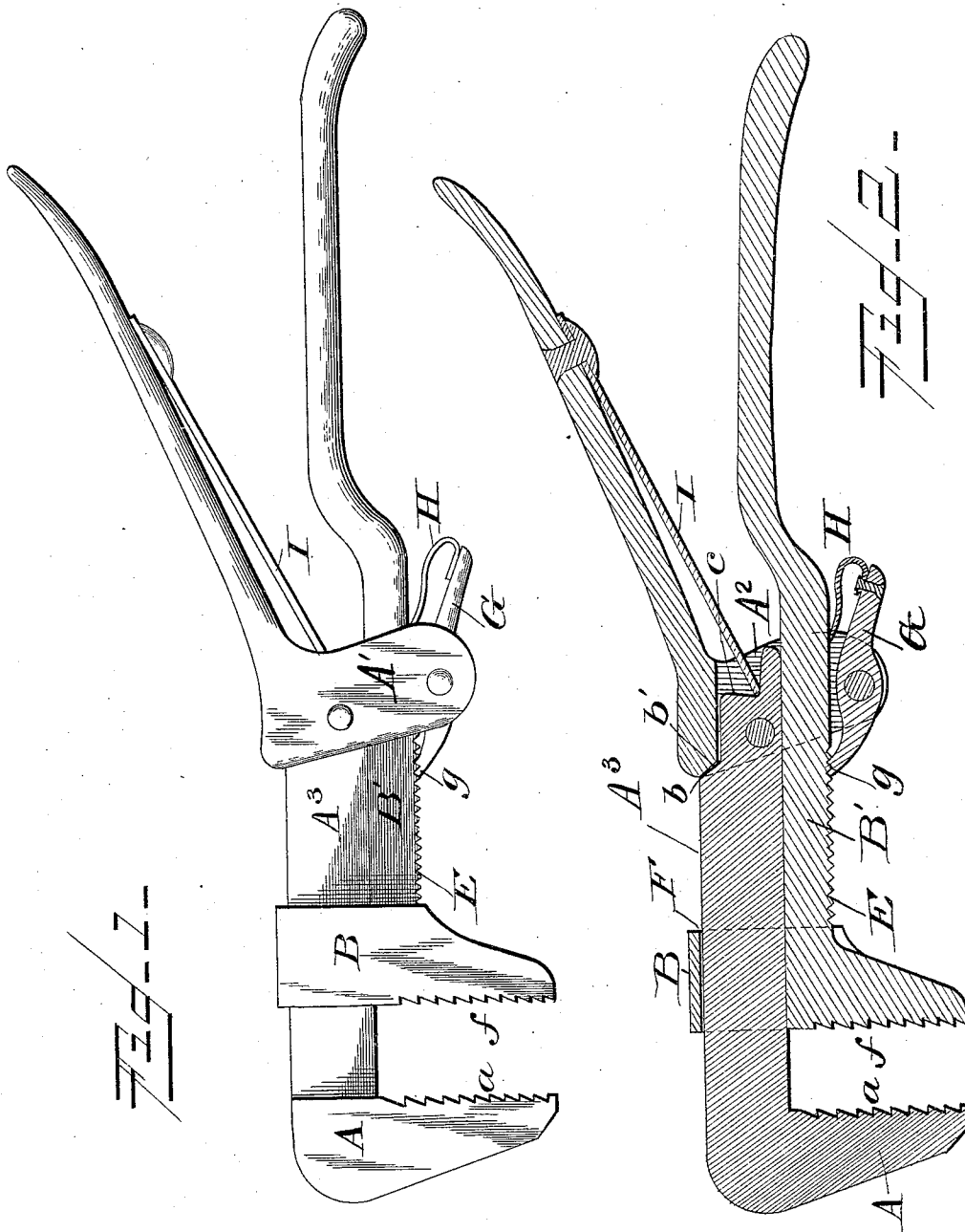


(No Model.)

I. C. GRAY.
RATCHET PIPE AND NUT WRENCH.

No. 484,634.

Patented Oct. 18, 1892.



WITNESSES
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UNITED STATES PATENT OFFICE.

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RATCHET PIPE AND NUT WRENCH.

SPECIFICATION forming part of Letters Patent No. 484,634, dated October 18, 1892.

Application filed June 24, 1892. Serial No. 437,900. (No model.)

To all whom it may concern:

Be it known that I, ISAAC CLINTON GRAY, a citizen of the United States, residing at Ilion, in the county of Marshall and State of Indiana, have invented certain new and useful Improvements in Ratchet Pipe and Nut 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 pipe and nut wrenches of that class known as "sliding jaw;" and the invention has for its object to improve, simplify, and economize the cost of construction of this character of wrenches and at the same time embodying in its construction strength, durability, and convenience of operation of the gripping-jaws to grasp a pipe or nut and the like objects readily and expeditiously. With these ends in view the invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully described in detail, and particularly pointed out in the appended claims.

