

No. 708,447.

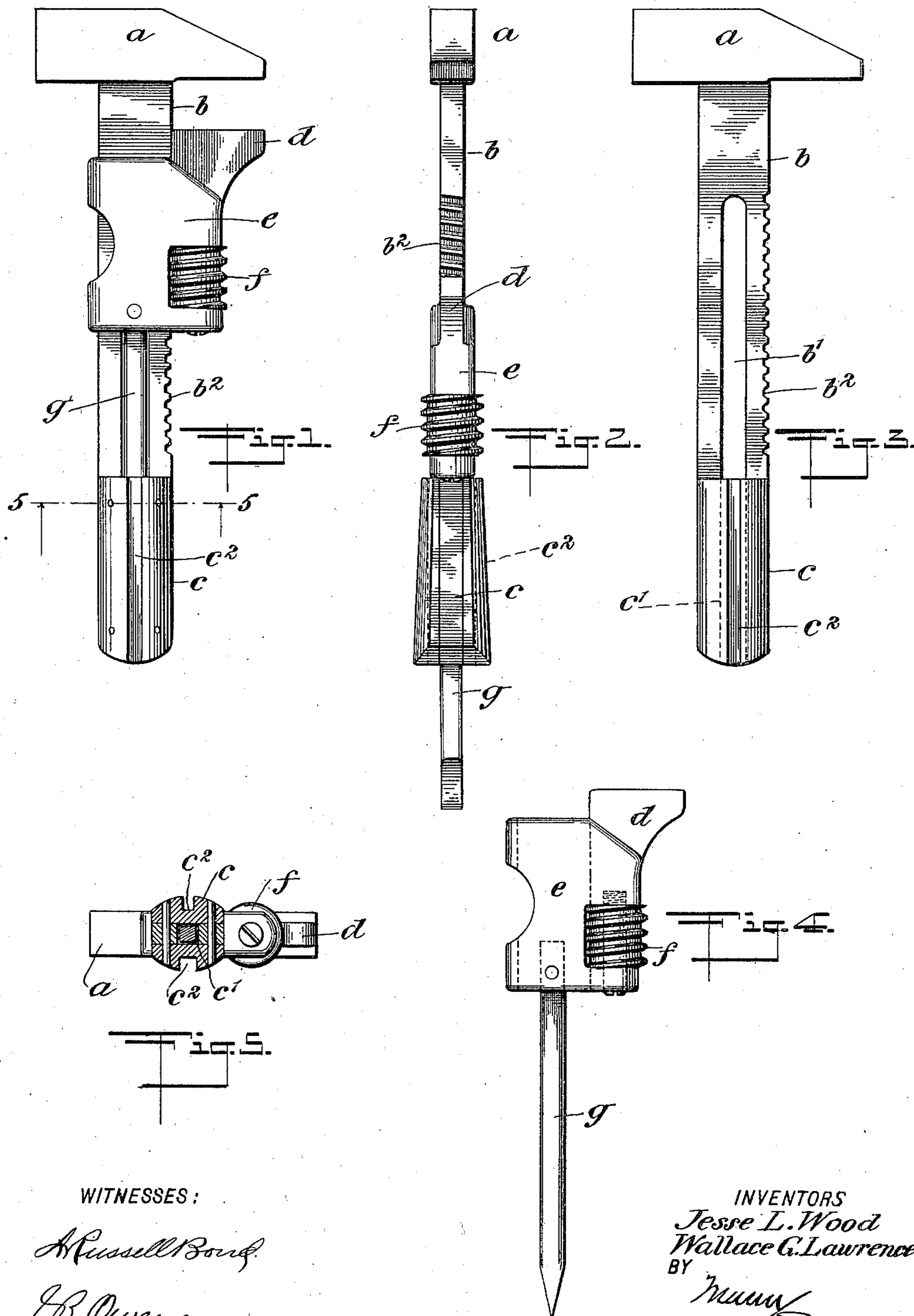
Patented Sept. 2, 1902.

J. L. WOOD & W. G. LAWRENCE.

COMBINATION TOOL.

(Application filed Dec. 10, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JESSE L. WOOD, OF FULTON, AND WALLACE G. LAWRENCE, OF CORDOVA,
ILLINOIS.

COMBINATION-TOOL.

SPECIFICATION forming part of Letters Patent No. 708,447, dated September 2, 1902.

Application filed December 10, 1901. Serial No. 85,323. (No model.)

To all whom it may concern:

Be it known that we, JESSE L. WOOD, a resident of Fulton, in the county of Whiteside, and WALLACE G. LAWRENCE, a resident of Cordova, in the county of Rock Island, State of Illinois, citizens of the United States, have invented a new and Improved Combination-Tool, of which the following is a full, clear, and exact description.

This invention relates to a tool of the general form of a monkey-wrench, in which various other implements are embodied by certain novel features of structure.

