No. 744,500. PATENTED NOV. 17, 1903.

C. W. DECKER.

WINDMILL PUMP COUPLING.

APPLICATION FILED JULY 8, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

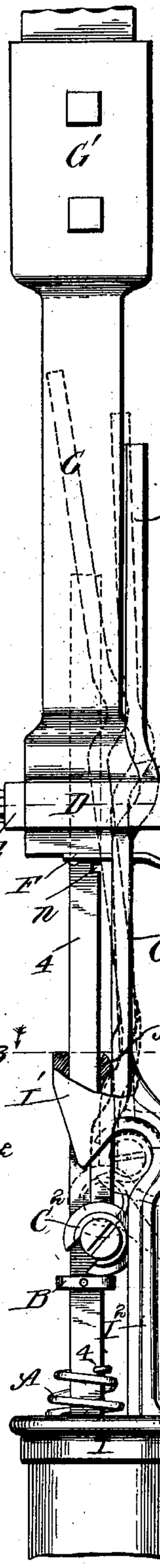


Fig. 7.

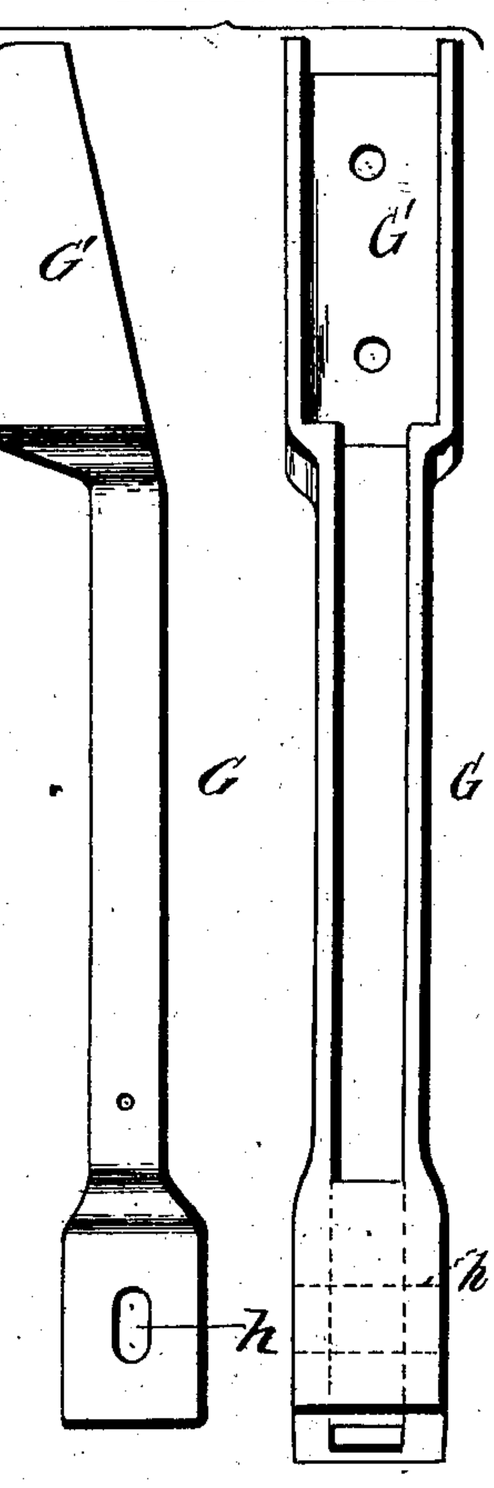


Fig. 4.

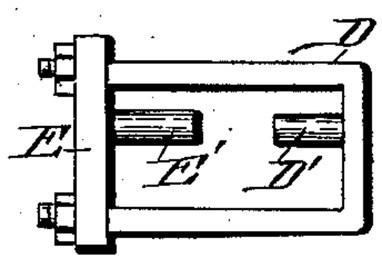


Fig. 8.

