J. A. HIGGINS.

MULTIPLE WRENCH.

APPLICATION FILED AUG. 23, 1910.

992,873.

Patented May 23, 1911.

Fig. 1

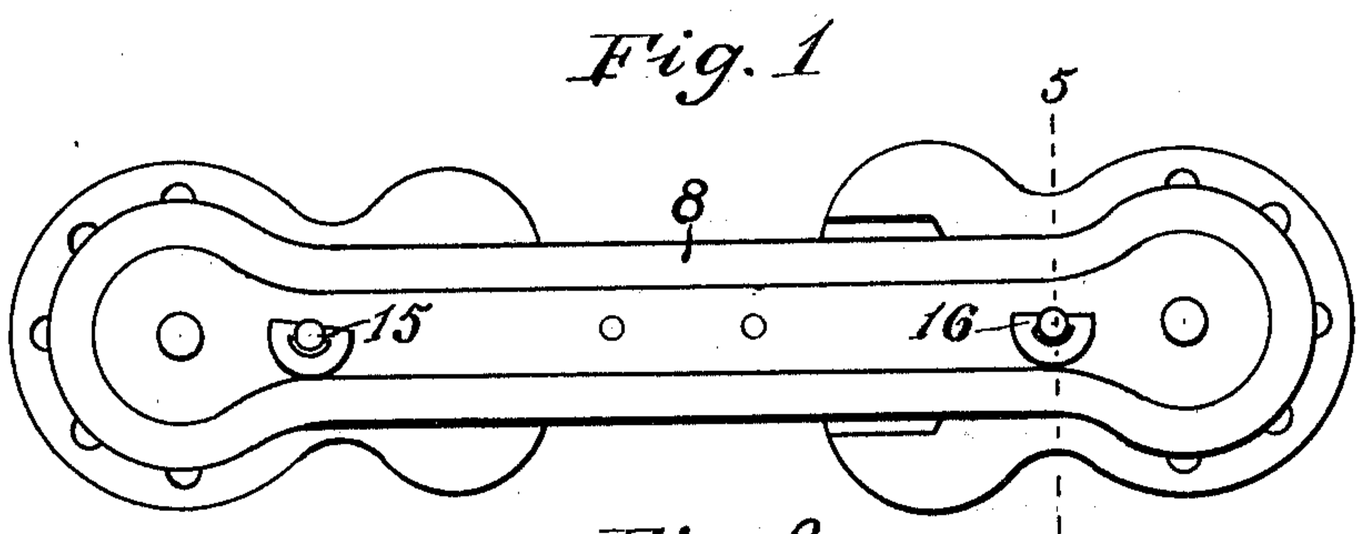


Fig. 2

