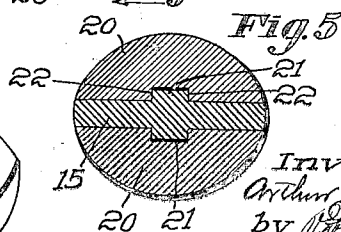
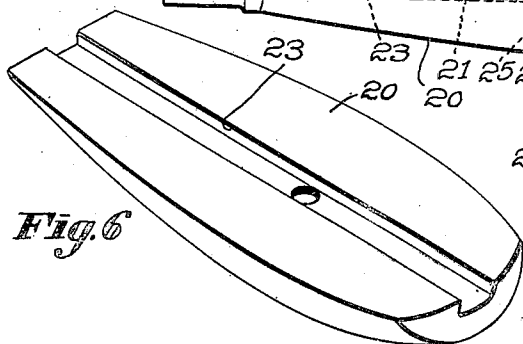
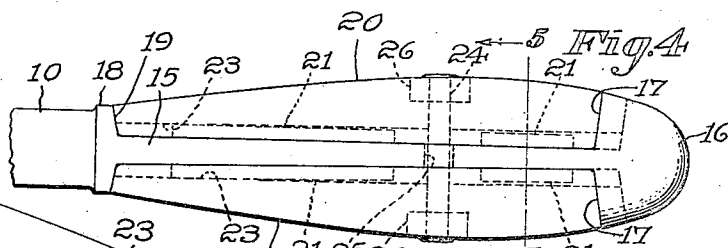
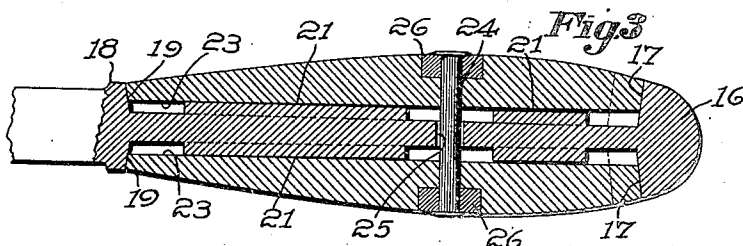
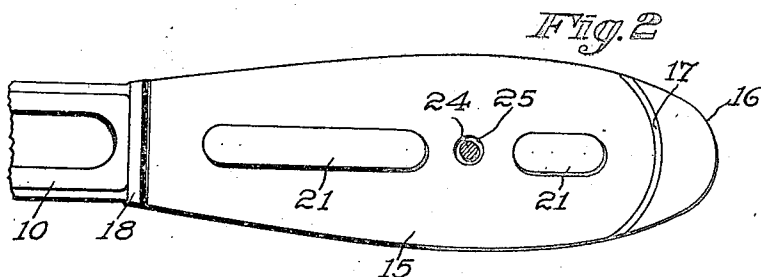
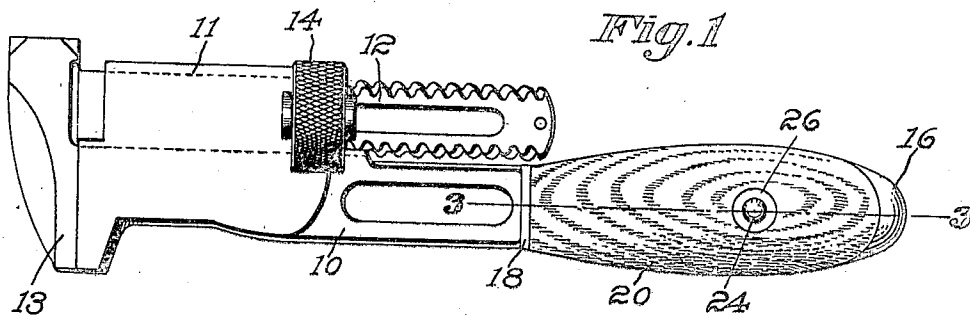


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A. J. WHITFIELD.
WRENCH.
FILED OCT. 28, 1921.

