

No. 791,651.

PATENTED JUNE 6, 1905.

J. ROEMER.
WRENCH.

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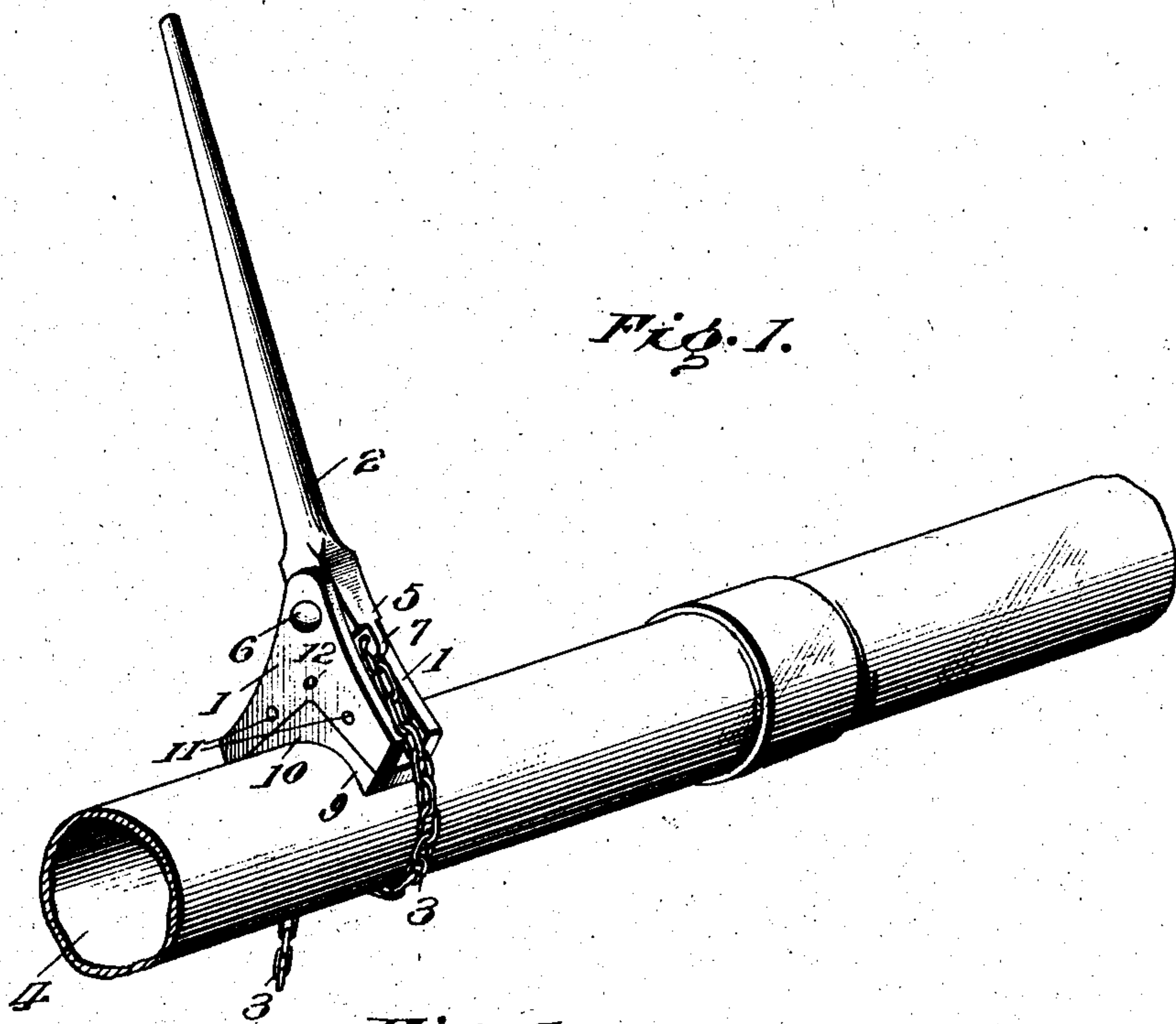


Fig. 1.

