(No Model.)

W. H. HUSTON.

COMBINATION WRENCH.

No. 490,789. Patented Jan. 31, 1893.

Fig. 1.

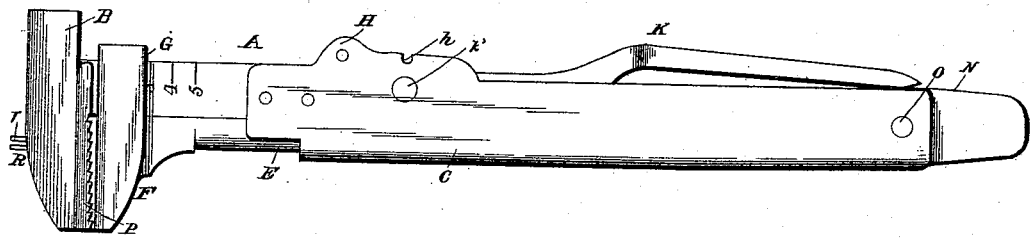


Fig. 2.

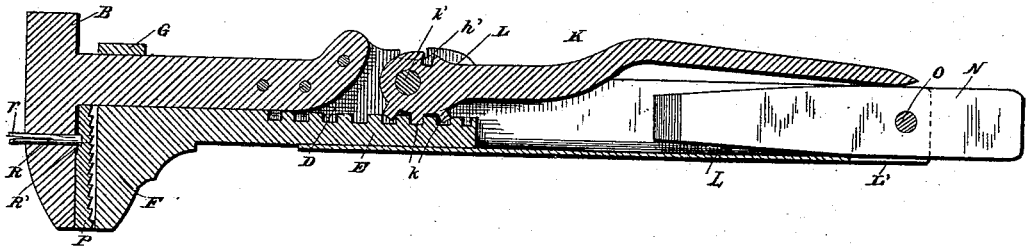


Fig. 3

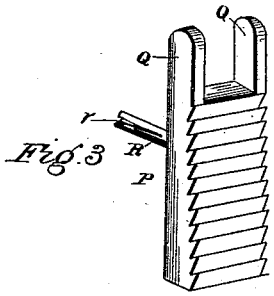


Fig. 4

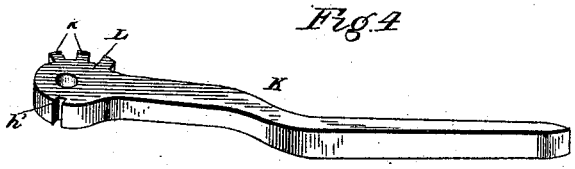
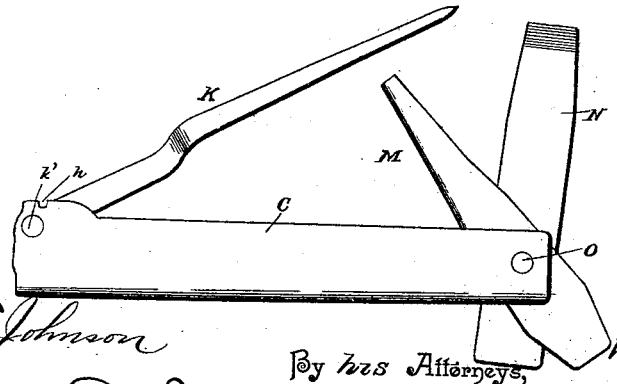


Fig. 5.



Witnesses

F. M. Johnson

Inventor

William H. Huston

By his Attorneys,

A. Snow & Co.

UNITED STATES PATENT OFFICE.

WILLIAM HENRY HUSTON, OF MEXICO, MISSOURI, ASSIGNOR OF ONE-HALF TO GEORGE T. DORSEY, OF LITCHFIELD, ILLINOIS.

COMBINATION-WRENCH.

SPECIFICATION forming part of Letters Patent No. 490,789, dated January 31, 1893.

