(No Model.)

W. HOUGHTON.

WRENCH.

No. 514,993. Patented Feb. 20, 1894.

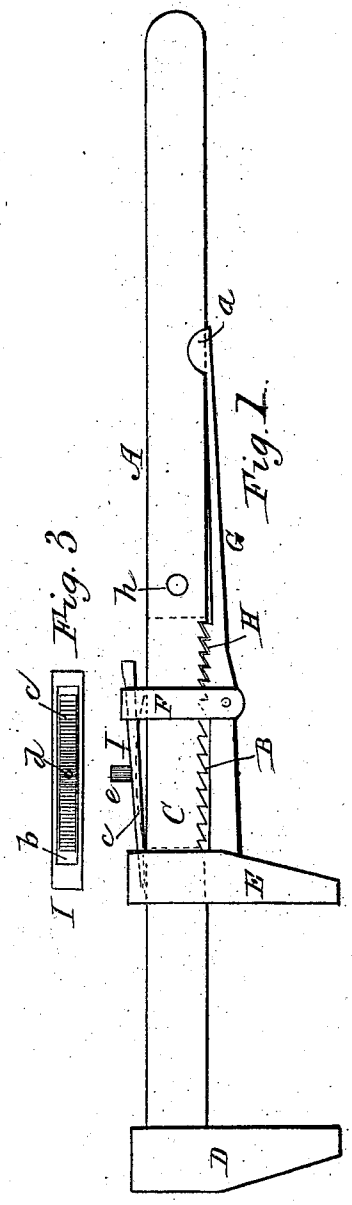

Fig. 1.

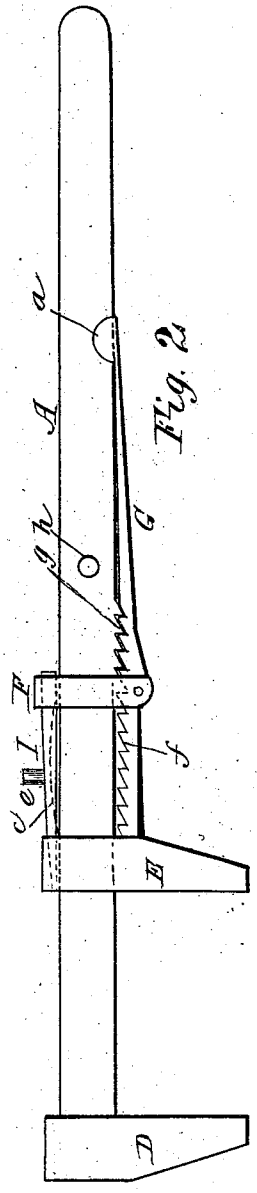

Fig. 2.

Fig. 3.

Witnesses
A. Stuart Jr.
Racrea.

Inventor
William Houghton
By W. Bruce
Atty

THE NATIONAL LITHOGRAPHING COMPANY,
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM HOUGHTON, OF PARIS, CANADA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 514,993, dated February 20, 1894.

Application filed May 4, 1893. Serial No. 472,975. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HOUGHTON, a subject of the Queen of Great Britain, residing at Paris, in the county of Brant, in the Province of Ontario, Canada, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

The invention relates to improvements in that class of devices known as monkey wrenches, and will possess many advantages, such as quickness and ease of jaw adjustment, solidity, depth, and great convenience in handling the instrument in cramped places where there is little room to work an ordinary wrench.

The device consists in a metal stem having a series of ratchet teeth on a portion of its face side, and a back jaw and tail-piece provided with corresponding ratchet teeth made to mesh into those on the stem. A clip is formed on the back jaw frame and made to pass around the stem to hold it to the back jaw and a wedge-shaped lock key is made to pass under the clip and rear of back jaw and a projection is formed on the said key to prevent it from falling out and also to act as a handle to move it back and forth. A flat spring is affixed to the under side of the key to draw the ratchet teeth into gear. The key is locked after getting the jaws in their proper place, and the back jaw cannot move downward after being placed in position. The end of the tail piece is provided with two lugs which come down on each side of the stem to keep the said tail-piece in its place.

