

(No Model.)

2 Sheets—Sheet 1.

C. L. DUNHAM.
PIPE WRENCH.

No. 542,012.

Patented July 2, 1895.

Fig. 1.

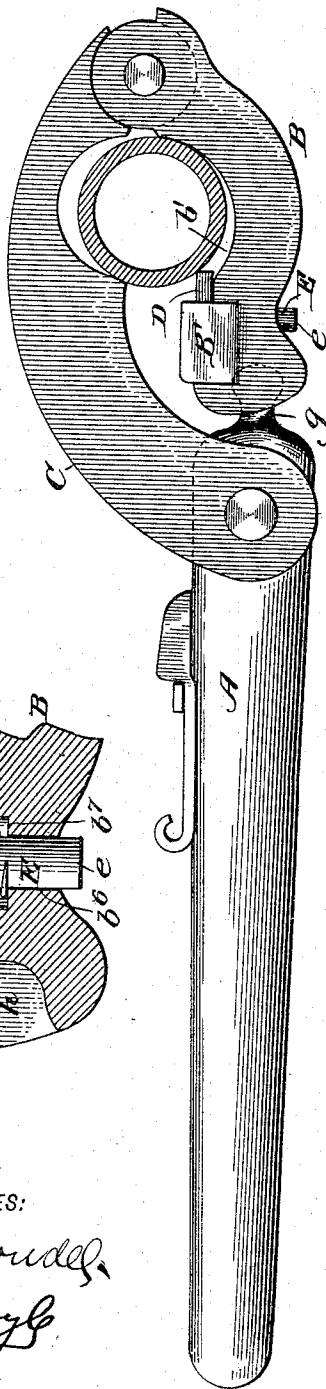
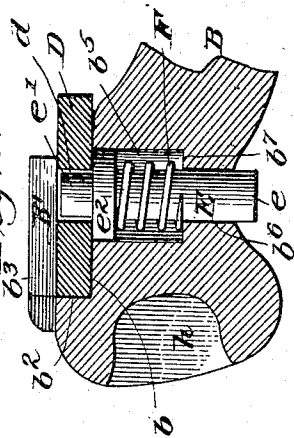


Fig. 3.



WITNESSES:

W. D. Bloude,
Chas. N. Boyle
3

Fig. 2.

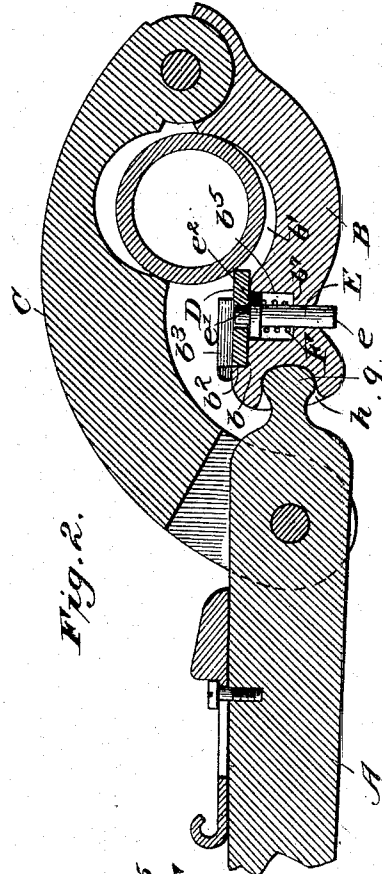
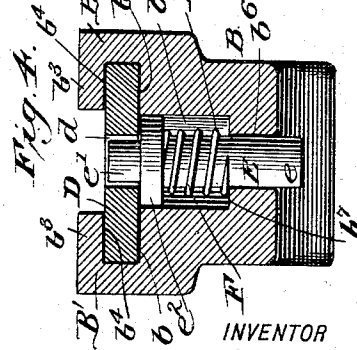


Fig. 4.



INVENTOR

Charles L. Dunham.

BY

J. M. Little,
his ATTORNEY.

UNITED STATES PATENT OFFICE.

