Aug. 14, 1934. S. SORENSEN 1,970,403

WRENCH

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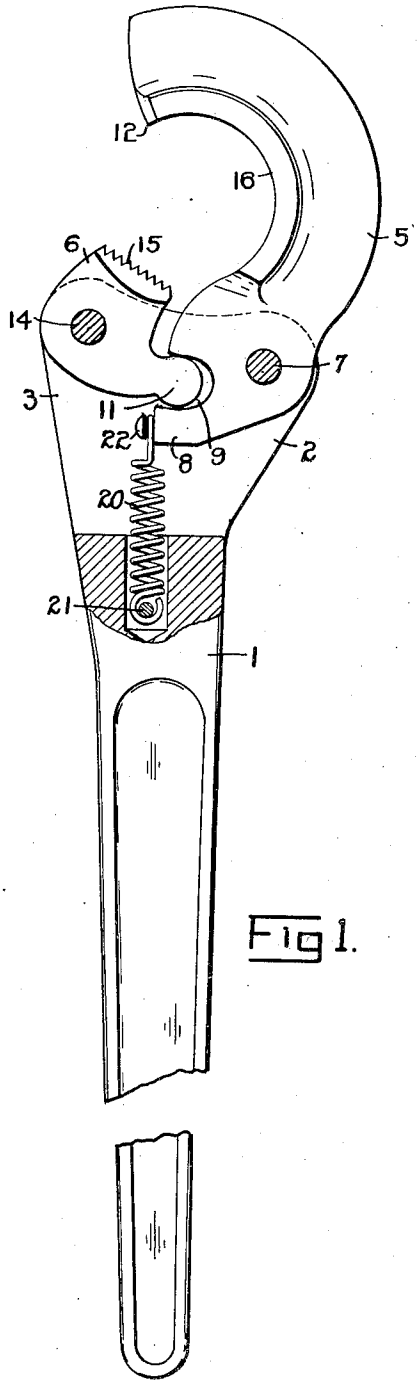


Fig 1.

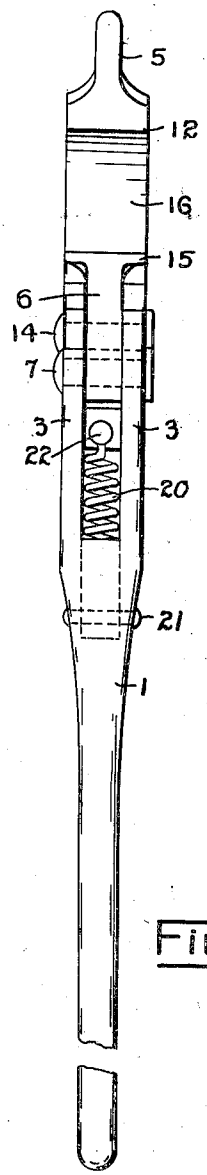


Fig 2.

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WRENCH

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3 Claims. (Cl. 81—91)

The present invention relates to a wrench of the type used in turning pipes or other circular members and is particularly related to a wrench which may be placed upon the pipe by merely placing it against the pipe and exerting a thrust thereon.

It is one of the objects of the invention to provide a simple and economical wrench which will automatically grip the pipe when placed in contact therewith.

Another object of the invention is to provide a wrench which tends at all times to grip the pipe and which is so constructed that rotation in one direction will cause the wrench to engage the pipe while rotation in the opposite direction will cause it to release the pipe.

Another object of the invention is to provide a pipe-engaging dog upon the wrench which is actuated in a direction opposite to that of the jaw which encircles the pipe.

Another object of the invention is to provide a wrench which will release by exerting a pull directly away from the object which it engages.

Other and further objects of the invention will be readily apparent when the following description is considered in connection with the accompanying drawing wherein

Fig. 1 is a side elevation of my improved wrench with certain portions of the handle member broken away to show the arrangement of the jaw and dog with respect to the handle.

Fig. 2 is a view of the wrench shown in Fig. 1, taken at right angles thereto.

The wrench comprises a handle portion 1, which may be formed in any desired manner, but preferably terminates in a head 2 which is somewhat wider than the handle member. This head is constructed of two spaced shanks 3 which form a yoke to receive the jaw 5 and the dog 6 which are adapted to engage the pipe. The jaw 5 is formed upon an arc of a circle so that it will engage about the pipe. One end of this jaw is arranged for connection with the head member 2. This end is provided with an opening to receive the pivot bolt 7 and extends inwardly and downwardly to terminate in a heel 8. This heel is here illustrated as having a recess 9 therein on its inward side. This recess is arranged to receive the projection 11, which is formed upon the dog 6. It will be noted that the recess 9 is slightly larger than the projection 11 to allow for play therein so that the jaw 6 may be allowed to pivot properly on the bolt 14. The dog 6 is pivoted on the bolt 14, which is also carried by the head 2, and passes through both of the shanks 3. With this arrangement it will be seen that any movement of the jaw member causes relative rotation of the dog member 6 in the opposite direction. The dog 6 may be formed with a plurality of teeth or gripping members 15. A spring 20 is shown as anchored at 22 to the heel member 8 of the jaw 5.

This spring 20 tends to normally retain the jaw and the dog in the position shown in Fig. 1. However, when it is desired to place the wrench about the object to be moved it is only necessary to place the forward end 12 of the jaw 5 against the pipe. A slight pressure upon the wrench then causes extension of the spring 20 and the jaw 5 is permitted to move backwardly away from the pipe. This movement tends to pivot the dog 6 also due to the connection of the ball 11 in the recess 9. In this way the dog also pivots outwardly so that the distance between the point 12 and the teeth 15 on the dog will become greater. This permits the entrance of the pipe so that it will engage the face 16 and the jaw and dog will then swing back to their normal position, on account of the tension of the spring 20. It should be noted that the relative position of the pivots 7 and 14 causes an eccentric movement of the teeth 15 with respect to the face 16 of the jaw. It is this eccentric movement that causes the teeth 15 to firmly grip the pipe after it has once passed the point 12. It will be seen that movement of the handle 1 causes the jaw and the dog to pivot toward each other and in this manner the pipe is more firmly engaged by pressure exerted upon the handle 1. While the construction here illustrated is simple it has been found in practice to be very efficient.

Having thus described my invention, what I claim as new is:

1. A wrench including a handle, a pair of spaced shanks thereon, a jaw pivoted between said shanks, a heel on said jaw below and spaced inwardly from the pivot, a recess in said heel, a dog also pivoted to said shanks, a projection on said dog spaced inwardly and below the pivot, said projection and said recess being arranged for interengagement whereby movement of either said jaw or said dog will cause opposite pivotal movement of the other, and a spring connected to said handle and said jaw heel to normally retain said jaw and dog in retracted position.

2. A pipe wrench including a handle, a jaw

member pivoted thereon adjacent one of its ends, a dog member also pivoted to said handle at a point approximately opposite the pivot of said jaw transversely of the said handle, both said dog and jaw pivots being fixed against lateral movement relative to said handle and said jaw, means on said dog engaging loosely within a lateral recess in said jaw whereby movement of one of said pivoted members on its pivot causes pivotal movement of the other to engage or release the pipe, a heel on said jaw, and a spring on said handle engaging said heel acting to normally force said jaw to closed position.

3. A wrench of the character described including a handle, a jaw pivoted thereto, a dog also pivoted on a point fixed relative to said dog and said handle, interengaging means on said jaw and dog whereby movement of one causes relative rotational movement of the other, and means secured to said jaw to normally retain said jaw and dog in contracted position.

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