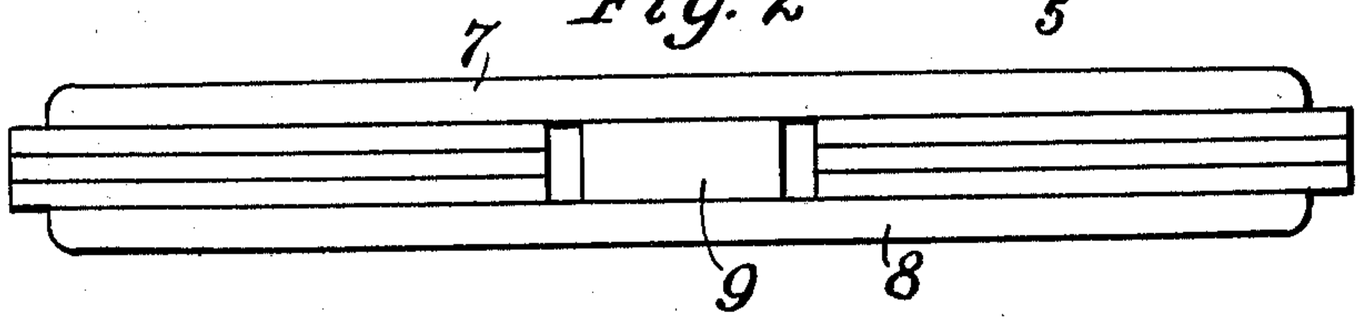


Fig. 3

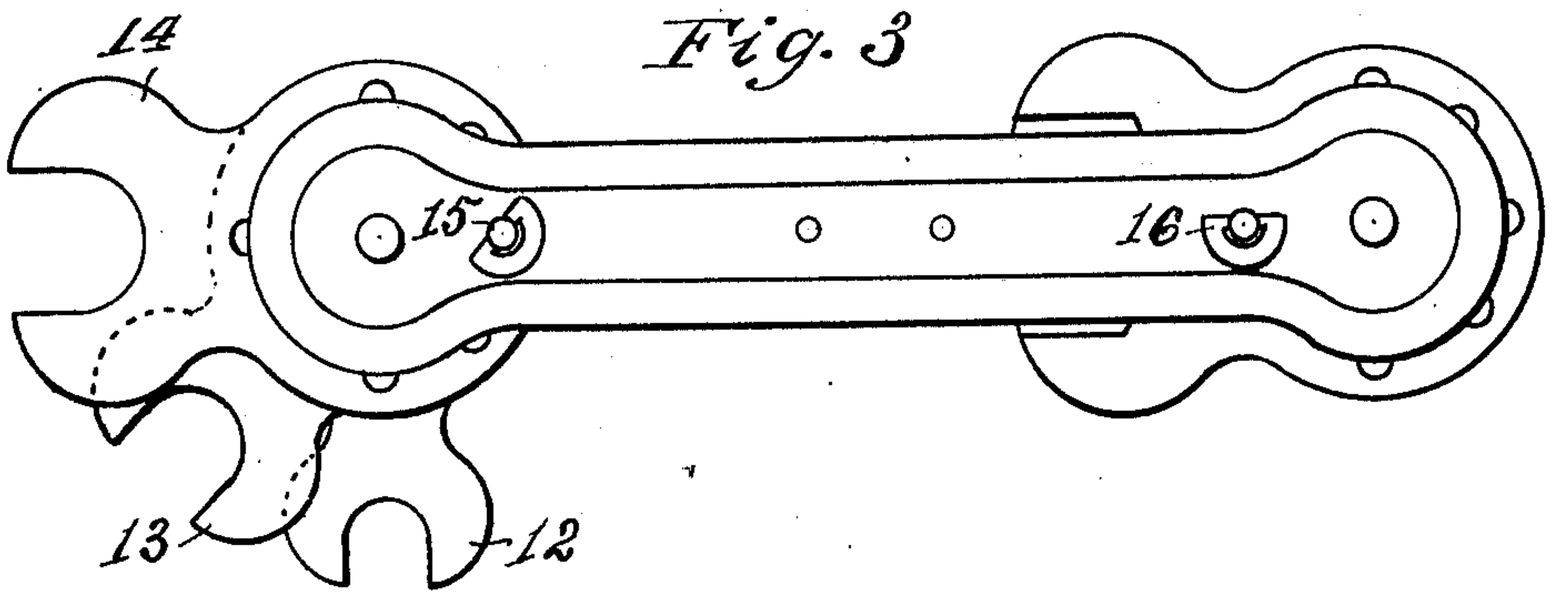


Fig. 4

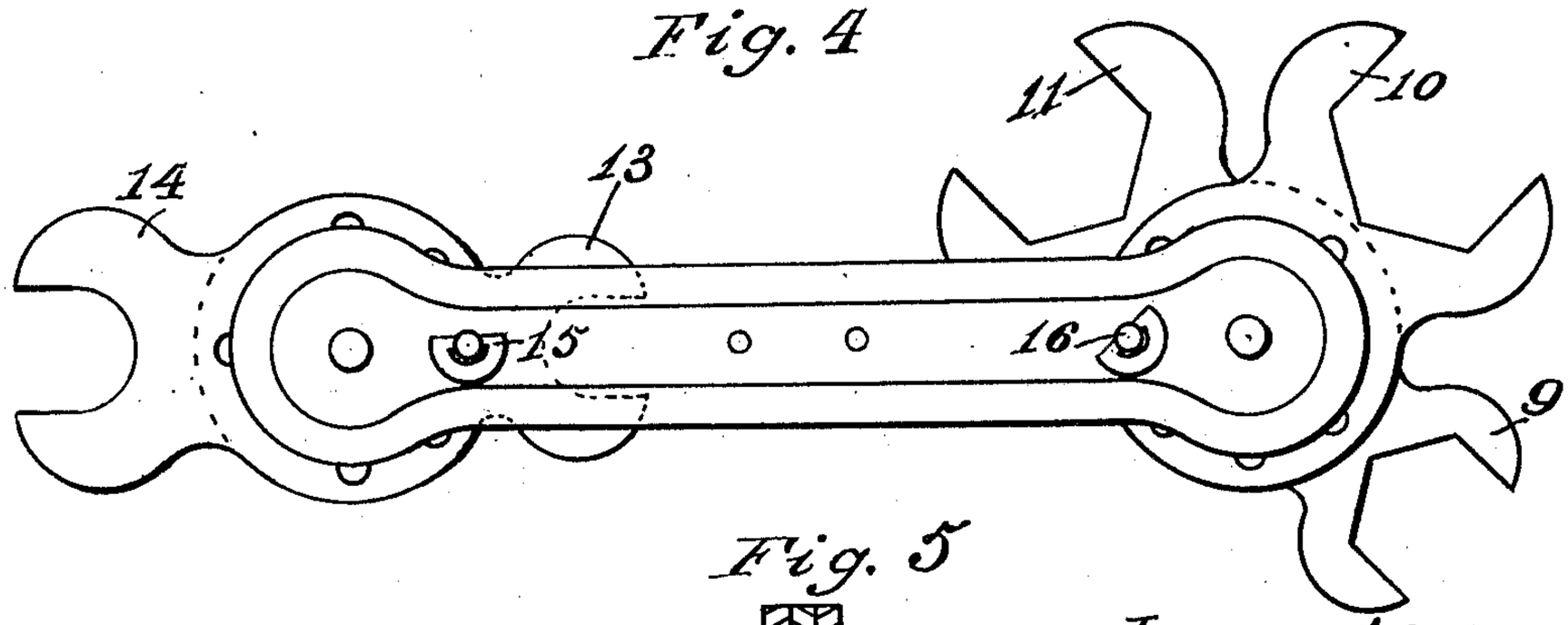
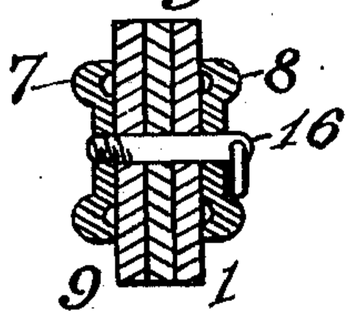


