

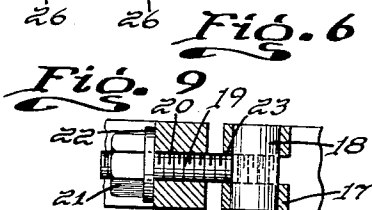
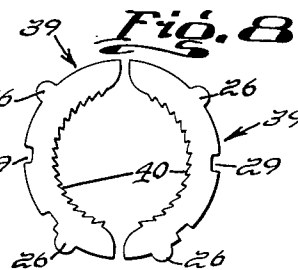
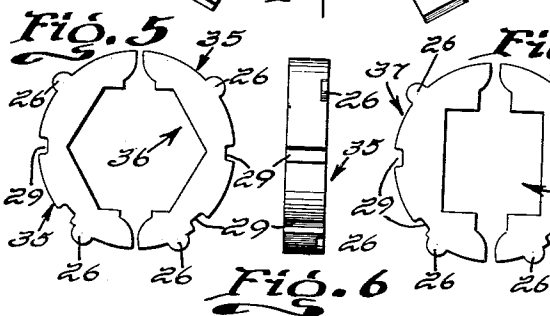
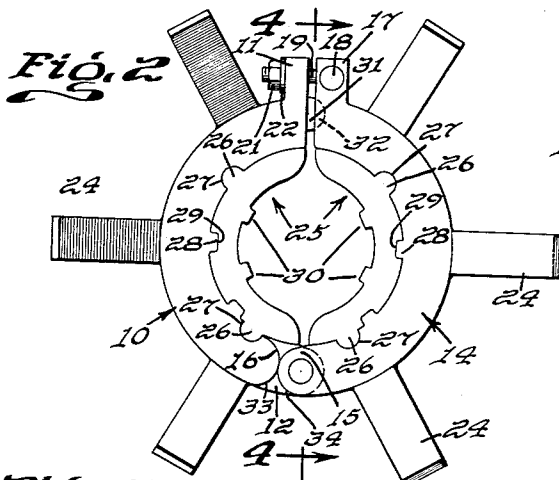
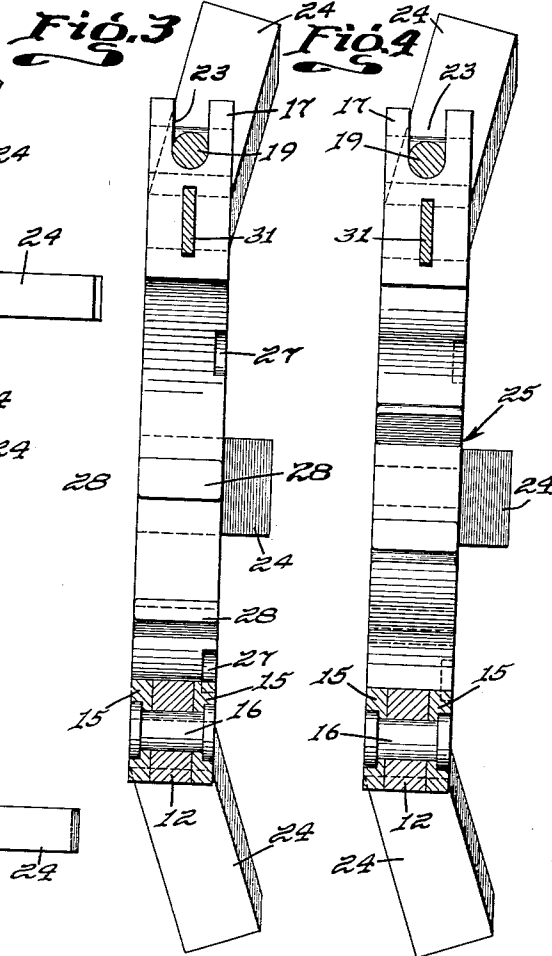
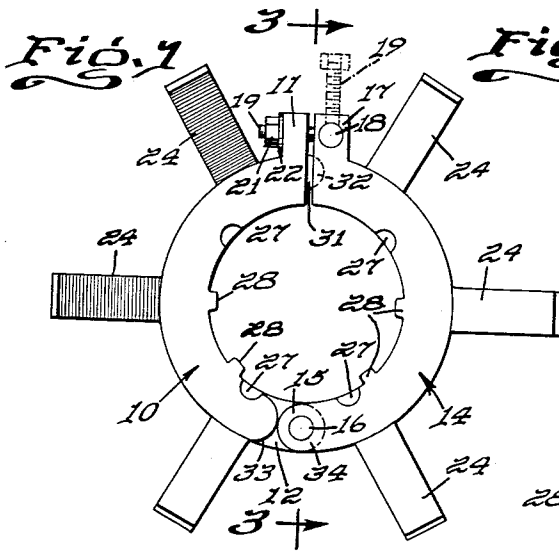
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E. W. BUTTKE

