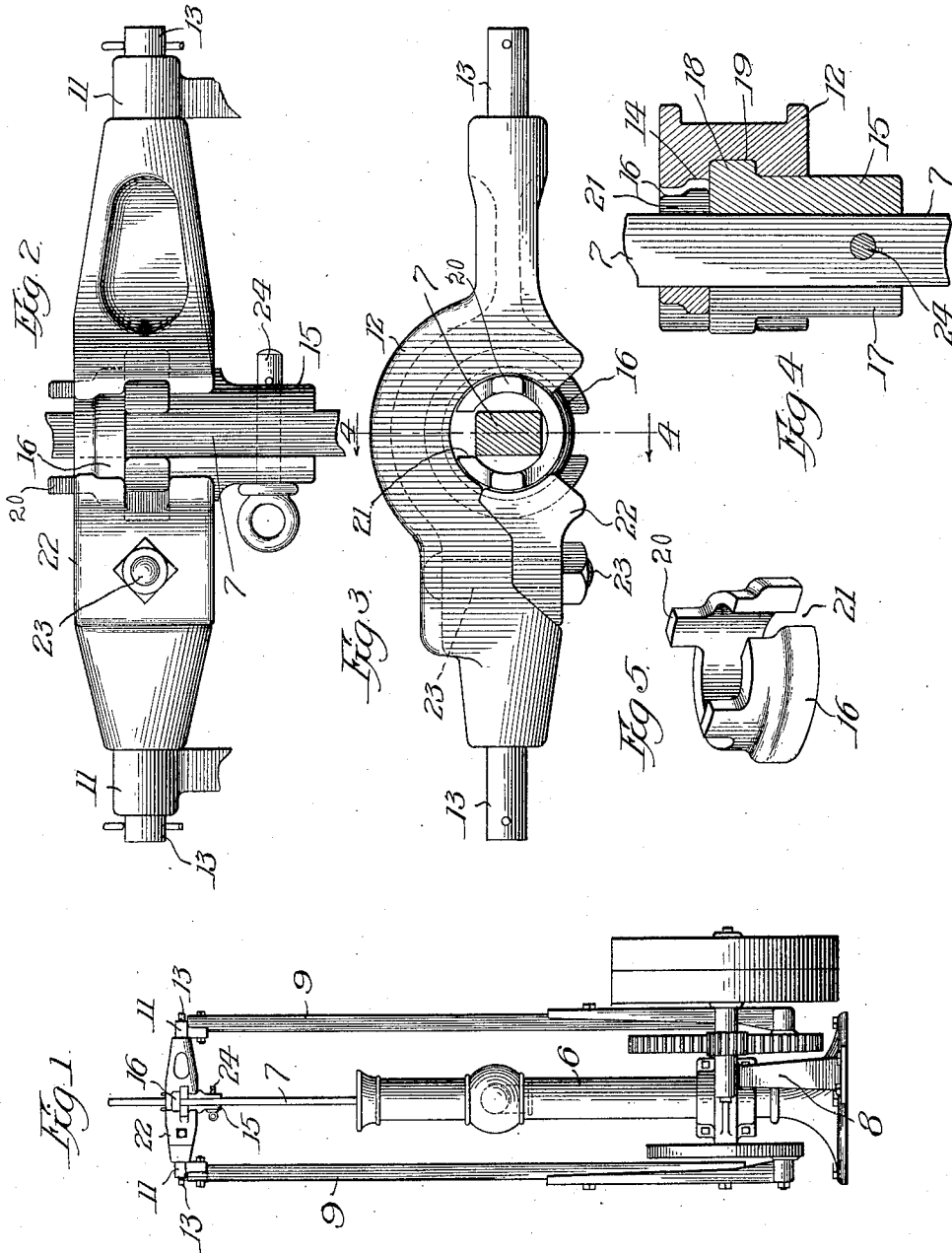


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PUMP JACK CROSS HEAD.
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UNITED STATES PATENT OFFICE.

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PUMP-JACK CROSS-HEAD.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY G. McCULLOCH, a citizen of the United States, residing at Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Pump-Jack Cross-Heads, of which the following is a specification.

This invention relates to cross heads in general and more particularly to cross heads for use in connection with pump jacks and aims to provide a cross head of this character which will permit the jack to be set at an angle to the pump standard and which can be quickly and easily attached to and detached from a pump rod.

One of the principal objects of this invention is the provision of improved means for holding the cross head in operative relation with a pump rod when the rod is detached therefrom for a hand or windmill pumping, said means being so constructed that the cross head may be completely and very easily disengaged from the pump rod when desired.

For the purpose of facilitating the explanation of my invention I have shown on the accompanying drawings a preferred embodiment thereof from which, when considered in connection with the following description, the invention will be readily understood.

Referring to the drawings—Figure 1 is an elevation of a pump jack equipped with my invention and connected to a pump; Fig. 2 is an enlarged elevation of my improved cross head; Fig. 3 is a plan view thereof; Fig. 4 is a transverse sectional view on the line 4—4 of Fig. 3; and Fig. 5 is a detail perspective view of my improved lock washer.

