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R. L. MURPHY

WRENCH

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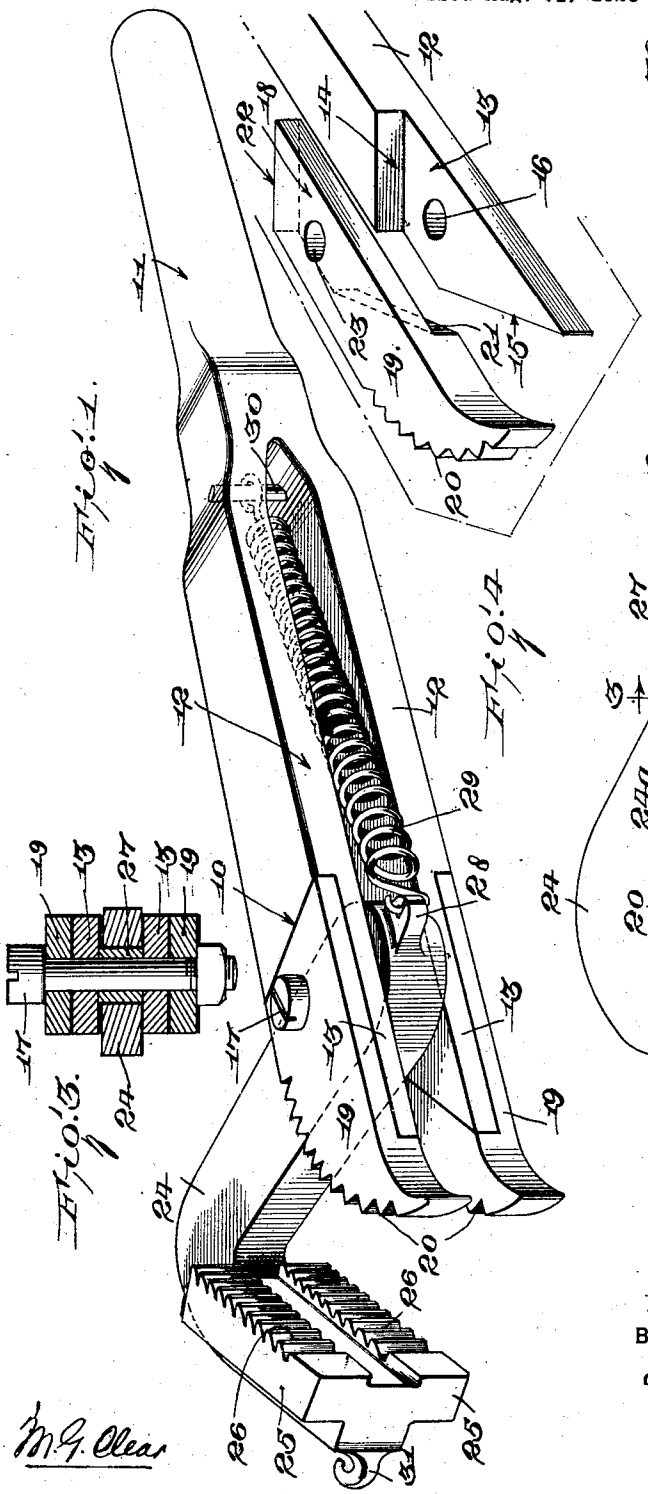


Fig. 1.

Fig. 4.

Fig. 5.

Fig. 2.

INVENTOR
Ralph L. Murphy
BY
Munn & Co.
ATTORNEYS

M. G. Clear

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RALPH L. MURPHY, OF MIERA, NEW MEXICO, ASSIGNOR OF ONE-HALF TO IRA L. ROBINSON, OF MIERA, NEW MEXICO.

WRENCH.

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My present invention relates generally to wrenches and more particularly to a pipe wrench, my object being the provision of a simple, strong and efficient wrench, which will be easy to manipulate, which is capable of readily supporting itself upon a pipe after being placed in connection with the pipe, and which will be especially effective and efficient in the hands of one unskilled in the use of the ordinary pipe wrenches.

A further object of my invention is the provision of a pipe wrench in connection with which a movable jaw is so arranged as to provide for ready interchange of sizes in order to adapt the wrench to large or small pipe, and a still further object is the provision of an arrangement of this character embodying a spring which controls the movable jaw, and which in the normal inactive position of the parts is housed and protected.

In the accompanying drawing which illustrates my present invention and forms a part of this specification:—

Figure 1 is a perspective view showing the complete wrench with the jaw open;

Figure 2 is a longitudinal section taken through a portion of the wrench showing the movable jaw closed, the parts being in the normal position of disuse.

Figure 3 is a detail cross section taken substantially on line 3—3 of Fig. 2, and

Figure 4 is a detail perspective view of a portion of the rigid jaw with one of its detachable bits in detached relation.