By reference to the accompanying drawings forming part of this specification, Figure 1 represents a side view of a wrench embodying my invention. Fig. 2 is a similar view showing a slight modification of the teeth. Fig. 3 is a plan of the under side of the key.

A is the stem having the ratchet teeth B cut in it, or on a steel plate C dovetailed in a recess formed in the stem as shown between dotted lines, and firmly secured therein, and having ratchet teeth cut on the front edge of it.

D is the outer jaw at the extreme end of the stem.

E is the back jaw and F the clip attached to it and formed to slide on the square shaped side of the stem.

G is the tail piece to protect the teeth at all times terminating in two lugs *a*, *a*, straddling the stem which keeps it parallel with the stem.

H is a series of ratchet teeth cut in the inner face of the movable back jaw frame and which are made to engage with the corresponding ratchet teeth B on the stem.

I is the lock key, wedge shaped and made to pass under the clip F at the rear of the back jaw E, and formed with a longitudinal recess *b*, on the under side of it to contain a flat spring *c*, held by a pin *d*.

Fig. 3 shows the under side of the key, detached.

e is a projection on the key for convenience in moving it back and forth to lock and unlock the back jaw.

In Fig. 1 the lock key I is shown unlocked. When it is locked the key is pushed as far in as it will go, as shown at Fig. 2—the said figure showing a slight modification of the ratchet teeth in which the greatest number of them, *f*, are cut on the edge of the back jaw frame E, and the corresponding teeth *g* (three or four) are cut in the stem A to engage with the former. This will answer the same purpose but I prefer the first mentioned one.

The operation of the device may be described as follows.—When an operator wishes to adjust the jaws to any desired width of opening between them, he draws back the lock key I as far as it will go, which loosens the back jaw and frame, enabling the same to slide back and forth on the stem, which is done by taking hold of the lugs *a* on the dovetail piece and drawing it out sufficiently far, so as to enable the ratchet teeth on both parts to clear each other. The operator may then push the back jaw E to the required distance from the outer jaw D, when he lets go the tail piece and the spring *c* under the lock key I, pulls the ratchet teeth H of the back jaw frame into engagement with the corresponding ratchet teeth B on the stem, the jaws will remain in that position without moving during the operation of the wrench, as in turning a nut for instance, but for greater security, the lock key I may be pushed under the rear portion of the back jaw E, and clip F as far as it can go, which affixes the said jaw E immovable at any point of distance from the outer jaw D; and the jaws can

be adjusted from the widest opening to the smallest by simply pulling back the lock key I and moving the back jaw, which takes up less time than one second, instead of sometimes minutes occupied in adjusting the jaws of the old make of monkey wrenches with a revolving nut.

h is a pin inserted in the stem A. to prevent the back jaw frame from going down too far upon it.

The wrenches will be manufactured in various sizes to suit all requirements.

Having thus described my improved wrench, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a wrench, the stem having a number of ratchet teeth cut on its inner face and a number of corresponding ratchet teeth cut in the frame of the back jaw, the frame having a tail piece to protect the teeth, terminating in two lugs straddling the stem, and a wedge shaped lock key, placed under the clip of the back jaw and the rear of the back jaw itself, the key having an interior spring, all constructed substantially as specified.

2. In a wrench, the stem A. having ratchet teeth B, a sliding back jaw E and tail piece G, with corresponding ratchet teeth H cut thereon to mesh into the teeth B of the stem, and lugs *a*, *a*, straddling the stem, and the lock key I, having a spring *c*, to lock the jaws in any desired position, substantially as specified.

Dated at Paris, Ontario, this 24th day of April, 1893.

WILLIAM HOUGHTON.

In presence of—
A. M. BANNISTER,
BANFIELD CAPRON.