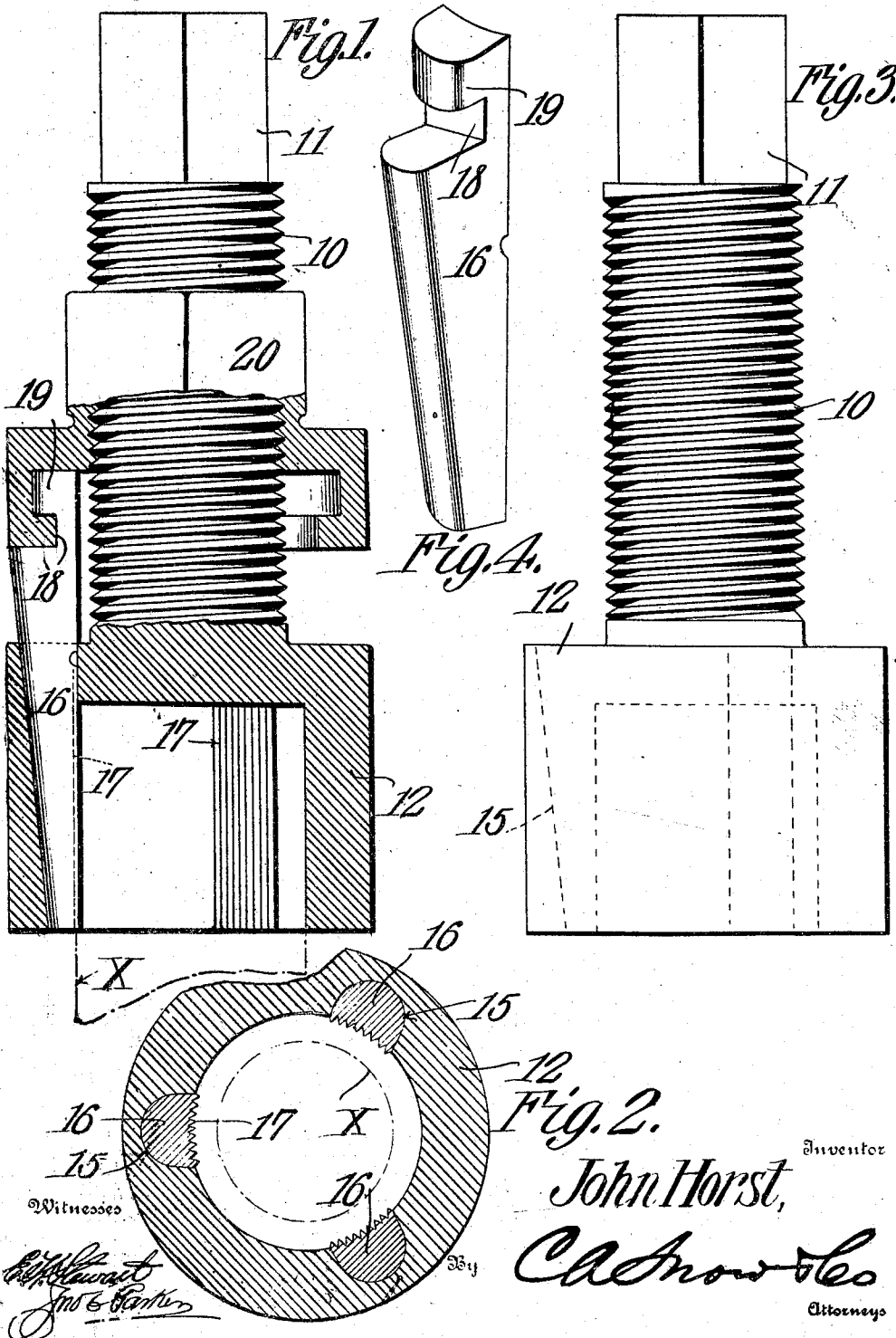


No. 885,926.

PATENTED APR. 28, 1908.

J. HORST.
PIPE WRENCH.

APPLICATION FILED DEC. 30, 1907.



