

No. 678,959.

Patented July 23, 1901.

J. P. LAVIGNE.
PIPE WRENCH.

(Application filed Jan. 19, 1901.)

(No Model.)

FIG. 1.

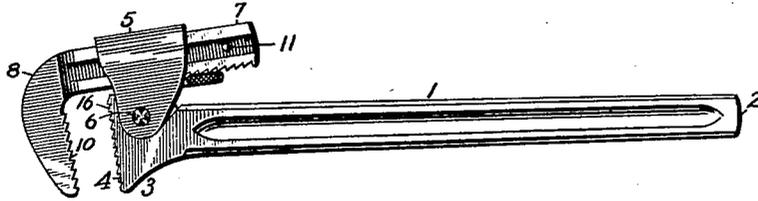


FIG. 2.

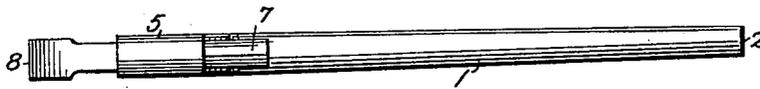


FIG. 3.

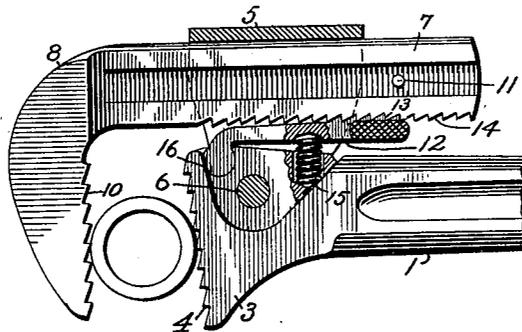


FIG. 4.

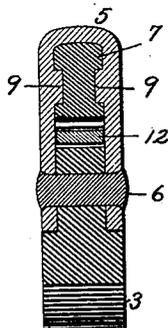


FIG. 6.

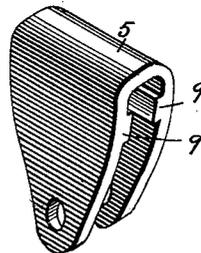


FIG. 5.

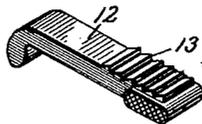


FIG. 7.



FIG. 8.



Witnesses.

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PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 678,959, dated July 23, 1901.

Application filed January 19, 1901. Serial No. 43,958. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. LAVIGNE, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification, reference being had therein to the accompanying drawings.

10 My invention relates to an adjustable pipe-wrench; and its object is to provide a simple compact device that can be instantly adjusted to any-sized pipe within its scope and with one hand of the operator, if desired, instantaneous in its action of gripping the pipe, and readily released therefrom.

To this end my invention consists in a pipe-wrench constructed and operating substantially as described, and more particularly pointed out in the claims.

Referring to the drawings, in which like numerals designate like parts in the several views, Figure 1 is a side view of my wrench with the jaws in their normal position; Fig. 2, a back view of the same; Fig. 3, a side view, partly in section, showing sliding jaw tipped back as to receive a pipe; Fig. 4, a vertical cross-section taken through the yoke-pivot; Fig. 5, a perspective view of the pawl; Fig. 6, a perspective view of the yoke; Fig. 7, the stop-pin; Fig. 8, the pawl-spring.

In the drawings, 1 designates the lever-bar, terminating in a handle 2 at one end and at the other in a jaw 3, the face of which is at a slightly-acute angle to the bar and is provided with suitable teeth 4 for engaging a pipe.