CHARLES L. DUNHAM, OF CENTREVIEW, OHIO, ASSIGNOR OF ONE-HALF TO
COCHRAN C. STOVER, OF SAME PLACE.

PIPE-WRENCH.

SPECIFICATION forming part of Letters Patent No. 542,012, dated July 2, 1895.

Application filed April 19, 1895. Serial No. 546,438. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. DUNHAM, a citizen of the United States, residing at Centreview, in the county of Monroe and State of Ohio, have invented certain new and useful Improvements in Pipe Tongs or Wrenches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of tongs or wrenches which are especially adapted for use upon pipes and similar articles.

My invention consists in certain improvements upon the pipe-tongs embodied in the patent granted to W. Crumie January 11, 1876, No. 171,999.

In the construction of that class of pipe-tongs in which the block-die or changeable tooth is secured upon the inner face of one of the jaws adjacent to the curved recess in which the pipe is secured, and is adapted to have its edge catch against the side of the pipe the block-die is liable to breakage and displacement when it is simply held in position by a set-screw passing through the block-die and into the jaw, all the strain being on the set-screw, so that with the heavy strain usual in the use of devices of this character the block dies or teeth thus secured are liable to break off. Furthermore, in this construction and arrangement the dies are not well adapted to be successively reused after they are dulled. When the edges of the die or tooth are dulled, they could not be ground and practically used again, for the reason that, owing to the fixed threaded set-screw construction, the new edges would not come into proper position for operation.

The object of my invention is to provide an improved construction and arrangement in which the die will be effectively and securely retained in position, which will enable the grinding and reuse of the die several times, which will obviate the disadvantages and breakage above set forth, and which will be durable, convenient, effective, and thoroughly efficient.

In the drawings, Figure 1 is a side view of a pipe-tongs embodying my improvements. Fig. 2 is a longitudinal sectional view of the

same. Fig. 3 is a detail perspective view of the jaw carrying the block die or tooth. Fig. 4 is a detail transverse sectional view taken through said jaw and the die. Fig. 5 is a detail longitudinal sectional view taken through said jaw and the die. Fig. 6 is a detail perspective view of the end of the jaw with the die removed. Fig. 7 is a detail perspective view of the spring-actuated retaining-pin mechanism. Fig. 8 is a detail perspective view of the block die or tooth. Fig. 9 is a detail plan view of the jaw with the block-die and retaining-pin removed.

Referring to the drawings, A designates the operating-lever, to which is pivotally connected the jaw C, the latter being pivoted at its outer end to the jaw B, having a recess *h* in its inner end, which recess is engaged by the end projection *g* of the lever A. The jaws are provided in their opposite inner faces with curved or segmental recesses in which the pipe is adapted to be clasped, and the main construction of all the foregoing parts may be substantially the same as in the Crumie patent. In the latter patent the block die or tooth D, which is formed by a rectangular steel plate adapted to have all its edges successively used, was simply secured against the flat inner face of the jaw B by means of a single set-screw passing through the block-die into the said jaw.

In my invention the jaw B is provided at its inner face and near its rear end with inwardly-projecting side flanges B', said flanges or ears being arranged at each side the flat die-seat *b* adjacent to the curved or semicircular recess *b'*. The flat die-seat *b* terminates at its rear end in a transverse shoulder *b²*. Projecting inwardly from the inwardly-projecting side flanges or ears B' B', at the top thereof and transversely with relation to the jaw, are provided lugs or arms *b³*, said arms thus projecting over the die-seat *b* and being adapted to receive the block die or tooth D between the arms and the die-seat, the under faces *b⁴* of said arms being preferably formed flat and smooth to correspond to the top face of the die.

In the jaw B, centrally with relation to the die-seat *b*, is provided an opening or perforation *b⁵* extending entirely through the jaw and of smaller diameter at its lower portion

b^6 , thus providing an interior annular shoulder b^7 . Within this opening b^5 is set a spring-actuated cylindrical retaining-pin E, having its bottom end e normally projecting from the bottom of the opening b^5 and its top end e' projecting above the die-seat b , as shown. This retaining-pin is provided near its top end e' with a circumferential annular flange or enlargement e^2 , corresponding to the interior annular shoulder b^7 of the opening b^5 and accommodated in the larger upper part of said opening. The annular flange e^2 preferably corresponds in diameter to the larger upper part of the opening b^5 . Between the shoulder b^7 and the circumferential flange e^2 is provided a coiled spring F upon the cylindrical pin E, which spring exerts its tension to retain the pin in normal position for securing the die-plate D in place.

