Oct. 31, 1944. C. HOLLINGSWORTH 2,361,769

PIPE WRENCH

Filed April 10, 1943

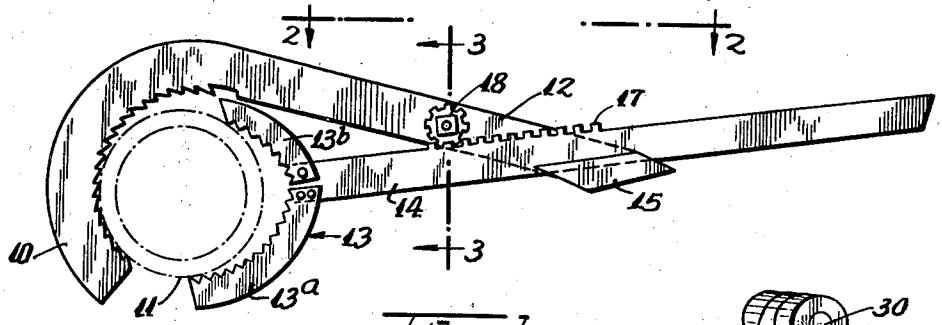


Fig. 1.

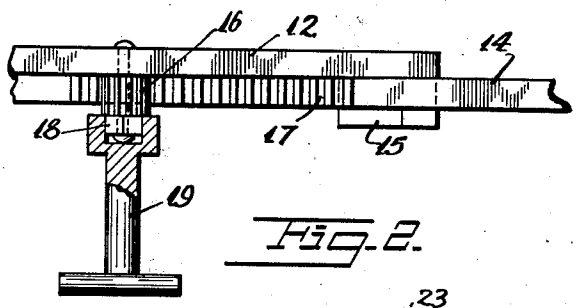


Fig. 2.

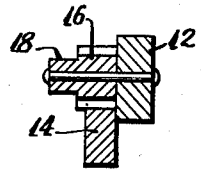


Fig. 3.

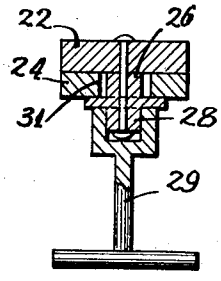


Fig. 6.

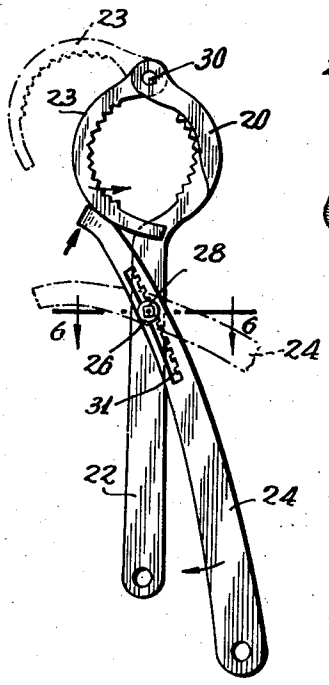


Fig. 5.

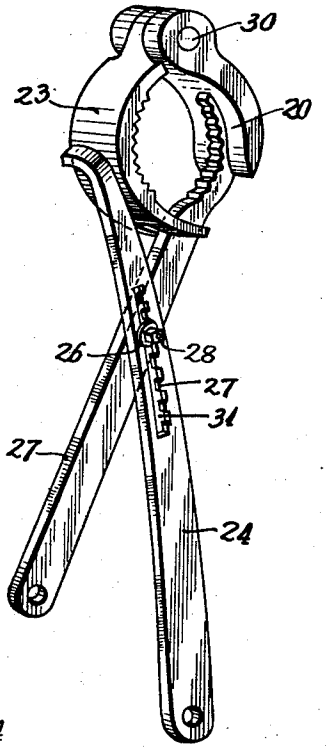


Fig. 4.

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PIPE WRENCH

Campbell Hollingsworth, New York, N. Y.

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2 Claims. (Cl. 81—79)

This invention relates to new and useful improvements in a pipe wrench.

The invention proposes a pipe wrench which is characterized by a pair of gripping jaws, and handles for controlling the operation of said jaws in a certain way.

The invention proposes that one of the gripping jaws partially encircle a pipe or other object to be gripped by the wrench, and that it continues into a handle portion. It is contemplated that another handle be provided slidably mounted on said handle portion and controlling a jaw complementary to the first-named jaw. Furthermore, it is proposed that a certain pinion and rack movement be provided for moving said handle portion and handle relative to each other.

It is proposed that the pinion be rotatively mounted on the handle portion of one of the jaws and mesh with rack teeth formed on the other handle. Means is also provided for manually turning and holding said pinion to move and hold said handle portions in relatively operative positions.

For further comprehension of this invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a side elevational view of a pipe wrench constructed in accordance with this invention.

