(No Model.)

# W. C. LAWRENCE.

## WRENCH.

No. 529,624. Patented Nov. 20, 1894.

*Fig: 1.*

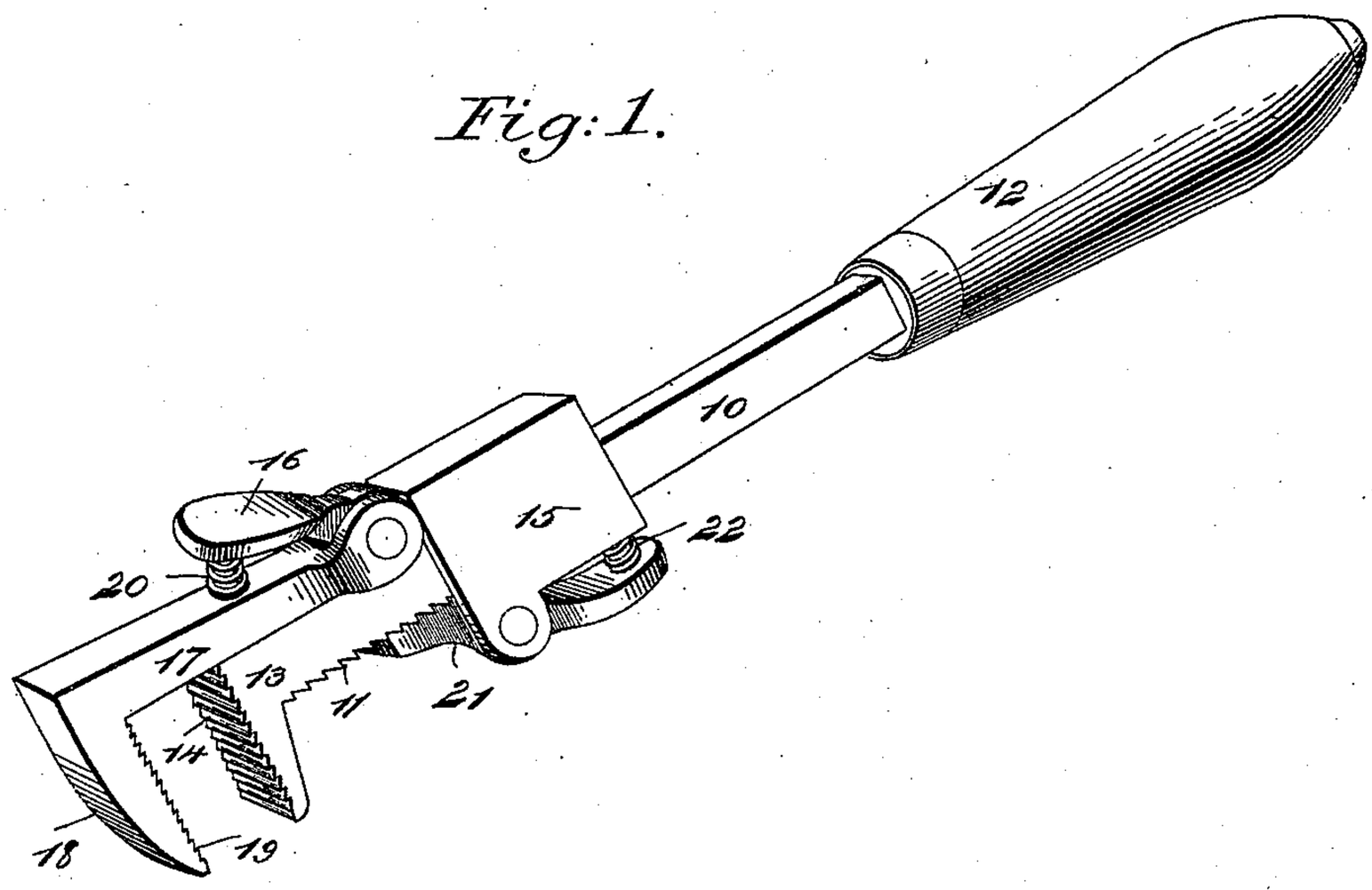
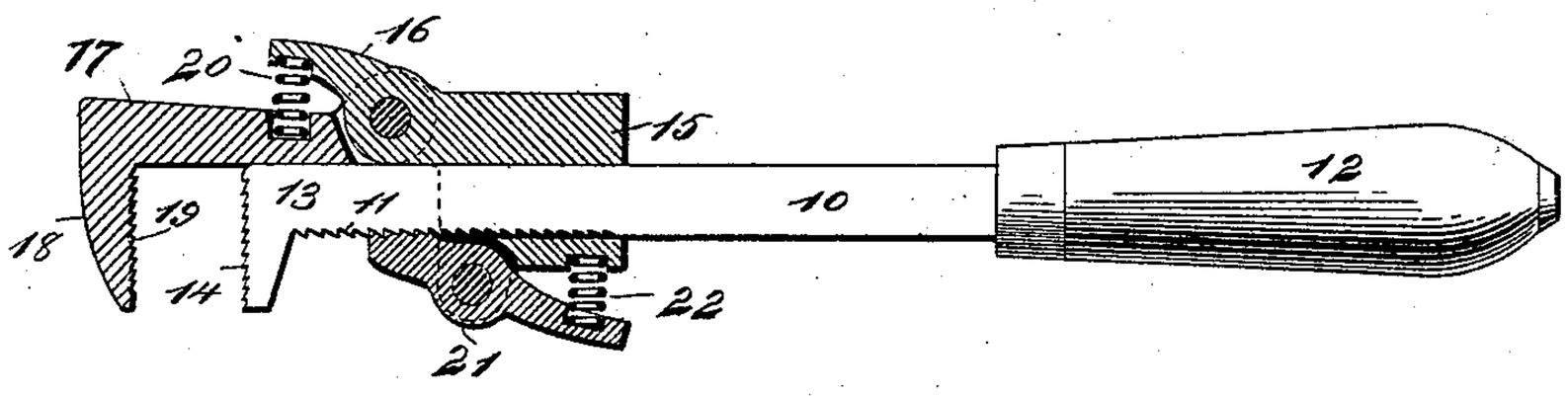