Referring now to these figures, my invention proposes a pipe wrench wherein the stationary jaw generally indicated at 10 is formed integral with an extension of the handle 11. This extension is substantially in line with the handle and is bifurcated, the ends of the furcations 12 constituting the stationary jaw and being reduced in thickness as at 13, forming shoulders 14, which like the extreme ends 15 of the reduced portions 13, are beveled. The bevels of each of the shoulders 14 and the corresponding extremity are in opposite directions and each reduced portion 13 is bored as at 16, the bores alining with one another for the reception of a transverse bolt 17.

The reduced portions 13 receive thereon the reduced shanks 18 of bits 19, whose opposite or free ends have toothed or ribbed engaging surfaces 20 along the outer arcuately curved portions of these bits, and the shanks 18 have shoulders 21 and end surfaces 22 which are beveled to respectively correspond with the beveled end surfaces 15 of the reduced portions 13 of the removable jaw and the beveled shoulders 14 thereof. The shanks 18 of the bits 19 are moreover bored as at 23, these bores alining with the bores 16 when the bits are in place, so that the bits may thus be held with their beveled surfaces abutting the beveled surfaces of the jaw 10 when the transverse bolt 17 is in place.

The bolt 17 or that portion thereof between the furcations constituting the rigid jaw also serves an additional function as a pivot bolt for the movable jaw generally indicated at 24 and of the angular shape shown, the outer arm having spaced apart ribs 25 provided with inner toothed or serrated surfaces 26 to oppose and cooperate with the toothed or serrated surfaces 20 of the bits 19. This movable jaw is preferably of the acutely angular form shown, although this particular form or the particular angle thereof may of course be varied to some extent in different sizes, it being understood that the movable jaw may be furnished in several sizes for ready interchange by removal and subsequent replacement of the pivot bolt 17.

To receive the bolt 17 the jaw has adjacent to the end of its inner arm an opening 24^a and it is preferred to use a bushing 27 within this opening around the central portion of the pivot bolt 17. Moreover, the extreme inner end of the inner arm of the movable jaw has an apertured lug 28 to receive one end of a retractile coil spring 29, which is disposed between the furcations 12 of the handle extension, with its inner end engaged with a cross pin 30.

Thus when the movable jaw is closed as in the position shown in Fig. 2, the spring 29 is entirely within the slot between the furcations 12, and is effectively housed and protected thereby, so that in the normal position of disuse the tool as a whole may be freely stored with other tools without danger of breaking or injuring the spring.

At its outer free end the movable jaw 24 may have a hook 31 and it is obvious, as before stated, that the special angle of this jaw may be varied to some extent. It is plain that the pivot bolt 17 not only effectively supports the movable jaw in such manner as to permit of ready interchange,

but this bolt also serves to hold the bits of the stationary jaw and is permitted to function effectively for this purpose, by virtue of the overlapping portions of the movable jaw and the bits with their relatively engaging beveled surfaces.

I claim:

1. A pipe wrench comprising a handle, a rigid jaw in fixed relation to the handle, having reduced portions, the latter provided with beveled ends and beveled shoulders, a removable jaw, bits having reduced shanks to engage the reduced portions of the rigid jaw, and having beveled ends and shoulders complementary to those of the rigid jaw, and a pivot bolt extending through the rigid and movable jaws for the support of the latter, and also extending through the said bit shanks, and serving to simultaneously pivot the movable jaw and hold the bits of the rigid jaw in place.

2. A wrench including a handle, a handle extension and a rigid jaw on the end of said extension, said jaw and said extension being bifurcated, an angular movable jaw having one arm opposing the rigid jaw, and having another arm extending between the furcations of the rigid jaw, a pivot bolt through the rigid and movable jaws to swingingly support the latter, bits on the furcations of the rigid jaw, each bit and its respective furcation having relatively opposing reduced portions terminating in oppositely beveled relatively engaging ends and shoulders, the said pivot bolt extending through the reduced portions of said bits and serving to simultaneously pivot the movable jaw and secure the bits in place.

3. A pipe wrench comprising a handle, a rigid jaw in fixed relation to the handle, having reduced portions, the latter provided with beveled ends and beveled shoulders, a movable jaw, bits having reduced shanks to engage the reduced portions of the rigid jaw, and having beveled ends and shoulders complementary to those of the rigid jaw, a pivot bolt extending through the rigid and movable jaws for the support of the latter, and also extending through the said bit shanks, and serving to simultaneously pivot the movable jaw and hold the bits of the rigid jaw in place, a bushing within the pivot opening of the movable jaw and extending through the same and mounted on the pivot bolts to maintain the reduced portions of the rigid jaw in spaced relation, and spring means coacting with the movable jaw and handle whereby to yieldingly hold said movable jaw to the work.

RALPH L. MURPHY.