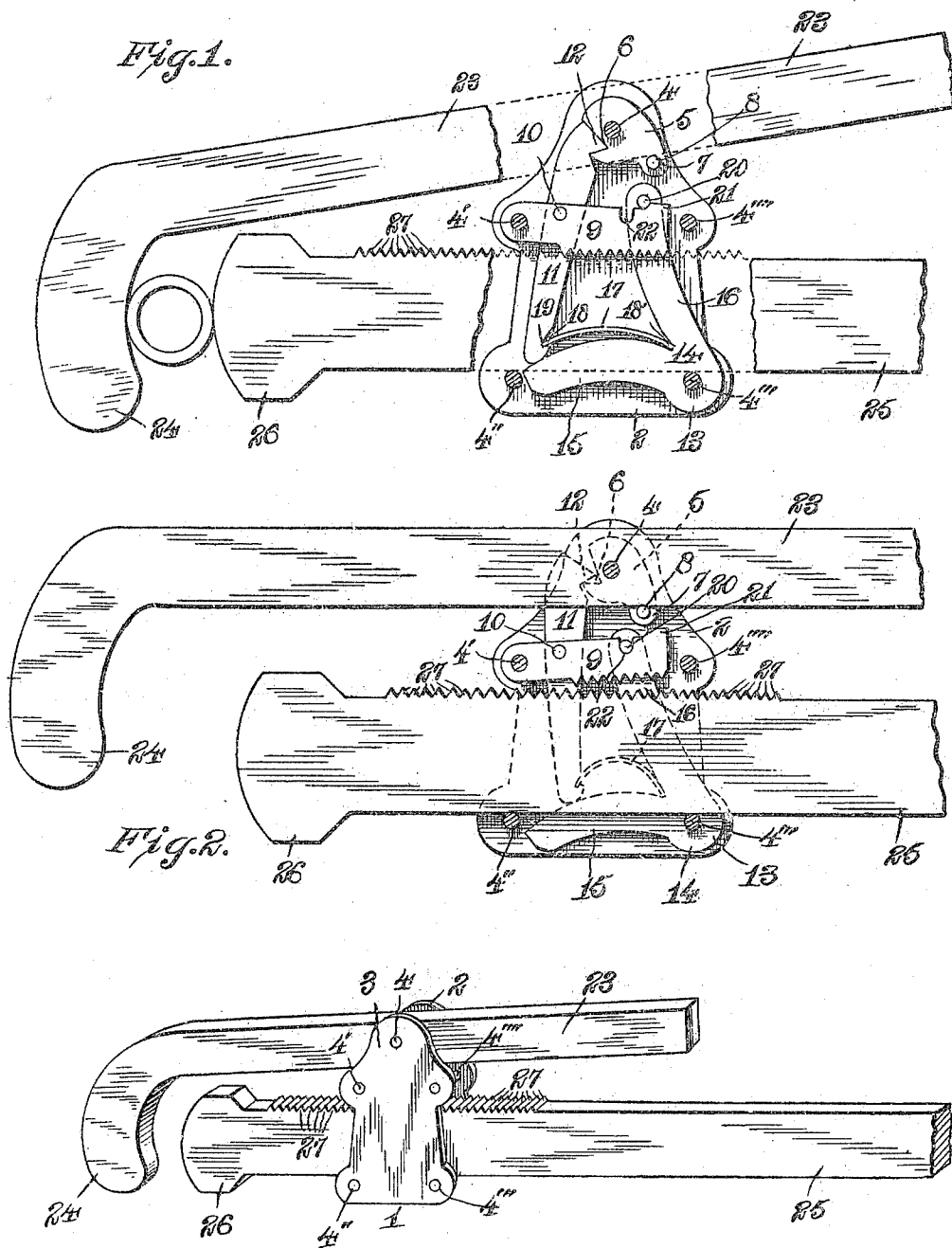


W. S. MIEHLE.
PIPE WRENCH.
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951,570.

Patented Mar. 8, 1910.