UNITED STATES PATENT OFFICE.

JOHN HORST, OF HUBBELL, MICHIGAN.

PIPE-WRENCH.

No. 885,926.

Specification of Letters Patent.

Patented April 28, 1908.

Application filed December 30, 1907. Serial No. 408,631.

To all whom it may concern:

Be it known that I, JOHN HORST, a citizen of the United States, residing at Hubbell, in the county of Houghton and State of Michigan, have invented a new and useful Pipe-Wrench, of which the following is a specification.

This invention relates to pipe wrenches, and has for its principal object to provide a novel form of wrench to be employed for screwing and unscrewing pipes or tubes into tube sheets or headers.

A further object of the invention is to provide a novel form of wrench which may be clamped with any desired degree of force on the end of a pipe or tube, the wrench being provided with means for engagement by any suitable operating device, such as a key or monkey-wrench.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a sectional elevation of a pipe wrench constructed in accordance with the invention. Fig. 2 is a transverse section through the wedges and cup. Fig. 3 is a view of the body of the device with the movable parts removed. Fig. 4 is a detail view of one of the clamping blocks.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The main body of the wrench comprises a threaded stem 10 having at its upper end a non-circular portion 11 for the reception of a wrench or operating key by which the device is turned, and at the lower end of the threaded stem a tubular cup 12 arranged to receive the end of the pipe or tube *x* which is to be screwed or unscrewed.

The cup 12 is provided with a plurality of vertically disposed grooves 15, of gradually increasing depth from the bottom upward, and the inner walls of said grooves are preferably rounded. These grooves are arranged for the reception of a series of wedge shaped

clamping blocks 16, the inner faces of which are provided with teeth or serrations 17 adapted to bite into the pipe or tube *x* to be operated upon. The wedge shaped blocks extend above the top of the cup and are provided with grooves 18 which are arranged to receive an internal flange 19 that is arranged at the lower end of a nut 20, the nut being internally threaded to fit upon the threaded stem 10, and as the nut is turned, the wedge blocks will be moved in the direction of the length of the pipe and their serrated inner faces moved into or out of contact with the pipe or tube *x*.

In practice, the nut 20 is turned upward until the several wedge shaped blocks are spaced to an extent sufficient to permit the introduction of the tube or pipe *x*, after which the nut is turned down and the wedge blocks are forced tightly against the periphery of the tube or pipe, the serrations 17 biting into the tube to such an extent as to prevent slipping when the wrench is turned.

Any ordinary form of socket or nut wrench may then be applied to the non-circular portion 11 of the stem and turned for the purpose of screwing or unscrewing the tube.

While in the present instance three wedge shaped clamping blocks have been shown, it is to be understood that the number may be increased or diminished in accordance with the size of the tube to be operated upon.

I claim:—

1. In a pipe wrench, a body portion comprising a threaded stem, and a guide, the latter being provided with tapered grooves, wedge shaped clamping blocks arranged in the grooves, a nut mounted on the threaded stem, and means for connecting the nut to said clamping blocks.

2. In a wrench of the class described, a body portion comprising a stem having a non-circular portion at one end and provided at the opposite end with a cup, the inner wall of the cup having tapered grooves, a plurality of wedge shaped clamping blocks mounted in the grooves and provided with serrated clamping faces, the outer faces of the upper portions of said blocks being grooved, and an adjusting nut mounted on the threaded stem and having an internal flange fitting within the grooves of the wedge blocks.

3. In a pipe wrench, a cup arranged for the reception of the end of a pipe, a tapered guide groove formed in said cup extending longitudinally thereof, a wedge shaped

clamping block carried by said cup in said groove, and means for forcing the block into engagement with the pipe.

4. In a pipe wrench, a cup arranged for the reception of the end of a pipe, a tapered guide groove formed in said cup extending longitudinally thereof, a wedge shaped clamping block provided with a serrated face carried by said cup in said groove, and

means for forcing the block into engagement with the pipe. 10

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN HORST.

Witnesses:

MORTON C. GETCHELL,

JOHN LEE.