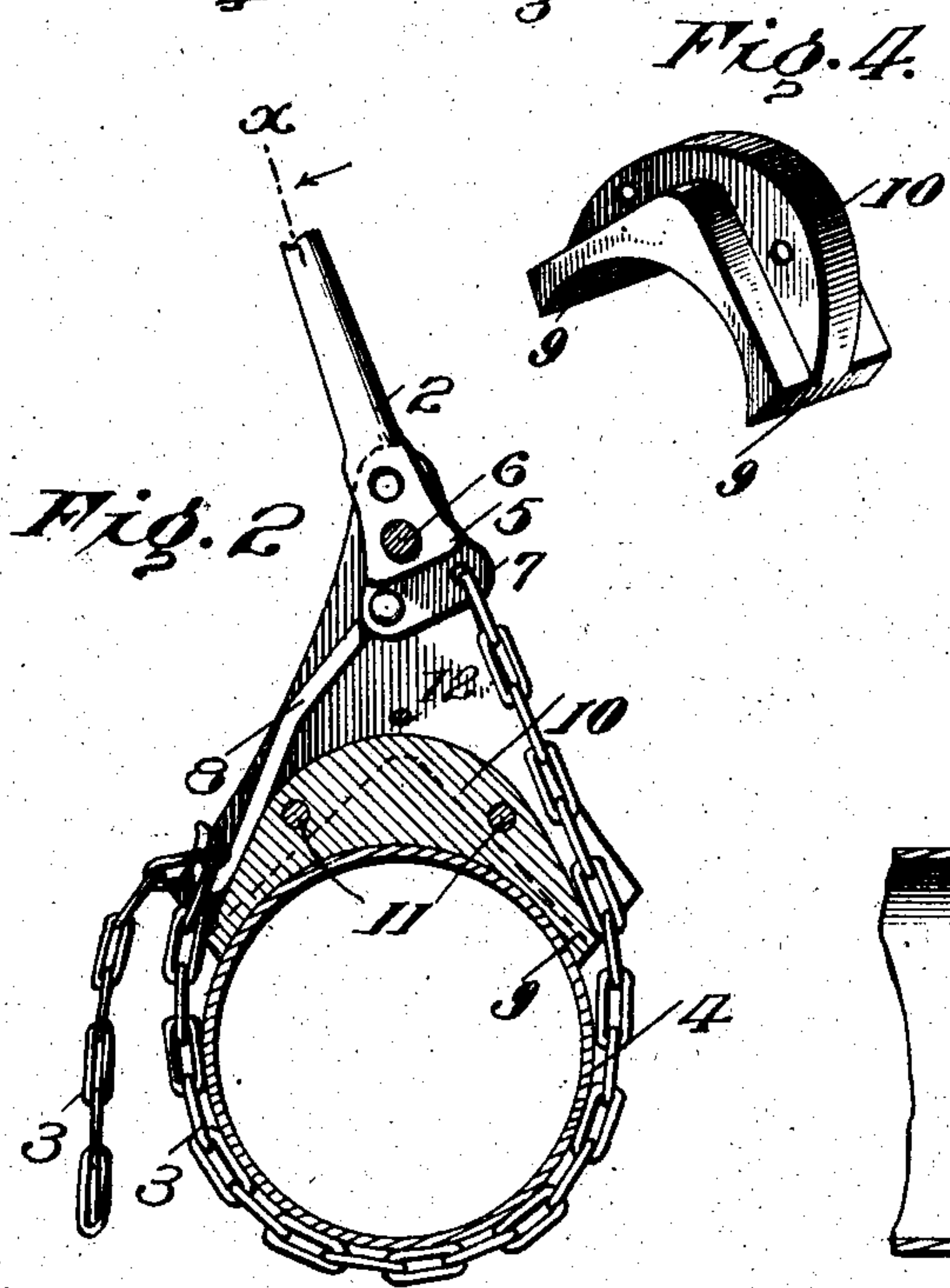


Fig. 2.

