

No. 717,083.

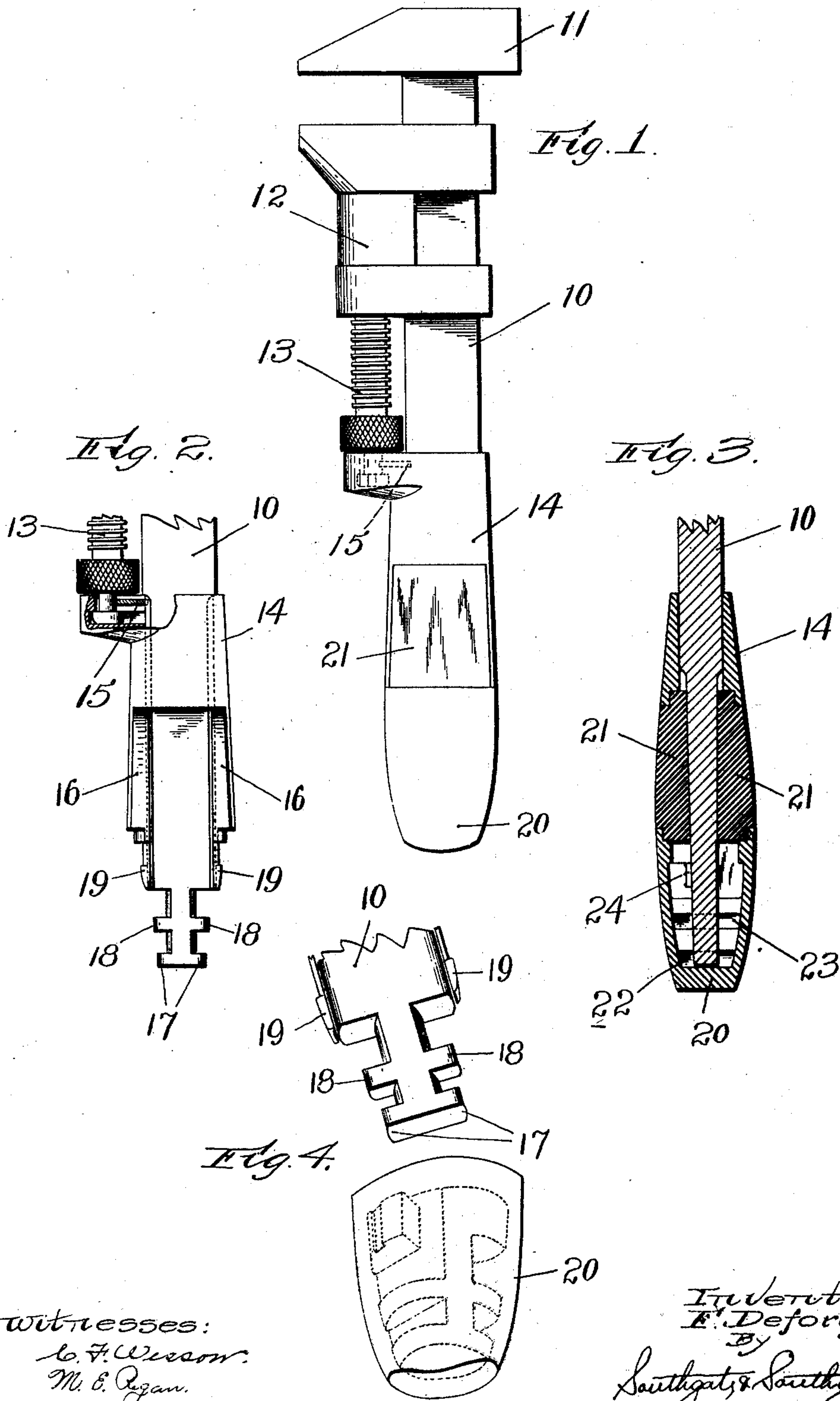
Patented Dec. 30, 1902.

F. DEFORGE.

WRENCH.

(Application filed June 9, 1902.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

FORTUNAT DEFORGE, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO LOUIS F. THOIN, OF WORCESTER, MASSACHUSETTS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 717,083, dated December 30, 1902.

Application filed June 9, 1902. Serial No. 110,857. (No model.)

To all whom it may concern:

Be it known that I, FORTUNAT DEFORGE, a subject of the King of England, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Wrench, of which the following is a specification.

This invention relates to an improved form of knife-handle monkey-wrench; and the special object of this invention is to provide a strong, efficient, and inexpensive form of monkey-wrench handle in which the parts are permanently and rigidly locked together without the use of screw-threads, rivets, or other forms of special fastening devices.

To this end this invention consists of the wrench as an article of manufacture and of the combinations of parts therein, as hereinafter described and more particularly pointed out in the claims at the end of this specification.

In the accompanying drawings, Figure 1 is a side view of a wrench constructed according to this invention. Fig. 2 is a fragmentary view thereof partially broken away, the wooden side pieces and end thimble of the handle being removed. Fig. 3 is a transverse sectional view of the handle, and Fig. 4 is a fragmentary diagrammatic view illustrating the relation of the locking-tangs and the sockets for receiving the same in the end thimble.