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UNITED STATES PATENT OFFICE.

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WRENCH.

Application filed October 28, 1921. Serial No. 511,002.

To all whom it may concern:

Be it known that I, ARTHUR J. WHITFIELD, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Wrenches, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to improvements in the construction of handles for hand operated tools, and more particularly to improvements in the construction of wrench handles.

In the construction of handles for adjustable wrenches and various other hand operated tools, it is desirable that the handles shall possess a high degree of strength to withstand the severe usage to which they may be subjected while at the same time it is desirable that the grip portion of the handles be formed of wood or other non-metallic material that offers a good gripping surface to the hand.

Wrench handles that are constructed entirely of metal possess the requisite strength, but are unsatisfactory in that they do not afford a gripping surface that is as satisfactory to the grasp of the hand as do wooden handles. Furthermore, metal handles are less pleasing to the feel of the hand than wooden handles, and this is particularly true in cold weather since the hand becomes chilled quickly when held in contact with cold metal.

Attempts have been made heretofore to provide composite handles, consisting of a metal handle web to which wood or other non-metallic grips or handle scales are secured. This forms a satisfactory type of handle as long as the handle scales remain in place, but difficulty has been experienced in providing a practical construction in which the handle scales will withstand the severe treatment to which they are often subjected.

One of the most frequent sources of injury to adjustable wrenches is the practice among careless workmen of striking the wrench with a hammer or other implement when they are unable to force the wrench by hand in the direction they desire to turn it. This practice soon breaks the handle

scales, or drives them loose from the metal portion of the handle.

With the above matters in mind, the present invention aims to provide an improved handle of the composite type above referred to which is strong and durable, while at the same time it is simple in construction and inexpensive to manufacture.

The various features of the invention and novel combination of parts will be herein described in connection with the accompanying drawings which show one good, practical form of the invention.

In the drawings:

Fig. 1 is a side view of a wrench having a handle constructed in accordance with the present invention.

Fig. 2 is an enlarged side view of the handle portion of the wrench with one of the handle scales removed;

Fig. 3 is an enlarged sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is an enlarged edge view of the handle shown in Fig. 1.

Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4; and

Fig. 6 is a perspective view looking at the inner face of one of the handle scales.

The handle construction forming the subject matter of the present invention is illustrated as forming the handle of an adjustable wrench, but it is apparent that various types of hand tools may be provided with handles constructed in accordance with the present invention.

In the construction shown the wrench bar 10 is provided with a housing 11 in which the stem 12 of the adjustable jaw 13 is slidably mounted, and adjustment of the jaw 13 may be effected in the usual manner by the nut 14.

The rear portion of the wrench bar 10 preferably is provided with a handle web 15 that may be formed integral with the bar 10. The handle web may have relatively flat faces, and since the greatest strain to which the handle web is subjected occurs near its juncture with the wrench bar, the web may taper slightly toward its rear end as shown in Figs. 3 and 4. The rear end of the handle web 15 is provided with a cap 16 having a rounded end, and the cap preferably is formed with arcuate shoulders 17 extending outwardly from each face of the

handle web. At the juncture of the handle web and wrench bar is formed a bolster 18 providing the shoulders 19. The construction of the shoulders 17 and 19 is such that they extend outwardly substantial distances from the flat faces of the handle web 15 and serve to position the handle scales 20 fitted between them, and to protect the ends of the handle scales.

As stated difficulty has been experienced heretofore in providing satisfactory means for securing the handle scales to the metal portion of the handle, the greatest difficulty being experienced in attempting to provide a construction that will prevent the handle scales from being displaced laterally relative to the handle web by blows imparted to the front or rear edge of the handle. To prevent the handle scale 20 from being forced laterally relative to the handle web 15, in the present case, rib or ribs 21 (two being shown in the drawings) are provided upon each face of the handle web to extend longitudinally thereof, and each rib is constructed to present square shoulders 22 extending outwardly a substantial distance from a face of the handle web. The ribs 21 are received in grooves 23 formed lengthwise of the inner face of the handle scales 20, and in order to simplify the operation of forming the grooves 23 they preferably extend the entire length of the handle scales as shown in Fig. 6. The side walls of the grooves 23 are formed firmly to seat against the shoulders 22 of the ribs, and the ribs preferably extend to a position near each end of the handle web to hold the handle scales throughout the greater portion of their length from lateral displacement.