In the accompanying drawings, to which reference is had and which fully illustrate my invention, Figure 1 is a side elevation of my improved wrench embodying my improvements, and Fig. 2 is a longitudinal sectional view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A designates a stationary or fixed gripping-jaw provided with the usual teeth *a*, cut upon its inner surface, this jaw being formed upon the upper forward end of a loosely-pivoted shank A³, the rear end of which is passed through a loop or slot formed in the rear end of a lower or rear sliding jaw, to be hereinafter referred to. The lower end of said loosely-pivoted shank A³ is also passed between jaws or lugs A' A², formed at right angles to and upon the upper and forward end of one of a pair of operating-handles, as clearly shown in Figs. 1 and 2 of the drawings. Formed upon the inner surface of the upper and forward portion of the jaws or lugs A' A² is an inwardly and downwardly inclined offset *b*, against which

a corresponding offset *b'*, formed upon the upper surface and near the rear end of the loosely-pivoted shank A³, contacts with every movement given by the operator to the operating-handles. By the formation of these offsets *b* and *b'*, respectively, sufficient space within the lugs A' A² is given for the proper elevation and play for the rear ends of the shanks of the gripping-jaws in their movements received from the operating-handles through the medium of a flat spring I. The rear end of the pivoted shank A³ from the point where the offset *b'* is formed gradually terminates in a smaller portion of the shank than that of the main body, this smaller portion being slightly rounded off at its extreme end, as shown in Fig. 2 of the drawings. A shoulder *c* is formed upon the upper surface of the smaller portion of the shank, and the free end of the flat spring I bears against this shoulder and the upper surface of the extreme end of the shank, the opposite end of said spring being secured to the under side and near the extreme end of the upper handle, by which, through the medium of the spring I, an up-and-down movement is imparted to the fixed or stationary jaw A and its shank and also an up-and-down movement, and simultaneous therewith an intermittent forwardly-sliding movement is imparted to a lower and rear sliding jaw formed upon the forward end of an intermittently-sliding shank, which will now be described.

B designates a rear parallel intermittently-sliding jaw having teeth or serrations *f* cut therein upon its contacting surface, corresponding with the teeth or serrations cut upon the inner surface of the fixed or stationary jaw. This jaw B is formed upon the forward end of an intermittently-sliding shank B', a loop or slot F being formed in its rear portion for the reception of the shank A³ of the stationary jaw, previously described, and having ratchet teeth or serrations E cut upon its outer surface its entire length, the rear end of the shank B' being angular in form and from this angular point terminating in a lower operating-handle corresponding substantially in form to that of the upper handle previously mentioned.

Pivotaly secured to the jaws or lugs A' A²

at their lower end is a pawl or dog G, having teeth *g* in its forward end to mesh with the teeth upon the outer surface of the sliding shank and interposed between the rear end 5 of the sliding shank of the rear gripping-jaw and pawl or dog, and pivoted upon the inner surface and rear end of the latter is a bent spring H, the free end of which bears against the lower or outer surface of the sliding shank 10 B' as it slides intermittently forward and prevents any backward movement of the shank, the functions of this spring H being to keep the teeth of the dog in mesh with the teeth or serrations upon the outer surface of the sliding shank and, as above stated, to prevent any 15 backward movement of the sliding shank.

By such construction of wrench as described the operator is enabled to work in any cramped or almost inaccessible places 20 where the ordinary construction of wrench could not be used.

From the preceding description, taken in connection with the accompanying drawings, the operation of my device will be obvious.

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

1. A pipe and nut wrench having a fixed jaw A and a shank A³, formed integral, the 30 latter provided with the inclined shoulder *b*, said shank thereof being pivoted at its end

within downwardly-extended lugs formed integrally upon the end of the upper operating-handle, said handle having the corresponding 35 shoulder *b'* and the spring adapted to bear against the shoulder *c*, a spring-actuated dog located and pivoted within the extreme lower end of said lugs, and the sliding jaw having the teeth E, engaging the pawl, whereby when 40 the handles are operated the sliding jaw will move forward and be held in position by the pawl, substantially as described.

2. The combination, with the sliding jaw having its shank integral with the lower operating-handle thereof and a spring-actuated 45 pawl or dog pivotally secured in the extreme lower end of the lugs of the upper operating-handle, of the fixed jaw having the end of its shank pivotally secured in the downwardly-extending lugs of the upper operating-handle 50 and the operating-spring secured to the upper operating-handle for engagement with the end of the shank of the stationary jaw, substantially as described, and for the purpose set forth.

In testimony whereof I affix my signature in 55 presence of two witnesses.

ISAAC CLINTON GRAY.

Witnesses:

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