

UNITED STATES PATENT OFFICE

2,234,398

SAFETY ROD TURNING DEVICE

Peter L. Ciaccio, Los Angeles, Calif., assignor to
Hubert R. Crane, doing business as Flexible
Sewer Rod Equipment Co., Los Angeles, Calif.

Application June 13, 1939, Serial No. 273,897

2 Claims. (Cl. 15—104.30)

This invention is a manually operative device for the rotation of a flexible, steel, spring rod as is shown for instance in U. S. Letters Patent No. 2,005,936.

Two men usually are employed in turning these spring rods to drive a cleaning tool or boring head in and along a conduit. It is an object of this invention to provide a safety wrench for each man so that uncontrolled torque suddenly applied to the wrench in either man's hand would be prevented from whirling the wrench handle with injurious consequence to the operator.

It is a further object of the invention to provide a double-acting, double latch wrench device, including a guard arm, so that in some cases one man may efficiently turn a rod in a conduit.

Another object is to provide a simple, practical, easily operated, and light and very strong rod wrench combining a safety feature, and to provide for reverse action or rotation at will.

The invention consists of certain advancements in this art as set forth in the ensuing disclosure and having, with the above, additional objects and advantages as hereinafter developed, and whose construction, combinations and details of means, and the manner of operation will be made manifest in the description of the herewith illustrative embodiment; it being understood that modifications, variations and adaptations may be resorted to within the scope, spirit and principle of the invention as it is more directly claimed hereinbelow.

Figure 1 is a front end elevation of the wrench.

Figure 2 is a sectional plan of the wrench.

Figure 3 is plan of the nose end of the wrench pawl.

Figure 4 is a perspective showing the wrench as in use.

These sewer rods 2 are made up of sections detachably joined by short couplings 3 with a through hole or are otherwise so made that by some kind of a keying device the rod may be rotated to turn a bore or cleaner tool, on its advanced end, in a conduit.

It has been the practice for two men to apply hand wrenches to different couplings on the rod and each to take a turn in twisting the rod, each man holding against back twist while the other takes a fresh bite, with the possibility that the wrench may suddenly whip out of control and injure an operative.

Therefore the instant tool includes a short, heavy barrel 5 having near each end a full circle of strong ratchet teeth 6. Also, the barrel has one or more diametrical holes 7 for a pin or key 8,

which, when inserted, will be removably retained by an expansion spring 9 engaging in a neck notch 10.

It will be seen that the barrel can be passed onto a rod 2 and the pin 8 passed through a hole 4 in one of the couplings when positioned in the bore of the barrel so that the rod will be turned when the barrel is rotated.

Rotation of the barrel is effected by means of radial pawls 11 axially shiftable and guided in sleeves 12 screwed at 12' into discoidal boxes 13 rotatively fitting the barrel 5 and embracing the relative rings of ratchet teeth 6.

The outer ends of the pawls 11 have caps 14 with lugs 15 movable inwardly into respective notches 16 in the near ends of the sleeves so that the latches may be shifted outwardly enough to be rotated to turn the wedge noses 11a in either of two directions as to the teeth 6 and enable the barrel to be forcibly rotated in either direction, as to advance the rod or to retract it in a conduit. An expansion spring 17 is provided for each pawl 11 to firmly force it to meshing position on its ratchet teeth.

The boxes 13 have radial hubs 13a about opposite their pawls and in one of the hubs there is here shown a short working or handle member 18 used by the operative to turn that box 13 and its pawl 11 to rotate the interlocked rod coupler (in the barrel) and the rod. In the meantime the box 13 at the other end of the barrel is provided with a very long leg or staff 19 fixed in its hub 13a and which is designed to engage the ground or other surface on which the operative is standing. The pawl 11 of this legged box 13 is so set that it will hold the back twist torque of the flexible spring rod 2 when the operative is swinging back the handle 18 to take a fresh place grip or bite on the ratchet teeth in the working box 13 (with the handle).

Consequently each operative is perfectly safe in use of the legged, double-ratchet wrench of this invention because the handle cannot be suddenly reversed by torque of the rod and whip him because it is constantly under control of the long leg or staff 19, as shown in Fig. 4.

It will be seen how readily one man can gradually build up enough torque in a rod to effect its rotation in a conduit since the ratchet pawl 11 of the leg box will prevent unwind of the rod during a re-set of the handle pawl to a new bite on the teeth 6 at its box 13.

What is claimed is:

1. A sewer rod turning wrench including a rod receiving barrel, a device to co-rotatively connect 55

the rod and the barrel, means on the barrel to effect a torque in the rod while at work, and a ratchet means including an extended anchoring part, said ratchet means being adapted to prevent unwind of the torqued rod.

5 2. The combination, in a bore cleaning apparatus, comprising a flexible rod having a driver receiving part by which the rod may be rotated, a barrel having an axial passageway to receive and
10 pass said part, drive means on the barrel to en-

gage and rotate said part and thereby the rod, and a ratchet means on the barrel to turn it and an extended lever to engage a convenient abutment at the outer end of the lever and having a ratchet connection with the said barrel and said second ratchet being adapted to prevent barrel rotation in a direction reverse to that permitted by the barrel driving ratchet.

PETER L. CIACCIO. 10