The tool is particularly useful to bicyclists and automobile drivers, although, of course, it is useful in various other branches of mechanics, as will be obvious from the following specification.

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view of the invention. Fig. 2 is a front view thereof. Fig. 3 is a side view of the shank. Fig. 4 is a view of the movable jaw and the parts carried thereby, showing it detached from the parts illustrated in Fig. 3; and Fig. 5 is a section on the line 5 5 of Fig. 1.

The tool comprises a stationary wrench-jaw *a*, which also forms a hammer.

b indicates the shank of the tool, which is suitably attached to or formed integral with the stationary jaw and hammer *a*. The shank *b* has a longitudinal slot *b'* therein, and its front edge is formed with a screw-rack *b²*, after the manner of the usual monkey-wrench.

c indicates a handle which may be formed integral with the shank or it may be made of separate parts fastened to the shank in any suitable manner. This handle is formed with a central longitudinal passage *c'* (see Fig. 5) in line with the slot *b'* of the shank *b*, the purpose of which passage *c'* will fully appear hereinafter, and the handle is provided in its side faces with grooves *c²*, these grooves being of different widths (see Fig. 5) and form-

ing spoke-wrenches for use on bicycle-wheels and other wheels of like construction.

d indicates the movable jaw of the monkey-wrench and which is formed on a slide *e*, mounted on the shank *b*, and provided with a worm *f*, meshing with the rack *b²* of the shank, so as to advance the slide *e*, and consequently the jaw *d*, toward and from the jaw *a*. Fastened to the slide *e*, so as to move therewith, and lying within the slot *b'* of the shank *b* and the passage *c'* of the handle *c* is the screw-driver *g*. When the slide *e* is moved up in close proximity to the jaw *a*, the screw-driver *g* is drawn entirely within the shank and handle of the tool and the lower part of the passage *c'* is left unobstructed, so that this part then forms a socket-wrench. When, however, the slide *e* is moved downward to separate the jaws *a* and *d*, the screw-driver *g* is projected out from the handle *c*, so that it may be used.

The manner of using the tool will be fully understood from the foregoing description, and it will be observed that the device embodies five distinct devices, any one of which may be used separately with great facility. These tools are the hammer *a*, the monkey-wrench, formed of the jaws *a* and *d*, the screw-driver *g*, the two spoke-wrenches *c²*, of different sizes, and the socket-wrench, formed by the lower part of the passage *c'*.

Various changes in the form and details of our invention may be resorted to at will without departing from the spirit of our invention. Hence we consider ourselves entitled to all forms of the invention as may lie within the intent of our claims.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination of a stationary jaw, a shank fastened thereto and having a longitudinal slot and also a rack, a slide mounted on the shank and comprising a movable jaw, a worm mounted in the slide and working with the rack of the shank, and a screw-driver attached to the slide and lying movably in the slot of the shank.

2. The combination of a stationary jaw, a shank fastened thereto and having a longi-

tudinal slot and also a rack, a slide mounted on the shank and comprising a movable jaw, a worm mounted in the slide and working with the rack of the shank, a screw-driver 5 attached to the slide and lying movably in the slot of the shank, and a handle carried by the end of the shank opposite the stationary jaw, said handle having a longitudinal passage therein forming a continuation of the 10 slot in the shank and through which passage the screw-driver may be projected.

3. The combination of a stationary jaw, a shank fastened thereto and having a longitudinal slot and also a rack, a slide mounted 15 on the shank and comprising a movable jaw, a worm mounted in the slide and working with the rack of the shank, a screw-driver attached to the slide and lying movably in the slot of the shank, and a handle carried 20 by the end of the shank opposite the stationary jaw, said handle having a longitudinal passage therein forming a continuation of the slot in the shank and through which passage the screw-driver may be projected, the outer 25 end of said passage in the handle being angular in cross-sectional form to permit its use as a wrench.

4. The combination of a stationary jaw, a shank fastened thereto and having a longitudinal slot, a slide mounted on the shank 30 and comprising a movable jaw, and a screw-

driver attached to the slide and lying movably in the slot of the shank.

5. The combination of a stationary jaw, a shank fastened thereto and having a longitudinal slot, a slide mounted on the shank 35 and comprising a movable jaw, a screw-driver attached to the slide and lying movably in the slot of the shank, and a handle carried by the shank opposite the stationary jaw, the 40 handle having a passage therein forming a continuation of the slot in the shank and through which passage the screw-driver may be projected.

6. A tool, comprising a stand having a rack 45 thereon, a stationary jaw, a movable jaw sliding on the stand, a worm mounted on the movable jaw and meshed with the rack for the purpose specified, and a screw-driver attached 50 to the movable jaw and moving therewith, the tool having a passage therein in which the screw-driver is movable, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of 55 two subscribing witnesses.

JESSE L. WOOD.

WALLACE G. LAWRENCE.

Witnesses:

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HENRY A. BURT.