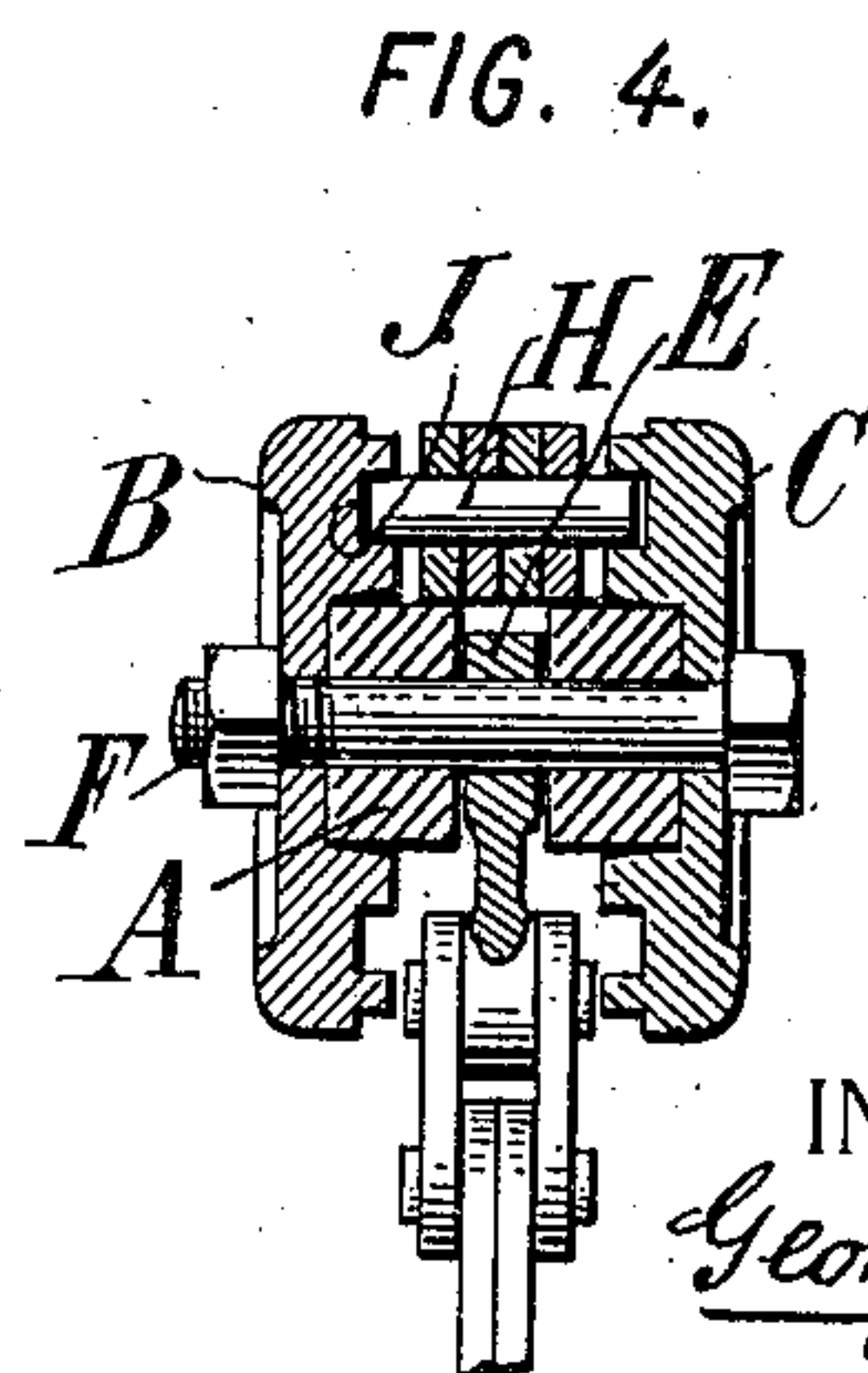
