No. 892,113. PATENTED JUNE 30, 1908.

G. AMBORN.

CHAIN PIPE WRENCH.

APPLICATION FILED MAY 6, 1907.

Fig 1

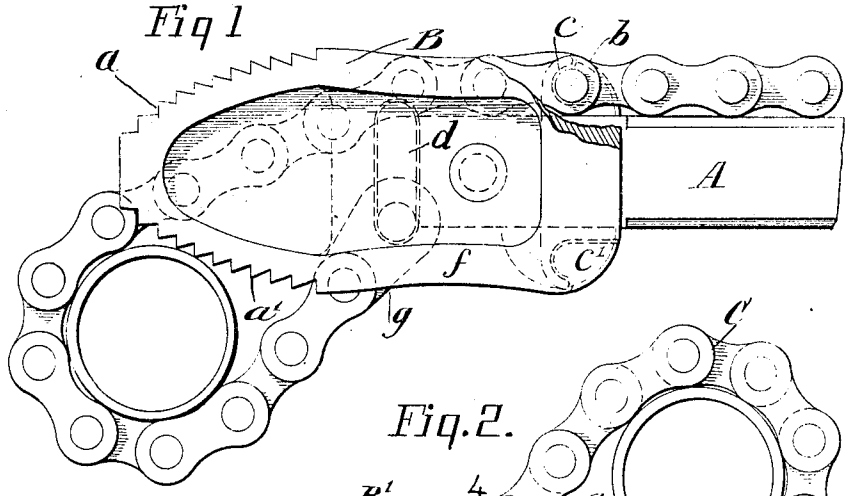


Fig. 2.

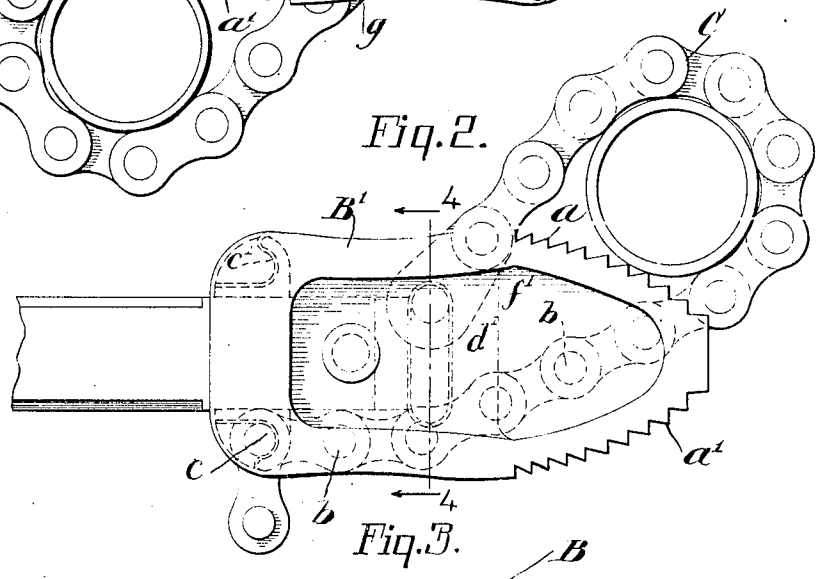


Fig. 3.

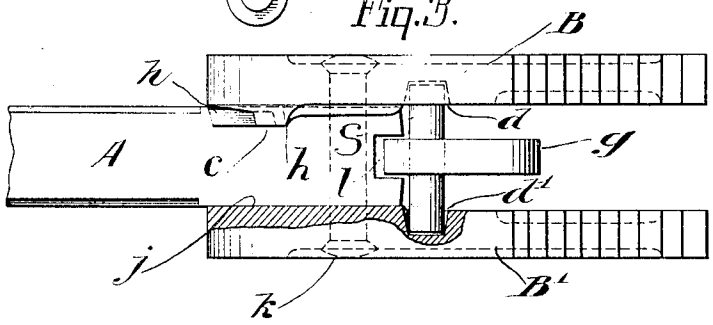
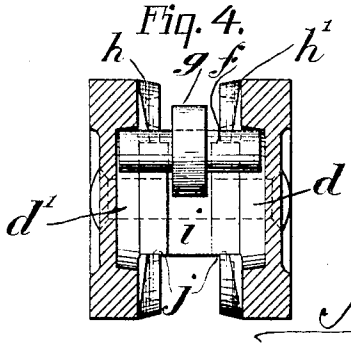