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CLAMP WRENCH

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INVENTOR.
Edward W. Buttke

BY Victor J. Evans & Co.

ATTORNEYS

1

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CLAMP WRENCH

Edward W. Buttle, Eugene, Greg.

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3 Claims. (Cl. 81-189)

This invention relates to a tool, and more particularly to a clamp wrench.

The object of the invention is to provide a wrench which is adapted to hold or support a plurality of different adapters whereby different types of elements can be handled with the tool so that only one tool is required.

Another object of the invention is to provide a clamp wrench which includes a plurality of outwardly extending fingers or arms which are adapted to be used for rotating the tool and wherein a means is provided for detachably connecting different adapter units within the wrench.

A further object of the invention is to provide a clamp wrench which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a plan view of the clamp wrench, without the adapters therein.

Figure 2 is a view similar to Figure 1 but showing a pair of mating or matching adapters in the wrench.

Figure 3 is a sectional view to enlarged scale taken on the line 3-3 of Figure 1.

Figure 4 is a sectional view to enlarged scale on the line 4-4 of Figure 2.

Figure 5 is a plan view showing a pair of modified adapters.

Figure 6 is an end elevational view of the adapters of Figure 5.

Figure 7 is a plan view of a pair of modified adapters which have a rectangular opening therein.

Figure 8 is a plan view of a still further modified set of adapters wherein there is provided teeth on the inner surface of the adapters which may be used to engage a pipe or the like.

Figure 9 is a sectional view showing the locking mechanism for connecting the jaws together.

Referring in detail to the drawings, the numeral 10 designates a first jaw of arcuate formation, and extending from one end of the jaw 10 and formed integral therewith or secured thereto is an apertured ear 12. A lug 11 extends outwardly from the other end of the jaw 10 for a purpose to be later described.

The tool of the present invention further includes a second jaw 14 of arcuate formation, and the jaw 14 includes a bifurcated portion 15 which receives therein or therebetween the ear 12. A pivot pin 16 pivotally connects the bifurcated portion 15 and the ear 12 together. Extending from the second jaw 14 is a lug 17, and a pin 18 is rotatably or pivotally mounted in the lug 17, Figures 1 and 9. A securing element such as a bolt or screw 19 is connected to the pin 18, and the bolt 19 is mounted for movement into and out of engagement with a slot or cutout 20 in the lug 11. The bolt 19 is adapted to move through a slot 23 in the lug 17. A nut 21 is arranged in threaded engagement with the bolt 19, and a washer 22

2

is circumposed on the bolt 19 and abutted by the nut 21. Thus, with the bolt 19 in the solid line position of Figure 1 or in the position shown in Figure 9, the pair of jaws 10 and 14 will be clamped or locked together. When the jaws are to be unlocked as for example when adapters are to be inserted or removed therefrom, the nut 21 can be loosened on the bolt 19 whereby the bolt 19 can be swung from the solid line position of Figure 1 to the dotted line position so that the jaws 10 and 14 can be pivoted apart about an axis extending through the pin 16.

