No. 877,225. PATENTED JAN. 21, 1908.

G. PATERSON.

PIPE WRENCH.

APPLICATION FILED NOV. 4, 1907.

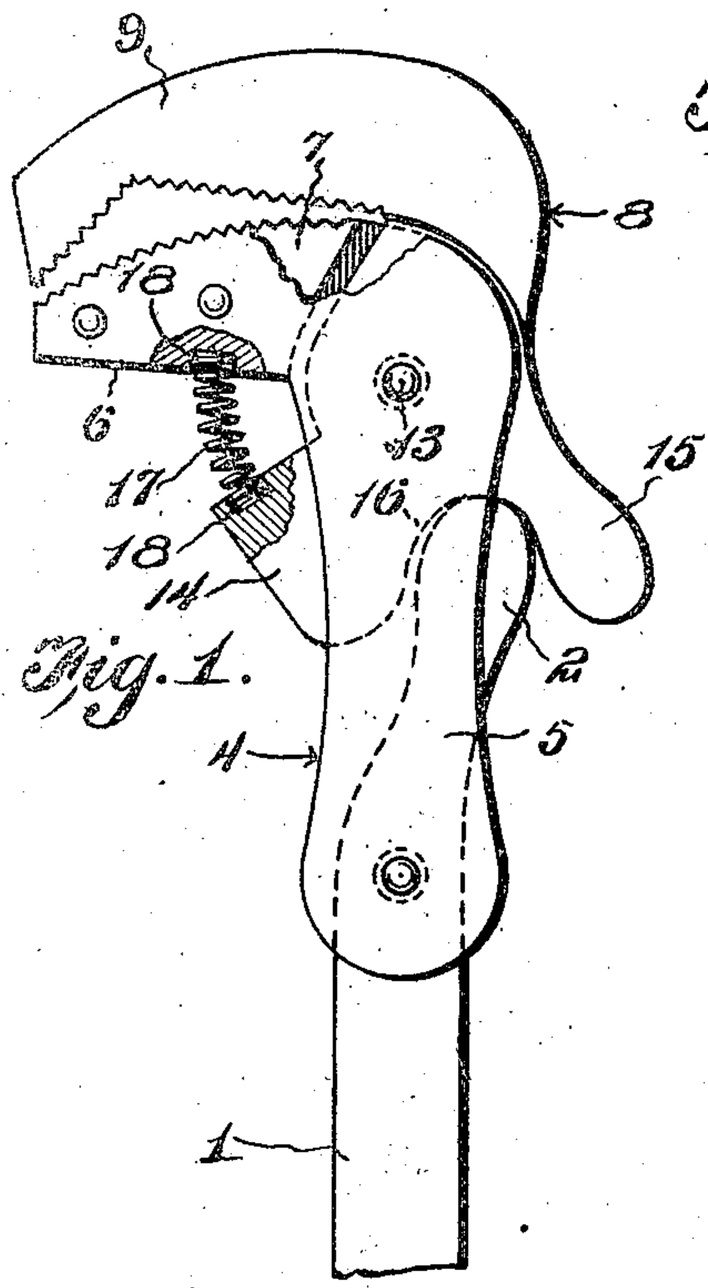


Fig. 1.