A U-shaped yoke 5 is pivoted upon a rivet 6 at its ends to the lever-bar, which is recessed to receive them, these recesses being of such a form as to allow a short vibratory movement of the yoke between the sides of the recesses. The yoke embraces the shank 7 of an adjustable jaw 8, which is adapted to slide therein. On the inner sides of the yoke are ribs 9, adapted to fit within corresponding grooves in the sides of the shank 7 and are designed to support and guide, in conjunction with the back of the yoke, the sliding jaw. The toothed surface 10 of the sliding jaw stands at right angles to its shank. Through the rear end of the shank of the

sliding jaw is a pin 11, projecting out slightly on each side, designed to act as a stop to prevent it from being drawn out too far. Between the lever-bar and the shank of the sliding jaw, which are practically parallel with each other, is a space in which is arranged a pawl 12, which is hinged at its forward end to the lever-bar at a point eccentric to the yoke-pivot and somewhat nearer the jaw 3, and also the shank of the sliding jaw, while its rear end is provided with teeth 13, adapted to engage in corresponding ratchet-teeth 14 on the shank of the sliding jaw, the rear end of the pawl being held in frictional contact therewith by a spring 15, which rests in a seat provided for it in the lever-bar. The pawl 12 is located within the yoke, excepting the rear end, which is outside, and this portion is slightly extended laterally, forming projections upon each side which are checked to be more readily grasped by the operator. By the action of the pawl-spring 15 pressing the pawl against the rear end of the sliding jaw the jaw, together with the yoke, is tipped forward until the yoke comes in contact with the sides of the recesses in the lever-bar at 16, and in this, which is their normal position, the faces of the jaws are parallel; but when inserting a pipe between them the rear end of the sliding jaw is pressed toward the lever-bar against the pressure of the pawl-spring, thus opening the points of the jaws, as seen in Fig. 3. The recesses in the lever-bar, which receive the ends of the yoke, are of a depth to bring the outer surface of the yoke flush with the surface of the lever-bar, making the wrench not only neat in appearance, but more convenient to use in certain narrow spaces.

The operation of my wrench is as follows: The pawl being forced back until its teeth are disengaged from the ratchet-teeth on the sliding jaw, which are pitched forward to resist the strain produced in turning a pipe, the jaw is free to be moved outward instantly to its full extent, and by holding the wrench downward the weight of the jaw is sufficient to cause it to open to its extreme limit, while by simply pushing against the forward end of the sliding jaw the wrench may be closed instantly. In actual use a convenient way to operate is to throw the jaw wide open and then

close it up onto the pipe, whatever its size may be, and tip the sliding jaw backward, as seen in Fig. 3. Then the action of the pawl-spring will cause the jaws to close upon the pipe, so that the slightest forward movement of the lever-bar will cause the jaws to grip firmly the pipe being operated upon, which is instantly released by reversing or moving the lever-bar in the opposite direction, and the jaws are entirely disengaged from the pipe by again pressing the rear end of the sliding jaw. The pawl is attached to the lever-bar in such a position relative to the yoke-pivot that when its teeth are engaged with those on the sliding jaw and the jaw is restrained from following the first forward movement of the lever-bar, as in operating upon a pipe, it causes the jaw to slide backward slightly in the yoke, thus completing a powerful grip upon the pipe.

I do not confine myself to the exact construction herein shown, but claim all that fairly falls within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a pipe-wrench, a lever-bar formed with a jaw at one end, a yoke, embracing the shank of a jaw adapted to slide therein, piv-

oted at its ends to said lever-bar, and a spring-operated pawl hinged to said lever-bar eccentric to the yoke-pivot and adapted to engage with teeth upon said shank, substantially as described.

2. In a pipe-wrench, a lever-bar formed with a jaw at one end, a yoke, embracing the shank of a jaw adapted to slide therein, pivoted at its ends to said lever-bar, said yoke having ribs engaging with corresponding grooves in said shank, and a spring-operated pawl hinged to said lever-bar eccentric to the yoke-pivot and adapted to engage with teeth upon said shank, substantially as described.

3. In a pipe-wrench, a lever-bar formed with a jaw at one end, and provided with recesses in its sides in which the ends of a yoke are pivoted, the sides of said recesses operating to limit the oscillatory movement of said yoke which embraces the shank of a jaw adapted to slide therein, and a spring-operated pawl hinged to said lever-bar eccentric to the yoke-pivot and adapted to engage with teeth upon said shank, substantially as described.

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Witnesses:

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