Fig. 4.



WITNESSES.
Philip Bellows.
Fred White

INVENTOR
George Amborn,
By Attorneys.
Arthur & Fraser Mann

UNITED STATES PATENT OFFICE.

GEORGE AMBORN, OF NEW YORK, N. Y., ASSIGNOR TO J. H. WILLIAMS & CO., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

CHAIN PIPE-WRENCH.

Specification of Letters Patent. Patented June 30, 1908.

No. 892,113.

Application filed May 6, 1907. Serial No. 372,036.

To all whom it may concern:

Be it known that I, GEORGE AMBORN, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Chain Pipe-Wrenches, of which the following is a specification.

This invention relates to chain wrenches and aims to provide certain improvements therein.

The type of wrench to which my invention particularly relates is provided with two jaws which are fastened to each side of a handle so that they are laterally separated, the chain being pivoted between the jaws so that it may swing to either side of the latter whereby either one or the other of the working faces of the wrench may be brought into operation. It has heretofore been customary to pivot the end of the chain upon a bolt which extends through the jaws and handle of the wrench, so that the chain is connected to the wrench in a fixed central position. This mode of construction is disadvantageous in that it either results in an insufficient grip upon the pipe or requires a length of jaw which would be otherwise unnecessary.

By my present invention I provide a wrench in which the point of connection of the chain is shifted from side to side of the wrench as the latter is reversed to bring its opposite working faces into operation. This may be accomplished in any suitable manner, but I prefer to provide the wrench with slots in which the connecting pin of the chain moves. Such slots may be formed in any suitable way, so long as they do not follow the contour of the working face or faces of the jaws since in this case the connecting pin of the chain would slip forwardly as the wrench was turned in use.

In the drawings wherein I have shown one form of my invention, Figure 1 is an elevation of the wrench showing the jaw in the operation of gripping the pipe from above; Fig. 2 is an elevation of the wrench reversed, the wrench being shown as operating against the under side of a pipe; Fig. 3 is a top or plan view of the wrench with the chain removed; Fig. 4 is a cross-section on the line 4, 4, of Fig. 2.

As shown in the drawings the wrench comprises a handle A having connected therewith two jaws B, B′, each of which is provided with working faces *a*, *a*′. The chain C is connected to the jaws between the latter and is provided with locking pintles *b*, *b* which are adapted to be brought into engagement with locks *c*, *c*′, each of which comprises two similar hook-like parts formed upon the opposing sides of the jaws B, B′.

In the preferred form of my invention the chain is connected with the jaws by a pin-and-slot connection, the slot of which extends laterally of the jaws. This construction is best seen in Figs. 3 and 4. As shown, each of the jaws is provided with an oblong slot or socket *d* or *d*′, in which works a pin or shaft *f*. The pin *f* is provided with an eye or the like *g* which is preferably formed integrally with the pin, or otherwise constructed so that it maintains its position upon the middle of the latter. The shape of the slot *d* is such that while it permits the pin *f* to shift from side to side, it nevertheless prevents it from slipping forwardly to such an extent in use as to prevent the proper tightening of the chain when the wrench is swung around the pipe. It is important, therefore, that the slot shall not follow the conformation of the working face or faces *a*, *a*′. Instead of the pin-and-slot construction illustrated, any other mode of connecting the parts may be substituted therefor which will accomplish the desired result. It is to be observed that the principal effect of shifting the connection as herein described, as compared with a fixed central connection is that it changes the angle of the chain in use so that its inclination to the horizontal axis of the wrench is decreased. To obtain the same angularity in a centrally pivoted chain would require that the chain be pivoted a considerable distance further to the rear than with the present invention. This enables me to obtain the same angularity of the chain with a considerably shorter jaw. As the wrench is reversed in use, the pin *f* automatically assumes a position in the bearing face or socket at the end of the slot on that side of the wrench on which the pipe is engaged. In Fig. 1 the wrench is shown with its working face *a*′ in engagement with the pipe and the pin *f* of the corresponding end of the slot. These conditions are reversed in Fig. 2, which shows the wrench as applied to the under side of a pipe.

