O. R. FOWBLE.

WRENCH.

APPLICATION FILED JUNE 21, 1920.

1,380,052. Patented May 31, 1921.

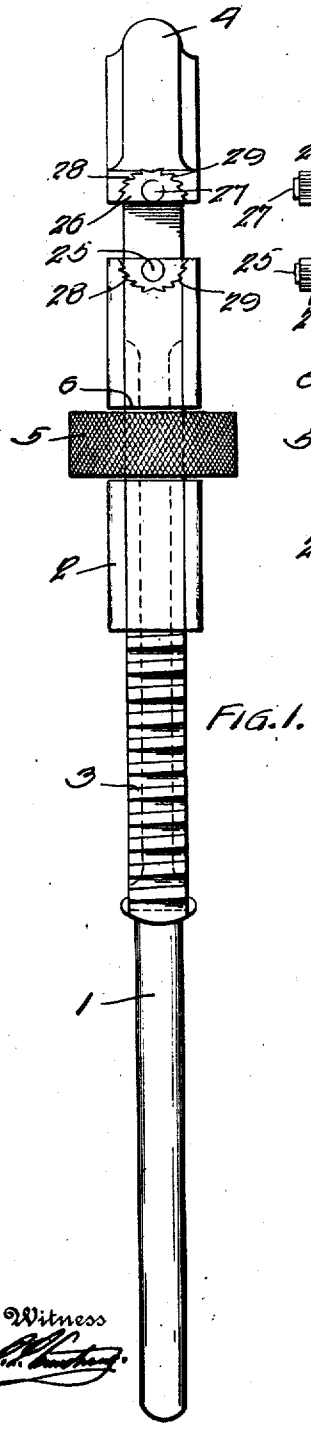


FIG. 1.

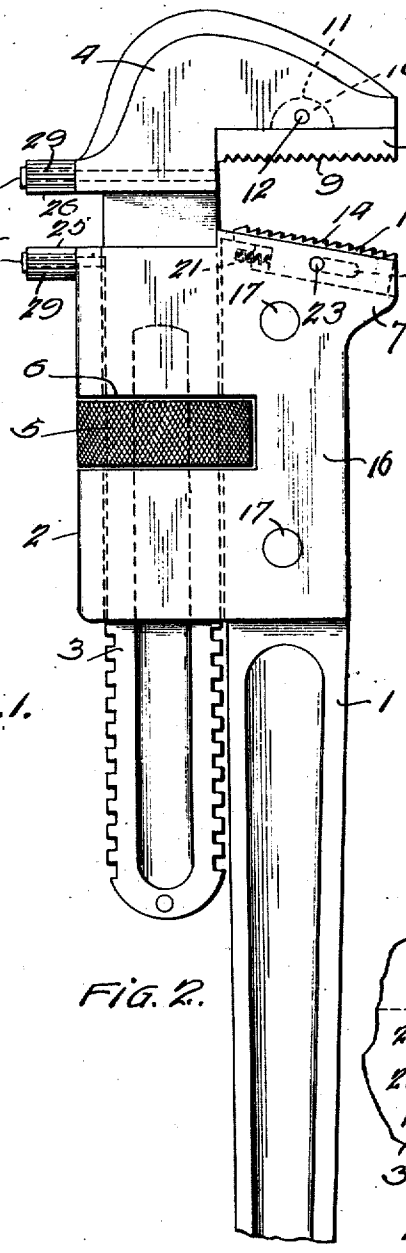


FIG. 2.

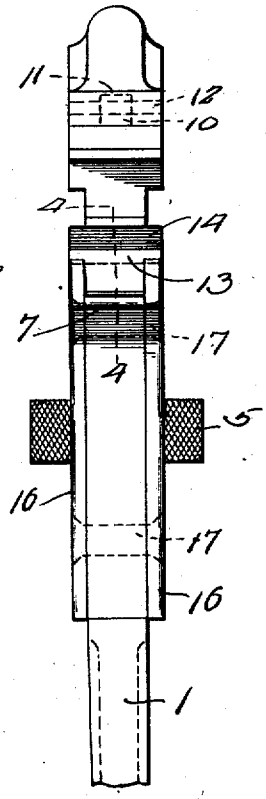


FIG. 3.

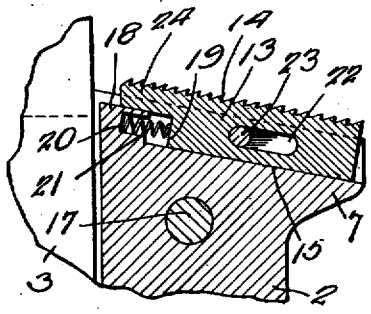


FIG. 4.

Witness

Inventor

O. R. Fowble,

By A. C. Hines

Attorney

UNITED STATES PATENT OFFICE.

OSCAR R. FOWBLE, OF HUNTINGTON, WEST VIRGINIA.

WRENCH.

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To all whom it may concern:

Be it known that I, OSCAR R. FOWBLE, a citizen of the United States, residing at Huntington, in the county of Cabell and State of West Virginia, have invented new and useful Improvements in Wrenches, of which the following is a specification.

This invention relates to improvements in wrenches of that type adapted for use upon pipes and to engage a pipe either upon the exterior or the interior thereof, and one object of my invention is to provide a construction whereby outside and inside grippers may be applied for efficient use on a type of wrench wherein the movable main jaw is provided with a shank in guided connection with and movable in parallel relation to the handle bar or shank of the main fixed jaw.

Another object of the invention is to provide a novel and improved construction and mode of mounting the supplemental stationary jaw, whereby increased efficiency is obtained.