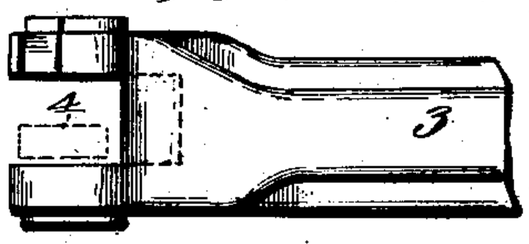
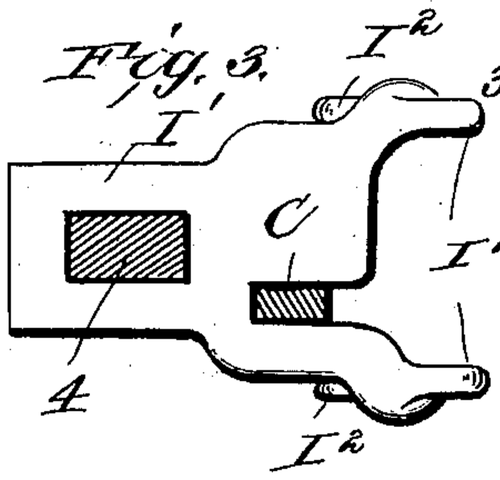


Fig. 3.



WITNESSES:

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WINDMILL PUMP COUPLING.

APPLICATION FILED JULY 8, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

Fig. 6.

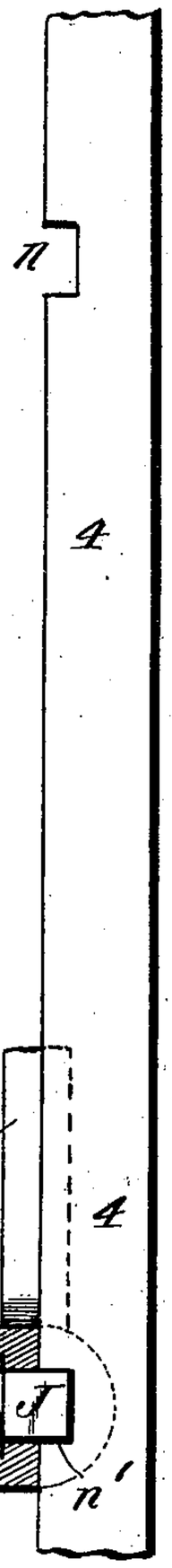


Fig. 4.

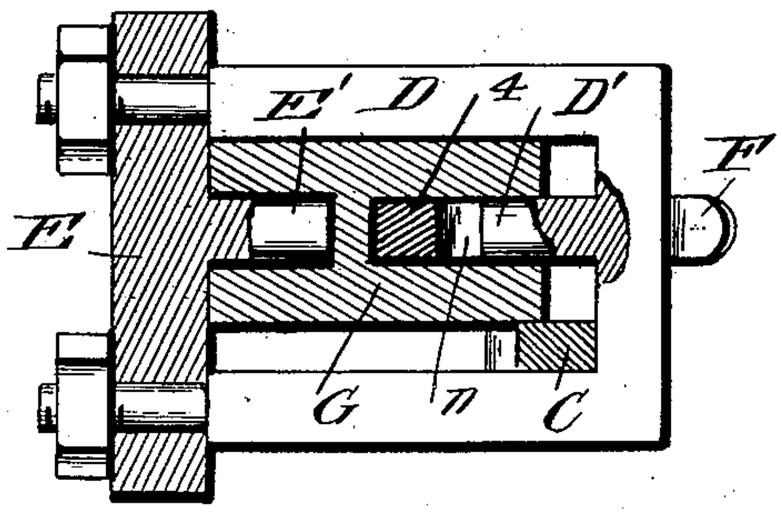
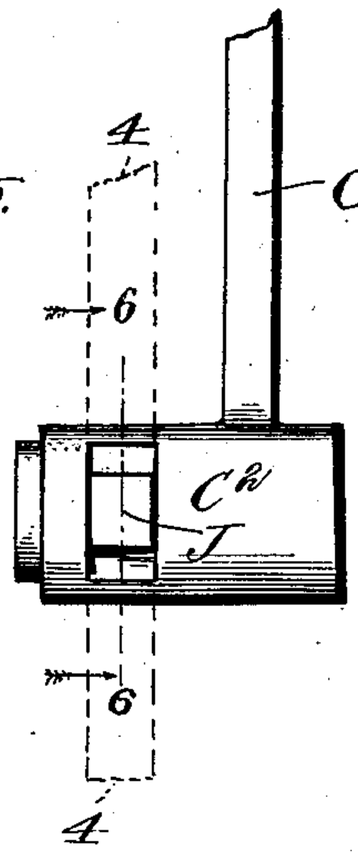
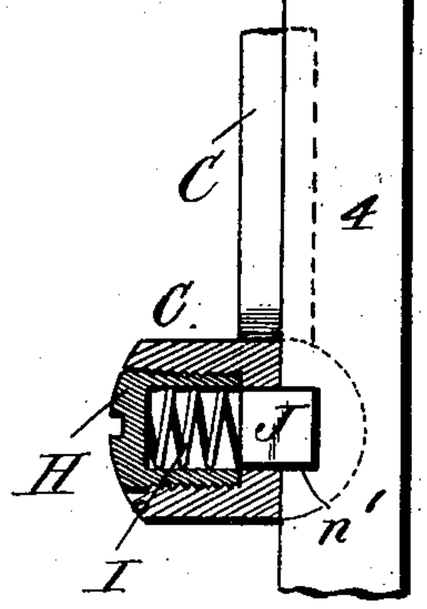