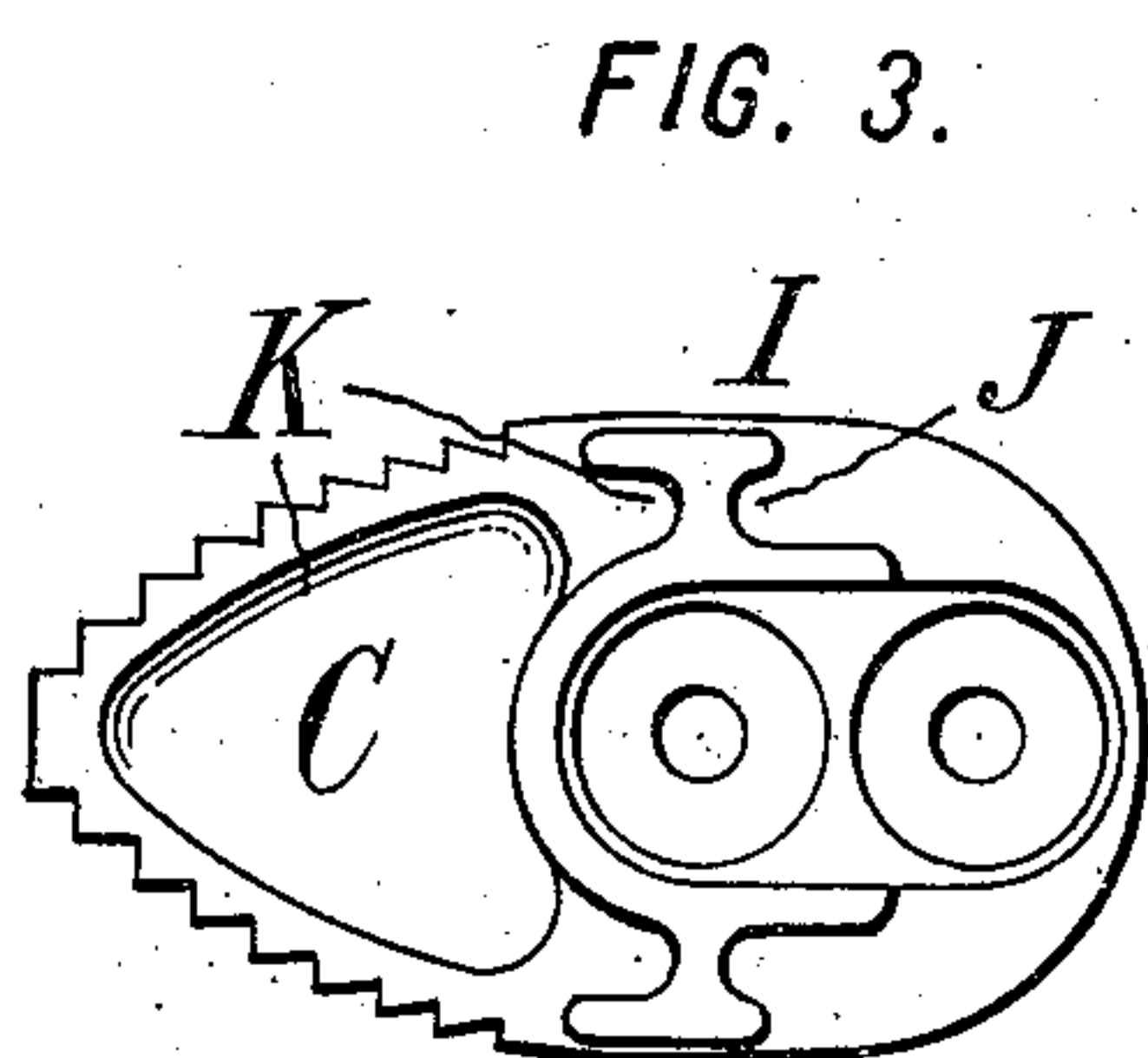