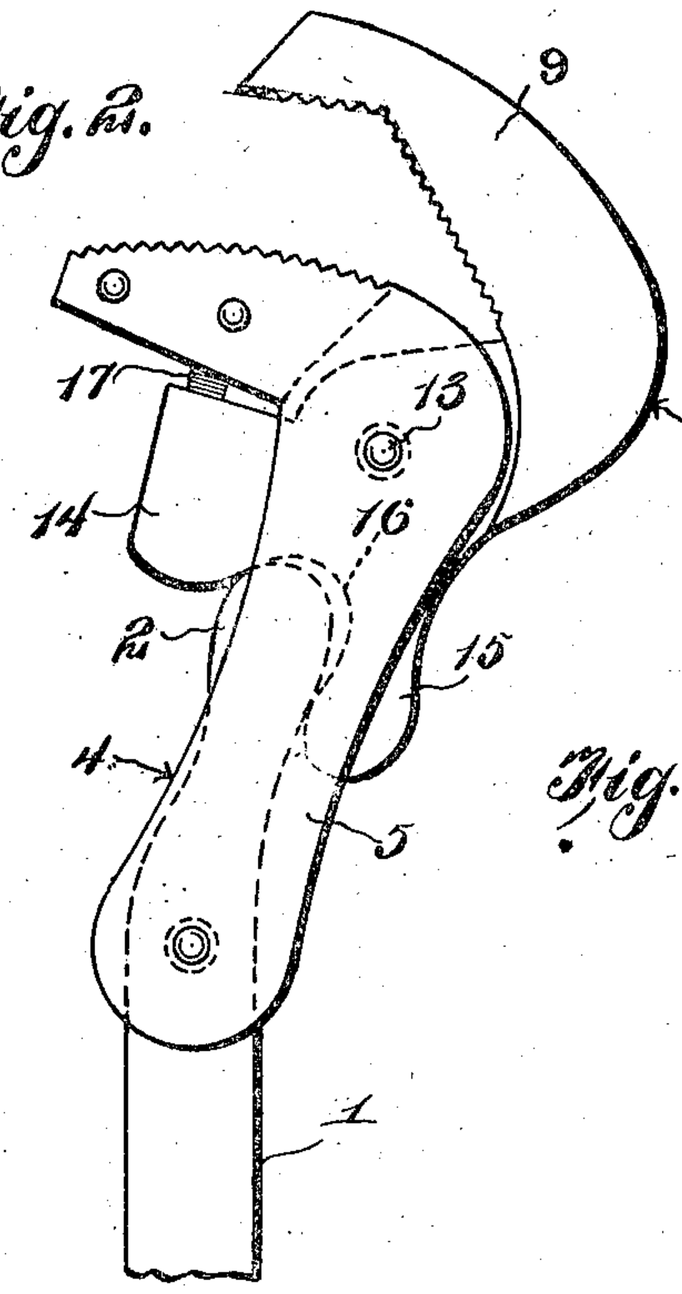


Fig. 2.

