

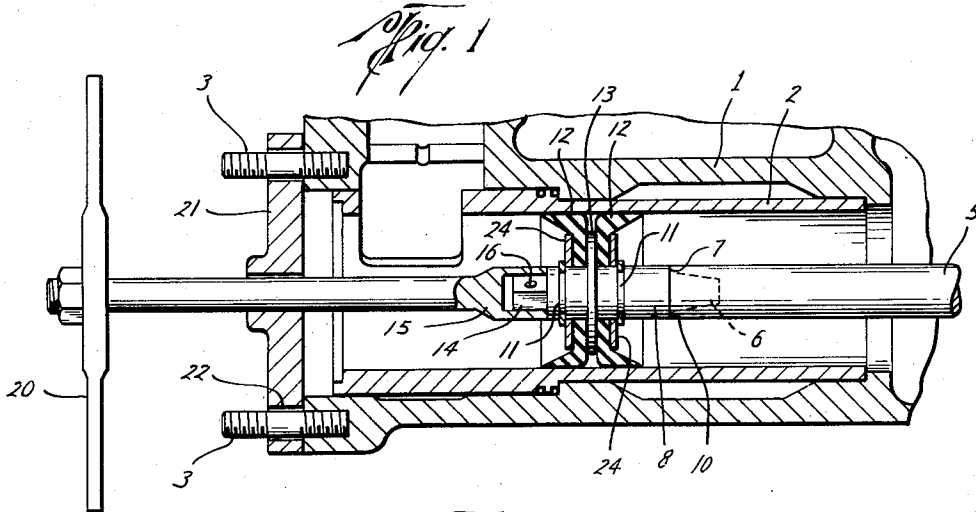
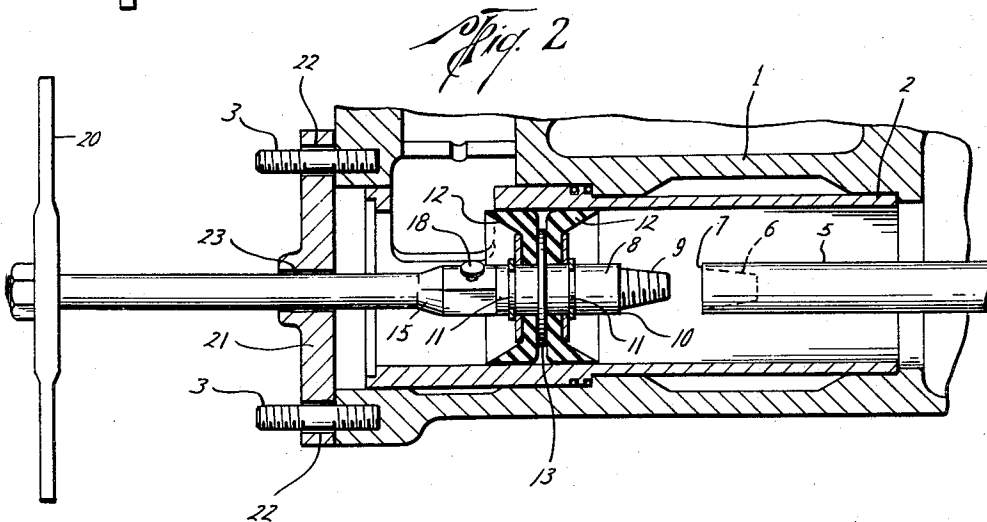
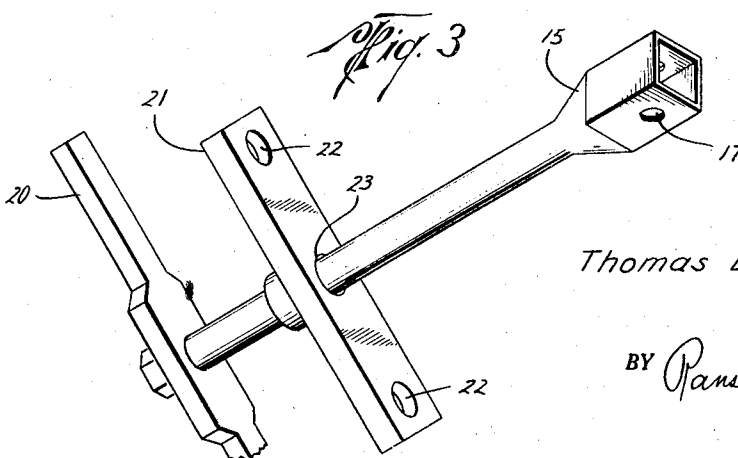
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PUMP PISTON AND ROD

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PUMP PISTON AND ROD

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2 Claims. (Cl. 309—17)

This invention relates to new and useful improvements in a pump piston and rod.