Application filed June 15, 1892. Serial No. 436,860. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY HUSTON, a citizen of the United States, residing at Mexico, in the county of Audrain and State of Missouri, have invented a new and useful Combination-Wrench, of which the following is a specification.

My invention relates to a combination wrench, the object of which is to provide a simple, portable tool, combining the uses of a number of tools in common use in a particular trade or line of work, and my invention is fully illustrated in the accompanying drawings, wherein:—

Figure 1 is a side view, Fig. 2 is a longitudinal sectional view, Fig. 3 is a detail view of the rod and pipe attachment, Fig. 4 is a view of the sliding-jaw lever, Fig. 5 is a partial side view, showing the punch and cold chisel extended.

The rectangular shank, A, which carries the stationary jaw, B, is fitted and firmly secured in the end of the hollow handle, C, the latter being open at its rear side and closed at its front side and the shank being arranged flush with the rear or open side so as to form a pocket, D, between the front side of the shank and the closed side of the handle. In the pocket, D, fits and operates the rack-arm, E, of the sliding jaw, F, the latter being provided with a loop or sleeve, G, to embrace and slide upon the shank. The rack-arm is guided and steadied by the adjacent, parallel sides of the shank and handle between which it operates.

Between rearwardly projecting ears, H H, which are provided with wire-cutting notches, *h*, is fulcrumed the operating lever for the sliding jaw, said lever, K, having a head, L, provided with teeth, *k*, to engage the rack-arm, as shown in Fig. 2. The fulcrum, *k'*, of the operating lever, is directly in rear, or in alignment with the shank, A, whereby in operating the wrench there can be no lateral strain or twist upon the shank. The strain is longitudinal. The head of the operating lever is also provided with wire-cutting notches, *h'*, to coact with the notches, *h*, in the ears, H, and form wire-cutting pliers.

The handle, which is hollow throughout, and is cut away at its extremity, as shown at L, serves as a sheath for the punch, M and chisel, N, which are fulcrumed upon a common pivot, O. When extended these small tools assume a position at right angles to the handle and fit in the recess, L, in the end of the handle.

The free end of the operating lever is beveled to form a screw-driver, and when folded this lever lies in contact with the edges of the punch and chisel, the operating ends of the latter being concealed within the handle and covered by the lever. Only the back ends of the punch and chisel are visible when these tools are folded, said back ends projecting slightly beyond the end of the handle.

The rod and pipe attachment, P, bears against the face of the stationary jaw and straddles the shank close to the latter, being provided with parallel arms, Q Q, for this purpose. The rod and pipe attachment is provided, furthermore, with a perpendicular stem, R, to fit in a perforation, R', in the stationary head, the free end of said stem being split, as shown at *r*, to hold it firmly in the perforation and prevent displacement during operation.

The rear end of the stationary jaw is adapted for use as a hammer.

The operating lever being upon the rear side of the handle enables the parts to be more compactly arranged, and brings the strain of the leverage in line with the shank, as above described.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States, is;—

1. In a wrench, the combination with the stationary jaw, of a rod and pipe attachment provided with parallel arms to engage the shank and a perpendicular split pin to engage a perforation in said jaw, substantially as specified.

2. In a wrench, the combination of the shank carrying the stationary jaw, the hollow handle secured to said shank and having an open rear side, the movable jaw having a toothed stem, a toothed operating lever fulcrumed in the handle to engage the stem of the movable jaw and adapted to fold into the open rear side of the handle, and the independent tools fulcrumed in the lower end of the handle to fold into the latter, and adapted to be locked in said folded position by the operating lever when the latter is folded, substantially as described.

3. In a wrench, the combination of the hol-

low handle having an open rear side and closed front side, the shank secured to the handle at its open side and forming, with the closed side thereof, a pocket, the sliding jaw having a rack-arm which fits and is guided in said pocket, and the operating lever provided with teeth to engage the rack-arm, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM HENRY HUSTON.

Witnesses:
MASON CREASEY,
W. R. KEMP.