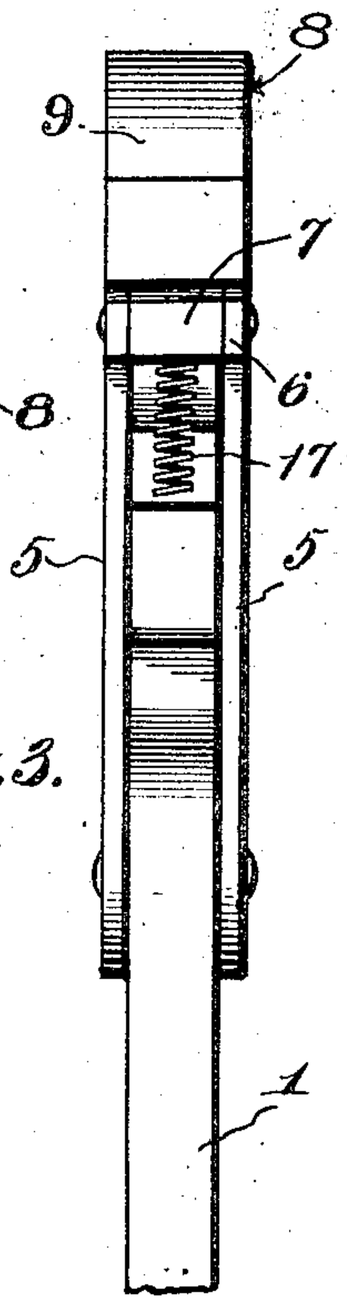
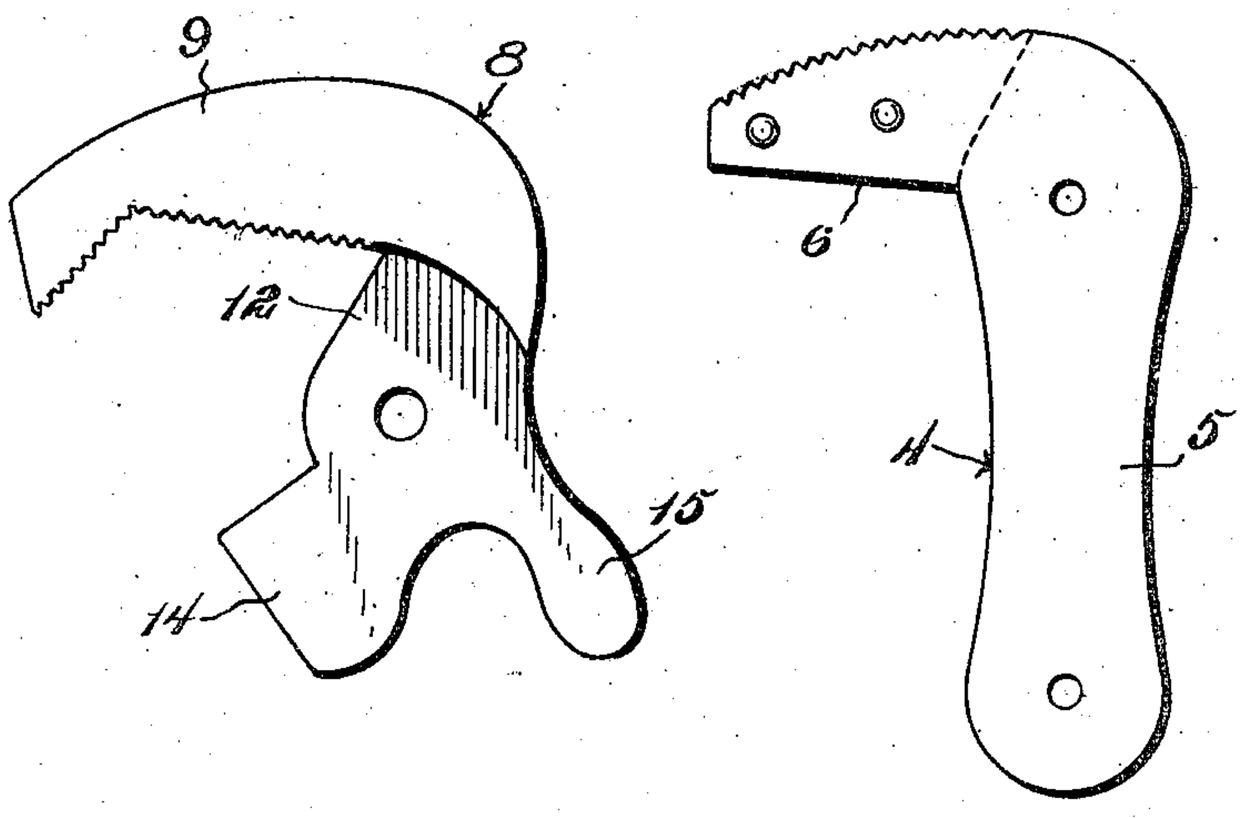


Fig. 3.

Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE PATERSON, OF BARRE, VERMONT.

PIPE-WRENCH.

No. 877,225. Specification of Letters Patent. Patented Jan. 21, 1908.

Application filed November 4, 1907. Serial No. 400,642.

To all whom it may concern:

Be it known that I, GEORGE PATERSON, a citizen of the United States, residing at Barre, in the county of Washington and State of Vermont, have invented certain new and useful Improvements in Pipe-Wrenches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in pipe wrenches.

The object of the invention is to provide a pipe wrench having pivotally connected co-acting jaw members which are so engaged by the handle that the latter forms a double lever for the jaws, thereby increasing the gripping power of the same.

With this object in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view of the wrench showing the jaws in a closed or operative position, parts being broken away and in section; Fig. 2 is a similar view showing the jaws in an open position; Fig. 3 is a front edge view of the wrench; and Fig. 4 is a side view of the parts separated.

In the embodiment of my invention I provide a handle, 1, which may be of any suitable length and is preferably constructed in the form of a flat metal bar. On the outer end of the handle is arranged an elliptically shaped head, 2, which is integrally connected to the handle bar by a reduced curved neck, 3, whereby said head is slightly offset toward the rear edge of the handle.

