(No Model.)

J. RYAN.

WRENCH.

No. 476,079. Patented May 31, 1892.

Fig 1

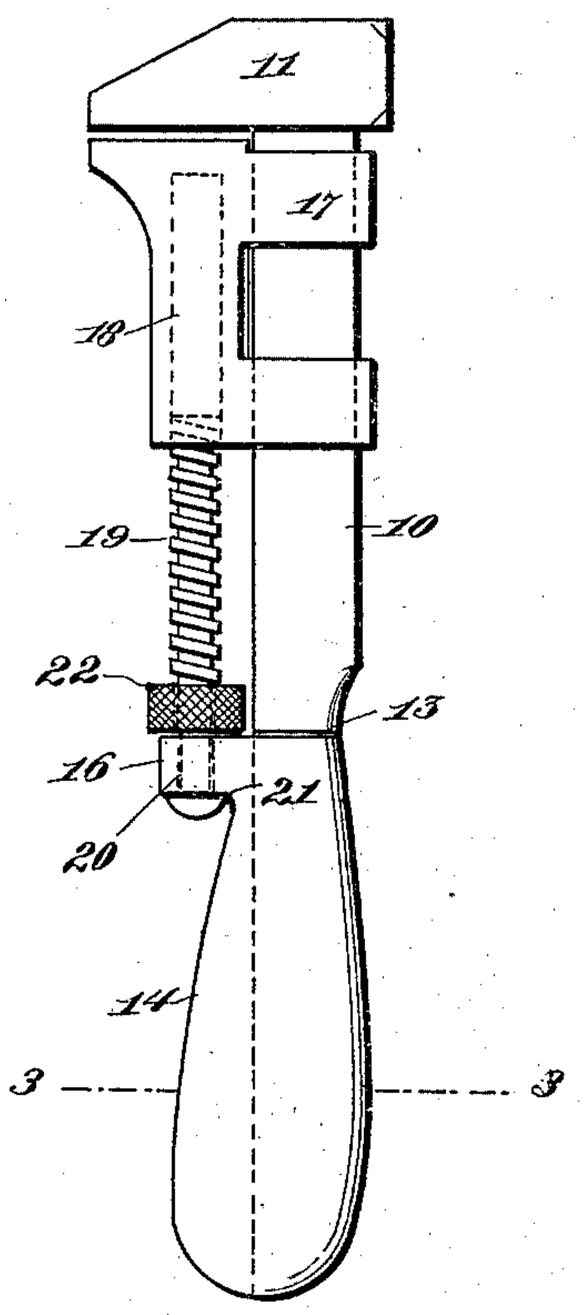


Fig 2

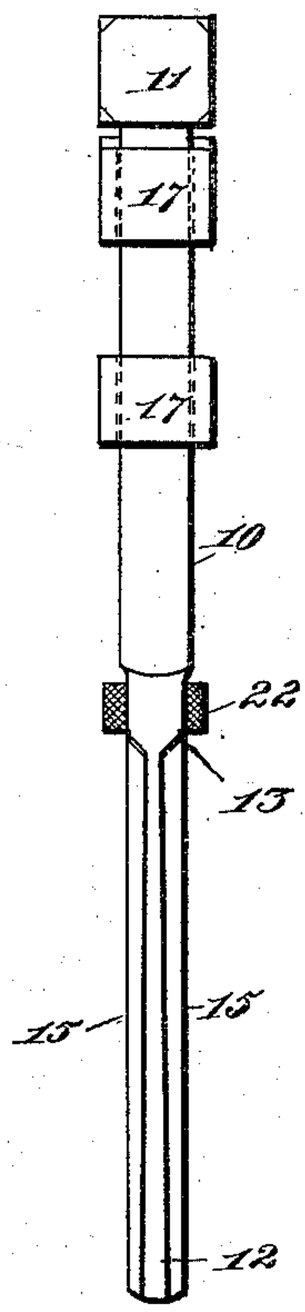


Fig 3

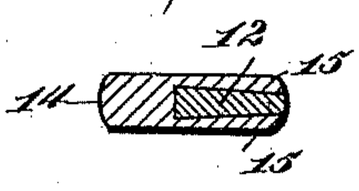


Fig 4

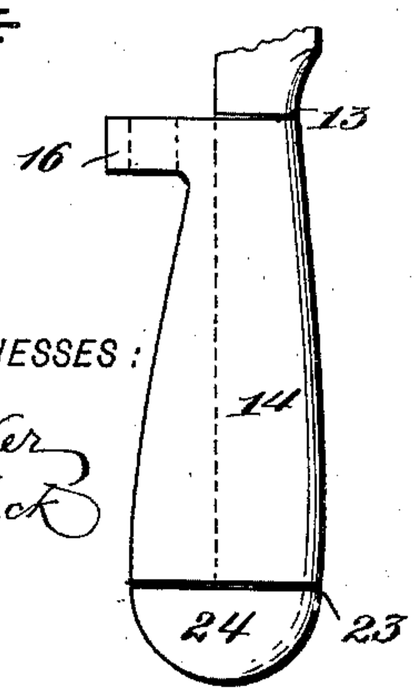
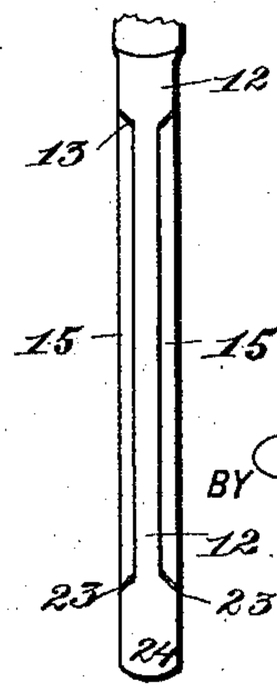


Fig 5



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WRENCH.

SPECIFICATION forming part of Letters Patent No. 476,079, dated May 31, 1892.

Application filed February 27, 1892. Serial No. 423,014. (No model.)

To all whom it may concern:

Be it known that I, JOHN RYAN, of New York city, in the county of New York and State of New York, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wrenches, and has for its object to construct a wrench in a simple, durable, and economic manner, and, further, to construct a wrench in which the handle will be made in two pieces and practically solid, and whereby the adjusting-screw will be given a support at the handle, and wherein the handle need not be recessed to receive the screw, thus adding materially to the strength of the entire wrench.

A further object of the invention is to so locate the adjusting-screw that the front face of the body-bar of the wrench need not be nicked in any manner and may be made perfectly straight, if desired.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the improved wrench. Fig. 2 is a back or rear view of the wrench. Fig. 3 is a transverse section through the handle, taken practically on the line 3 3 of Fig. 1. Fig. 4 is a detail view of a handle in side elevation, differing slightly in construction from that shown in Figs. 1 and 2; and Fig. 5 is a rear view of a handle constructed in the manner shown in Fig. 4.

The body-bar 10 of the wrench has the upper jaw 11, secured to or formed integral with its upper end, the jaw being of any desired shape. The lower portion of the body-bar 10 is adapted for use as a handle and is designated in the drawings by the reference-numeral 12. This handle portion of the body-bar is wedge-shaped in cross-section, being of greater thickness at the bottom than at the top, and the handle portion of the body-bar is much thinner than the upper portion of said bar. Therefore a shoulder 13 is produced by reason of this reduction, the said shoulder being shown in Figs. 1 and 2, and it divides the handle from the body of the bar. The shoulder 13, while straight at opposite sides, is preferably inclined downward at the rear, as shown best in Fig. 2.