Fig. 5.





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No. 744,500. Patented November 17, 1903.

UNITED STATES PATENT OFFICE.

CARL WASHBURN DECKER, OF CHARLES CITY, IOWA, ASSIGNOR OF TWO-THIRDS TO FRANK E. HIRSCH AND GEORGE W. VON BERG, OF CHARLES CITY, IOWA.

WINDMILL-PUMP COUPLING.

SPECIFICATION forming part of Letters Patent No. 744,500, dated November 17, 1903.

Application filed July 8, 1903. Serial No. 164,716. (No model.)

To all whom it may concern:

Be it known that I, CARL WASHBURN DECKER, of Charles City, in the county of Floyd and State of Iowa, have invented a new and useful Improvement in Windmill-Pump Couplings, of which the following is a specification.

My invention is in the nature of an improved windmill-pump coupling. Its object is to make it possible to throw the pump-handle in gear and the windmill out of gear, or vice versa, by means of the hand-lever alone, the same being intended to provide a pump which can be made at comparatively small cost and great simplicity of parts.

A further object is to so construct the parts as to make it impossible for both hand-lever and windmill-rod to be coupled to the piston-rod of the pump at one and the same time.

My invention consists in the novel construction and arrangement of parts hereinafter described, and pointed out in the claims.

Figure 1 is a side elevation of the coupling. Fig. 2 is an enlarged cross-section on line 2 2 of Fig. 1. Fig. 3 is an enlarged cross-section on line 3 3 of Fig. 1. Fig. 4 is a detail of the locking-yoke. Fig. 5 is a side view of the lower end of the shifting-bar. Fig. 6 is a section taken on the line 6 6 of Fig. 5, showing also a portion of the pump-rod and the windmill-locking device. Fig. 7 is an edge and side view of the connection for the windmill-rod, and Fig. 8 is a detail of the under side of the upper end of the hand-lever.

In Fig. 1 of the drawings, 1 represents the pump-head. 2 is the rocker-arm support, 3 the hand-lever, and 4 the piston-rod, of an ordinary windmill-pump.

A indicates a spring the object of which is to support the weight of the pump-rod 4 and the water in the pump, said rod being supported in its lower position upon said spring by means of a ring B, riveted to the pump-rod a short distance below the point of connection with the hand-lever.

C is a vertical shifting-bar arranged beside the pump-piston rod and having in its length a bend at *c* and another at *c'*. This shifting-bar has also at its lower end an enlarged cylindrical-shaped cross-piece C^2, Fig. 5, which is adapted to be retained in and carried by the upper end of the hand-lever.