Pivotally connected to the outer end of the handle is an inner jaw member, 4, said member being preferably formed by a pair of parallel side plates, 5, between the inner ends of which the head 2 and neck 3 of the handle are inserted, said side plates being pivotally connected with the end of the handle adjacent to the inner end of the neck portion 3, thereby permitting said jaw member to swing freely on the outer end of the handle. On the outer ends of the plates 5 is formed the working portion of the inner jaw, said portion being formed by substantially right-angular projections 6, which are connected together and spaced apart by a block 7, which is bolted or otherwise secured between the right-angularly projecting portion of the plates. The outer edges of the projections 6 and the block 7 are preferably curved, as shown, and said edges may, if desired, be provided with serrations or teeth.

Pivotally connected with the inner jaw member 4 is an outer jaw member 8, said outer jaw member comprising an outer curved or segmental working portion, or bill, 9, the inner edge of which conforms substantially to the curvature of the outer edges of the working projection, 6, and block 7, of the inner jaw, and with which edge the inner edge of the outer jaw is adapted to co-act in gripping a pipe or other object. In the inner edge of the extreme outer end of the working portion of the jaw 8 is a reduced connecting plate 12, which is adapted to be inserted between the plates 5 of the inner jaw member, said plate 12 being pivotally connected to the plates 5 by means of a centrally disposed pivot bolt 13. On the inner end of the connecting plate 12 is formed a forwardly projecting jaw-opening lug 14, and a rearwardly projecting jaw-closing lug 15, between which is formed a recess, 16, in which is seated the elliptical head 2 of the handle.

The outer end of the jaw-opening lug 14 projects beyond the forward edges of the plates 5 and between the upper edge of said lug and the adjacent lower edge of the spacing block 7 of the inner jaw member is arranged a jaw-closing spring, 17, which may be of any suitable form, but which is here shown as a coiled spring having its opposite end seated in recesses or sockets 18 formed in the upper edge of the lug 14, and the lower edge of the block 7.

In the operation of the device, the spring 17 will normally force the jaw members to the position shown in Fig. 1 of the drawings, in which position they are engaged with the pipe or other article to be turned, after which the handle 1 is swung in the proper direction to bring the elliptical head thereon into engagement with the closing lug, 15, of the outer jaw, thereby forcing said lug outwardly and the working portion of the outer jaw downwardly or inwardly into engagement with the working portion of the inner jaw. When the head 2 is thus engaged with the lug 15, the pivotal connection of the handle with the side plates 5 of the inner jaw member will force said plates in the opposite direction to the

movement of the lug 15, and thereby force the working portion of the inner jaw outwardly or into engagement with the opposite side of the pipe or other article to be turned, the handle 6 thus exerting a double leverage power, or, in other words, actuating both the inner and the outer jaws to cause the same to tightly grip the article between them.

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

1. In a wrench of the character described, a handle, an operating head on the outer end of said handle, an inner jaw member pivotally mounted on said handle, an outer jaw member pivotally mounted on the inner jaw, a spring adapted to hold said outer jaw member in engagement with the inner jaw, and integrally formed opening and closing lugs on said outer jaw adapted to be engaged by the head on said handle, whereby said jaws are forcibly held in closed position and in engagement with the article to which the wrench is applied, substantially as described.

2. In a wrench of the character described, a handle, an operating head on the outer end of said handle, an inner jaw member comprising a pair of parallel side plates, pivotally connected at their inner ends to the outer end of said handle, an outer jaw member comprising a curved working portion adapted to co-act with the working portion of the inner jaw member, means on said outer jaw adapted to be engaged by the operating head on said handle to open and close said jaws, and a spring to hold said jaws in closed position, substantially as described.

3. In a wrench of the character described, a handle, an operating head formed on the outer end of said handle, an inner jaw member comprising a pair of parallel side plates pivotally connected at their inner ends to the outer ends of said handle, substantially right-angular working projections formed on the outer ends of said plates, a spacing block arranged between said projections to form a working surface with the outer edges thereof, an outer jaw member comprising a curved working portion adapted to co-act with the working projection of said inner jaw member, an integrally formed connecting plate on said outer jaw member adapted to be inserted between the side plates of the inner jaw member and pivotally connected thereto, integrally formed opening and closing lugs on the inner ends of said connecting plate adapted to be engaged by the head on said handle, and a spring arranged between one of said lugs and the working projection of said inner jaw member, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE PATERSON.

Witnesses:
GEO. A. REED,
MARY E. SEXTON.