In connection with the handle-section of the body-bar a second handle-section 14 is employed. This section 14 is solid for a portion of its width, and from this solid portion two wings 15 are projected which virtually constitute an integral portion of the solid section, as shown in Fig. 3. These wings are of spring metal and are adapted to be sprung over and to fit snugly to the handle-section of the body-bar 10, and when the outer or casing section 14 of the handle is sprung over the inner solid section 12 the rear edges of the wings are bent over so as to fit snugly to the shoulder 13 of the body-bar and overlap the rear edge of the inner handle-section. As the inner handle-section is wedge-shaped and of greater thickness at the bottom than at the top it will be observed that the more a downward pressure is brought to bear upon the casing-section of the handle the tighter it will cling to the inner solid section, while under upward pressure the casing-section of the handle is still held firmly in place by reason of the shoulder 13. I desire it to be distinctly understood that the casing-section of the handle may be sprung over the solid inner section in any suitable or approved manner, and if in practice it is found desirable the inner or solid section of the handle may be channeled or grooved in its sides in order to admit of the wings of the casing-section being readily slid to place. The casing-section of the handle at the upper edge of its solid portion is provided with a lip 16, horizontally located in front of the body-bar 10, and the lower jaw 17 of the wrench is held to slide upon the body-bar in the usual manner; the said lower jaw being provided with an interior vertical threaded bore 18, produced in its under edge in front of the body-bar, and into this threaded bore the upper end of the adjusting-screw 19 is introduced, the lower end of the adjusting-screw being reduced and entered in an aperture 20, formed in the lip 16 of the handle, and the lower end of the adjusting-screw is upset in any approved

