portion, a link pivoted to said base portion, and an eccentric associated with said link and the other jaw for moving said jaws to clamping position.

25 2. A wrench including a base portion, a pair of jaws movably mounted with respect to said base portion, threaded means for adjusting one of said jaws with respect to the base portion, a link pivoted to said base portion, an eccentric strap carried by said link, an eccentric associated with the other jaw and cooperating with said strap so as to move said jaws to clamping position.

30 3. A wrench including a base portion, a pair of jaws movably mounted with respect to said base portion, threaded means for adjusting one of said jaws with respect to

the base portion, a link pivoted to said base portion, an eccentric strap carried by said link, an eccentric associated with the other jaw and cooperating with said strap, and means for operating said eccentric to move said jaws to clamping position.

4. A wrench including a base portion, a jaw having an extension slidably connected to said base portion, a second jaw slidably mounted on said extension, threaded means cooperating with said base portion and said second jaw for adjusting the latter, and a link and lever associated with said base portion and said extension for moving said jaws to clamping position.

5. A wrench including a base portion, a jaw having an extension slidably connected to said base portion, a second jaw slidably mounted on said extension, a threaded bolt associated with said base portion and said second jaw for adjusting the latter, and a tube swiveled to said extension and splined to said bolt.

6. A wrench including a base portion, a jaw having a pair of extensions slidably connected to said base portion, a second jaw slidably mounted between said extensions, threaded means cooperating with said base portion and said second jaw for adjusting the latter, a link pivoted to said base portion and a lever pivoted between said extensions and cooperating with said link for moving said jaws to clamping position.

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