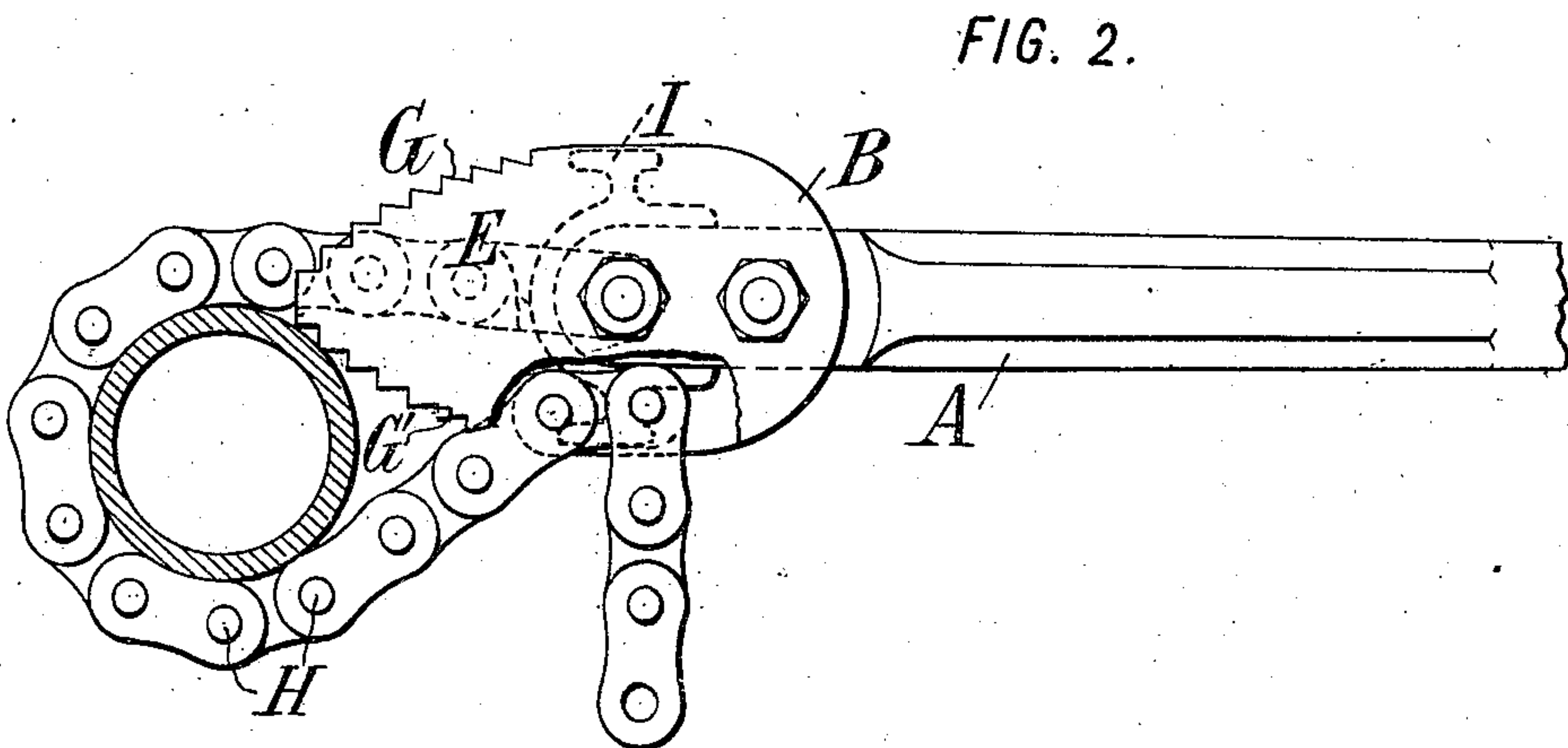