It is an object of this invention to provide novel means for mounting a piston on a piston rod so that the piston may be quickly and easily detached from the rod and removed.

It is another object of the invention to provide a piston and piston rod construction, and a piston moving means, that will permit ready and easy connection or disconnection of the piston from the rod and removal of the piston from the pump cylinder or mounting the same on the rod in a pump cylinder.

It is still a further object of the invention to provide means for removing pistons that may be easily and cheaply manufactured and that will provide means simple in operation for accomplishing the work.

With the above and other objects in view, the invention has relation to certain novel features of construction, operation and arrangement of parts more particularly defined in the following specifications and illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevational view, in cross section, illustrating the piston puller in piston pulling position preparatory to disconnecting the piston from the piston rod.

Figure 2 is a side elevational view, in cross section, illustrating the piston puller in pulling position, after the piston has been disconnected from the piston rod and is being removed from the liner, and

Figure 3 is a perspective view of the puller shaft and bar.

Referring now more particularly to the drawings, the numeral 1 designates a housing, such as the housing of a mud pump, having a liner 2 and studs 3, 3. The piston rod 5 is provided with an internally threaded socket 6 at the terminus thereof, which said socket is axially centered and provided with an annular shoulder 7. The piston is formed of a piston head 8, which has the reduced and tapered externally threaded terminus 9, having an annular shoulder 10, the threaded portion 9 meshing with the threads of the socket 6 and the shoulders 7, 9 abutting, when the parts are screwed tightly together, making a flush joint.

Grooves, as 11, 11, may be provided in the piston head 8 to receive snap rings which abut against the usual retainer plates as 24, 24, and lock the rubber piston body members 12, 12 in place on the head 8. The center plate 13 is integral with the head 8, and the outer end of the head 8 is reduced as at 14 and shaped to

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receive a socket wrench, as 15, and is preferably provided with an orifice 16, and the wrench 15 may also be provided with orifices, as 17, 17, through which a pin 18 may be inserted to aid in the withdrawal of the piston. Any suitable handle may be provided on the extended end of the wrench 15, such as the detachably mounted cross bar 20.

A supporting bar as 21 may be provided having suitable stud receiving orifices 22, 22 and a center orifice 23 through which the wrench 15 projects to maintain the wrench in alignment with the piston rod when in use.

When it is desired to remove the piston, the pump head cover (not shown) is removed from the studs 3, 3 and the wrench 15, with its shaft extended through the orifice 23 of the bar 21, is applied to the piston by mounting the orifices 22, 22 of the bar 21 on to two diametrically opposed studs 3, 3 on the well head, and applying the socket of the wrench to the end 14 of the piston head 8 and turning the wrench by means of the handle 20, backing the piston terminus 9 out of the socket 6 in the piston rod, and the piston then withdrawn from the liner. When the head 8 and rod 5 are disconnected, the piston will usually readily slip out of the liner, and may be thus withdrawn by the hand of the user, but if, for any reason, the piston does not readily slip out of the liner, the pin, 18, which may be a common nail of the desired size, may be inserted through the orifice 17 in the wrench and the orifice 16 in the piston head, and pressure applied in any suitable manner to the handle 20, to remove the piston

While the foregoing is considered a preferred form of the invention, it is by way of illustration only, while the broad principle of the invention is defined by the appended claims.

What I claim is:

1. In a pump piston and rod, a piston head, one end thereof having an externally threaded outwardly tapered projection, a piston rod having an axial internally threaded and inwardly tapered socket formed in the extended end thereof, a wrench receiving means on the other end of said head for the rotation of said head to engage and disengage said projection with said piston rod, detachably mounted means for guiding a wrench during engagement and disengagement of the piston with the piston rod.

2. In a pump piston and rod for use on mud pumps and the like, a piston rod having an internally threaded socket in the piston receiving end thereof and an annular shoulder adjacent said socket, a piston head having one end reduced in diameter forming an annular shoulder adapted to abut against said annular shoulder on said piston rod and having said reduced portion externally threaded and formed to be received by said socket in said piston rod, the opposite end of said head having a reduced portion formed to receive a socket wrench, means for maintaining a socket wrench in alignment with said head and detachably secured to said head.

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