

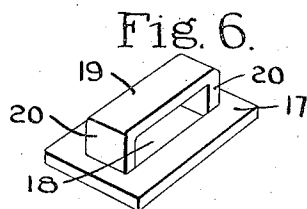
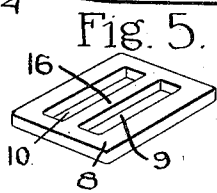
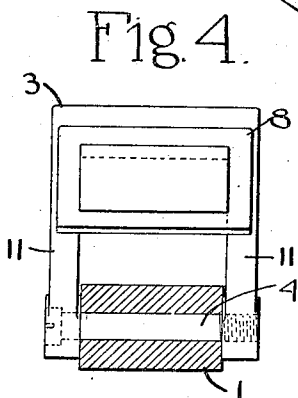
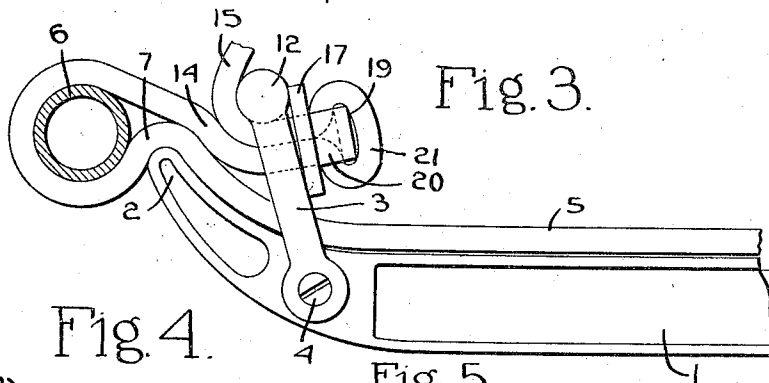
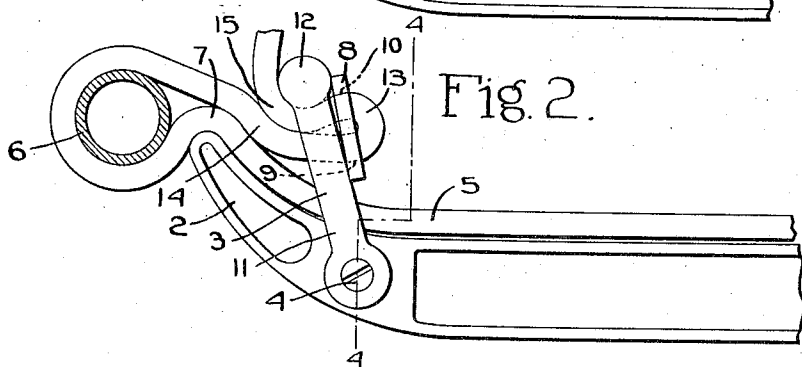
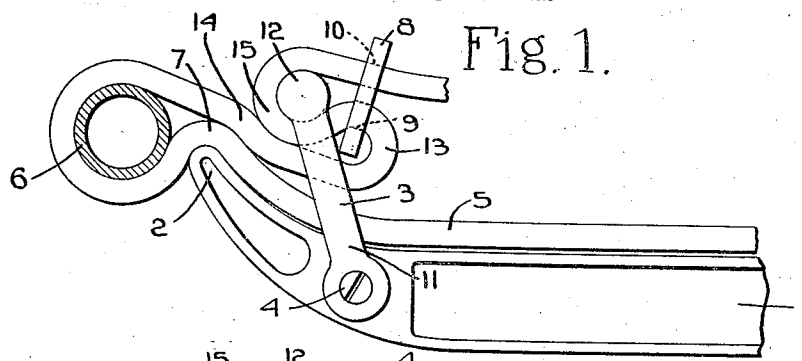
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W. A. ELLISON

STRAP WRENCH

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## UNITED STATES PATENT OFFICE.

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## STRAP WRENCH.

Application filed August 2, 1922. Serial No. 579,122.

*To all whom it may concern:*

Be it known that I, WILLIAM A. ELLISON, a citizen of the United States, and resident of Salem, county of Essex, State of Massachusetts, have invented an Improvement in Strap Wrenches, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to strap wrenches such as are used by plumbers and others on smooth piping and it has for its object to provide a novel method of anchoring the strap to the shackle of the wrench by which the strap may be adjustably secured to the shackle thereby enabling the position of the strap to be shifted as wear occurs so as to distribute the wear more evenly over the strap.

One well known type of strap wrench which is extensively used in the trade consists of a handle member having a curved nose, a shackle pivotally connected to the handle member near the nose and a strap having one end looped about the shackle, said end being sewed to the body of the strap thus permanently securing the strap to the shackle.

When a strap wrench is in use the portion of the strap which is acted on by the curved nose of the handle receives the greatest strain and in strap wrenches of the above-mentioned type where the strap is permanently secured to the shackle the wear on the strap comes at substantially one point. As a result the strap will weaken and give out at this point, although the remainder of the strap is in perfectly good condition.