Witnesses:
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Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM S. MIEHLE, OF CHICAGO, ILLINOIS.

PIPE-WRENCH.

951,570.

Specification of Letters Patent.

Patented Mar. 8, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM S. MIEHLE, a citizen of the United States, residing at Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Pipe-Wrenches, of which the following is a specification.

My invention relates to pipe wrenches and the object of my invention is to provide a tool of such character which will be of such improved construction as to adapt the same to be readily and quickly adjusted to engage pipes of varying diameters, and, which, when in adjusted position, will be self locking.

A further object is to provide a wrench of the nature stated which will be of great efficiency, and which will be of comparatively simple construction hence of low cost to manufacture.

Other objects will appear hereinafter.

With these objects in view my invention consists in a pipe wrench characterized as above mentioned and in certain details of construction and arrangement of parts all as will be hereinafter fully described and more particularly pointed out in the claims.

My invention will be more readily understood by reference to the accompanying drawings forming a part of this specification and in which,

Figure 1 is an enlarged sectional elevation of my device in its preferred form, showing the jaws thereof in locked position, a portion of the jaw shanks being broken away to expose underlying parts. Fig. 2 is a similar elevation, showing the jaws in unlocked position, and, Fig. 3 is a perspective view of my device in its entirety.

Referring now to the drawings, 1 indicates a mechanism casing or housing comprised of substantially parallelly disposed, similar, metallic plates 2 and 3, the same being connected together and spaced apart by transversely extending posts 4—4'—4''—4'''—4'''' the extremities of which are suitably secured in said plates to form a rigid frame work. Rockingly mounted upon the pin 4, adjacent the inner surface of the plate 2, is a disk 5 in the periphery of which is provided a notch 6 preferably V-shaped as shown. Inwardly projecting from an obliquely depending lug 7 projecting from said disk, is a pin 8 the purpose of which will be hereinafter fully described. Hav-

ing its outer extremity swingingly mounted upon the pin 4' is a locking member 9, the same being of suitable length and provided upon its under surface with teeth of a suitable form. Interposed between the plate 2 and said locking member, the same being pivoted at 10 to the latter, is a lever 11. The upper extremity 12 of said lever is hooked or pointed to form a locking dog, the same being so formed as to be exactly received in the notch 6 of the member 5, as clearly shown in Fig. 1. Said notch and lever extremity are so formed, that, upon the rotation of said disk in a direction caused by the depression of the pin 8 of the disk 5, the upper end of said lever will be elevated and also rocked outwardly by said disk.

Having its extremity 13 pivotally mounted upon the pin 4'', the same being arranged adjacent the inner surface of the plate 2, is a two-armed or bell crank lever 14. The inner or upper surface of the arm 15 of said lever is curved in form adapting the same to serve in the capacity of a cam. The lever 11 is of such a length that the lower extremity thereof is adapted to contact and to travel upon said cam surface, the latter being so disposed that, upon the oscillation of said lever from normal position, as before described, said arm 15 of said bell crank lever will be depressed evidently causing the inward rocking of the arm 16 of the latter. A suitable spring, preferably a leaf spring 17 having its extremities 18—18' engaging respectively a notch or seat 19 provided at the lower extremity of the lever 11 for the reception thereof, and the lever 14 at the junction of the arms 15 and 16 thereof, exerts an outward force upon said levers tending normally to position the lower extremity of the lever 11 at the outer extremity of the arm 15, to force the latter into engagement with said lever extremity, and consequently to normally effect the engaging positioning of the hooked upper extremity of the lever 11 with the notch 6 of the disk 5. Provided at the upper extremity of the arm 16 is an inwardly projecting pin 20 normally resting in forced engagement with the upper edge of the toothed member 9 because of the indirect stress upon the latter exerted by the spring 17. A projection 21 formed upon the inner extremity of the upper edge of the member 9 acts as a stop

for said pin to prevent disengagement thereof with said edge by passage thereof beyond the extremity of said member. Such provision it will be clear by closer scrutiny is not essential, inasmuch as the lever 11 by engagement with the lever arm 15 is adapted to fulfil such function, however an additional safe guard by this provision is provided. Provided in said edge of the member 9 adjacent said projection 21, is a notch 22 of a width requisite for the reception of the pin 20. With such provision upon the inward rocking of the lever arm 16, as before described, said pin will be brought to registering position with said notch, whereupon upward rocking of the member 9 will evidently be permitted to an extent commensurate with the depth of said notch.