*Fig: 2.*

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# UNITED STATES PATENT OFFICE.

WILLIAM C. LAWRENCE, OF CASSELTON, NORTH DAKOTA.

## WRENCH.

SPECIFICATION forming part of Letters Patent No. 529,624, dated November 20, 1894.

Application filed July 13, 1894. Serial No. 517,454. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM C. LAWRENCE, of Casselton, in the county of Cass and State of North Dakota, have invented a new and useful Improvement in Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in wrenches, and it has for its object to provide a wrench especially adapted as a pipe wrench but capable of use for other purposes, and to so construct the wrench that it will be simple, durable and economic, and whereby the wrench may be operated with one hand, and also whereby the wrench will obtain substantially an eccentric grip upon the pipe, thus enabling the wrench to obtain a perfect bite or hold, and likewise enabling a maximum of power to be applied to the manipulation of the pipe.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a perspective view of the improved wrench; and Fig. 2 is a longitudinal section through the movable portion of the wrench, the bar or stationary portion being shown in side elevation.

In carrying out the invention, what may be termed the body portion of the wrench consists of a bar 10, preferably rectangular in cross section and smooth upon three faces, its outer face being provided with teeth 11 located near the upper end of the bar and having an inclination in direction of the opposite or handle end thereof, which handle end is provided with a suitable grip 12 for convenience in handling. At the toothed or upper end of the bar 10 of the body a jaw 13, is formed, preferably integral with the bar, and the said jaw is at right angles to the bar and is provided upon its upper face, which is straight, with teeth 14, having an inclination in an outwardly direction. The movable or adjustable portion of the wrench consists of a sleeve 15, held to slide upon the body bar 10 to and from its jaw 13. At the back of the sleeve at or near its upper end an upwardly and rearwardly-extending post 16, is formed, and upon this post, preferably near its junction with the sleeve, the inner end of the shank 17 of the upper jaw 18, is pivoted, the said inner end of the shank being bifurcated in order that it may engage with opposite sides of the post. The upper jaw 18 extends over the lower jaw 13, and upon its under face is provided with teeth 19, having an inward inclination, or an inclination opposite to the teeth on the lower jaw. The shank of the upper jaw is held normally in engagement with the rear face of the body bar 10 through the medium of a spring 20, which has bearing against the rear face of the said shank and against the opposing face of the post 16.

At the front upper portion of the sleeve 15 a pawl 21, is pivoted, extending in opposite directions beyond its pivot point, the outer end of the pawl upon its inner face being provided with a series of teeth adapted for locking engagement with the teeth 11 of the body bar. The inner end of the pawl is normally held in an outwardly direction through the medium of a spring 22, which has bearing upon the front portion of the sleeve and opposing surface of the pawl. Thus the spring 22 serves to keep the teeth of the pawl in engagement with the teeth of the body bar.

By pressing the spring-controlled end of the pawl inward, which may be done with the thumb of the hand holding the body bar, the movable portion of the wrench, namely the sleeve and upper jaw may be carried in direction of either end of the body bar, and thus increase or decrease the distance between the jaws for the purpose of taking pipe of different diameters.

The post 16 prevents the upper jaw from being carried too great a distance rearward, and the spring 20, serves to force the upper jaw, when relieved from rearward tension, over the lower jaw parallel therewith. The hinge of the upper jaw permits it to fold back far enough to admit of both jaws striking the pipe as the wrench is slid along the latter past a central line, so that when pressure is applied to the handle of the wrench the two jaws will take hold of the pipe with an eccentric-like grip.

Among the advantages of the wrench above

described may be given the following: its superior clutch or holding power over wrenches of its class, and its being capable of manipulation and adjustment with rapidity and ease. In fact the sliding portion of the wrench may be said to be at all times in adjustment to any kind of pipe it is made to span. It is evident that the improved wrench will clutch any article placed between its jaws, from the smallest rod to an article of its full capacity. The wrench will not slip when once it has a bite upon the article to be manipulated, and will readily let go the moment pressure is removed from the wrench. In the manipulation of the pipe the pivoted upper jaw of the wrench permits the wrench to be carried backward for a new grip expeditiously and conveniently.

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

1. An improved wrench, comprising a toothed body bar having a fixed jaw at its toothed end, a sleeve held to slide upon the body bar, an upper jaw pivoted to the said sleeve, such sleeve having a portion projected over the pivoted end of the pivoted jaw adapted to limit the rearward swing thereof, a spring interposed between such projecting portion and the back of the pivoted jaw and a spring controlled pawl connected with the sleeve normally held in engagement with the tooth surface of the bar, all arranged substantially as shown and described.

2. In a wrench, the combination, with a body bar having a handle at one end, teeth upon its outer face, and a jaw formed upon its outer end, of a sleeve held to slide upon the body bar, provided with a post projected outwardly from its upper rear corner and at the rear of the body bar, a dog pivoted in the forward portion of the sleeve, provided with a series of teeth adapted for engagement with the teeth of the body bar, and a spring normally holding said teeth in engagement, an upper jaw normally located parallel with the lower jaw or jaw upon the body bar, a shank connected with the upper jaw and pivoted upon the post of the sleeve, and a spring having bearing against said post and against the shank of the upper jaw, whereby said shank is held normally in engagement with the rear of the body bar and the upper jaw over the lower one, as and for the purpose set forth.

WILLIAM C. LAWRENCE.

Witnesses:
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