June 3, 1924.

1,496,619

E. A. BOLE

PIPE WRENCH

Filed May 25, 1923

FIG. 1.

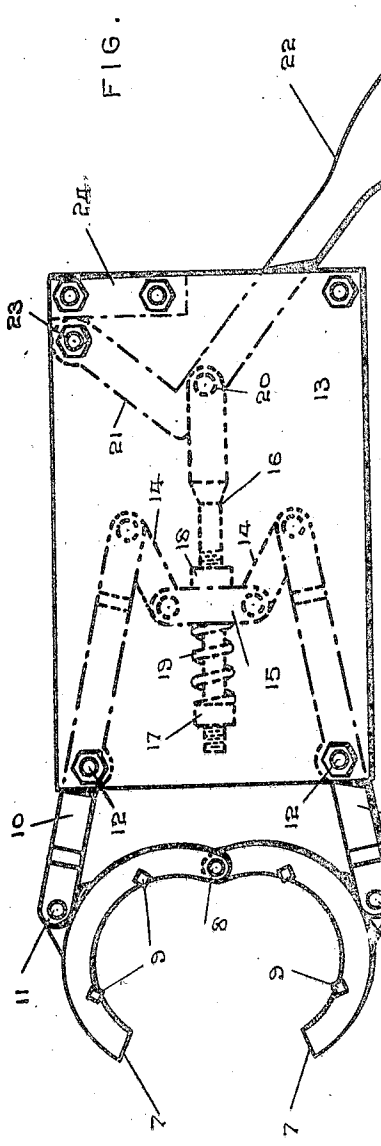


FIG. 2.

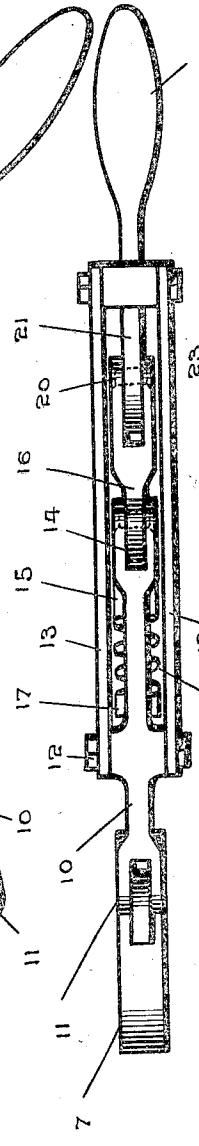
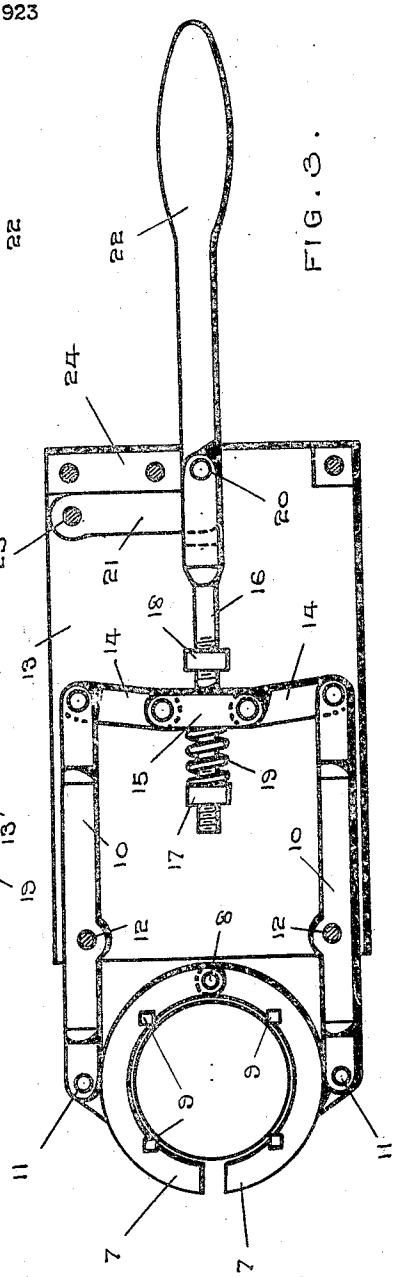


FIG. 3.



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UNITED STATES PATENT OFFICE.

EDWARD A. BOLE, OF LONG BEACH, CALIFORNIA.

PIPE WRENCH.

Application filed May 25, 1923. Serial No. 641,418.