G is a sliding sleeve-coupling which is attached to the lower end of the windmill-rod and is adapted also to receive the upper end of the piston-rod of the pump. This sleeve-coupling G has at its lower end on opposite sides holes *h*, adapted to receive pins D' E' of a two-part yoke D and E, (see Fig. 4,) which embraces the lower end of the sleeve G. This yoke slides horizontally and serves, as hereinafter described, to lock together or unlock the piston-rod and the windmill-rod. The pins D' E' slide in holes in the lower end of sleeve G, and the pin D', when the yoke is slid to the left in Fig. 1, enters also a notch *n* in the piston-rod 4. In the yoke D E there is on one side a larger space between the pins D' E' and the side of the yoke than there is on the other, and in operation the shifting-bar C plays freely in this larger opening within the yoke and beside the sleeve G. The horizontal sliding of the yoke D E to lock or unlock the piston-rod and windmill is effected by a spring F in one direction and by the curved portion *c'* of the shifting-bar C in the other direction. This shifting-bar is operated from below by the hand-lever, as will be presently described.

The piston-rod 4 extends through a guide I', formed in the standards I^2, rising from the pump-head, and said piston-rod is notched at *n'* (see Fig. 6) at a point below the guide I' to provide a means of coupling to the hand-lever. The upper notch *n* is at a point at such a distance above this lower notch *n'* that when piston-rod 4 is carried to its highest extremity of stroke the upper notch is opposite the point reached by yoke D E when carried to the highest extremity of stroke by the windmill, so that when piston-rod 4 having been carried to its highest point of stroke by the hand-lever is released the pin D', which is to engage this upper notch, must be either opposite the point reached by this notch or at some point below it, making it impossible for windmill-rod to fail to connect with piston-rod 4 the first time the windmill-rod is carried upwardly by the motion of the windmill.

The coupling of the hand-lever to the pis-

ton-rod is effected through the shifting-bar C, as seen in Figs. 5 and 6. The lower end of this bar carries in its cylindrical head a dog J, acted upon by a spring I, which is itself carried within a hollow screw H, the latter being screwed into the rear side of the cylindrical-shaped cross-head at the lower end of bar C. The front side of this cylindrical cross-head is cut away or grooved vertically to receive the edge of the piston-rod 4, and when the notch n' of the piston-rod is opposite the dog J the spring I forces the dog into the notch of the piston-rod and couples the piston-rod and shifting-bar C, which latter is by its cylindrical cross-head connected to the hand-lever 3. This hand-lever is at its upper end so constructed as to carry the lower end of bar C into a position similar to that occupied by the pin used in ordinary pumps. One side of the lever (see Fig. 8) has an opening large enough to allow the passage of the bar C when the lower part of bar C is put in place in its bearings in the hand-lever 3. This opening just mentioned being on the lower front side of the bearing in lever 3 when bar C is in proper position in the pump makes the position of C in its bearings secure.

In the upper ends of standards I^2 are formed hook-shaped recesses or seats I^3, into which the cross-head of bar C and the upper end of hand-lever 3 rise and move away from the piston-rod when the hand-lever is thrown down.