Extending radially outward from the jaws 10 and 14 and secured thereto or formed integral therewith, is a plurality of spaced apart fingers 24, and the fingers 24 may be arranged at an angle with the jaws as shown in Figures 3 and 4. These fingers 24 are adapted to be used for rotating the tool, and if increased leverage is desired, a suitable pipe or the like can be arranged in engagement with the fingers 24 for rotating the tool.

A pair of mating or similar adapter sections are adapted to be positioned within the jaws 10 and 14, and for example adapter sections 25 can be positioned therein. Each of the adapter sections 25 is arcuate and has the same construction, and each is provided with a means that coacts with the jaws 10 and 14 for causing the adapter sections to rotate with the jaws. Thus, extending outwardly from each of the sections 25 is a plurality of tongues 26, and these tongues 26 are snugly received in grooves 27 which are formed on the inner surfaces of the jaws, Figures 2 and 3. The adapter sections 25 have the same width as the jaws, but the tongue and grooves 26 and 27 are of less width than the sections and jaws.

Extending inwardly from each of the jaws is a plurality of ribs 28, Figures 1, 2 and 3. These ribs 28 are of the same width as the jaws and these ribs 28 snugly project into or seat in recesses 29 which are formed in the outer surfaces of the adapter sections 25. Extending inwardly from each of the adapter sections 25 is a plurality of spaced apart teeth 30 which are adapted to engage a workpiece so as to rotate the workpiece when the wrench is rotated. It is to be noted that the center of the sections 25 is open whereby a workpiece can be extended there-through.

A means is provided for helping to insure that the jaws 10 and 14 remained properly aligned, and this means comprises a lip 31 which extends from one end of the jaw 10. This lip 31 is adapted to be received snugly in a cutout or recess 32 in the other jaw 14. The end portion of the jaw 10 adjacent the pivotal connection between the jaws is rounded as at 33, while the adjacent end portion of the other jaw 14 is also rounded as at 34 and this rounded construction insures that there will be no interference with the normal pivotal movement of the jaws as they are moved into and out of their open and closed positions.

Referring to Figures 5 and 6 of the drawings, there is shown a pair of modified adapters which are each indicated by the numeral 35, and these adapters are adapted to be used in lieu of the previously described adapters 25. The same means is provided for connecting the adapters 25 to the jaws 10 and 14 so that these various adapters can be interchangeably used. However, the adapters 35 coact to define in their interior a hexagonal shaped opening 36 which can be used for rotating a six sided object or the like.

In Figure 7 there is shown a further modified set of adapters which are indicated by the numeral 37, and the adapters 37 have their interior cutout as at 38 in a rectangular shape for receiving a suitable square or rectangular object. In Figure 8 the adapters are indicated by the numeral 39, and the interior of the adapters 39 are provided with teeth or serrations 40 which may be used for engaging a pipe whereby such piece of pipe can be readily rotated when the adapters are in the wrench.

From the foregoing it is apparent that there has been provided a clamp wrench wherein the same pair of jaws 10 and 14 can be used for supporting or receiving different sets of adapters. Thus, the adapters 25 can be inserted between the jaws, or the adapters 35, 37 or 39 can be positioned between the jaws. Each of the adapters has the same means for detachably connecting the adapters to the jaws so that as the jaws are rotated the adapters will rotate therewith. Thus, projecting inwardly from the jaws are ribs 28 which snugly seat in recesses 29 in the adapters, and tongues 26 extend outwardly from the adapters for engagement with grooves 27 in the jaws. When the adapters are to be removed or replaced, the bolt 19 can be swung from the solid line position of Figures 9 and 1 to the dotted line position of Figure 1 whereby the jaws 10 and 14 can be swung open about the pivot pin 16. Then, the adapters can be readily removed and replaced and then the bolt 19 returned to the solid line position of Figure 1. Then, the fingers 24 can be used for rotating the tool and due to the provision of the previously described interengaging tongues and ribs, the jaws and adapters will rotate in unison.

