(No Model.)

J. RICHARD & F. COLMAN.

WRENCH.

No. 573,702. Patented Dec. 22, 1896.

Fig. 1.

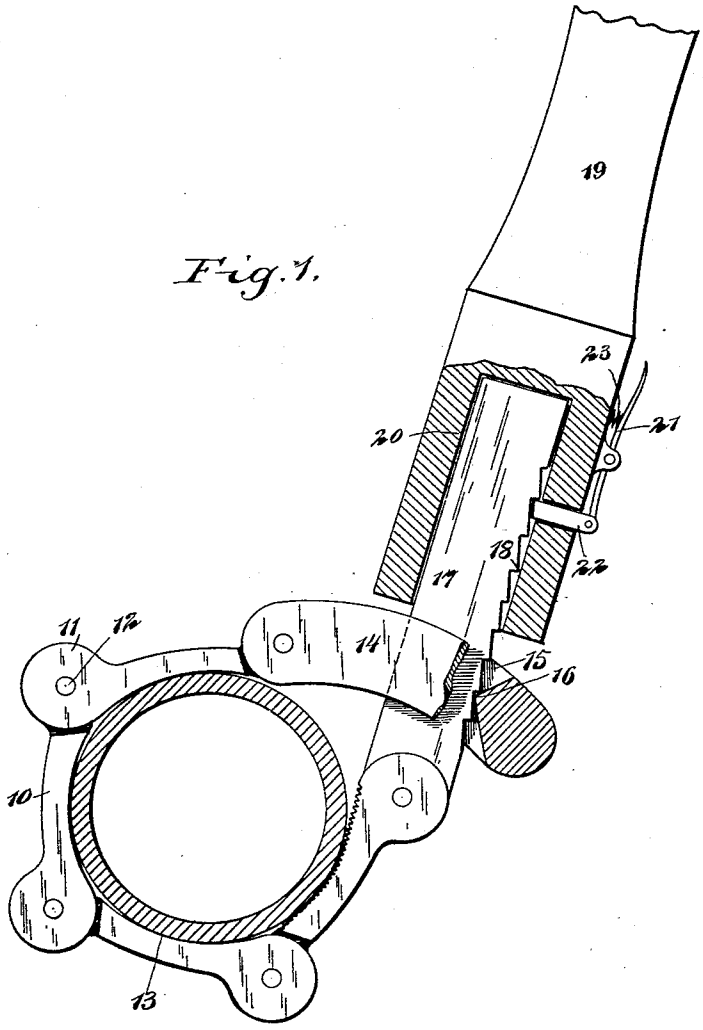


Fig 2

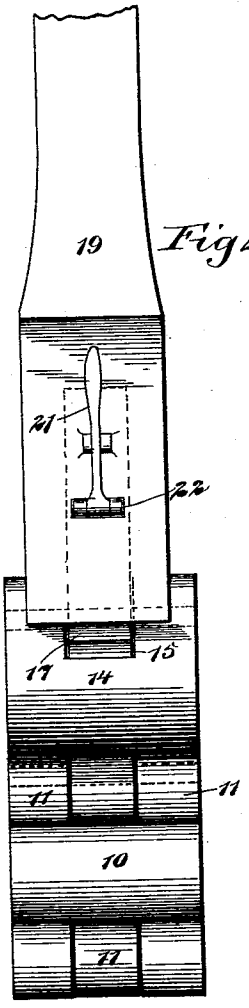
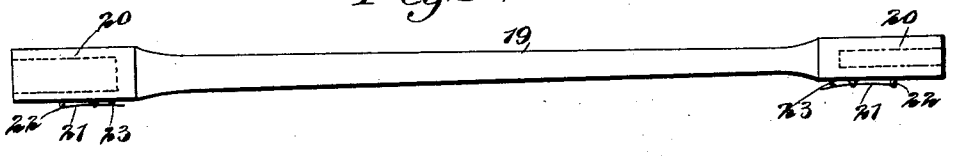


Fig. 3.



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JULIUS RICHARD AND FREDERICK COLMAN, OF BISBEE, ARIZONA TERRITORY; SAID RICHARD ASSIGNOR TO SAID COLMAN.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 573,702, dated December 22, 1896.

Application filed July 22, 1896. Serial No. 600,119. (No model.)

To all whom it may concern:

Be it known that we, JULIUS RICHARD and FREDERICK COLMAN, of Bisbee, in the county of Cochise and Territory of Arizona, have invented a new and Improved Wrench, of which the following is a full, clear, and exact description.

Our invention relates to an improvement in wrenches, particularly to that class of wrenches known as "pipe-wrenches."

The object of the invention is to construct a chain wrench the links whereof are adapted to be brought in clamping engagement with a pipe, and to form the links in such manner that they will fit snugly almost entirely around the pipe, and by reason of their continuous and even bearing prevent the pipe from being crushed while subjected to the necessary force to turn it.

Another object of the invention is to provide the chain-body of the wrench with a lever so connected that when the lever is applied in a direction to turn the pipe the clamping-body of the wrench will be tightened on the pipe during such action, the attachment between the lever and the clamping or chain body of the wrench being also such that by moving the lever backward the pipe will be immediately released from clamping engagement with the body portion of the wrench, thus affecting a quick release.

A further object of the invention is to provide a pipe-wrench which may be conveniently used where pipes are close together or close to a wall, partition, or the like.

Another object of the invention is to so construct the lever of the wrench that it may be quickly disconnected from the body and the body opened out practically to a straight line.

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 characters of reference indicate corresponding parts in all the figures.

