No. 732,108. PATENTED JUNE 30, 1903.

J. C. OSBORNE.

WRENCH.

APPLICATION FILED AUG. 29, 1902.

NO MODEL.

Fig 1

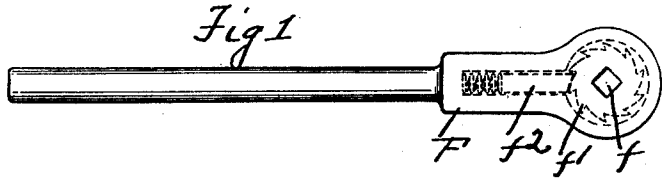


Fig. 2.

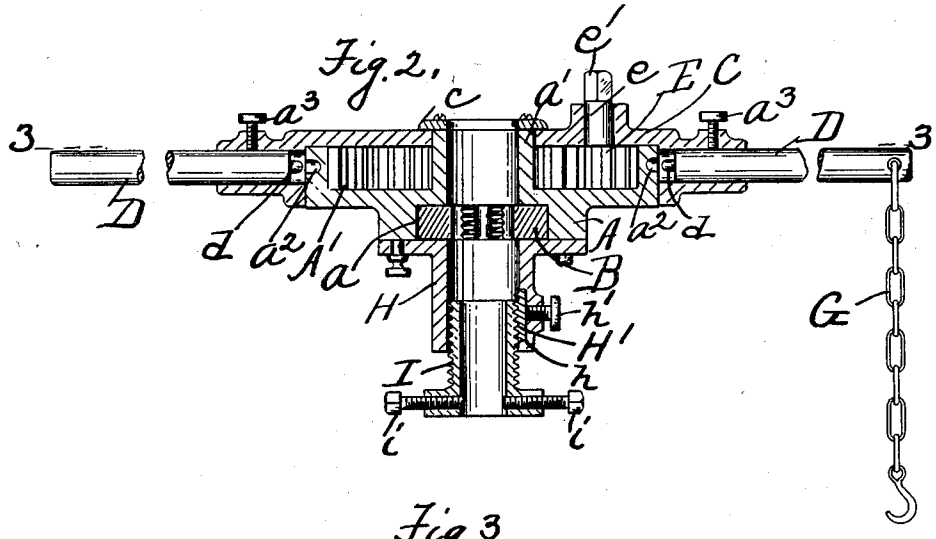
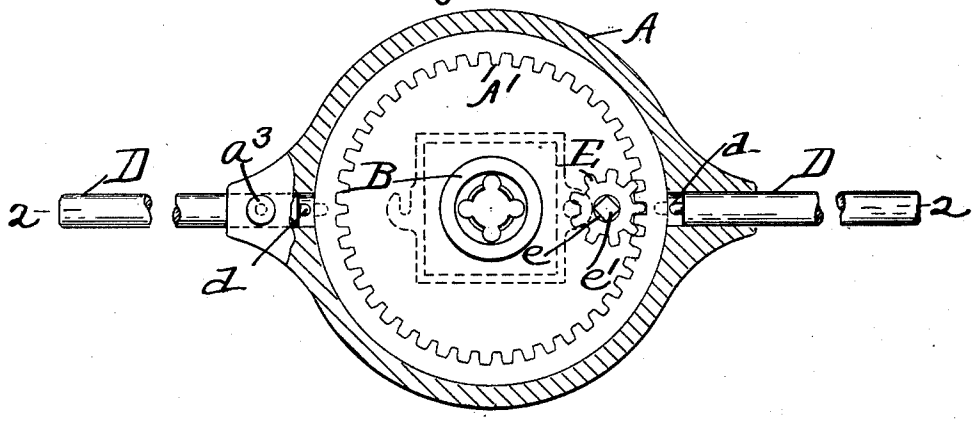


Fig 3



Witnesses.

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 732,108. Patented June 30, 1903.

UNITED STATES PATENT OFFICE.

JAMES C. OSBORNE, OF ERIE, PENNSYLVANIA.

WRENCH.

SPECIFICATION forming part of Letters Patent No. 732,108, dated June 30, 1903.

Application filed August 29, 1902. Serial No. 121,524. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. OSBORNE, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to wrenches; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and pointed out in the claims.