The block die or tooth D is formed of a flat steel plate and is adapted to rest against the transverse shoulder b^2 , when it is secured in position upon the die-seat b and under the overhanging lugs or arms b^3 , by means of the spring-actuated retaining-pin E. In the center of the die is provided a smooth opening or perforation d , corresponding to the projecting top end e' of the pin E and adapted to receive the same. This opening d may be slightly larger in diameter than the end e' , if desired. The die is reversible, so that all its edges can be successively used, and by reason of this improved construction and arrangement the edges of the die may be ground and the die effectively reused a number of times without affecting its secure retention in position or its proper projection and operation against the side of the pipe when the latter is clamped in the curved or segmental recesses of the jaws.

The spring-actuated cylindrical retaining-pin E and the actuating-spring F may be readily removed from the opening b^5 , in which they are normally housed, for purposes of substitution or repair, if desired.

The operation and advantages of my improvements will be readily understood by those skilled in the art to which it appertains, the general operation of the tongs being substantially the same as in the construction embodied in the above-mentioned patent.

It is obvious that the projecting top end of the retaining-pin will securely hold the die in position, and by reason of the construction and arrangement herein described and illustrated breakage or displacement of the die is obviated and the strain is distributed and evenly met. The die or tooth is effectively and securely retained in operative position and inclosed or braced by the projecting side flanges or ears B' and the transverse shoulder b^2 , in conjunction with the retaining-pin and the projecting lugs or arms b^3 . To remove the die from its seat, it is only necessary to pull down the spring-actuated retaining-pin E (by means of its projecting bottom end e) until the top end e' is within the open-

ing b^5 , when the die can be slipped out from between the side flanges or ears B' . The die may be as readily set into position, and when the pin E is released it is returned to normal position by the tension of the spring F.

The annular flange e^2 of the spring-actuated pin E bears against the under face of the die D and serves to bind the latter in place under and against the overhanging lugs or arms b^3 .

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. A pipe tongs of the class described, having the jaw provided with the block-die or plate secured in position by a spring-actuated retaining-pin seated in the jaw and engaging the die, substantially as and for the purpose set forth.

2. A pipe tongs of the class described, having the jaw provided with projecting lugs or arms overhanging the die-seat, the removable block-die or plate set in said seat under the projecting lugs or arms and provided with the opening or perforation, and a spring-actuated retaining-pin seated in an opening in the jaw and projecting upwardly therefrom and having its top end engaging the opening in the die, substantially as and for the purpose set forth.

3. A pipe tongs of the class described, having the jaw provided with the inwardly-projecting flanges or ears at the sides of the die-seat, said flanges or ears having the lugs or arms projecting over the die-seat, the block-die or plate set in its seat between the projecting side flanges or ears and under the arms or lugs thereon and having the opening or perforation, the retaining-pin seated in the opening or perforation in the jaw and projecting therefrom into engagement with the opening in the die, and the actuating spring housed in the opening in the jaw, substantially as and for the purpose set forth.

4. A pipe tongs of the class described, having the jaw provided with the die-seat and with the projecting lugs or arms overhanging the die-seat, the jaw being provided at the die-seat with an opening or perforation having an interior annular shoulder, the block-die or plate adapted to be set in the die-seat under the overhanging lugs or arms and provided with the opening or perforation, the retaining-pin seated in the opening in the jaw and having its top end projecting therefrom and engaging the opening in the die, said pin being provided with a circumferential flange or shoulder, and a coiled-spring mounted upon said retaining-pin, substantially as and for the purpose set forth.

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

CHARLES L. DUNHAM.

Witnesses:

FRANK MARLOW,
JEROME LITTLE.