No. 818,025. PATENTED APR. 17. 1906.

E. A. HARDISON.

WRENCH.

APPLICATION FILED JUNE 19, 1905.

Fig. 1.

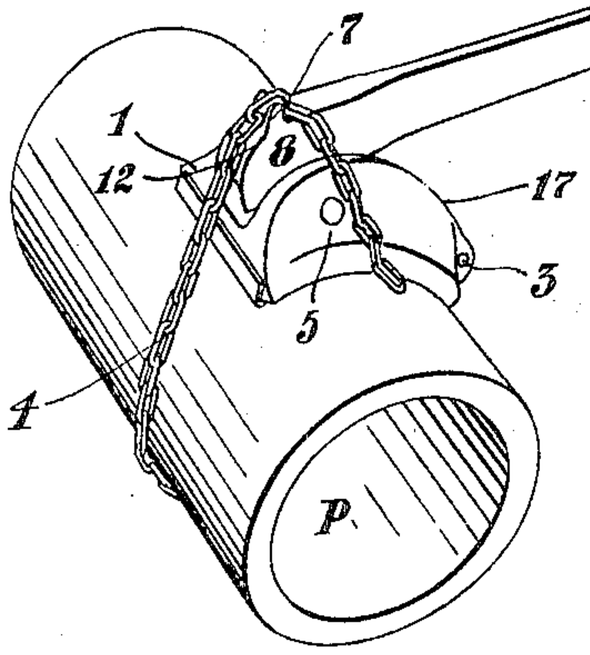


Fig. 2.

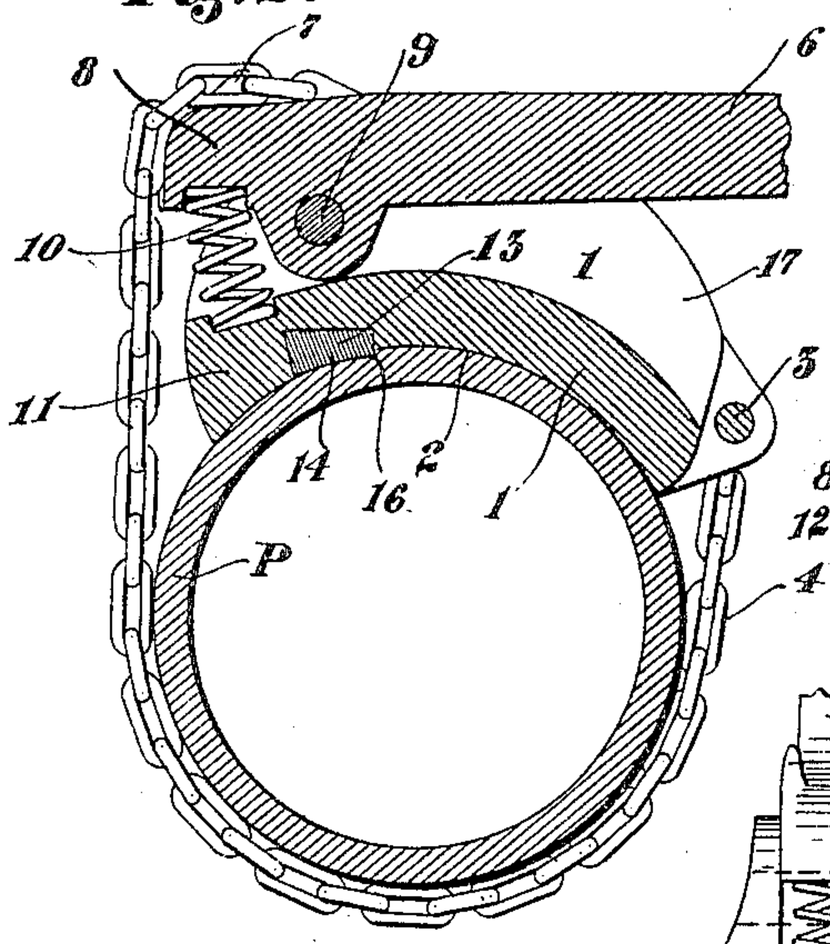


Fig. 3.

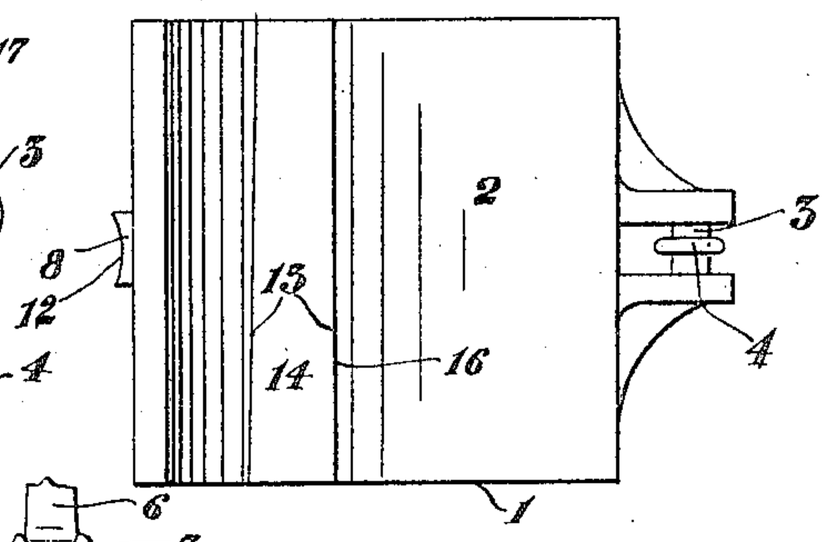
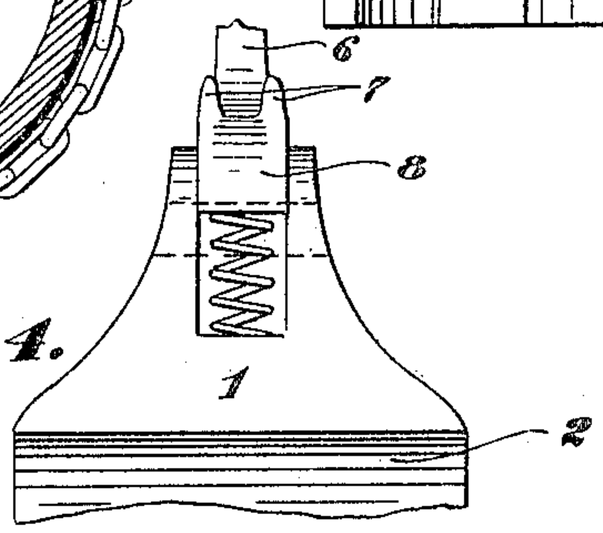