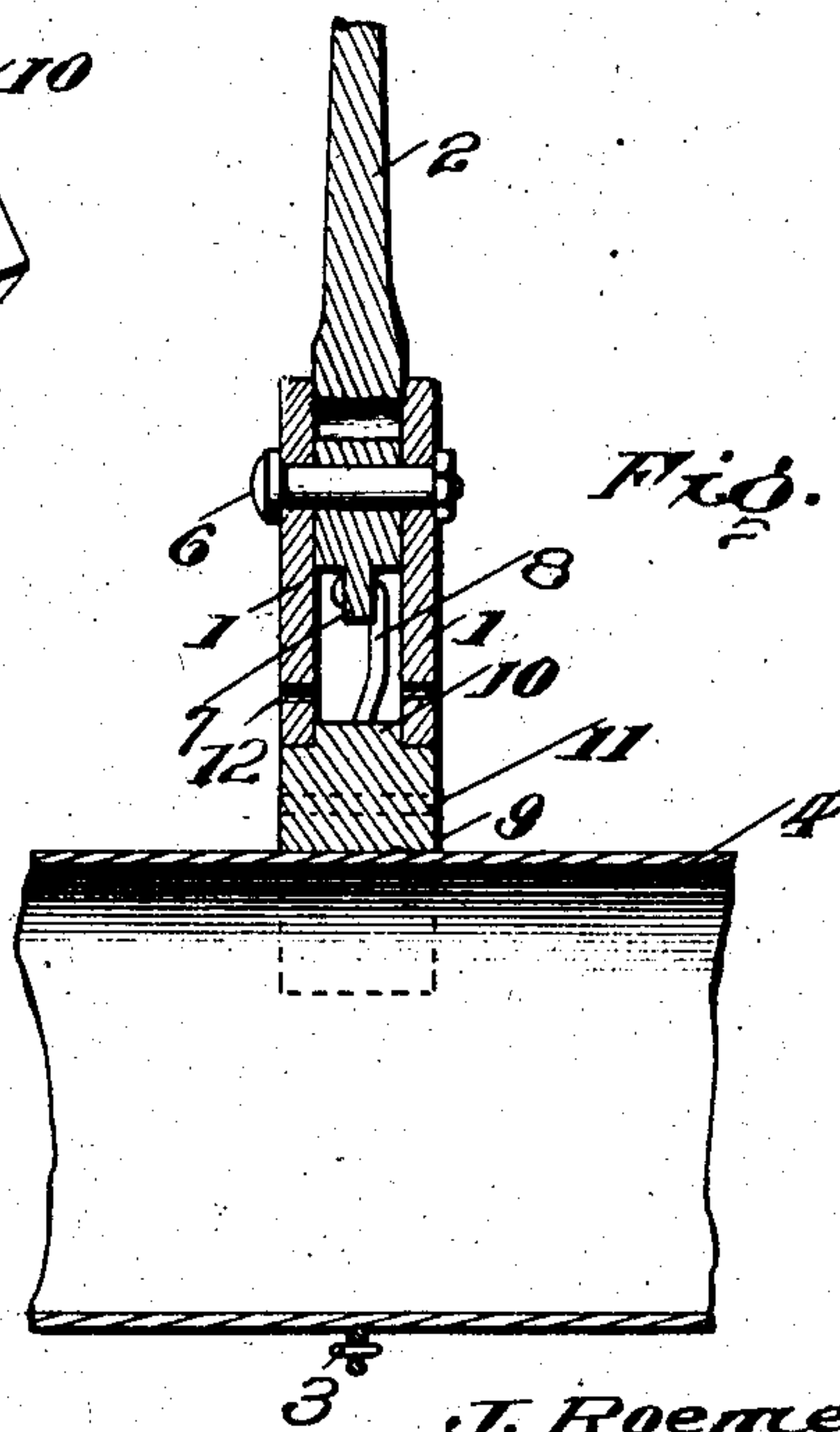


Fig. 3.

Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH ROEMER, OF SANTA MARIA, CALIFORNIA, ASSIGNOR TO ROEMER REVERSIBLE LEVER TONG COMPANY, OF SANTA MARIA, CALIFORNIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 791,651, dated June 6, 1905.

Application filed October 13, 1904. Serial No. 228,301.

To all whom it may concern:

Be it known that I, JOSEPH ROEMER, a citizen of the United States, residing at Santa Maria, in the county of Santa Barbara and State of California, have invented certain new and useful Improvements in Wrenches, of which the following is a specification.

This invention appertains to the type of wrenches embodying a flexible grip and operating-lever, and has for its object to provide a tool of this class which is readily reversible without necessitating its removal from the work and which will ratchet in either position and may be used on comparatively thin pipe without crushing or indenting the same.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the wrench, showing it applied to a section of pipe. Fig. 2 is a sectional detail of the wrench and pipe, the outer portion of the handle being broken away. Fig. 3 is a section of the wrench and pipe on the line *xx* of Fig. 2 looking in the direction of the arrows. Fig. 4 is a detail perspective view of the removable jaw.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The head of the wrench is approximately of triangular form and is preferably composed of companion plates 1, spaced apart to receive between them the head of the operating-lever 2 and the end portions of a chain 3 or flexible grip of desired construction. The wrench-head is notched in the face designed to receive the work, the notch or depression being approximately of V form, so as to prevent lateral displacement of the tool when fitted to the work or pipe 4.

