May 26, 1925. 1,539,803

J. W. McDANIEL

WINDMILL COUPLER

Filed Jan. 30, 1923

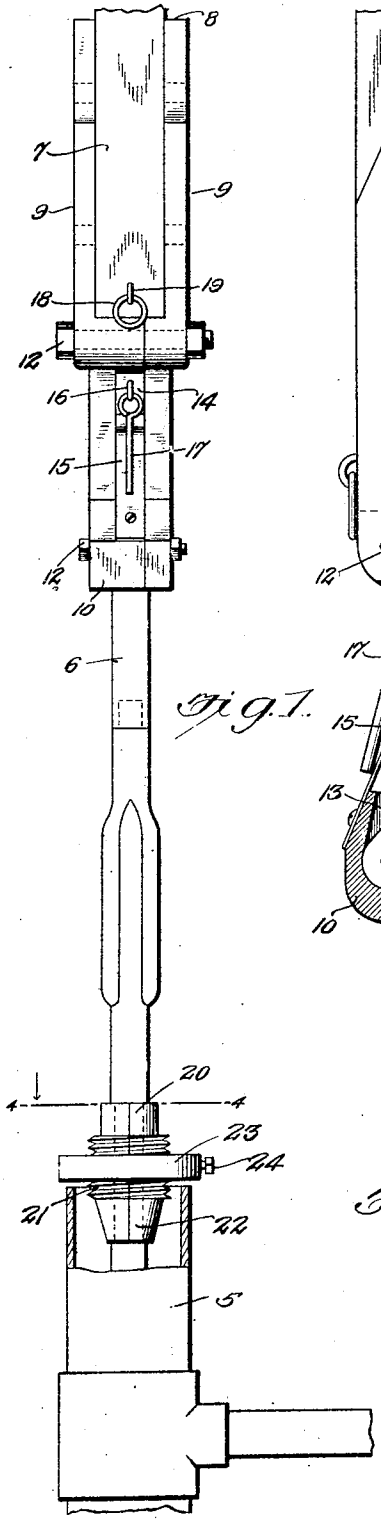


Fig. 1.

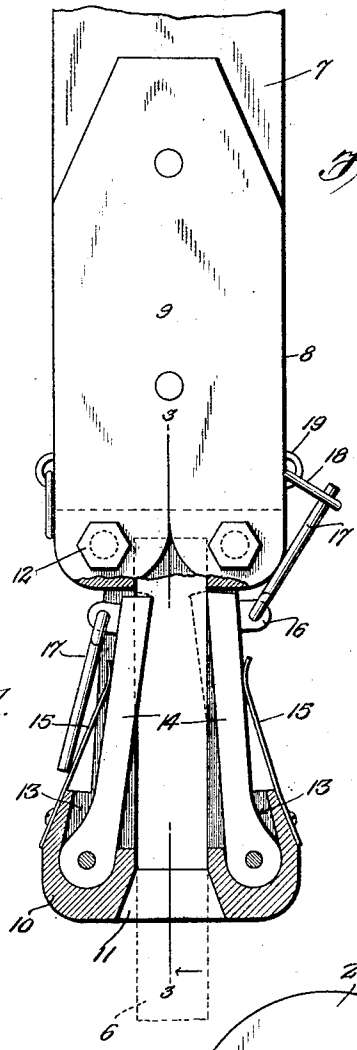


Fig. 2.

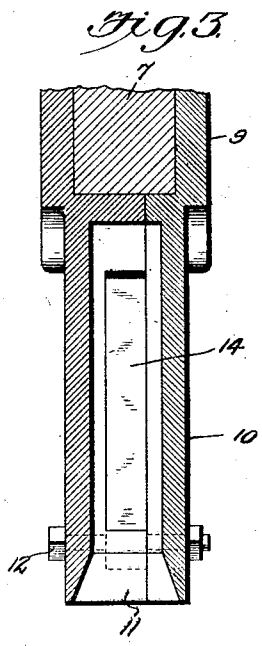


Fig. 3.

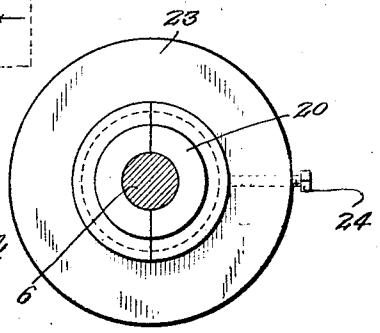


Fig. 4.

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Patented May 26, 1925. 1,539,803

UNITED STATES PATENT OFFICE.

J WYLIE McDANIEL, OF SONORA, TEXAS.

WINDMILL COUPLER.

Application filed January 30, 1923. Serial No. 615,875.

To all whom it may concern:

Be it known that I, J WYLIE McDANIEL, a citizen of the United States, residing at Sonora, in the county of Sutton and State of Texas, have invented certain new and useful Improvements in Windmill Couplers, of which the following is a specification.

The present invention relates to wind mill couplers having for an object the provision of means applicable to wind mills of standard construction for quickly disconnecting the power shaft from the plunger rod.