The construction so far described is such that the handle scales 20 are prevented from being displaced laterally upon the handle web by the cooperating ribs 20 and grooves 23, and are prevented from displacement lengthwise of the handle web by the shoulders 17 and 19 which shoulders serve also to protect the ends of the handle scale. It is necessary to provide means for holding the handle scales firmly seated upon the faces of the handle web 15, and in the present case this is satisfactorily accomplished by a single pin 24 which passes through the handle scales and through an aperture 25 in the handle web, and the ends of the pin 24 extend through washers 26 seated in sockets formed in the handle scales, the ends of the pin being upset sufficiently to clamp the parts together. Since the pin 24 is not relied upon to prevent displacement of the handle scales either laterally or lengthwise, the aperture 25 is preferably made large enough to entirely clear the pin, and as a result the handle scales are not subjected at any time to pressure of the pin against a lateral wall thereof. This fea-

ture is important, because it is found that where securing pins are relied upon to hold the handle scales from displacement relative to the handle web, the handle scales frequently split at the point where the pins pass through them.

The construction described is such that the wrench bar and the handle forming parts integral therewith may be quickly and inexpensively formed by drop forging operations, and the handle scales which are formed of wood or other non-metallic material may readily be given the configuration shown, whereupon they may be quickly secured to the opposite sides of the handle web by a single pin. The present construction is inexpensive to manufacture and is extremely strong and durable.

What I claim is:

1. A wrench handle comprising, in combination, a wrench bar having a handle web integral therewith, a bolster integral with one end and a cap integral with the other end of the handle web, ribs extending longitudinally of the opposite faces of the handle web, handle scales fitted to the opposite faces of the handle web between the bolster and cap and each scale having a rib receiving groove formed longitudinally of its inner face, said ribs provided with square shoulders that project substantial distances into the handle scales firmly to hold the scales from movement laterally relative to the handle web, and a pin for holding the handle scales against the opposite faces of the handle web.

2. A wrench handle comprising, in combination, a wrench bar having a rearwardly extending flattened handle web, a bolster integral with one end and a cap integral with the other end of the handle web, ribs upon the opposite flattened faces of the handle web and extending longitudinally thereof upon opposite sides of the axis of the web, handle scales fitted to the opposite faces of the handle web between the bolster and cap and each scale having a rib receiving groove extending longitudinally of its inner face, said ribs provided with relatively square shoulders that project substantial distances into the grooves of the handle scales firmly to hold the scales from movement laterally relative to the handle web, a pin extending through the handle web for holding the handle scales against the opposite faces of the handle web, and the web having a pin receiving aperture therethrough of sufficient size to provide a substantial amount of clearance about the pin that the latter may move in the aperture sufficiently to align itself with the apertures of the handle scales.

3. A wrench handle comprising, in combination, a wrench bar having a rearwardly extending flattened handle web, a bolster in-

tegral with one end and a cap integral with the other end of the handle web, ribs upon the opposite flattened faces of the handle web and extending longitudinally thereof
5 upon opposite sides of the axis of the web, handle scales fitted to the opposite faces of the handle web between the bolster and cap and each scale having a rib receiving groove extending longitudinally of its inner face,
10 said ribs provided with relatively square shoulders that project substantial distances into the grooves of the handle scales firmly to hold the scales from movement laterally relative to the handle web, and a pin extend-
15 ing through the handle scales and handle web firmly to hold the scales against the web.

In testimony whereof, I have signed my name to this specification.

ARTHUR J. WHITFIELD.