The invention consists of the features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawings, in which:

Figure 1 is an edge view of a wrench constructed in accordance with my invention.

Fig. 2 is a side elevation of the same.

Fig. 3 is an opposite edge view of the wrench from that shown in Fig. 1.

Fig. 4 is a detail section taken substantially on line 4—4 of Fig. 3.

The wrench comprises a handle bar or main shank 1 upon which is mounted a guide sleeve 2 in which the threaded shank 3 of a movable jaw member 4 is slidably mounted. The threads of the shank 3 are engaged by the threads of a rotary nut 5 journaled in a slotted portion 6 of the sleeve, whereby the movable jaw member 4 may be adjusted with relation to the fixed jaw 7 of the handle bar or main shank 1.

The working face of the movable jaw member 4 is suitably formed to receive a jaw proper 8 having a toothed or serrated outer surface 9, said jaw proper 8 being provided with a lug or projection 10 to fit within a recess 11 in the jaw member 4 and secured therein by means of a fastening pin, screw or the like 12, whereby the jaw element 8 is detachably mounted, allowing a broken or worn jaw element to be removed and a new one conveniently substituted in its place.

The jaw element 8 is arranged for coöperation with a gripper or jaw element 13 carried by the fixed jaw member 7. This jaw element 13 has a working face inclined at an angle to the plane of the toothed surface 9 of the jaw element 8 and provided with serrations or teeth 14 extending in one direction, said toothed surface 14 being arranged for coöperation with the toothed surface 9 of the jaw member 8 for exteriorly gripping pipes or other objects.

The gripper or jaw element 13 is fitted to slide in a direction toward and from the shank member 3 in a guideway 15 formed by cutting away a portion of the jaw member 7, said guideway being completed by the forwardly extending portions of side plates 16 formed integrally with the sides of the sleeve 2 and extending on opposite sides of the bar or shank 1 and riveted or otherwise secured thereto, as indicated at 17. By this construction the sleeve 2 is mounted in position upon the shank 1 and the sides of the guideway 15 simultaneously formed.

The jaw member 7 is provided at one end of the guideway 15 with a lug 18 forming a stop shoulder to limit the inward movement of the gripper 13, which lug or shoulder 18 is arranged in alinement with a shoulder 19 on said gripper. The lug 18 extends inwardly of the forward or guiding edges of the guide plates 16 and is formed with a socket or recess 20 receiving one end of a coiled spring 21, bearing at its opposite end against the shoulder 19 and tending to hold the gripper 13 at the limit of its outward movement while permitting yielding inward movement thereof. The gripper 13 is provided with an elongated slot 22 through which passes a pin 23 extending across the guideway 15 between the guide plates 16, and whereby the body of the gripper is guided in its inward and outward sliding movements. The toothed surface of the gripper 13 is desirably prolonged by the provision of a lug or extension 24 at the inner end thereof, said lug lying outside of said shoulder and being movable in contact with the outer face of the lug 18 and between the adjacent portions of the guide plates 16, whereby a further guiding connection is provided to insure movement of

the gripper 13 in a direct line and without pivotal action on the pin 23 liable to cause a defective or insecure gripping engagement between the gripper and the object to be grasped between the same and the toothed surface of the jaw element 8. By the construction described it will be seen that the spring 21 is concealed and housed and protected from the access of dust and dirt and from liability of injury, and is also disposed at a point where it does not interfere with the full and free admission of the object to be gripped between the stationary and movable jaws.

The sleeve 2 carries upon its crown portion a semicircular stationary grip 25 for coöperation with a movable gripper 26 pivotally mounted upon a pin or stud 27 carried by the jaw member 4, said grippers 25 and 26 being adjustable with relation to each other in an obvious manner. These grippers 25 and 26 are adapted for engagement with the interior of a pipe or other tubular object, and each of said grippers is provided upon opposite sides of the center of its curved face with sets of teeth 28 and 29 projecting in opposite directions, so as to adapt the grippers for a gripping action in either direction of pivotal movement of the wrench. The gripper 25 may be fixed in any suitable manner to the sleeve 2, but the gripper 26 is pivotally mounted upon the pin or stud 27 so as to have an eccentric gripping action when the wrench is pivotally adjusted or revolved in one direction or the other, whereby the pipe, tube or similar object may be firmly gripped and revolved to permit it to be screwed or unscrewed, as will be readily understood. The construction described enables a wrench of the type disclosed to be manufactured in a simple manner and provided with jaws or grippers to engage either the exterior or interior of a pipe or other object to be held or rotated.

From the foregoing description, taken in connection with the accompanying drawing, the construction and mode of operation of the wrench will be readily understood and it will be seen that a simple, reliable and efficient type of wrench of this character is provided and one in which special provision is made for the ready and convenient application and removal of the gripping elements 8 and 13, so that new grippers may be substituted for old ones, and in which the gripper 13 is effectually guided and its controlling spring securely housed and protected from injury.

Having thus fully described the invention, I claim:

A wrench comprising a handle bar or main shank having an oblique end portion forming a guide surface and provided with a socketed lug projecting beyond the line of said guide surface at the inner end thereof, a sleeve having side plates secured to the handle bar with portions projecting at opposite sides beyond said guide surface and lug and forming therewith a guideway of somewhat greater depth than said lug, a movable jaw having a shank slidable in the sleeve, means for adjusting the same, a supplemental jaw slidably mounted in the guideway and in guided connection with said guide surface and side plates, said jaw having at its inner end a reduced extension movable between the side plates and the outer side of the lug, and a coiled spring secured at one end in the socket of the lug and bearing at its opposite end against the inner end of the supplemental jaw to normally force said jaw outward.

In testimony whereof I affix my signature.

OSCAR R. FOWBLE.