Co-ordinate objects of the invention are to employ inexpensive mechanism for permitting automatic engagement of the pump plunger rod with the power shaft; to provide conveniently located and easily operated means for disconnecting the rod and shaft; and to provide retainers for holding the rod and shaft disconnecting means in an inoperative position.

The above and other objects of the invention will be more fully understood from the following description of the present preferred form of the invention taken in connection with the accompanying drawings wherein:—

Fig. 1 is a fragmentary side elevational view of wind mill pumping means illustrating the application of the present invention thereto;

Fig. 2 is a fragmentary front elevational view of a coupler constructed in accordance with this invention;

Fig. 3 is a vertical sectional view taken on the line 3—3 of Fig. 2 looking in the direction of the arrow; and

Fig. 4 is a horizontal sectional view taken on the line 4—4 of Fig. 1 looking in the direction of the arrow.

In the drawings, in order to illustrate the application of the present invention, a portion of a pump cylinder 5 is shown which may be of the usual or any desired configuration and has a plunger rod 6 extending upwardly therefrom for engagement with a wind mill power shaft, sometimes referred to as the "red rod", 7.

The device of this invention consists especially of a coupler generally designated 8 which in the present instance consists of a coupler housing embodying parallel side plates 9 which embrace the shaft 7 and are secured thereto. The lower ends of said side plates issue into reduced parallelly arranged terminals 10 the inner faces of which taper outwardly to provide a flared mouth 11 through which the plunger rod 6 is adapted to pass. The side plates 9 are detachably connected by bolts and when so connected the lower portion of the coupler, formed by the terminals 10, comprises a socket. The socket extends upwardly beyond the free ends of the terminals 10 between the bolts 12.

The lower ends of the terminals 10 bulge outwardly in lateral planes and are routed out to provide recesses 13 each of which has one end of a retaining member or pawl 14 pivotally mounted therein. The lower ends of the pawls are of circular configuration so as to permit the pawls to be rocked on their axes. The pawls are normally forced inwardly into the bore of the socket by means of springs. The springs are detachably secured on inclined faces formed exteriorly on the enlarged lower ends of the terminals 10 while the upper ends thereof extend inwardly and impinge the pawls 14. Each pawl has an apertured lug 16 formed thereon which receives the eye of an eye bolt 17 the latter capacitating as a handhold. When it is desired to hold the pawls 14 outwardly against the resistance of the spring 15, the shanks of the eye bolts 17 may be engaged with retaining rings 18. The rings 18 are movably engaged with staples 19 secured to the lower end of the power shaft 7.

The head of the plunger rod 6 may be moved upwardly in the socket end of the coupler until the head passes the upper terminals of the pawls 14 permitting the latter to flex inwardly below said head. In this way the power shaft 7 of the wind mill is connected to the plunger rod.

The weight of the plunger rod on the tops of the pawls 14 prevents the pawls from being moved with facility. Consequently means is employed for relieving the pressure of the plunger rod 8 on said pawls. The means in the present instance consists of an abutment comprising a split collar 20 which is externally screwthreaded midway its ends, as indicated at 21 and has the lower terminal 22 thereof tapered. An annulus or ring 23 is adjustably mounted on the threads 21 and is provided with a set screw 24 which is adapted to impinge the threads 21 in order to hold the annulus 23 in a predetermined position on the collar 20. By splitting the collar 20 the latter may be quickly positioned on the plunger rod and is held from movement thereon by reason of the

fact that the plunger rod is reduced at this point as indicated by the dotted lines in Fig. 1. Normally, the annulus 23 is so positioned on the collar 20 that the annulus will not impinge the upper end of the cylinder on the down stroke of the plunger rod. However, when it is desired to disconnect the plunger rod, the screw 24 is released and the annulus rotated so as to feed the same downwardly on the collar 20 thereby causing the annulus to engage the upper end of the cylinder on the down stroke of the plunger rod which forces the latter upwardly a sufficient distance to relieve pressure of the head of the plunger from the upper ends of the pawls 14 thereby allowing disengagement of the latter through the instrumentality of the eye bolts 17.

From the above it is apparent that the plunger rod may be quickly engaged or disengaged from the power shaft of the wind mill. Various changes may be made in the device especially in the details of construction, proportion and arrangement of parts within the scope of the appended claims.

What is claimed is:—

1. A windmill coupler including a socket body having resilient sides, a plunger rod having a head engageable between said sides, and means carried by said sides to permit manual separation of the same for releasing the plunger rod head.

2. A windmill coupler including a socket body having resilient sides, a plunger rod having a head engageable between said sides, an abutment mounted on said rod to impinge against an object and urge said head upwardly beyond the terminals of said sides, and a handhold carried by each side for flexing the sides outwardly to release the plunger head.

3. A coupler including a socket housing equipped with resilient pawls, a rod engageable in said housing, an abutment adjustably carried by said rod and engageable with an object to move said rod into the housing, and means to disengage said pawls subsequent to inward movement of said rod whereby the rod and coupler may be detached.

4. A coupler including a coupler housing one end of which is formed to provide a socket equipped with resilient pawls, portions of which normally project into the bore of said socket, means attached to said pawls to flex the same outwardly from said bore, and means to retain said pawls in said outwardly flexed position.

In testimony whereof I affix my name.

J WYLIE McDANIEL.