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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WRENCH.

No. 818,025. Specification of Letters Patent. Patented April 17, 1906.

Application filed June 19, 1905. Serial No. 265,863.

To all whom it may concern:

Be it known that I, EDWIN A. HARDISON, a citizen of the United States, residing at Bakersfield, in the county of Kern and State of California, have invented a new and useful Wrench, of which the following is a specification.

The object of this invention is to provide a pipe-wrench which will be superior to those heretofore known in convenience and effectiveness.

Simplicity is another object aimed at, and also freedom from liability of injuring the pipe or other object gripped for turning.

This invention is designed to be applicable for turning well-casings, as well as for other uses, and may be applied with either a chain or a band for encircling the pipe or other object to be turned. The same may be made with and also without a bit for biting into the material of the pipe or other object to be turned, and I have so constructed the device that the same tool can be used with and also without the bit by simply attaching or detaching the bit as occasion may require.

An object is to provide a friction-wrench for screwing pipe.

This invention comprises a shoe having a band formed of either a smooth strap, a chain, or other suitable flexible device fastened at one end to the shoe, and means, such as a lever on the shoe, for engaging the other end of the band and drawing it tight on the pipe or other object to be turned round.

The accompanying drawings illustrate the invention.

Figure 1 is a perspective view of my newly-invented pipe-wrench as it appears in use on a pipe, a fragment of which is shown. Fig. 2 is a sectional side view of the same, a portion of the handle being broken away to contract the view. Fig. 3 is a view of the gripping-face of the shoe. Fig. 4 is a fragmental view illustrating portions of the shoe and the end of the lever when the lever is in position for releasing the grip on the pipe.

1 is a shoe having a pipe-engaging face 2, extending substantially the entire length thereof, which is formed in the arc of a circle corresponding to the periphery of the pipe P. Said shoe is also provided with means 3 for attaching the band 4, (which is shown as a chain in this instance,) and is also provided with means 5 for pivoting a lever 6 of the first order having a catch 7 at its short arm 8 to engage the band 4 in the process of gripping the pipe.

9 is a pivot which pivots the lever 6 to the shoe. 10 is a spring between the short end 8 of the lever and the front end 11 of the shoe, pressing against the lever between its fulcrum and the resistance. The purpose of this spring is to normally hold the band and shoe tight on the pipe. The pivot 9, by which the lever is pivoted to the shoe, is preferably arranged at about one-third of the way back from the front end of the shoe, and the shoe is by this arrangement given a better gripping adjustment on the pipe, and the operation of the pipe-wrench is facilitated by this construction.

The front end of the lever is preferably provided with a groove 12 to receive the band 4 to prevent it from slipping sidewise. The gripping-face 2 may be provided with a tapering channel 13.

14 is a tapering bit in said channel. The bit is slightly dovetailed, as well as tapering, and the channel is made to conform thereto, so that when the bit is driven into the channel from one edge of the shoe it is held in place by the walls of the channel. The bit and channel are so constructed that when the bit is in place one edge 16 will project slightly to bite into the material of the pipe or other object to be gripped.

In practice the operator will place the shoe on the pipe P and will bring the band around the pipe and catch it upon the means 7 on the lever adapted for holding the same. Then the lever will be moved toward the rear end 17 of the shoe, thus tightening the band and causing the shoe to tightly grip the pipe.

To take a new bite with the wrench, the lever will be moved in the opposite direction, thus compressing the spring 10. Said spring tends to hold the band 4 normally tight on the pipe after the band has been caught over the catch 7.

Pipe-wrenches have been constructed in which the gripping-band is attached permanently to a lever pivoted to a shoe, the adjusting-catch being carried by the shoe instead of by the lever. To take up the slack in such a construction, the band must be slid around the pipe when the lever is relaxed, which is not necessary in the herein-described device, because when the lever is tipped to lower the catch 7 another link may be placed on said catch without the labor of moving

the chain longitudinally around the pipe, which is difficult to accomplish with a heavy chain and a large pipe.

I claim—

1. The combination of a shoe, having a pipe-engaging face extending substantially the entire length thereof, a band fastened at one end to the shoe, a lever pivoted to the shoe and provided with a catch for the band, and a spring between the shoe and the lever for holding the band tight.

2. In combination, a shoe adapted near each end thereof to contact with a pipe, a lever of the first order pivoted to said shoe, a band fastened to the shoe, means for fastening said band to said lever, and a spring between the shoe and the lever, said spring pressing against the lever between its fulcrum and the resistance.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 7th day of June, 1905.

EDWIN A. HARDISON.

In presence of—

JAMES R. TOWNSEND,
JULIA TOWNSEND.