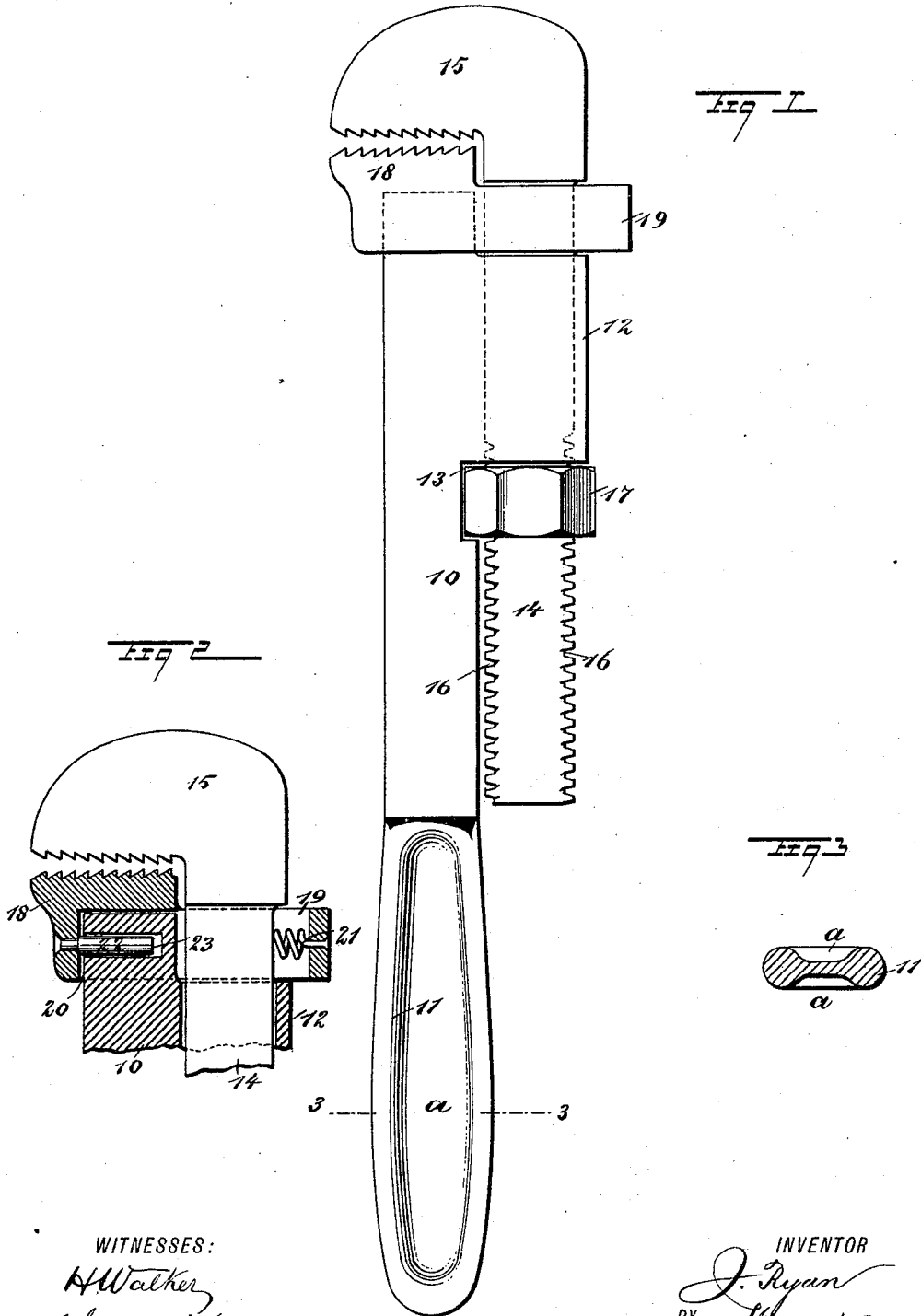


(No Model.)

J. RYAN.
PIPE WRENCH.

No. 461,714.

Patented Oct. 20, 1891.



WITNESSES:

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JOHN RYAN, OF NEW YORK, N. Y.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 461,714, dated October 20, 1891.

Application filed July 8, 1891. Serial No. 398,840. (No model.)

To all whom it may concern:

Be it known that I, JOHN RYAN, of New York city, in the county and State of New York, have invented a new and useful Improvement in Pipe-Wrenches, of which the following is a full, clear, and exact description.

My invention relates to an improvement in pipe-wrenches, and has for its object to simplify the construction of such tools and to provide a wrench comprising but few parts, durable and economic; and a further object of the invention is to so construct the wrench that the several parts may be expeditiously and conveniently separated and any one part duplicated, if necessary.

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 and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the wrench.

Fig. 2 is a partial side elevation and a partial vertical sectional view of the upper portion of the wrench; and Fig. 3 is a transverse section through the handle, taken on the line 3 3 of Fig. 1.