manner, so as to form a head 21, for instance, which admits of the adjusting-screw being revolved without disengagement from the lip, and immediately above the lip, or as near thereto as may be desired, a thumb-piece 22 is firmly secured to the adjusting-screw, by means of which the screw is manipulated. Thus by turning the thumb-piece 22 the screw is revolved and the lower jaw is carried upward in direction of or downward away from the upper jaw, as required. It will be observed that by this construction of the wrench there is no channel or chamber required in the handle proper. Thus a wrench is obtained which is light in construction and yet which is capable of great strength.

It will also be observed that in the construction of the wrench the burden of the strain placed upon the lower jaw will be sustained by the handle proper and not by the lip 16, and it will be further observed that when constructing a wrench in the manner above described the front face of the body-bar may be made perfectly straight, as shown in Fig. 1.

In Figs. 4 and 5 a slight modification in the form of the handle of the wrench is illustrated, and this construction differs from that shown in Figs. 1 and 2 only in that the casing-section does not extend from top to bottom of the shank-section, but the shank-section is provided with a lower shoulder 23, the counterpart of the upper shoulder 13, the lower shoulder at the top being made inclined in like manner as the upper shoulder and the lower extremity of the solid or inner section of the handle is made wider than that shown in Fig. 1, as indicated at 24 in Fig. 4, while the wings 15 of the outer or casing section are of a length only to extend from the upper shoulder 13 to the lower shoulder 23, and the wings at the rear of the wrench are made to fit snugly between the inner walls of the shoulders, as shown in Fig. 5. In the form of handle shown in Figs. 4 and 5, as in the handle shown in Fig. 1, the outer or casing section may be sprung over the inner or solid section in any approved manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a wrench, the combination, with the body-bar having its lower end reduced, producing a shoulder, of a casing adapted to be sprung over the lower reduced portion of the body-bar and clamped thereto, engaging with the shoulder of said bar, substantially as shown and described, whereby the handle is rendered solid, but is constructed in two sections, as set forth.

2. In a wrench, the combination, with a body-bar having the lower end thereof reduced, forming a shoulder, and wedge-shaped in cross-section to form a portion of the handle, of a casing-section for the handle comprising a solid portion and wings emanating therefrom, the wings being adapted to clamp the handle portion of the body-bar and to engage with the shoulder of said bar, substantially as shown and described.

3. In a wrench, the combination, with a body-bar, the lower end of which is reduced to form a shoulder, the lower reduced portion of the body-bar being adapted as a portion of the handle and constructed, essentially, wedge-shaped in cross-section, of a movable jaw having sliding movement on the body-bar, a casing-section adapted as a portion of the handle, comprising a solid portion and wings emanating therefrom clamped to and engaging with the handle portion of the body-bar, a lip or extension formed upon the solid portion of the handle-casing at its upper end, and an adjusting-screw, the upper end of which is entered in a threaded aperture in the movable jaw, the lower end being held to turn in the lip or extension of the handle-casing, and an adjusting-piece secured to the adjusting-screw, substantially as shown and described.

4. In a wrench, the combination, with a body-bar carrying at its upper end a fixed jaw and having its lower end reduced to form shoulders tapering at the back edge of the bar, the lower reduced portion of the body-bar being adapted as a section of the handle and essentially wedge-shaped in cross-section, of a casing adapted as a second section of the handle, comprising a solid portion, and wings emanating therefrom, adapted to surround and engage the reduced or handle portion of the body-bar and also to engage with the shoulders of said bar, a lip or extension formed at the upper solid portion of the handle-casing, a jaw held to slide upon the body-bar, an adjusting-screw, one end of which is entered in a threaded aperture in the movable jaw, the other end being adapted to turn in the lip or extension of the handle, and an adjusting-piece secured to the adjusting-screw, whereby the latter may be manipulated, as and for the purpose specified.

JOHN RYAN.

Witnesses:
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C. SEDGWICK.