Pivoted, preferably substantially midway its extremities, upon the post 4 is the shank 23 of the movable wrench jaw 24 which may be of any desired dimensions and peculiar shape desired. Said shank 23 is so arranged and is of such dimensions that the inner edge thereof is adapted to contact the pin 8 of the disk 5. The posts 4"-4'" of the housing 1 slide upon a handle forming shank 25 of the stationary jaw 26 of my wrench, said shank being of a width slightly less than the space intervening the adjacent surfaces of the plate 3 and the levers 11 and 14, and of a length such, that the teeth 27 provided in the upper edge thereof will normally be forcibly engaged by the teeth provided in the undersurface of the member 9, as clearly shown in Fig. 1, the latter being adapted, when in engagement therewith, to lock jaw 24 against movement relative to the jaw 26. With such construction, as just stated, the jaw 24 will be normally locked in position on shank 25 by the member 9. Now, upon desiring to disengage said jaw, the downward rocking or depression of the rearward extremity of the jaw shank 23 to a position as shown in Fig. 2, is all that is necessary, such actuation it being clear, causing the rotation of the disk 5, through the medium of the pin 8, said disk in turn causing the oscillating elevation of the lever 11. Said lever simultaneously causes the rocking of the lever 14 and the member 9, the latter to disengagement from the teeth 27 of the jaw shank 25, whereupon jaw 24 may evidently be slid upon shank 5 to any position desired, and in which position it will be locked upon releasing the jaw shank 23.

While I have shown what I deem to be the preferable form of my wrench I do not wish to be limited thereto as there might be many changes made in the details of construction and the arrangement of parts without departing from the spirit of my invention comprehended within the scope of the appended claims.

Having described my invention what I

claim as new and desire to secure by Letters Patent is:

1. In a pipe wrench, the combination with a stationary jaw having a toothed shank, of a co-acting sliding pivoted jaw; a pivoted locking member adapted to engage the teeth on said shank to lock said movable jaw thereon; locking means adapted to lock said locking member in engagement with said teeth and arranged to cause disengagement of said locking member upon downward rocking of said movable jaw; and a spring coöperating with said locking means to normally hold said locking member in engagement with said teeth, substantially as described.

2. In a pipe wrench, the combination of a stationary jaw having a toothed shank, a housing slidable on said shank; a movable jaw pivoted in said housing; a toothed locking member pivoted in said housing and adapted to engage said toothed shank; a train of levers and a compression spring arranged for actuation by said movable jaw and adapted to normally force said toothed locking member into engagement with said shank and being adapted upon depression of the rearward end of said movable jaw to effect the rocking of said locking member out of engagement with said shank, substantially as described.

3. In a pipe wrench, the combination of a stationary jaw having a toothed shank; a housing slidable on said shank; a movable jaw pivoted in said housing; a toothed locking member pivoted in said housing and adapted to engage said toothed shank; a lever pivoted to said locking member and provided with a locking dog at one end; a locking disk pivoted in said housing and provided with a notch adapted to engage said dog to hold said locking member in engagement with said shank, a pin on said disk adapted to be engaged by said movable jaw to operate said lever upon downward movement of the rearward end of said movable jaw; a bell crank lever pivoted in said housing and having one arm provided with a notch and pin engagement with said locking member to normally hold the same in locking position and the other arm having a cam engagement with the other end of said lever adapted to operate said bell crank to release said locking member upon operation of said lever; and a spring interposed between said lever and said bell crank, and adapted to normally hold the parts in locking position, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM S. MIEHLE.

Witnesses:

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