Fig. 5



Witnesses

E. B. Watts

M. H. Darg.

Inventor

John A. Higgins

By Delbert K. Decker

Attorney

UNITED STATES PATENT OFFICE.

JOHN A. HIGGINS, OF GREENPORT, NEW YORK.

MULTIPLE WRENCH.

992,873. Specification of Letters Patent. Patented May 23, 1911.

Application filed August 23, 1910. Serial No. 578,560.

To all whom it may concern:

Be it known that I, JOHN A. HIGGINS, a citizen of the United States, residing at Greenport, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Multiple Wrenches, of which the following is a specification.

This invention relates to wrenches, and particularly to that class of wrenches especially adapted for being carried in a kit or tool-box.

The object of the invention is to construct a wrench for this purpose which shall be in reality a multiple wrench, that is, one provided with a number of individual wrenches varying in size.

Another object of the invention is to construct a wrench of this sort in a manner such that the taking-end of the wrench may be turned or folded into the handle, thereby covering the sharp points or corners of the taking-ends of the individual wrenches and preventing injury to other tools or to the receptacle in which the wrench is carried.

The invention therefore consists in the structure of parts and their combination substantially as hereinafter described and claimed.

In the accompanying drawing which forms a part of this specification, Figure 1 represents in side elevation and Fig. 2 in edge elevation the improved wrench in condition for storing in a kit or carrying otherwise; Fig. 3 is a side elevation of the wrench showing the individual wrenches at one end unfolded and ready for use; Fig. 4 is a side elevation of the wrench showing different dispositions of the individual wrenches at opposite ends of the handle; and Fig. 5 is a transverse section of the wrench as seen in Figs. 1 and 2 taken in the plane indicated by the line 5—5 in Fig. 1.

The wrench comprises a handle made from two pieces of sheet metal stamped and preferably provided with strengthening ribs or beads which, in the instance illustrated, extend about the periphery of what may be termed the hafts of the handle. Such hafts are indicated at 7 and 8 and are shown secured together as by riveting them to a middle piece 9. Pivot holes are formed in the ends of the handle and upon pivots passing through said holes are mounted at one end of the handle the individual wrenches 9, 10 and 11, and at the other end of the handle the individual wrenches 12, 13 and 14. Though there are but three individual wrenches in each end of the handle any number may be used. It will be noted that all of these wrenches vary from one another, or, in other words, are graded from a small size up to a large size so that for any particular machine or vehicle the wrench may be made to carry an individual wrench for every sized nut on the machine or vehicle.

This invention contemplates securing all the individual wrenches at either end of the handle in a predetermined fixed relation to one another and to the handle, and for this purpose the shank of each of the individual wrenches is provided with a series of holes concentric with the pivot hole and through the hafts are formed holes with which those in the shanks of the individual wrenches will register. Suitable pins are provided for passing through the holes in the handle and in the shanks of the individual wrenches. These pins may be of any form, but are preferably made substantially as illustrated in the drawing at 15 and 16. These are preferably screw-threaded at one end and turn into a screw-threaded hole in one of the hafts and are provided at their outer end with hinged thumb pieces which may lie flat against the side of the handle between the peripheral beads of the haft at the side in which the pins are inserted.

It will be noted that when the individual wrenches are folded into the handle, as in Fig. 1, there are no sharp corners or angles presented and the wrench may be carried even in ones pocket with safety. It will also be noticed that the wrench constructed as shown and described is very compact, readily adjusted and easily manipulated. Obviously, the parts may be made of different form and the individual wrenches varied as to location in the handle, and while it is contemplated stamping all the parts from sheet metal and the individual wrenches particularly from tool steel, obviously, the parts may be forged, drop-forged or swaged, or even cast, if desired.

The invention claimed is:—

An article of manufacture consisting of a multiple wrench having two peripherally beaded hafts secured together at their middle, individual wrenches pivoted between said hafts and each individual wrench pro-

vided with holes concentric with its pivot and securing pins adapted to pass through the hafts and through the holes in the individual wrenches and provided with turning means at one end which will lie flat against the hafts between the peripheral beads, substantially as set forth.

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

JOHN A. HIGGINS.

Witnesses:
EFFIE L. FANNING,
ADELAIDE I. BIGGS.