Figure 1 is a partial side elevation and partial sectional view of the improved wrench, illustrating the wrench applied to a pipe, the latter being in transverse section. Fig. 2 is a front elevation of the wrench; and Fig. 3 is a side view of the handle-section of the lever of the wrench, the handle serving as a continuation of the said lever.

In carrying out the invention the body of the wrench consists of a number of links 10, which are ordinarily made solid, and the links are connected through the medium of interlocking knuckles 11, suitable pivot-pins 12 being passed through the knuckles, and the inner faces 13 of the links are concaved, the concaved surfaces being uniform and the concavities such that when the links are carried around the pipe, as shown in Fig. 1, each link that can possibly engage with the pipe will have a smooth and continuous contact therewith. Thus when pressure is brought to bear on the links in a manner to close them around the pipe their even bearing on the latter will prevent said pipe from being crushed, enabling the wrench to be used with good effect on pipes of thin brass or copper.

At one end of the chain of solid links 10 a locking-link 14 is pivoted or hinged, and this locking-link is also provided with a concaved inner face and has, furthermore, a longitudinal slot made therein, and the outer end wall of the slot 15 is beveled in opposite directions to an approximately central point, forming a sharp transverse surface 16, as shown in Fig. 1.

A bar 17 is pivotally connected with the opposite end of the link or chain body of the wrench, and the said bar is of such width that it may pass readily through the slot 15 of the locking-link. The front edge of the bar 17, which is to act in the capacity of a lever, is provided with a number of teeth 18, as is also shown in Fig. 1, and when the lever or bar 17 is drawn upward through the locking-link a sufficient distance to bring the body or clamping-links 10 to an engagement with the pipe the sharp edge 16 of the inner end wall of the locking-link will engage with one of the teeth 18 of the bar or lever, and as downward pressure is applied to the lever the lever will be carried in direction of or to a contact with the upper inclined surface of

the end wall of the slot 15 in the locking-link, carrying that link downward over or in direction of the body of the clamping-link 10, to which the lever 17 is pivoted, thereby causing the body portion of the wrench to tightly clamp the pipe, and as the downward movement of the lever is continued to turn the pipe the body of the wrench will be held the more firmly in engagement with the pipe. The link 10, to which the lever 17 is pivoted, is serrated or otherwise roughened upon its inner face to facilitate the purchase of the chain-body upon the pipe.

A quick release of the pipe from the wrench is effected by simply carrying the lever 17 upward, and the wrench may be entirely removed from said pipe by drawing the lever entirely out of the locking-link 14.

As the lever 17 is quite short, a handle 19 is provided therefor, and this handle is preferably provided with a socket 20 at each end, the sockets being of different dimensions, so that one handle may be used with wrenches of two different sizes. The upper end of the lever 17 is made to enter a socket in the handle, and adjacent to each socket on the outer face of the handle a thumb-latch 21 is pivoted, carrying at one of its ends a pawl 22, which has sliding movement in an opening in the handle and extends into the socket, the inner end of the pawl being beveled or otherwise shaped to fit to the teeth 18 of the lever, and the pawl is likewise held in position for engagement with the said teeth by means of a spring 23, placed beneath the handle end of the latch.

It is evident that a wrench of the above description, in addition to being simple, durable, and economic, will occupy but little space in a tool-chest and will be effective in operation.

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

1. In a pipe-wrench, a chain-body having the inner faces of its links concaved to fit to a cylindrical surface, a locking-link located at one end of the said chain-body, and a locking-bar serving as a lever, pivoted to the opposite end of the said chain-body, being adapted to be passed through the locking-link and have locking engagement therewith, as and for the purpose set forth.

2. In a pipe-wrench, the combination, with the locking-bar or lever thereof, of a handle receiving an end portion of the said locking-bar or lever, the said handle being provided with a spring-controlled pawl operated from the exterior of the handle and arranged for locking engagement with the aforesaid locking-bar or lever, as and for the purpose set forth.

3. In a pipe-wrench, the combination, with a chain-body, the links whereof have a pivotal connection and are provided with concaved inner faces, adapting them to fit closely to a cylindrical surface, a slotted and curved locking-link pivotally connected with one end of the chain-body, the outer wall of the slot of the said locking-link having its surfaces inclined partially upward and partially downward, and a toothed locking-bar or lever, having a hinged connection with the opposite end of the chain-body, the said lever or locking-bar being adapted to pass through the slot in the locking-link, the teeth of the locking-bar or lever engaging with the beveled wall of the locking-link, of a handle provided with a socket to receive the free end of the locking-bar or lever, a pawl having sliding movement in the handle and arranged for engagement with the teeth of the locking-bar or lever, and a latch located on the handle, whereby the movement of the pawl is controlled, as and for the purpose set forth.

4. A wrench comprising a body portion constructed of links adapted to clamp an object, a slotted locking-link pivotally connected to one end of said body portion, and a lever pivotally connected with the other end of said body portion and adapted to be passed through the slot in the locking-link, said lever having teeth arranged to be held in engagement with the end wall of the slot in said locking-link, as set forth.

5. In a pipe-wrench the combination of a body portion formed of pivotally-connected links having their inner faces concaved, a locking-link pivotally connected to one end of said body portion and provided with a longitudinal slot, one wall of which is inclined in opposite directions, and a lever pivotally connected with the opposite end of said body portion, and arranged to be passed through said slotted locking-link, said lever being provided with a toothed edge adapted to engage the inclined wall of said locking-link, as set forth.

6. In a pipe-wrench, the combination with a body portion, of a locking-link and a lever pivotally connected to the opposite ends of said body portion, said lever having toothed engagement with said locking-link, and a handle carrying a pawl also in engagement with the teeth of said lever, as and for the purpose set forth.

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