The operating-lever 2 has its inner end

widened, as shown at 5, and fitted between the plates or spaced portions of the wrench-head and pivotally connected thereto by means of the bolt or fastening 6. The operating-lever is adapted to be adjustably connected to the head and for this purpose is provided with a series of openings, through one of which the bolt or pivot fastening 6 passes to connect the operating-lever and wrench-head. The terminal portion of the operating-lever is reduced, as indicated at 7, to admit of the flexible grip being connected thereto and yet not interfere with the wrench-head in the operation of the tool. In the preferable construction the flexible grip consists of a chain, although any part capable of embracing the work and conforming thereto may be substituted therefor. The chain is preferred because its links form, in effect, teeth which securely grip the work and prevent slipping. Moreover, the links provide convenient means for varying the length of the grip according to the size of the pipe, rod, or other work to be held. The hook 8 is pivotally connected at one end to the operating-lever, and the chain or flexible grip 3 is attached at one end to said operating-lever and is designed to be adjustably connected near its opposite end with the hook 8. The hook 8 and flexible grip are connected to opposite end portions of the reduced part 7. Hence movement of the operating-lever upon the pivot connecting it with the wrench-head serves to tighten and loosen the grip of the chain 3 upon the work. When the operating-lever is moved to a position approximating a radius of the work, the grip is loosened and the wrench may be moved freely upon the work. When the operating-lever is moved away from a line corresponding to a radius of the work, the chain is tightened and the work gripped with a force proportionate to the power applied to the lever for turning the work either to tighten or loosen a screw-thread joint. The wrench may be used either as a right-handed or left-handed tool and may be instantly converted from one to the other by changing the relative inclination of the operating-lever, as will be readily comprehended.

In some instances it is preferred to provide

the wrench with a jaw 9, the gripping-face of which is made concave to conform approximately to the work, so as to obtain a close fit thereon. The jaw is provided with a web 10, which is fitted between the plates of the wrench-head and secured thereto by pins or fastenings 11. It is the intention to provide different sizes of jaws 9 for different diameters of work. This jaw is used to advantage with light tubing or pipe and prevents crushing or indenting of the same and in conjunction with the flexible grip equalizes the grip-pressure upon all points. For rods or heavy pipe the jaw may be omitted, as the V-shaped notch or depression of the wrench-head forms a self-adapting seat for different sizes of work, as will be readily appreciated.

An opening 12 is formed in the plates 1 to receive a bolt or pin to act jointly with the fastening 6 to hold the plates in proper relation when the jaw 9 is removed.

Having thus described the invention, what is claimed as new is—

1. A wrench comprising a head having an approximately V-shaped notch or depression in one face forming a seat to receive the work, an operating-lever pivoted a short distance from its inner end to said head to admit of reversing the tool without its removal from the work, and a flexible grip connected to the inner end of the operating-lever upon opposite sides of a line passed lengthwise of the lever and through its pivotal support to admit of

alternately loosening and tightening the grip upon oscillating the lever in either of its two operative positions, substantially as set forth.

2. A wrench comprising a head having spaced parts, a lever having its inner end widened and arranged between the spaced parts of the wrench-head and pivotally connected thereto, a hook loosely connected to an end portion of the widened part of the operating-lever, and a flexible grip connected to the opposite end portion of said widened part of the operating-lever and adapted to be adjustably connected with said hook, substantially as set forth.

3. A wrench comprising a head composed of spaced portions, an operating-lever pivotally supported between the spaced portions of said head, a flexible grip arranged to operate in the space formed between the separate portions of the wrench-head and connected to the operating-lever to be alternately tightened and loosened by an oscillatory movement thereof, and a jaw detachably fitted to the wrench-head and having a concave face to conform approximately to the work, substantially as set forth.

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

JOSEPH ROEMER. [L. s.]

Witnesses:

W. E. MISCALL,
J. S. WEAR.