

UNITED STATES PATENT OFFICE

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HEEL JAW

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1 Claim. (Cl. 81-101)

This invention relates to improvements in pipe wrenches having removable or replaceable heel jaws. One of the principal objects of this invention is to provide a pipe wrench having a removable heel jaw wherein the connection between the heel jaw and the housing is so arranged that stresses applied to the heel jaw are removed from the pin which holds the heel jaw in place.

Another object of the invention resides in the provision of an improved connection for a heel jaw to the wrench handle, which connection may be easily and accurately machined, thus permitting the heel jaw to be forged and the housing to be cast. Still other objects of the invention as well as certain economies in manufacture will become apparent from the following description of the embodiment of my invention, which description is illustrated by the accompanying drawing wherein:

Fig. 1 is a side elevational view of the wrench housing and handle with a portion of the housing broken away and shown in section, and the heel jaw shown in position in section and with the hook jaw and adjusting nut shown in dot-dash lines;

Fig. 2 is a plan view looking at the end of the housing and handle with the heel jaw removed;

Fig. 3 is a bottom plan view of the heel jaw.

As best shown in Fig. 1, the wrench includes a handle 1 having at one end thereof a channeled housing 2 through which a hooked jaw 3 is adapted to slidably extend, the hooked jaw being provided with a threaded shank 4 adjustably held in position by a nut 5 which engages between the bottom of the housing and lugs 6 extending rearwardly from the handle 1. The hooked jaw is provided with a serrated face 7 adapted to cooperate with the serrated face 8 of the heel jaw for engaging the pipe.

The end of the handle adjacent to the housing 2 is provided with a flat seating surface 9 which is of generally rectangular shape, but will vary as shown in Fig. 2, depending upon the cross sectional contour of the handle. The seating face is provided with a groove 10 which may be milled in the face and varies in depth from the housing to the point far away from the housing, as best shown in Figs. 1 and 2. A number of abutments 11 and 12 are provided on the face 9, the abutments being upstanding and in opposite aligned relation on opposite sides of the groove 10. Each of the abutments is provided with a number of walls 14 and 15 which preferably lie in planes normal to the plane of the seat 9. The

heel jaw is provided on its under-surface with a seat 16 adapted to rest upon the seat 9 at the end of the handle. A lug 17 depends downwardly from the seat adapted to extend into the groove 10. The side walls 18 and 19 of the lug may engage the side walls of the groove 10. The lug is apertured at 20 to receive a pin 21 which passes through an opening 22 in the end of the housing and which opening extends through the groove 10.

A channel 25 is formed on the bottom of the heel jaw being provided with walls 26 and 27 extending to the plane substantially normal to the seating face 16 and adapted for engagement with the walls 14 and 15 of the lugs 11 and 12.

In operation the heel jaw is seated on the seat at the end of the hook jaw, the groove 25 and the upstanding projections 11 forming a complementary tongue and grooves which provide for interlocking engagement with the hook jaw and the handle. The pin 21 extends through the housing and end of the handle and the lug 17, locking the heel jaw to the handle. The lug 17 engages in the groove 10. When stresses are applied to the heel jaw due to the turning movement of the hook and heel jaw on the pipe, stresses are transmitted from the heel jaw to the lugs 11 and 12 through the groove 25 removing such stresses from the locking pin 21. Stresses are taken up by the lug 17 in the groove 10.

I find that this new construction materially eliminates shear of the pins 21 due to normal use, or when such wrench is used as a hammer as occasionally occurs.

Although I have described my invention in a particular embodiment, I am aware that numerous and extensive departures may be made therefrom without departing from the spirit and scope of my invention.

I claim:

In a wrench of the class described including a handle, a housing, a hook jaw adjustably disposed in the housing, and a heel jaw carried by the handle adapted to cooperate with the hook jaw, said handle being provided with a rectangular seat for the heel jaw comprising a flat bearing surface bisected by a longitudinally extending slot, a pair of aligned abutments on said flat bearing surface on opposite sides of said slot and provided with faces disposed in planes normal to the flat bearing surface, said heel jaw being formed with a flat seating surface for engagement with said rectangular seat and having a downwardly extending apertured lug adjacent one end with the sides thereof engageable with

the sides of said slot, said seating surface provided with a transverse groove intermediate the lug and the other end of the flat seating surface with the walls of the groove engageable with the sides of said abutments on the bearing surface, and pin means extending transversely through the body of the wrench and through the lug on

the heel jaw to lock said heel jaw onto the rectangular seat, said abutments on the bearing surface and said cooperating groove in the heel jaw removing stresses from said pin during the use of the wrench.

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