By my invention I provide a novel means of connecting the strap to the shackle so that the position of the strap relative to the shackle can be shifted as wear occurs thus bringing different portions of the strap in position to take the severe strain. If it is found that the strap is weakening at one point the strap can be shifted so as to bring another unweakened portion into position to receive the severe strain.

In order to give an understanding of the invention I have illustrated in the drawings

a selected embodiment thereof which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 is a side view of a strap wrench embodying my invention,

Figs. 2 and 3 are similar views showing a little different construction.

Fig. 4 is a section on the line 4-4, Fig. 3.

Fig. 5 is a perspective view of the anchoring member shown in Figs. 1 and 2.

Fig. 6 is a perspective view of the anchoring member shown in Fig. 3.

In the drawings 1 indicates the body or handle of the wrench which is formed at one end with the curved gripping nose 2, and 3 is the shackle which is pivoted to the body as shown at 4. 5 indicates the strap which is secured at one end to the shackle 3 and is adapted to pass around the pipe 6 to be gripped, said strap extending from the shackle around the pipe and then over the nose 2 and back through the shackle, as usual in strap wrenches of this type.

When the wrench is used a downward movement of the handle in Figs. 1, 2 and 3 of the drawing will cause the strap to be clamped about the pipe 6 with sufficient pressure so as to turn the pipe, and during this operation the portion 7 of the strap, which is engaged by the nose 2, receives the greatest strain. In fact the strain at this point is so severe that unless the strap can be shifted so as to bring different portions thereof in engagement with the nose 2 said strap is apt to give way at this point.

My invention contemplates the use of an anchoring member for adjustably anchoring the strap to the shackle to provide for shifting the strap relative to the shackle and handle thereby to bring different portions of the strap into position to be engaged by the nose 2.

In Figs. 1, 2 and 5 I have shown an anchoring member in the form of a plate 8 having two strap-receiving slots 9 and 10 therein and having a length greater than the distance between the two arms 11 of the shackle 3. In Fig. 1 I have shown the strap 5, after encircling the pipe 6, as passing through the arms 11 of the shackle and then around the lower edge of the anchoring

member 8 and through the slot 9, said strap then extending back through the shackle again and around the bridge 12 thereof and thence through the other slot 10 of the anchoring member.

When the wrench is used, the strain on the strap will draw the anchoring member firmly against the shackle 3 and the bight 13 formed in the strap together with the clamping pressure between the portions 14 and 15 of the strap serve to anchor the strap firmly to the shackle and prevent it from slipping. The connection between the strap and the shackle, however, is such that if desired the strap can be adjusted relative to the shackle to bring different portions thereof into position to engage the nose 2.

In Fig. 2 a different way of threading up the strap is shown wherein the strap extends through the shackle 3 and through the slot 9 of the member 8 and then is bent around the center bar 16 of said member and passes back through the slot 10 and thence through the shackle. In this embodiment the bight 13 formed in the strap together with the clamping pressure developed between the portions 14 and 15 of the strap prevent the latter from slipping.

In Figs. 3 and 6 I have shown a construction which is slightly different in that the anchoring member indicated at 17, is provided with a central strap-receiving slot 18 and with a bar 19, which is offset from the body of the anchoring member but is connected thereto by two arms 20.

In using this type of anchoring member the strap is inserted through the slot 18 and then is folded around the bar 19, as shown at 21, and then is passed back through the slot 18 and through the shackle. With this construction when the device is used the strap will be secured to the shackle by the gripping action due to the bight or loop 21

and also the clamping action between the portions 14 and 15 of the strap.

In all embodiments of the invention the strap is not permanently secured to the shackle but can be adjusted so as to bring different portions thereof into engagement with the nose 2 and the pipe 6 and thus when the strap begins to show signs of weakness at any part it can be readily shifted so as to bring an unused and stronger part into position to receive the severe strain.

I claim.

1. A strap pipe wrench comprising a handle having a curved gripping nose, a shackle pivoted to the handle, an anchoring member independent from the shackle but adapted to engage the latter, said anchoring member having a plurality of strap-receiving slots extending through it, each of which slots is of a size to have a strap threaded therethrough, and a strap arranged to be passed through the shackle over the nose and around the pipe to be gripped, thence back through the shackle and through one slot of the anchoring member and around a portion thereof, and through the other slot of said anchoring member and the shackle.

2. In a strap pipe wrench, the combination with a handle member having a curved gripping nose, of a shackle pivoted to the handle member, an anchoring member independent from the shackle and engaging the latter on the opposite side thereof from the nose, said anchoring member having a plurality of strap-receiving slots, and a strap passing through the shackle and over the nose and adapted to pass around a pipe to be gripped and thence back through the shackle again and through the slots of the anchoring member successively.

In testimony whereof, I have signed my name to this specification.

WILLIAM A. ELLISON.