

(No Model.)

H. B. MORRISON.  
WRENCH.

No. 407,740.

Patented July 23, 1889.

Fig. 1.

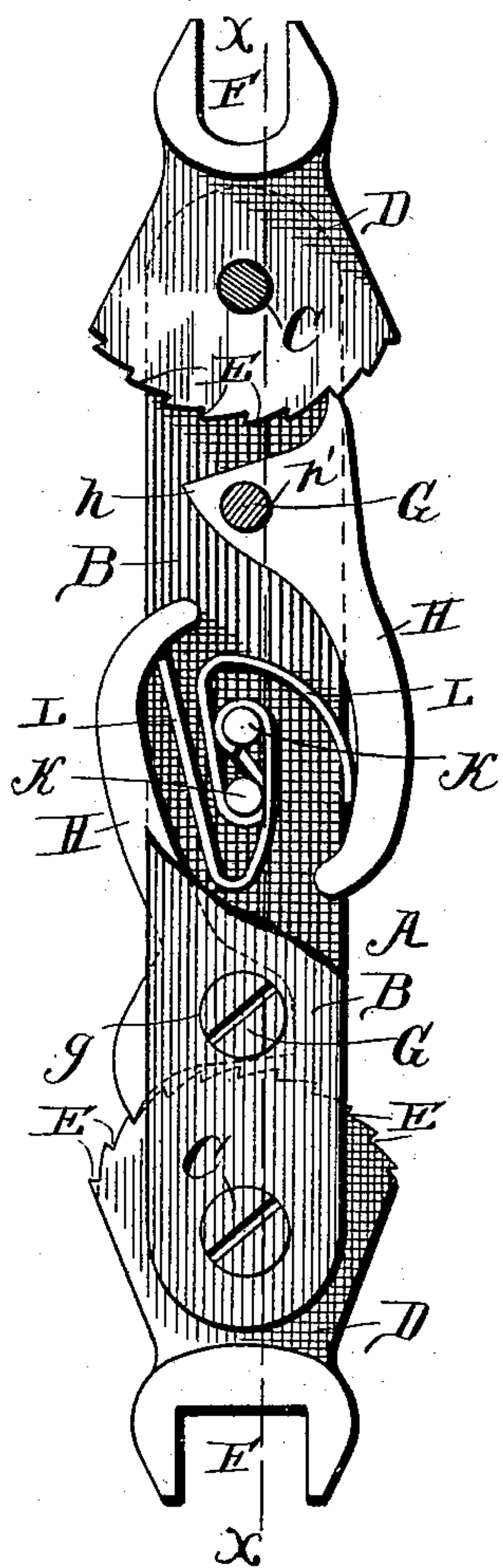
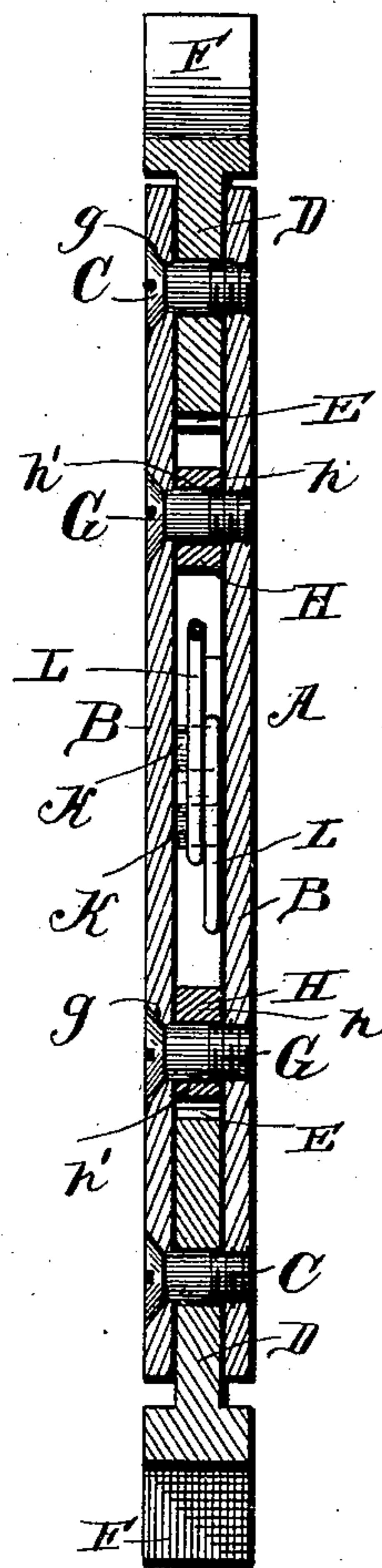


Fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## WRENCH.

SPECIFICATION forming part of Letters Patent No. 407,740, dated July 23, 1889.

Application filed August 10, 1888. Serial No. 282,456. (No model.)

*To all whom it may concern:*

Be it known that I, HORATIO B. MORRISON, a citizen of the United States, residing at Britt, in the county of Hancock and State of Iowa, have invented new and useful Improvements in Wrenches, of which the following is a specification.

The object of my invention is to provide a simple, cheap, durable, and easily-operated wrench; and it consists in a certain novel construction and arrangement of devices, fully set forth hereinafter in connection with the accompanying drawings, and specifically pointed out in the appended claim.

In the drawings, Figure 1 is a side view of the improved wrench, partly broken away. Fig. 2 is a detail longitudinal sectional view on the line  $x x$  of Fig. 1.

Referring by letter to the drawings, A designates the shank or handle of the wrench, which consists of the parallel side plates B B, secured together at their ends by the transverse screws or bolts C C, and D D represent the adjustable jaws, which are mounted on the said screws or bolts between the side plates, and are provided with the segmental ratchets E E. These jaws are provided with angular notches F F, which are preferably of different sizes.

On suitable transverse screws or bolts G G, which are also arranged in registering apertures in the side plates B B, are mounted the pawls H H, the shorter arms of which engage the ratchets E E, and the longer arms project slightly beyond the edges of the side plates, and thus enable the operator to depress them and disengage the shorter arms from the ratchets. The inner sides of the pawls are provided with inwardly-projecting offsets  $h h$ , which are provided with apertures  $h' h'$ , which register with the apertures  $g g$  in the sides of the handle, and the bolts G pass through these apertures, thus pivoting the pawls eccentrically, whereby, when the longer arms are depressed, the shorter arms are drawn away from the ratchets.

K K represent transverse studs or pins, which are arranged at the center of the shank or handle, and to these studs are at-

tached the springs L L, which bear at their free ends, respectively, against the lower arms of the pawl, and normally hold the latter in engagement with the ratchets.

It will be seen by reference to the accompanying drawings that the adjustable jaws may be arranged at any desired angle to the shank or handle, thereby enabling the wrench to be used to turn bolts or nuts or screws which are located in small depressions or other awkward positions, where it is impossible to use a wrench in which the notch is either on the end or on the side; but the main advantage of the improved wrench resides in the simplicity and compactness of construction and in the fewness of parts employed.

Having thus described my invention, I claim—

The herein-described wrench, comprising the handle composed of the parallel similar side plates B B, secured together at their ends by the transverse screws or bolts C C, the adjustable jaws D D, fitting between the ends of the said plates, mounted on the screws or bolts C C, and provided at their inner ends with the segmental ratchets E, in a common plane with the jaws, the screws or bolts G G, also arranged in registering apertures in the side plates near the inner ends of the said jaws, the pawls H, engaging with the segments, provided with inwardly-extending enlargements  $h$ , mounted on the screws or bolts G, and having their adjacent ends projecting slightly beyond the edges of the side plates, the pins K K, arranged adjacent to each other near the centers of the side plates, and the springs L L, each bent around one of said pins and around and beyond the other and bearing at their free ends against the adjacent ends of the pawls to hold the latter in engagement with the segmental ratchets, substantially as specified.

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

HORATIO B. MORRISON.

Witnesses:

FRANK SCRIBNER,

WESLEY ALDRIDGE.