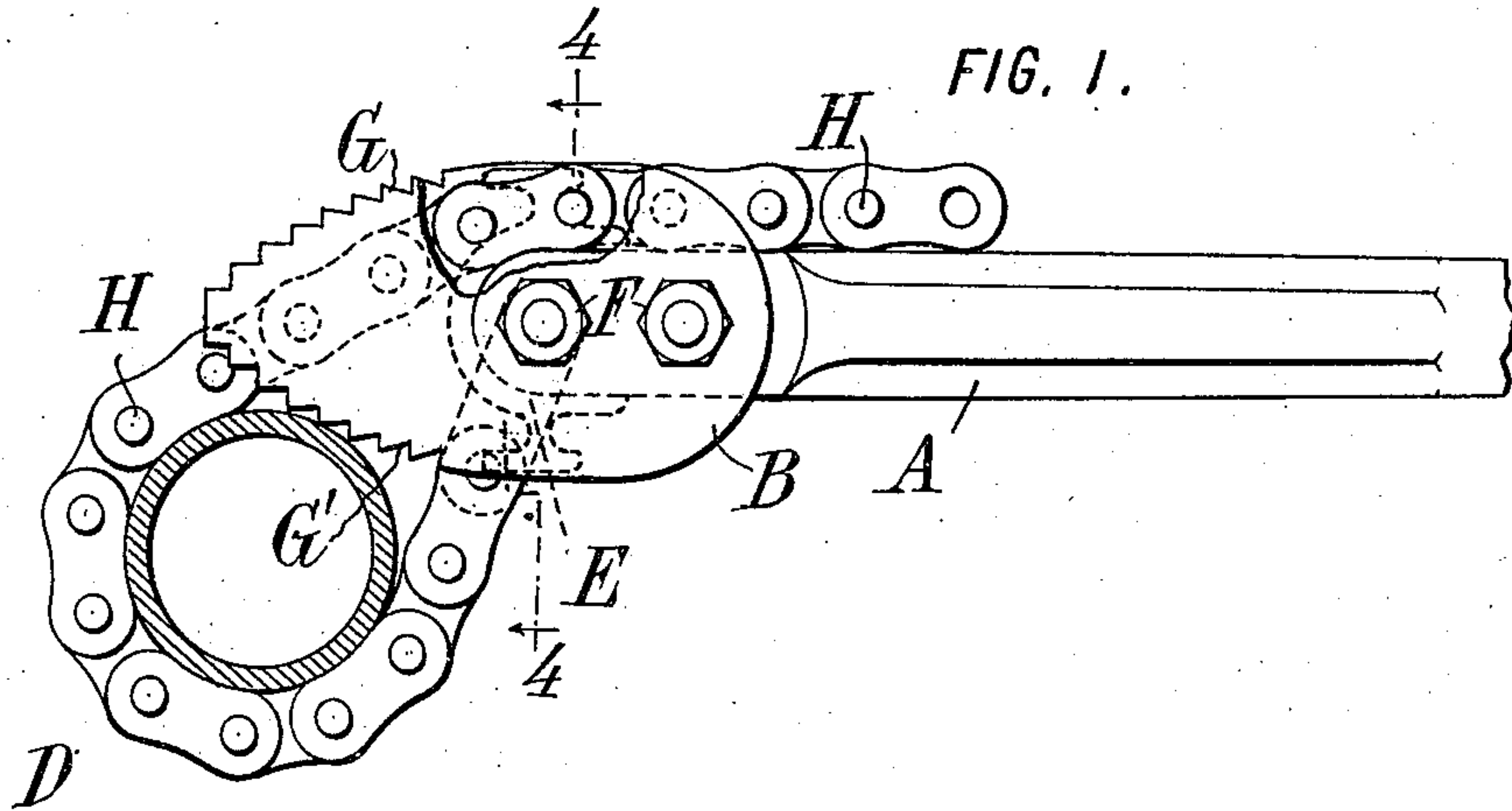