Fig. 2 is a fragmentary elevational view looking in the direction of the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary vertical sectional view taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a pipe wrench constructed in accordance with another form of this invention.

Fig. 5 is a side elevational view of the pipe wrench shown in Fig. 4.

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5 to which a turning tool has been added.

The pipe wrench, in accordance with the form of the invention illustrated in Figs. 1–3, includes a gripping jaw 10 for partially encircling a pipe schematically illustrated by the dot and dash lines 11. The gripping jaw 10 continues into a shank portion 12. Another gripping jaw 13 is complementary to the gripping jaw 10 so that it may act against the pipe 11 to grip same in conjunction with the jaw 10. The gripping jaw 13 is formed from two stationary jaw sections 13a and 13b which are fixedly mounted on a handle 14. This handle 14 is slidably mounted on the shank portion 12. For this purpose the shank portion 12 has an offset overhanging flange 15 engaging the edge of the handle 14.

A pinion 16 is rotatively mounted on the shank portion 12 and meshes with rack teeth 17 formed on the side of the handle 14. Means is provided for manually turning and holding the pinion 16 to move and hold the handle 14 in an operative position in which the body 13 in conjunction with the jaw 10 grips a pipe 11. This means includes a non-circular boss 18 formed in the side of the pinion 16 and normally engaged by a wrench turning tool 19. This turning tool 19 is in the form of a socket wrench with the socket portion engaging the non-circular projection 18.

The operation of the device is as follows:

The turning tool 19 is turned with one hand so as to turn the gear 16 which moves the rack 17 forwards to cause the jaw 13 on the end of the handle 14 to engage and grip the pipe 11 in conjunction with the jaw 10. Then while the turning tool 19 is being held to maintain the gripping pressure, the handle 14 is turned with the other hand. Thus the pipe wrench is in operation.

In Figs. 4–6 inclusive a modified form of the invention has been disclosed which is similar to the prior form, distinguishing merely in the design and operation of the complementary gripping jaw. In accordance with this form of the invention, the pipe wrench includes a gripping jaw 20 for partially encircling a pipe, and which continues into a handle portion 22. Another gripping jaw 23 is complementary to the said gripping jaw 20. A handle 24 is slidably mounted on the handle portion 22 and controls the operation of the gripping jaw 23. This handle 24 is provided with a rack 27 which is engaged by a pinion 26 rotatively mounted on the handle portion 22. Means is provided for manually turning and holding said pinion 26 to move and hold said handle 24 in its operative position.

The complementary gripping jaw 23 is pivotally connected with the free end of the gripping jaw 20 by a pintle 30. The handle 24 has a slot 21 through which the pinion 26 passes. The rack teeth 27 are formed along one side of the slot 31. The handle 24 has an offset outer end 32 which is adapted to engage against side portions of the jaw 23. The pinion 26 is provided with a non-circular side projection 28 which is engaged by a removable turning tool 29. The free end of the jaw 23 is bifurcated as illustrated in Fig. 4, so that the fingers thereof straddle the handle portion 22.

The operation of this form of the invention is as follows:

A pipe is encircled by the gripping jaws 20 and 23. Then the turning tool 29 is turned so as to advance or retract the handle 24 to a position in which the offset portion 32 engages an advantageous point upon the back of the gripping jaw 23. The handle 24 is then pressed towards the handle portion 22, and the wrench is turned.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. A pipe wrench having a gripping jaw for partially encircling a pipe and continuing into a handle portion with a second gripping jaw complementary to said gripping jaw and pivotally mounted on the end of said first gripping jaw and a second handle crossing said handle and having one end bearing against said second jaw for forcing said jaws together when the outer ends of said handles are squeezed together, means for pivotally and slidably supporting said second handle on said first handle comprising rack teeth in the material of said second handle along one side of a slot formed in said second handle intermediate of its ends, a pinion rotatively supported on said first handle and extended through said slot and meshing with said rack teeth, and means on said pinion preventing its disengagement from said slot in all pivoted and longitudinally adjusted positions of said handles.

2. A pipe wrench having a gripping jaw for partially encircling a pipe and continuing into a handle portion with a second gripping jaw complementary to said gripping jaw and pivotally mounted on the end of said first gripping jaw and a second handle crossing said handle and having one end bearing against said second jaw for forcing said jaws together when the outer ends of said handles are squeezed together, means for pivotally and slidably supporting said second handle on said first handle comprising rack teeth in the material of said second handle along one side of a slot formed in said second handle intermediate of its ends, a pinion rotatively supported on said first handle and extended through said slot and meshing with said rack teeth, and means on said pinion preventing its disengagement from said slot in all pivoted and longitudinally adjusted positions of said handles, comprising a circular flange formed on the outer end of said pinion and engaging the face of said second handle.

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