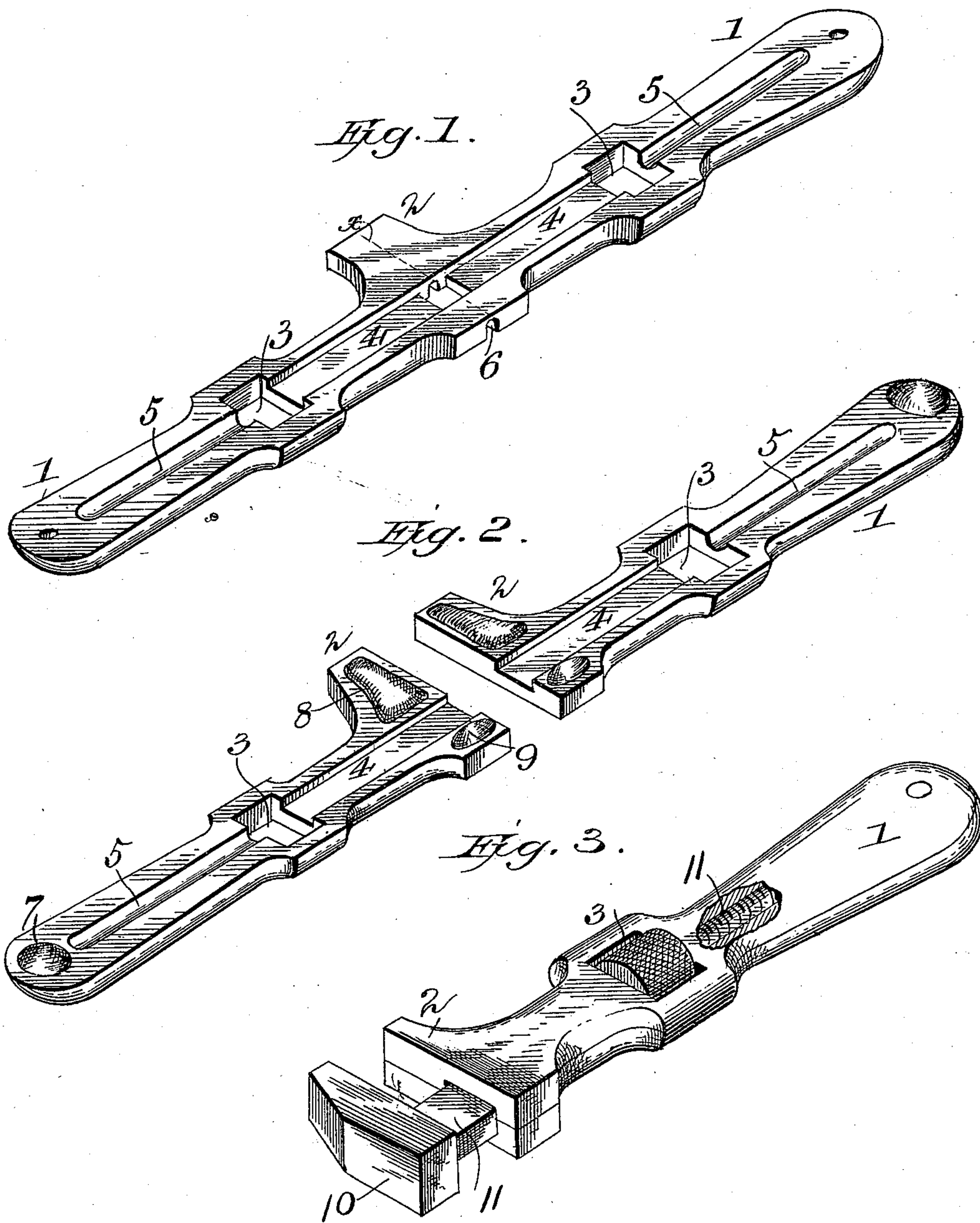


(No Model.)

D. WILCOX.
WRENCH.

Patented Aug. 20, 1895.

No. 544,709.



Witnesses
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WRENCH.

SPECIFICATION forming part of Letters Patent No. 544,709, dated August 20, 1895.

Application filed September 10, 1894. Serial No. 522,554. (No model.)

To all whom it may concern:

Be it known that I, DARIUS WILCOX, a citizen of the United States, residing at Mechanicsburg, in the county of Cumberland and State of Pennsylvania, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to certain improvements in wrenches; and it consists of a novel form of blank, a peculiarly-constructed handle and jaw, and a novel method of making the same.

The objects of the invention are to simplify and cheapen the construction of wrenches, and also to produce a wrench which is not only of less cost, but at the same time equal, if not superior, to those now in use.