No. 876,925.

PATENTED JAN. 21, 1908.

G. AMBORN.
CHAIN PIPE WRENCH.
APPLICATION FILED MAR. 8, 1907.



WITNESSES:
Fred White
Rene Guine

INVENTOR :
George Amborn,

By Attorneys
Arthur C. Traut & Howard

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.

No. 876,925.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed March 8, 1907. Serial No. 361,287.

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 similar devices and aims to provide certain improvements therein.

The invention is particularly directed to that type of chain wrenches in which two laterally separated jaws are provided, between which the chain is centrally pivoted so that either side of the wrench may be used. In this type of wrench two locking devices are generally used, which are usually constructed to engage locking pintles formed upon or carried by the chain. In the intended or normal manner of using such wrenches the chain is locked upon the side of the wrench which is opposite the pipe. Occasionally, however, the chain is locked upon the same side as the pipe. This changes the direction of strain materially so that the chain is very apt to slip out of engagement with the lock. This is especially true when the chain is slackened during the return stroke of the wrench for the purpose of obtaining a fresh grip upon the pipe.

According to the present invention I provide a lock which is adapted to securely hold the chain under all of the varying conditions of use, and which at the same time is adapted to be easily engaged by the chain and disengaged therefrom when desired.

Referring to the drawings illustrating my invention, Figure 1 is a side elevation of a chain pipe wrench showing the wrench in the position as normally used; Fig. 2 is a view similar to Fig. 1 showing the wrench with its chain locked upon the same side as the pipe; Fig. 3 is an elevation of the inner face of one of the jaws removed; Fig. 4 is a cross-section taken on the line 4—4 of Figs. 1 and 3.

In the drawings, A designates the shaft or handle of the wrench which has bolted to its forward end a pair of jaws B, C, which are separated laterally a sufficient distance (as shown in Fig. 4) to permit the chain D to be pivoted between them. In the construction shown the handle A has a slot at its forward end which receives the long link E, which is pivoted upon a bolt F fastened to the handle

and the jaws. The effect of this construction is that the wrench may be reversed so as to bring either of its working faces G or G' into operation.

My invention relates chiefly to the form of lock by which the free end of the chain is held in its adjusted positions. In the construction illustrated the chain is provided with a series of locking pintles H, H, and with this form of chain I prefer to construct the lock by forging it up from the metal forming the jaws B, C. As thus constructed the lock comprises opposing locking faces separated to a sufficient extent to permit the chain to lie between them.

Referring to Fig. 3 which shows at I one of the halves of the lock, it will be noted that I provide a locking recess J which is adapted to receive one of the pintles of the chain, and which takes all of the strains in ordinary use, as shown in Fig. 1. The locking recess J opens rearwardly so that it is necessary for the pindle to be brought to the rear of the recess and moved inwardly and forwardly to enter it. In front of the locking recess J, I provide a retaining recess K which is adapted to prevent the disengagement of the chain. The recess K opens toward the front so that the pindle must be moved rearwardly to enter it. The recess K is of greater depth than the recess J so that in order to engage the chain with the lock it is necessary to first bring one of the pintles close to the bottom of the retaining recess K before the next adjacent pindle can be swung downwardly past the end of the wall of the locking recess, and into the latter. When the rearward pindle lies in any position in the locking recess, the forward pindle is held within the retaining recess so that it cannot escape. In order, therefore, for the parts to be unlocked the chain must be moved rearwardly until the forward pindle lies at the bottom of the retaining recess, and the link must then be given a distinct outward movement so as to swing the rearward pindle clear of the locking recess, the parts being so proportioned that such pindle will barely pass the locking recess under these conditions. These necessary unlocking movements may be said practically to never occur unintentionally in use, so that accidental unlocking is wholly obviated. If the wrench be turned with its lock downwardly, the parts assume the positions illustrated in Fig. 2, the chain being retained in locked position.