The object of the invention is to provide a wrench which may be used in the ordinary manner and which may be so adjusted as to utilize a gear mechanism, so as to increase the power of the wrench.

The invention is illustrated in the accompanying drawings, as follows:

Figure 1 shows a plan view of the wrench for working the gearing; Fig. 2, a section on the line 2 2 in Fig. 3; Fig. 3, a section on the line 3 3 in Fig. 2.

A marks the wrench-plate, in which is provided a means for engaging a thing to be turned. As shown in the drawings, it is provided with the socket a, in which is arranged a screw-plate B. Journaled on the wrench-plate by means of the hub a' and the periphery of the wrench-plate is a handle-plate C. This handle-plate is provided with the handles D. The inner ends of the handles have the lugs d, which may be brought into notches or sockets a^2 on the periphery of the wrench-plate A. The handles may be locked in this position by means of the set-screws a^3. With the handles so placed the wrench-plate is locked with the handle-plate and turns with it.

The wrench-plate has the internal gear A', and meshing with this gear is a gear E. The gear E is journaled in the handle-plate by means of the stud e. The upper end of the stud e is squared at e' to receive a handle. When it is desired to use the gear, the lugs d are withdrawn from the notches a^2 and locked in their outer position by means of the set-screws a^3. The flange-plate c prevents any side movement of the handle-plate on its bearings. This flange-plate is secured to the end of the hub a'.

It will readily be seen that if the handle-plate C is held against turning and the gear E rotated the wrench-plate A will be rotated, but at a much slower speed than the stud e, thus giving increased power to the device. In order to form a convenient means for locking the handle-plate against rotation, I provide the chain G, which may be secured to any convenient fixed object, so as to prevent turning of the handle-plate.

I prefer the ratchet-wrench F for operating the gear E. This wrench has the wrench-socket f arranged in the ratchet-wheel f'. The ratchet-wheel is locked against a backward movement by the pawl f^2. The socket f is designed to fit the square e'.

A lead-screw collar H is secured on the wrench-plate A. It is provided with a socket h, in which may be placed a screw-segment H'. The lead-screw I is adapted to operate on the screw-segment H'. A set-screw h' is provided for forcing the screw-segment into engagement with the lead-screw. The lead-screw is provided with the set-screw i for fixing it on the pipe. By providing simply a screw-segment as distinguished from a complete annular thread I am enabled to provide for the different lead-screws at very small expense.

What I claim as new is—

1. In a wrench the combination of a wrench-plate having means for engaging a thing to be turned; a handle-plate; means for locking the handle-plate with the wrench-plate; and a geared connection between the handle-plate and wrench-plate.

2. In a wrench the combination of a wrench-plate having means for engaging a thing to be turned; an internal gear thereon; a plate journaled on the handle-plate with an axis concentric with the internal gear; means for locking the handle-plate with the wrench-plate; and a gear journaled on the handle-plate and adapted to mesh the internal gear on the wrench-plate.

3. In a wrench the combination of a wrench-plate having means for engaging a thing to be turned and a notched periphery; an internal gear on said wrench-plate; a handle-plate journaled on said wrench-plate; handles on said handle-plate, said handles being provided with lugs adapted to be brought into

the notches on the wrench-plate; and a gear journaled on the handle-plate and adapted to mesh the gear on the wrench-plate.

4. In a wrench the combination of the wrench-plate A having the socket *a*, internal gear A′ and notches a^2; the handle-plate C journaled on the periphery of the wrench-plate and the hub *a′*; the flange-plate *c* for securing the handle-plate in place; the gear E journaled by means of the stud *e*; in the handle-plate, and in mesh with the internal gear A′; the stud *e*; the handles D having the lugs *d* adapted to be brought into the notches a^2; and means for locking the handle in the handle-plate.

5. In a wrench requiring a lead-screw the combination with the wrench-plate; of a lead-screw collar thereon, said collar having a socket therein; a screw-segment in said socket; and a lead-screw in engagement with said screw-segment.

6. In a wrench requiring a lead-screw the combination with the wrench-plate; of a lead-screw collar thereon, said collar having a socket therein; a screw-segment in said socket; means for forcing the screw-segment against the lead-screw.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JAMES C. OSBORNE.

Witnesses:
JOSEPH F. RASTATTER,
W. E. CATLIN.