(No Model.)

F. A. CARRITHERS.

WRENCH.

No. 533,049. Patented Jan. 29, 1895.

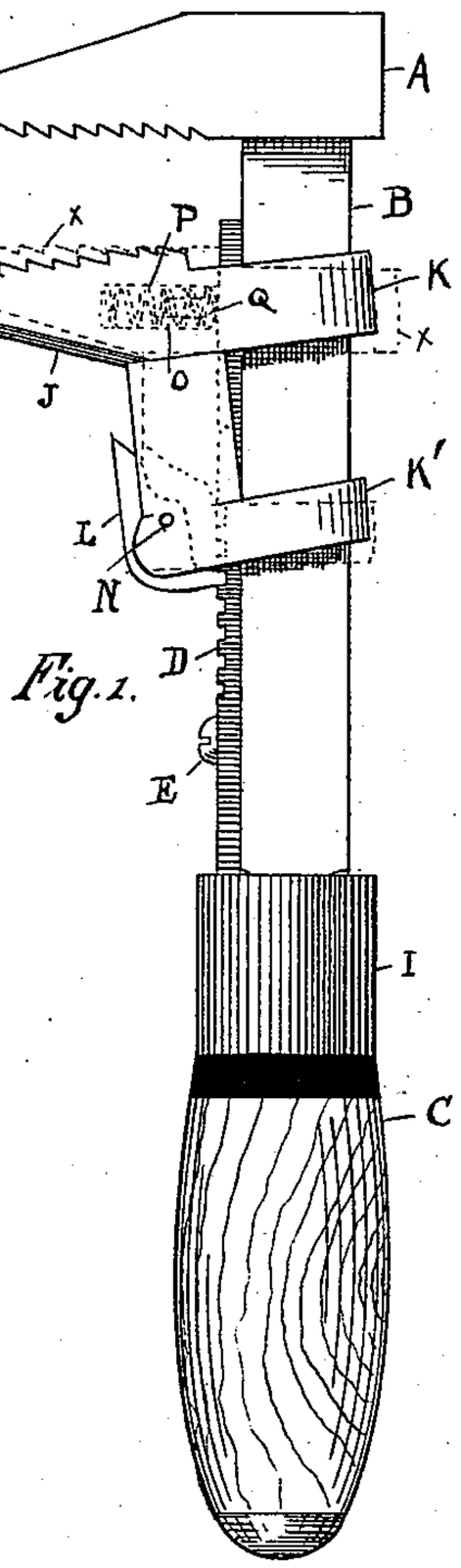

Fig. 1.

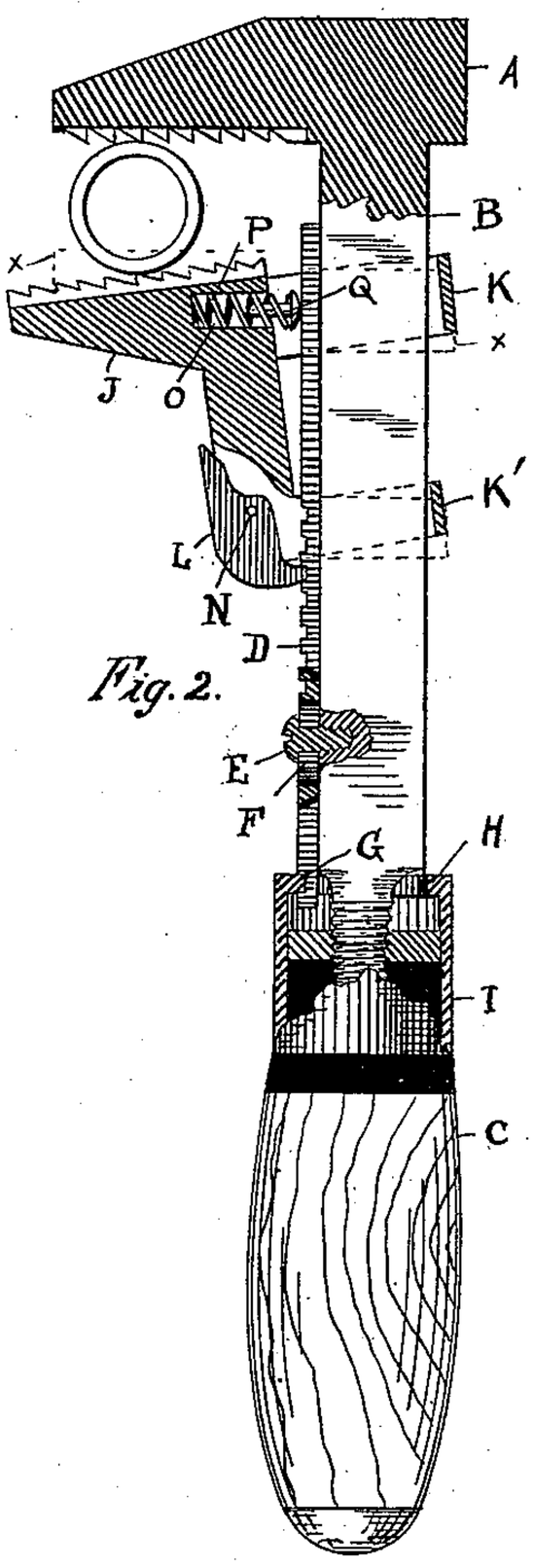

Fig. 2.