Referring to the drawings forming a part of this specification, Figure 1 is a perspective view of the blank from which the handle and one jaw of the wrench are formed. Fig. 2 is a similar view of a slightly different form of blank. Fig. 3 is a perspective view of the completed wrench, partly broken away.

On the drawings like numerals of reference indicate corresponding parts in the different views.

1 represents the handle of the wrench, on the end of which is formed the fixed jaw 2, and it is of the usual configuration. It is about twice the length of the handle and jaw, and is formed all in one piece, as in Fig. 1, or in two parts, as in Fig. 2.

Near the central portion of the handle, and about the widest part thereof, are apertures 3 3 to receive the nut or sleeve which operates the movable jaw. Extending from the apertures 3 3 are grooves or channels 4 4, which grooves are to receive the shank of the movable jaw of the wrench, and they extend through the fixed jaw thereof and are about half the depth of the diameter of the shank.

From the opposite side of the apertures 3 3, extending nearly to the end of the handle, are grooves or channels 5 5 to receive the threaded end of the shank of the movable jaw. The grooves or channels 4 4 are preferably rectangular and grooves 5 5 semicircular;

but while these are the best forms they are not absolutely essential.

In Fig. 1 of the drawings the two members comprising the handle are connected by a web of metal 6, with a hole through it for the shank of the movable jaw, while in Fig. 2 this web is omitted. In the latter elevations or projections 7 8 9 are provided on the inner face of the blank, either on one or both members thereof, so that when the two parts are brought together, by superimposing on one the other with the channels or grooves facing each other to form the handle, they may be welded by a blow or squeeze—as by electrolysis, for example. These projections may also be formed at one end when the blank shown in Fig. 1 is used, but are not absolutely essential. When the blank shown in Fig. 1 is used to form the handle, it is bent on the dotted line *x*, and as one end of the blank is the counterpart of the other, it will be seen that a rectangular passage is formed extending from the face of the lower jaw 2 to the aperture 3 for the thumb-nut to receive the shank of the movable jaw. The web where the blank is bent forms the face of the fixed jaw.

10 represents the movable jaw, and 11 is its shank. This jaw and shank are of the customary form. The shank is rectangular as far as the point in the handle where the thumb-nut is used, and the shank may be provided with any suitable scale. Its lower end is cylindrical and is screw-threaded to engage with the nut, which is tapped to receive it, as usual, and by revolving the nut the movable jaw is operated. The handle and fixed jaw I sometimes weld through intervention of the elevations or projections 7 8 at one end and rivet or braze the other end, or I omit the welding projections altogether from the members of the blank and secure them together by riveting or other suitable means.

The method of constructing the blank and handle with its fixed jaw is as follows, viz: The blank, approximately of the form intended, is placed in a die of such configuration as to form the grooves, which are forged or swaged therein. By this operation a flash or fin is thrown out at the edges. The blank is next passed through a trimming-die, by means of which the flash or fin is removed. The parts are then ready to be put together, either

by bending one upon the other, as already described, or by superimposing one part upon the other, as already stated. A proper-shaped mandrel is inserted in the shank-cavity, and the whole is struck in finishing-dies, and the handle thus treated is finished perfectly on the inside and practically smooth on the outside, requiring but little, if any, further finish on the outside.

10 The wrench may be constructed as an ordinary nut-wrench, or it may be formed with a knife-roll, or the jaws otherwise made for cutting pipe in a well-known manner, as the invention is equally well adapted for a nut or
15 pipe wrench.

Minor changes in the details of construction may be made without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. A blank for wrenches comprising two members, the counterpart of each other, having the handle and the fixed jaw integral therewith; struck or swaged grooves or channels for the shank of the movable jaw, holes for the nut and elevations or projections on

the inner faces of the members by means of which the two parts may be welded substantially as described. 30

2. A blank for wrenches comprising two members, the counterpart of each other having the handle and the fixed jaw integral; struck or swaged grooves or channels for the shank of the movable jaw holes for the nut and means whereby the parts may be secured together, substantially as described. 35

3. That improvement in the art of manufacturing the handle and fixed jaw of a wrench, comprising two members, which consists in forging or swaging grooves or channels on the inner faces thereof, and projections for welding removing the flash or fin formed by the swaging superimposing the two members upon each other with their channels facing each other—welding the jaw end, and riveting or brazing the end of the handle and completing the operation in finishing dies substantially as described. 40 45 50

In testimony whereof I affix my signature in presence of two witnesses.

DARIUS WILCOX. [L. S.]

Witnesses:

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