It is therefore possible to use the wrench with the lock upon the same side as the pipe. In the normal use of the wrench the latter may be on the under side of the pipe so that the lock is on the lower side of the wrench. Under these circumstances the free end of the chain swings downwardly without any tendency to unlock the parts while on the return stroke of the wrench, during which the chain is slackened the pintles do not move rearwardly a sufficient distance to permit the unlocking of the parts. It frequently happens that the wrench is used in a vertical or nearly vertical position with its jaws uppermost. Under these conditions there is no tendency to unlock the chain since the weight of the wrench is sufficient to keep the chain taut with the pintles in place during the return movement. If the wrench is used in a vertical position with the jaws downwardly, there is no tendency to unlock since the chain would have to be given an upward movement relatively to the jaw, a movement which does not occur in practice.

While my invention is particularly adapted to double jaw wrenches having a centrally pivoted chain, it will be noted that I do not wish to be limited to this construction since my invention is susceptible of use with other chain pipe wrenches or similar devices. It will also be observed that while I have illustrated my invention in connection with a chain having locking pintles, it is adapted for use with chains of other constructions. Moreover while I have illustrated one form of locking means embodying my invention, I do not wish to be limited thereto, since the construction illustrated may be considerably varied without departing from the invention.

What I claim is:—

1. In a chain wrench, a jaw, a chain having a succession of engaging faces, and means for locking the free end of said chain adapted to be engaged upon first a rearward movement of one engaging face, and then an inward movement of a second engaging face.

2. In a chain wrench, a jaw, a chain having engaging faces, and a lock adapted to be engaged by such faces, said lock having a rearwardly extending locking recess and a forwardly extending retaining recess in front of the said locking recess, said retaining recess having sufficient depth to engage one of the faces of the chain when an adjacent face is in any position in said locking recess.

3. In a chain wrench, a jaw, a chain having pintles, and means for locking the free end of said chain, such means comprising a lock adapted to be engaged by such pintles upon first a rearward movement of one pintle and then inward movement of a second pintle.

4. In a chain wrench, a jaw, a chain having locking pintles, and a lock adapted to engage such pintles, said lock having a rear-

wardly extending locking recess and a forwardly extending retaining recess, said retaining recess having a sufficient depth to engage a pintle of the chain when an adjacent pintle is in any position in such locking recess.

5. In a chain wrench, a jaw, a chain having locking pintles, and a lock adapted to engage such pintles, said lock having a rearwardly extending locking recess adapted to receive a chain pintle, and a forwardly extending retaining recess arranged in front of said locking recess, and adapted to engage an adjacent pintle said retaining recess being of greater depth than said locking recess.

6. In a chain wrench, a jaw, a chain having locking pintles, and a lock adapted to engage such pintles, said lock having a rearwardly extending locking recess adapted to receive a chain pintle, and a forwardly extending retaining recess arranged in front of said locking recess and adapted to engage an adjacent pintle, said retaining recess being of sufficient depth to retain its pintle in engagement therewith when the wrench is used with the pipe on the same side as the lock and the chain is taut.

7. In a chain wrench, a pair of jaws, a centrally pivoted chain having locking pintles, and a pair of locks on opposite sides of the jaws whereby the wrench may be used in reverse positions, each lock being adapted to be normally used with the pipe on the opposite side of the wrench, and each lock being adapted to retain the chain in locked position irrespective of whether the wrench is used with the lock on the upper or lower side, or whether the chain is loose or taut.

8. In a chain wrench, a jaw, a chain having pintles, and a lock for such chain, said wrench being adapted to grip the pipe on the side which is opposite to the lock, and said lock comprising recesses extending forwardly and rearwardly respectively, said recesses being adapted to receive two of the chain pintles when the chain is under a forward stress in use.

9. In a chain wrench, a pair of jaws, a chain pivoted at one end between such jaws, said chain having pintles, and a lock for said chain adapted to engage said pintles, said wrench being adapted to normally grip the pipe on the side which is opposite to the lock, and said chain being adapted to lie between such jaws when in locked position, and said lock comprising recesses extending forwardly and rearwardly respectively, said recesses being adapted to receive two of the chain pintles when the chain is in locked position.

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.