In constructing the wrench I preferably

form the jaws B, B' with thickened portions or ribs *h*, *h*, and by the use of a suitable tool form a groove *j* in each of said thickened portions to receive the handle A. The grooves *j* are made so shallow that they do not extend beyond the inner faces of the jaws, so that in the grooving operation the tool may be run entirely across the jaw without cutting into working portion of the latter. I also preferably form the handle so that it does not extend beyond the pivot pin *f*, and instead of bolting the handle and jaws together as heretofore, I prefer to rivet them together as shown at *k* in Fig. 3. This operation is rendered practicable by the fact that the handle at the point through which the rivet passes is unslotted so that it will not be distorted by the riveting operation.

I prefer to provide a shallow slot *l*, however, in the handle in front of the rivet *k*, which slot is adapted to receive the rear shoulder of the eye *g* as shown in Figs. 3 and 4. With this construction the pin *f* is prevented from tilting sidewise in its slots *d*, *d'* and thus escaping from the latter. Any other means for effecting this result may be provided.

While I have described in detail one form of my invention, it will be noted that I do not wish to be limited thereto since various modifications may be made thereon without departing from the invention. It will also be noted that while I have shown my invention as applied to a double jawed wrench, it may in some cases be applied to wrenches of other types, or to other similar devices.

What I claim is:—

1. In a chain wrench, the combination of a handle, a jaw having a working face on each side thereof, and a chain having its end fixed thereto by a sliding connection, such connection comprising a guide on the body of the wrench, and a part connected with said chain and working along said guide, whereby the fixed end of the chain may act from different points of the wrench, said guide being extended in a direction which is out of parallelism with such working faces, and being adapted to hold the chain against a forward slipping movement in use, and means for locking the free end of the chain.

2. In a chain wrench the combination of a handle, a jaw having working faces on each side thereof, a chain having one of its ends connected to one of said parts by a pin and slot connection, the slot of which extends across the jaw from side to side whereby the connected end of the chain lies at that end of the slot which corresponds to the side of the working face used and means for locking the free end of the chain.

3. In a chain wrench, the combination of a handle, a jaw having working faces on each side thereof, a chain having one of its ends connected to one of said parts by a pin and slot connection, the slot of which is substantially straight and extends across the jaw from side to side whereby the connected end of the chain lies at that end of the slot which corresponds to the side of the working face used and means for locking the free end of the chain.

4. In a chain wrench, the combination of a pair of jaws spaced apart, said jaws having oppositely arranged slots extending across the jaws from side to side, a pin movable in said slots, a chain connected with said pin, and means for locking the free end of the chain.

5. In a chain wrench, the combination of a pair of jaws spaced apart, said jaws having oppositely arranged slots extending laterally of the jaws, a pin movable in said slots, said pin having a rearwardly extending shoulder, a handle having a slot in which said shoulder is adapted to move whereby to prevent tilting of said pin, a chain connected to said pin at one end and means for locking the other end of said chain.

In witness whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

GEORGE AMBORN.

Witnesses:
EUGENE V. MYERS,
THEODORE T. SNELL.