On the drawings, 6 designates a pump of any preferred type having the usual pump rod 7. The pump jack 8 may be of any preferred construction, the one shown on the drawings being illustrative merely, the details of construction of which are immaterial so far as my present invention is concerned. The connecting or pitman rods 9 are preferably provided with boxes 11 adapted for connection to a cross head.

The cross head, constituting the subject matter of the present invention, comprises a body 12 preferably of cast construction having the extensions or trunnions 13 adapt-

ed to fit the boxes 11. The body is provided intermediate its ends with a socket 14 shaped to receive a swivel 15 and a lock washer 16. The swivel 15 is provided with a longitudinal slot 17 adapted to receive the pump rod 7 and the upper end of the swivel is provided with an enlarged head or annular shoulder 18 which fits in a circumferential groove 19 formed in the socket 14 to prevent longitudinal movement of the swivel relatively to the body 12. The lock washer 16 is rotatably mounted in the socket 14 above the swivel 15 and is provided with an opening 21 in one side thereof to permit the introduction of the pump rod laterally into the slot 17 of the swivel. The socket 14 is open at one side to permit the placing of the swivel 15 and the lock washer in position and a block 22, formed to provide a continuation of the socket, is secured by a bolt 23 or other preferred retaining means to the body 12 so as to partially close the mouth of the socket 14 and retain the swivel and lock washer in operative position therein.

When the cross head is to be attached to a pump rod the lock washer is turned by grasping one or both of the projections 20 which extend above the body 12 to bring its open side 21 into alinement with the slot 17 of the swivel whereupon the cross head may be swung into position so that the pump rod lies within the slot 17 and within the lock washer. The washer is then given a half turn into the position shown in Fig. 3 of the drawings thereby locking the cross head in operative relation with the pump rod. The cross head is thereby held in operative relation to the pump rod without being connected therewith and may remain in this position when the pump is operated by windmill or by hand. When it is desired to use the pump jack for pumping purposes a pin 24 may be inserted through apertures in the swivel and in the pump rod thereby rigidly connecting the pump rod and cross head together. When my improved cross head is used it is not necessary that the pump jack be set in exact alinement with the pump rod since the swivel 15 can be turned to present the slot 17 for the reception of the pump rod within the limits of the open mouth of the socket 14. The cross head may be disconnected from the pump rod by simply withdrawing the pin 24, but the

cross head will still be retained in operative relation to the rod by the lock washer. When it is desired to remove the jack the lock washer is given a half turn to bring the open side into alinement with the slot 17 whereupon the cross head may be withdrawn from the rod.

It is believed that my invention and many of its attendant advantages will be understood from the foregoing without further description and, while I have shown and described a practical embodiment of the invention, it will be obvious that the construction of the various mechanical details may be varied within wide limits without departing from the spirit of the invention or sacrificing any of the material advantages thereof.

I claim:

1. A pump jack cross head comprising a body, a swivel and a lock washer each open at one side to receive a pump rod, and means for detachably connecting the pump rod to said swivel, said lock washer being adapted to retain the pump rod in sliding engagement with the swivel when said swivel is disconnected from the rod.

2. A pump jack cross-head comprising a body open at one side to receive a pump rod, means for detachably connecting the pump rod to said body, a lock washer open at one side rotatably mounted on said body for retaining the pump rod in sliding engagement with the body when said body and rod have been disconnected, and means for retaining said washer in position on the body.

3. A pump jack cross head, comprising a body adapted to be connected with the connecting rods of a pump jack, a slotted swivel rotatably mounted thereon, and a rotatable lock washer for holding a pump rod in operative relation to said swivel.

4. A pump jack cross head comprising a body adapted to be attached to the connecting rods of a pump jack, a swivel provided with a longitudinal slot adapted to receive a pump rod rotatably mounted on said body, and a lock washer having an open side to receive the pump rod, said washer being rotatably mounted on the body whereby the pump rod may be locked in operative relation to the swivel.

5. A pump jack cross head comprising a body provided with a socket, a slotted swivel and an open-sided lock washer rotatably mounted in said socket, and a block for holding said swivel and washer in position.

6. A pump jack cross head, comprising a body provided with a socket, a swivel and an open-sided lock washer rotatably mounted in said socket, and a block for holding said swivel and washer in position, said washer being provided with projections whereby the washer may be rotated to lock a pump rod in operative relation to the head.

7. A pump jack cross head comprising a body open at one side, a swivel secured to the said body and open at one side and adapted to be connected to the pump rod, a rotatable open sided lock washer, all of said members being adapted to be positioned to aline the said openings for the reception of a pump rod, the rotation of the said washer serving to detachably retain the cross head and pump rod in operative relation when the swivel is disconnected from the pump rod, and means for holding the said washer in operative relation.

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