With the wrench clamped onto an object, the wrench does not have to be removed and when the wrench is being rotated, it is only necessary to move the pipe along the various fingers or appendages 24 to apply the desired amount of leverage. The wrench will take the place of four separate spanner wrenches and the various adapters will fit the objects that are to be removed or tightened. Further, the adapters do not use springs, brackets, or lock screws and in actual construction, the inner circumference of the jaws is grooved deeper in the center than it is on the outside so that there will be no tendency for the adapters to accidentally become disengaged from the jaws. If desired a hammer can be used for inserting or removing the adapters from the jaws. The fingers or appendages 24 are arranged at an angle of approximately 15° with respect to the jaws so that a workpiece can be more easily turned as for example where there is an overhang in castings, housings and sprockets. The wrench can also be used as a sledging wrench. Since the adapters of each pair are not connected, due to the provision of the pivot pin 16 and adjustable nut 21, the jaws can be moved towards and away from each other so as to accommodate articles of different sizes.

The adapters 35 shown in Figures 5 and 6 can be used to turn a hexagonal shaped nut for example, while the adapters 37 of Figure 7 can be used for working on drill steel and the like. The adapters 39 with the teeth 40 of Figure 8 can be used for turning pipes.

I claim:

1. In a wrench, a first curved jaw having an ear extending from one end thereof, a lug extending from the other end of said jaw and provided with a cutout, a curved lip extending from said first jaw adjacent said lug, a second jaw of arcuate formation having a recess for receiving said lip, said second jaw having a bifurcated end pivotally connected to said ear, a lug extending from the end of said jaw opposite said bifurcated end, a pin pivotally mounted in said last named lug, a securing element extending from said pin and mounted for movement into

and out of engagement with said cutout, a pair of mating adapter sections interposed between said jaws, and means detachably connecting said sections to said jaws, said means comprising ribs extending inwardly from said jaws and having the same width as said jaws, there being recesses in said adapter sections for snugly receiving said ribs, tongues extending outwardly from said adapter sections and being of less width than said sections, there being grooves in said jaws for snugly receiving said tongues.

2. In a wrench, a first curved jaw having an ear extending from one end thereof, a lug extending from the other end of said jaw and provided with a cutout, a curved lip extending from said first jaw adjacent said lug, a second jaw of arcuate formation having a recess for receiving said lip, said second jaw having a bifurcated end pivotally connected to said ear, a lug extending from the end of said jaw opposite said bifurcated end, a pin pivotally mounted in said last named lug, a securing element extending from said pin and mounted for movement into and out of engagement with said cutout, a pair of mating adapter sections interposed between said jaws, and means detachably connecting said sections to said jaws, said means comprising ribs extending inwardly from said jaws and having the same width as said jaws, there being recesses in said adapter sections for snugly receiving said ribs, tongues extending outwardly from said adapter sections and being of less width than said sections, there being grooves in said jaws for snugly receiving said tongues, a plurality of fingers extending outwardly from said jaws and arranged angularly with respect thereto, the meeting edges of said first and second jaws adjacent the pivot being rounded, and means projecting inwardly from said adapter sections for engagement with a workpiece.

3. In a wrench, a first curved jaw having an ear extending therefrom, a lug extending from said jaw and provided with a cutout, a lip extending from said first jaw adjacent said lug, a second jaw of arcuate formation having a recess for receiving said lip, said second jaw having a bifurcated end pivotally connected to said ear, a lug extending from said jaw, a pin pivotally mounted in said last named lug, a securing element extending from said pin and mounted for movement into and out of engagement with said cutout, a pair of mating adapter sections interposed between said jaws, and means detachably connecting said sections to said jaws, said means comprising ribs extending inwardly from said jaws, there being recesses in said adapter sections for snugly receiving said ribs, tongues extending outwardly from said adapter sections, there being grooves in said jaws for snugly receiving said tongues.

References Cited in the file of this patent

UNITED STATES PATENTS

810,304	Remion	Jan. 16, 1906
1,057,593	Stroope	Apr. 1, 1913
1,518,755	Purvis	Dec. 9, 1924
1,658,075	Butt	Feb. 7, 1928
2,637,236	Vergnani et al.	May 5, 1953
2,697,957	Yoder	Dec. 28, 1954