To all whom it may concern:

Be it known that I, EDWARD A. BOLE, a citizen of the United States, residing at Long Beach, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Pipe Wrenches; and I do hereby 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.

The present invention relates to wrenches for pipes and other objects of circular form, and aims to provide such a wrench having novel means for mounting and operating the jaws to tightly grip the object.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts, as hereinafter described and claimed, it being understood that changes can be made, within the scope of what is claimed, without departing from the spirit of their invention.

The invention is illustrated in the accompanying drawing, wherein—

Figure 1 is a plan view of the wrench with the jaws open.

Fig. 2 is a side elevation thereof.

Fig. 3 is a plan view showing the jaws closed, the top plate being removed and portions being shown in section.

In carrying out the invention there is provided a pair of complementary arcuate or C-shaped jaws having their concaved sides confronting one another, and said jaws are hingedly connected, as at 8, to swing open and closed. Said jaws have the biting teeth 9 in the concaved faces thereof, to tightly grip the pipe or object when the jaws are closed.

The jaws are carried and operated by a pair of levers 10 pivoted, as at 11, to the jaws between the ends of the jaws at the convexed sides thereof, with the hinge 8 of the jaws located between said levers. The levers 10 are fulcrumed or pivoted, as at 12, between a pair of plates 13 comprising the body of the implement, and those arms of the levers opposite to the arms which are pivoted to the jaws, are connected by toggle links 14 with a joint member 15 located between the plates 13. A rod or link 16 extends slidably through the member 15 and has the adjustable nuts or members 17 and 18 thereon at opposite sides of the member 15, whereby the rod 16 will move the member 15. A coiled spring 19 is confined between the member 15 and nut 17 to yieldingly move said member ahead of said nut when the rod 16 is moved away from the jaws. The rod or link 16 is pivoted, as at 20, to the elbow of an angular or L-shaped lever 21 which has a handle 22 projecting beyond the edges of the plates 13 opposite to the jaws, said lever 21 being fulcrumed to said plates, as at 23.

A stop block 24 is secured between the plates 13 at one rear corner thereof for the contact of the lever 21 when it is swung to close the jaws. When the handle 22 of the lever 21 is swung relatively to the plates 13, so that the nut 18 on the rod or link 16 moves the member 15 toward the jaws, as seen in Fig. 1, the toggle links 14 are pulled with the member 15, thereby swinging the corresponding arms of the levers 10 toward one another, and separating the opposite arms, so as to open the jaws 7. The jaws can then be conveniently placed around the pipe or object, and by swinging the handle 22 in the opposite direction relatively to the plates 13, the link or rod 16 is pulled away from the jaws, and the member 15 is moved rearwardly by the spring 19, so that the links 14 move toward a straight line position, thereby separating the corresponding arms of the levers 10 and swinging the jaws closed toward one another around the object, as seen in Fig. 3. The links 14 being brought close to an alining position and the spring 19 being under compression, will result in the jaws gripping the object with considerable pressure, and the handle 22 is then moved in the same direction for turning the object, the turning force applied to the handle also being applied to the plates 13 because the lever 21 bears against the block 24 during the turning movement or torsional strain.

Having thus described the invention, what is claimed as new is:—

1. A wrench comprising a body, a pair of levers fulcrumed to the body, jaws carried by said levers to engage an object, toggle links connected to said levers, and an operating lever fulcrumed to the body to swing relatively to the body in the direction in which the force is to be applied to the object, said operating lever being operatively connected to said links to move the jaws toward one another when the operating le-

ver is swung relatively to the body as stated.

2. A wrench comprising a body, a pair of levers fulcrumed to the body, jaws carried by the levers to engage an object, toggle links connected with said levers, a joint member connecting said toggle links, an operating lever fulcrumed to the body to swing relatively to the body in the direction in which the force is to be applied to the object and a yieldable connection between said operating lever and joint member to yieldingly move the jaws toward one another when the operating lever is swung relatively to the body as stated.

3. A wrench comprising a body, a pair of levers fulcrumed to the body, jaws carried by the levers to engage an object, toggle links connected with said levers, a joint member connecting said toggle links, an operating lever fulcrumed to said body to swing relatively to the body in the direction in which the force is to be applied to the object, a rod pivoted to the operating lever and slidable through said joint member, and a spring on said rod to yieldingly move said joint member with the rod when the operating lever is swung relatively to the body as stated, so as to yieldingly move the jaws toward one another.

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

EDWARD A. BOLE

Witnesses:

I. R. COMMANDER,

DONALD L. CROBBE.