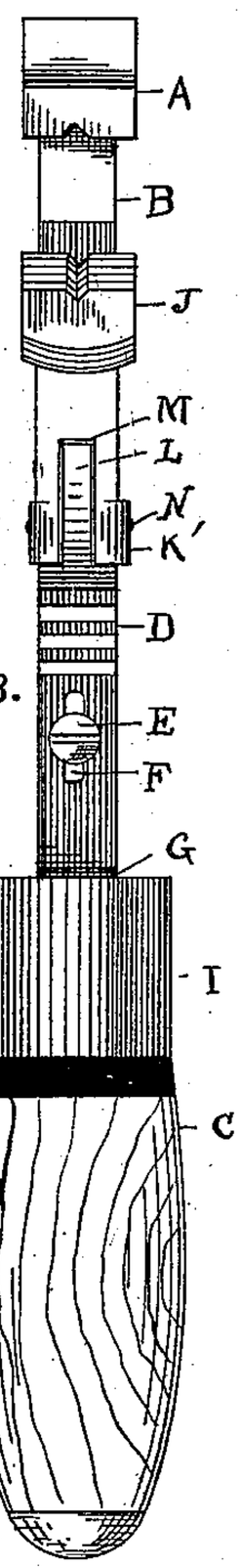

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

FRED AUGUSTIN CARRITHERS, OF PEKIN, ILLINOIS.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 533,049, dated January 29, 1895.

Application filed January 30, 1894. Serial No. 498,539. (No model.)

To all whom it may concern:

Be it known that I, FRED AUGUSTIN CARRITHERS, a citizen of the United States, residing at Pekin, in the county of Tazewell and State of Illinois, have invented certain new and useful Improvements in Wrenches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in wrenches.

While the object of the invention is to improve on my Letters Patent No. 512,007, granted January 2, 1894, the further object is to provide a wrench, whose lower jaw is capable of having a lateral movement on the shank of the wrench to allow the work to be held more firmly and without a possibility of a slip and at the same time allow the wrench to release itself the moment working pressure is withdrawn.

In the drawings presented herewith and forming part of this application, Figure 1 represents a side elevation of the wrench. Fig. 2 represents a longitudinal sectional elevation of the wrench showing the invention more clearly. Fig. 3 is a front elevation of the same.

The jaw A is made integral with the shank B as in ordinary wrenches, and the shank, at the opposite end, screws into a bushing or other suitable device within the handle C.

A ratchet bar D lies against the face of the shank B and is there held by means of a screw E passing through a slot F in said bar, into the said shank. The lower end of the ratchet bar is provided with a notch at G with which engages an inner annular flange or lip H on the ferrule I of the handle C.

The lower jaw J occupies a position, as usual, below the fixed jaw and is held in relation to said jaw by means of the straps K and K′ which surround the shank as shown. The said jaw J is provided at its lower extremity with a pawl L which is retained within the slot M by the pin or pivot N.

Thus far the device is substantially the same as to construction and purpose as my former patent referred to.

What I now desire to bring out is the construction of the jaw J, before described, and its workings. This jaw is provided with a coiled spring P and plunger Q which occupy a position within a hole or depression O made in the rear face of the jaw adjacent to the ratchet bar D.

The upper strap K is elongated somewhat so that considerable play is allowed between the jaw proper and the shank, and the spring P exerts a constant pressure between the ratchet bar D and the jaw, the effect being to throw the jaw outward so as to bring the end of the strap K against the rear face of the shank B. The lower strap K′ is allowed sufficient play to permit the jaw to move freely.

The position of the jaw when out of its normal position is shown by dotted lines X X in Figs. 1 and 2. The pawl L forms the pivot for the jaw in its lateral movement.

The operation of the device may be understood from what follows. When it is desired to grasp a piece of work, as for instance a piece of piping, the wrench is placed upon it as is ordinarily done with such tools and the pawl L is raised and the jaw pushed up to bear upon the pipe, and the said pawl is then allowed to enter the nearest notch of the ratchet bar and then by the slight turning of the handle C the ratchet bar with its jaw is forced upward more firmly against the work. It will thus be seen that the jaw is brought as near as practicable to the work by the ratchet teeth and pawl and the final positive grip obtained is accomplished by turning the handle on the threaded shank in a direction to force the jaw against the work.

The particular advantage of the spring-jaw may now be understood. The normal position or the position which the jaw occupies when not in use is that shown in the figures, but when the wrench grips the work and pressure is brought to bear thereon, the jaw is forced back toward the shank B by reason of the teeth of the jaws biting into the work and the consequent diminishing of space between the said jaws.

I do not limit myself to any particular construction as I may change the parts in a greater or less degree and still accomplish the results set forth.

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

The combination, in a wrench, of a shank B, having the fixed head and the lower threaded extremity, the handle C engaging the said threaded extremity, a notched bar D secured to the shank B but having a longitudinal sliding movement thereon, said bar being in engagement with the handle C substantially as set forth, a spring-jaw J embracing both the shank B and bar D and being in positive engagement with the bar D by the pawl L, pivoted to said jaw, and the notches of the said bar, whereby a longitudinal movement of the jaw J on the shank B is acquired by a movement of the handle C in either direction, and a spring P for retaining the said jaw J in its normal or open position as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

FRED AUGUSTIN CARRITHERS.

Witnesses:
C. JOHNSON,
A. KEITHLEY.