It will be seen from the foregoing description that when, after the hand-lever has been used in pumping, its free end is dropped to nearly its lowest point the upper end of the hand-lever carries the lower end of bar C back out of connection with lower notch in piston-rod 4. As the lower end of hand-lever 3 is moved still farther to the lowest extremity of its stroke the lower end of bar C is carried to a point far enough back in seat I^3 so that the upper portion of bar C is forced forward by the pressure of spring F upon yoke D E, allowing pin D' to engage upper notch n in piston-rod 4, as has been described. In this case pin D' must engage upper notch n in rod 4 as soon as the windmill causes sleeve G to move a sufficient distance upward. Now if the windmill-rod is in connection with piston-rod 4 by means of locking-yoke D E and sleeve G and it is desired to disconnect windmill-rod and connect hand-lever to piston-rod 4, if hand-lever 3 is lifted by the hand the lower end of C moves toward piston-rod 4, and as the bar C bears upon guide I' at X the upper end of C is forced backward away from piston-rod 4, forcing yoke D E back and withdrawing pin D' from notch n in the piston-rod. As lever 3 is lifted still farther in this same direction by the hand the lower end of bar C is brought in contact with back edge of rod 4. If the lower part of bar C is now opposite lower notch in 4, dog J will be forced into this notch by spring I. If, on the other hand, this notch is not opposite dog J, it must be at some point below, and as bar C is carried by motion of lever 3 still farther downward dog J must finally reach a point opposite this notch and engage it, as piston-rod 4 cannot drop too far, being supported by ring B, resting upon spring A. It will thus be seen that it is impossible for the hand-lever and windmill-rod to be in connection with the piston-rod of the pump at the same time and that the coupling of the hand-lever to the piston-rod and uncoupling of windmill-rod from the same, or vice versa, is accomplished by making use of the last portion of the upper end of stroke of the upper end of hand-lever only, making this device very convenient.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A windmill-pump coupling, comprising a stationary guide mounted upon the pump-head, a piston-rod having a notch above and another notch below said guide, a clutch-coupling for the windmill-rod and the upper notch of the piston-rod, a clutch-coupling for the hand-lever and the lower notch of the piston-rod and a vertical shifting-bar connecting these two clutch-couplings and having a tilting bearing at an intermediate point against the stationary guide substantially as described.

2. In a windmill-pump coupling, the combination with a notched piston-rod; of a sleeve connection for the windmill-rod, a yoke embracing this sleeve connection and arranged to slide transversely thereto and provided with inwardly-projecting locking pins or lugs, one of which is arranged to engage the notched piston-rod, a spring for forcing this yoke in one direction, a shifting-bar for forcing it in the other direction and a hand-lever attached to the shifting-bar substantially as and for the purpose described.

3. In a windmill-pump coupling, the combination with a notched piston-rod, an upper clutch-coupling for connecting the windmill-rod thereto, a vertical shifting-bar for shifting said coupling, said shifting-bar having at its lower end a cross-head with a spring-seated dog therein adapted to engage the notched piston-rod, and a hand-lever connected to said cross-head substantially as shown and described.

4. In a windmill-pump coupling, the hand-lever having a forked upper end with a bearing and an outlet therefrom, combined with the shifting-bar C having cylindrical lower end fitting said bearing of the hand-lever, the piston-rod and the clutch-couplings arranged to be actuated by the shifting-bar substantially as described.

5. In a windmill-pump coupling, the combination with the piston-rod, the hand-lever and the windmill-rod; of clutch-couplings for alternately coupling the hand-lever and the windmill-rod to the piston-rod, a laterally-adjustable shifting-bar connecting the two coup-

lings, a stationary standard mounted upon the pump-head and formed at its upper end into a hook-shaped seat and a fulcrum-bearing for the laterally-adjustable shifting-bar substantially as described.

6. In a windmill-pump coupling, the combination with the notched piston-rod and a sleeve connection for the windmill-rod having holes in its lower end; of a two-part coupling-yoke having inwardly-projecting pins or lugs, said yoke embracing the sleeve connection for the windmill-rod and sliding transversely thereto, a spring for forcing it in one direction, and a shifting-bar for forcing it in the other direction substantially as described.

7. In a windmill-pump coupling, the combination with the notched piston-rod and a sleeve connection for the windmill-rod having holes in its lower end; of a two-part coupling-yoke having inwardly-projecting pins or lugs set as described to leave a greater space upon one side of them than upon the other, a spring for forcing the yoke in one direction and a shifting-bar for shifting it in the other direction, said shifting-bar being arranged to play within the yoke and between its sides and the sleeve connection for the windmill-rod substantially as described.

8. In a windmill-pump coupling, the combination with the piston-rod and the hand-lever having a detachable connection with the piston-rod; of an upright guide for the upper end of said hand-lever, and also for the piston-rod, said guide having a laterally-formed seat to receive the upper end of the hand-lever to allow it to fall back from and be disconnected from the piston-rod substantially as described.

CARL WASHBURN DECKER.

Witnesses:
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CARL F. BUNZE.