In the ordinary forms of monkey-wrenches which have heretofore been employed it has been found in practice that the part which is most liable to give out is the wrench-handle—that is to say, in ordinary machine-shop work or in other work requiring the use of monkey-wrenches the wrenches are frequently subjected to exceedingly rough usage, being frequently used as hammers or driving-tools and being otherwise abused. This handling or rough usage of a monkey-wrench of the constructions which have heretofore ordinarily been employed now frequently results in the loosening of the handle-fastenings, so that the wrench becomes shakily or the parts of the handle become broken and the wrench comes apart. To overcome this objection, a number of special forms of wrench-handles have been devised; but in all of such con-

struction with which I am familiar the parts have been fastened together by the use of screw-threads, rivets, or other forms of fastening devices, which are liable to work loose under the rough handling before referred to. To overcome these objections, I have provided a form of wrench construction in which the end thimble of the handle is permanently locked or fastened in place, so that when the parts of the handle have been once assembled or turned to operative position they will constitute a substantially rigid structure which cannot thereafter be separated or taken apart. To accomplish this object, the shank of the wrench and the side pieces thereof are provided with locking-tangs, which are arranged to be turned into engagement with recesses in the end thimble. The parts are designed to fit tightly together, so that when turned into position they will be rigidly fastened.

In order to lock the end thimble from being turned back again after it has been turned to its fastened position, the locking-tangs of the step-ferrule have a normal tendency to spring slightly outwardly, so as to bind in the sockets which receive them, and are preferably arranged to spring outwardly behind small detents or stops to form a lock against backward turning.

Referring to the accompanying drawings for a detail description of the wrench constructed according to my invention, 10 designates the stem or shank of the wrench, which is provided at its upper end with the fixed jaw 11. Mounted on the stem 10 is the sliding jaw 12, threaded into which is the adjusting-screw 13. Fitting onto the reduced lower end of the shank 10 is the step-ferrule 14, having a step for receiving the stud projecting down from the adjusting-screw 13. The adjusting-screw 13, as shown most clearly in Fig. 2, is provided with a head arranged to fit into a T-shaped slot in the step and the screw is held in place by a piece 15, which fits into slots in the step and is held in place by the wrench-shank 10. Extending down from the step-ferrule 14 are side pieces 16.

At its lower end the wrench-shank 10 is provided with two sets of locking-tangs 17 and

18, while the lower ends of the side pieces 16 are preferably comparatively thin and normally tend to spring outwardly and are provided with small locking-tangs 19. The wooden side pieces 21 are of substantially the ordinary construction and are provided with projections engaging behind shoulders in the step-ferrule 14 and end thimble 20, respectively.

As illustrated in Figs. 3 and 4, the end thimble 20 is provided with a central hole for receiving the end of the wrench-shank, opening from which are the locking-recesses 22 and 23 for receiving the locking-tangs 17 and 18, respectively. Above the recesses 23 are partial recesses for receiving the locking-tangs 19. Formed in the sides of each of these partial recesses, as illustrated most clearly in Fig. 3, is a rib or detent 24, arranged so that when a locking-tang 19 has been turned past the detent 24 it will spring outward slightly to form a lock for preventing the end thimble from being turned back after it has been once set up to locked position.

In assembling a wrench as thus constructed the adjusting-screw 13 is started into the adjustable jaw 12. The head on the lower end of the adjusting-screw is slipped into the T-shaped slot in the step. The wrench-shank is inserted through the adjustable jaw and step-ferrule. The wooden side pieces are then put in position and the parts are permanently locked together by the application of the end thimble, the end thimble being applied, as illustrated in Fig. 4, at substantially right angles to its locked position and then being given a quarter-turn to carry the locking-tangs into the recesses for receiving the same, the slight outward spring of the locking-tangs 19 preferably being relied on to permanently lock the end thimble in place.

By means of this construction it will be seen that I have provided an extremely rigid and serviceable form of wrench in which the parts are fastened together without the use of screws, rivets, or other fastenings, which are liable to work loose, and that when the parts have been once assembled they lock themselves, so that they cannot again be taken apart.

I am aware that numerous changes may be made in practicing my invention by those who are skilled in the art without departing from the scope thereof as expressed in the claims. I do not wish, therefore, to be limited to the special construction I have herein shown and described; but

What I do claim, and desire to secure by Letters Patent of the United States, is—

1. As an article of manufacture, a wrench comprising a wrench-shank having locking-tangs at its lower end, and a closed end thimble having recesses for receiving the locking-tangs to hold the parts together.

2. As an article of manufacture, a wrench comprising a wrench-shank having locking-tangs at its lower ends, a step-ferrule having side pieces with locking-tangs at their lower ends, and a closed end thimble having recesses for receiving the locking-tangs of the shank and side pieces so as to hold the parts together.

3. As an article of manufacture, a knife-handle monkey-wrench comprising a wrench-shank having locking-tangs at its lower end, a step-ferrule having side pieces with locking-tangs at their lower ends, a closed end thimble, and wooden side pieces having their ends engaging sockets in the step-ferrule and end thimble respectively, said end thimble being provided with locking recesses for receiving the locking-tangs of the wrench-shank and side pieces respectively to hold the parts together.

4. As an article of manufacture, a wrench comprising a wrench-shank having locking-tangs at its lower end, an end thimble having a hole for receiving the wrench-shank, with recesses leading therefrom for receiving the locking-tangs, and means for preventing the end thimble from being turned back to unlock the parts after they have been turned to normal position.

5. As an article of manufacture, a wrench comprising a shank having locking-tangs at its lower end, a step-ferrule having side pieces with locking-tangs at their lower ends, which normally tend to spring outwardly, and an end thimble having a hole for receiving the wrench-shank and sockets for receiving the locking-tangs of the wrench-shank and side pieces respectively, said end thimble having small ribs or detents behind which the spring locking-tangs of the side pieces engage to prevent the end thimble from being turned back after the parts have been turned to normal position.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FORTUNAT ^{his} X DEFORGE.
mark

Witnesses:

PHILIP W. SOUTHGATE,
LOUIS W. SOUTHGATE.