The main or body bar 10 of the wrench, and adapted to carry the upper jaw, has integral with its lower end a handle 11, the said handle being vertically dished or recessed upon opposite sides, as illustrated at *a* in Figs. 1 and 3. The body-bar 10 of the wrench is rectangular in cross-section, and is provided a short distance below its upper end, upon its rear side, with an integral strap 12, the opening in which strap is rectangular. The strap, as illustrated in the drawings, is quite long, extending downward to a point near the center of the body-bar of the wrench; but if in practice it is found desirable two short straps may be substituted for the long one. Immediately below the lower end of the strap 12 a recess 13 is produced in the rear side face of the body-bar 10. In connection with the body-bar an adjusting-bar 14 is employed. This adjusting-bar is rectangular in cross-section and has produced or formed at its upper end the upper jaw 15 of the wrench, which upper end is toothed upon its lower

face, and the toothed surface extends over and beyond the upper end of the body-bar. The adjusting-bar 14 is capable of vertical movement in the strap 12 of the body-bar, and from the lower end of the adjusting-bar to a point near its upper end the front and rear faces are provided with teeth 16. A nut 17 is located upon the toothed surface of the adjusting-bar, which nut also enters the recess 13 in the body-bar. Thus the nut is prevented from moving vertically, and when rotated forces the adjusting-bar either upward or downward, as desired, to bring the upper jaw to or from the lower jaw 18. The lower jaw 18 is located upon the upper end of the body-bar 10, and the said lower jaw is provided with a strap 19, integral therewith and extending horizontally from its rear end. The jaw is further provided with a recess 20, in which recess the upper end of the body-bar fits, and the adjusting-bar 14 passes upward through the strap 19; but the strap is of greater length than the thickness of the adjusting-bar, so that it normally projects beyond the rear face of the latter, and a spring 21, of any approved construction, is secured to the rear end of the strap and has a bearing against the rear face of the adjusting-bar, as is best shown in Fig. 2. It will be observed that as the recess 20 in the jaw connects with the strap-opening the upper jaw is capable of a lateral movement, and it is guided in this movement through the medium of a pin 22, fast to its rear face and free to slide in a horizontal opening or aperture 23, produced in the front face of the body-bar, as is likewise shown in Fig. 2. The teeth of the lower jaw are the reverse of the upper jaw and the toothed surface of the lower jaw is shown inclined, although, if in practice it is found desirable, the toothed surface of the upper jaw may be inclined instead, or the toothed surfaces of both jaws may be inclined, but in opposite directions, to impart to the opposed surfaces of the jaws the characteristics of an alligator-wrench.

In the operation of the wrench, when the jaws have been adjusted to grasp a pipe, as the wrench is operated to turn the pipe the lower jaw slides forward, thereby increasing the tenacity of its hold over the hold of ordinary pipe-wrenches, and when the wrench is car-

ried backward to obtain another hold, after having been carried forward to its full limit the spring 21 acts to restore the lower jaw to its normal position, (shown in the drawings,) thus enabling the wrench at this time to be better manipulated to obtain a fresh hold upon the pipe. It is obvious that the wrench is simple in construction, comprising but few parts, and that it is durable and economic.

The various parts may be separated conveniently and expeditiously, and this is effected by screwing the adjusting-bar upward until it can be withdrawn from its nut 17 and the strap of the body-bar and the lower jaw. The lower jaw may then be carried forward until its pin 22 leaves the opening 23 in the body-bar, at which time the jaw and its attached strap may be removed from the body-bar. The wrench thus virtually consists of but four pieces—the body-bar, the adjusting-bar, the adjusting-nut, and the movable lower jaw.

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

1. As an improved article of manufacture, a wrench constructed in four pieces, comprising a body-bar having an attached handle and a guide-strap, an adjusting-bar having integral with its upper end the upper jaw of the wrench and having its lower end threaded, an adjusting-nut adapted to travel upon the toothed surface of the adjusting-bar and fit within a recess within the body-bar, and a laterally-movable spring-controlled lower jaw supported by the body-bar, as and for the purpose specified.

2. In a wrench, the combination, with a body-bar having integral with its lower end a handle and provided near its upper end, at its rear side, with a strap and a recess below

said strap, of a toothed adjusting-bar capable of movement in the strap of the body-bar and having formed at its upper end the upper jaw of the wrench, a nut held to turn below the strap of the body-bar in the recess of said bar and upon the toothed surface of the adjusting-bar, a recessed upper jaw capable of sliding upon the upper end of the body-bar, a strap integral with the said lower jaw and extending around the adjusting-bar, a guide device attached to the lower jaw, and a spring carried by the strap and adapted for engagement with the adjusting-bar, as and for the purpose specified.

3. In a pipe-wrench, the combination, with a body-bar having a handle integral with its lower end and provided near its upper end, at its rear side, with a strap and a recess below the strap, a toothed adjusting-bar having movement in the strap of the body-bar and having formed in its upper end the upper jaw of the wrench, and an adjusting-nut held to turn upon the toothed surface of the adjusting-bar in the recessed surface of the body-bar, of a lower jaw having a recess in its under face adapted to receive the upper end of the body-bar, a pin secured to the recessed surface of the upper jaw and held to slide in the aperture in the body-bar, a strap integral with the lower jaw and extending rearwardly therefrom, through which the adjusting-bar passes, and a spring carried by the said strap and having a bearing against the rear face of the adjusting-bar, as and for the purpose set forth.

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Witnesses:

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