(No Model.)

W. D. TRAHERN.

Pump.

No. 231,460. Patented Aug. 24, 1880.

Fig. 1.

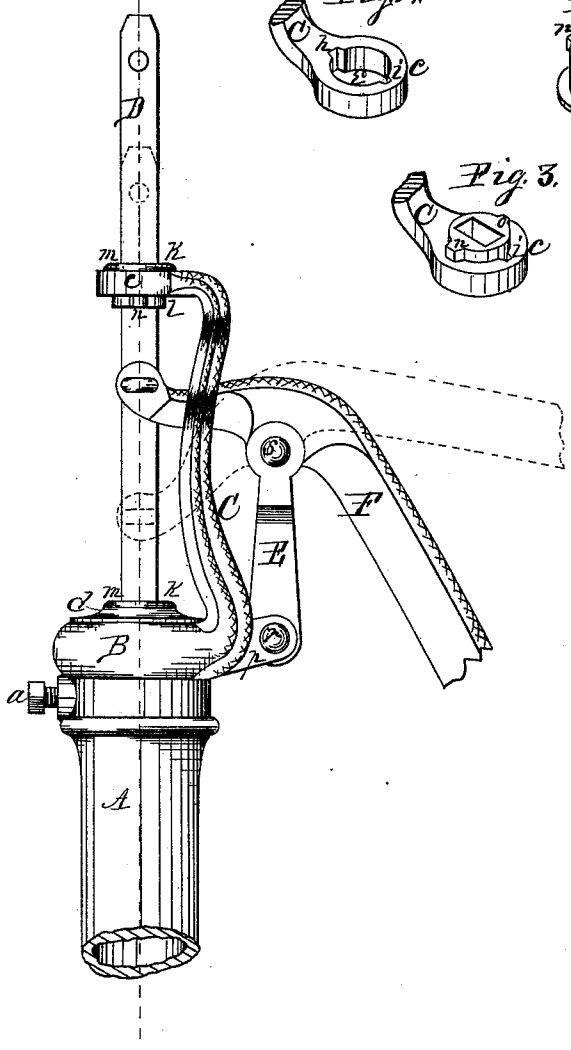


Fig. 4.

Fig. 5.

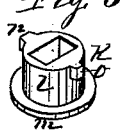
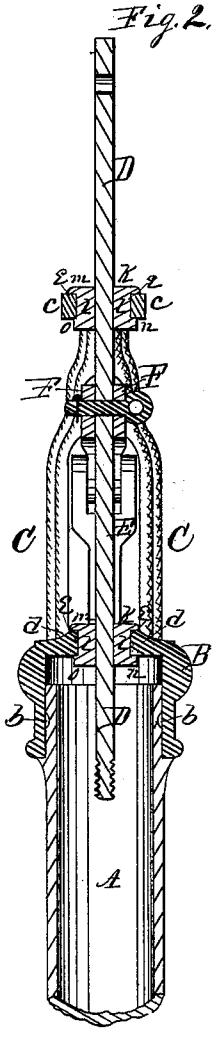


Fig. 3.

Fig. 2.



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WILLIAM D. TRAHERN, OF ROCKFORD, ILLINOIS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 231,460, dated August 24, 1880.

Application filed March 30, 1880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM D. TRAHERN, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention relates to pumps mainly employed in wells and adapted to be operated by hand or to be connected to a windmill, engine, or other prime motor, and the devices and their application, constituting the subject-matter of this specification, will be hereinafter more fully described.

In the accompanying drawings, Figure 1 is a side elevation of the upper portion of a pump embodying my invention, of which Fig. 2 is a central vertical section. Fig. 3 is an isometrical representation of the under face of the guide to the pump-rod and its support in the overhanging upper portion of the standard. Fig. 4 is an isometrical representation of the support to the removable guide to the pump-rod, and Fig. 5 is an isometrical representation of the removable guide to the pump-rod.

In the figures, A represents the upper portion of a pump-standard, which is of the usual form, and is fitted with a removable cap, B, fitted to receive the upper portion of the pump-standard, and is fitted with a set-screw, *a*, screw-threaded into the cap in such position that its end shall enter an annular groove, *b*, formed in the upper portion of the standard, by means of which the cap may be fixed to the standard in any adjusted position. From the side edge of this cap rises a slotted supporting-arm, C, having its upper end, *c*, overhanging the axial center of the pump-standard. This overhanging upper portion, *c*, of the slotted arm, and the upper portion, *d*, of the removable cap B, are fitted with axial openings *e*, each of which is fitted with vertical grooves *h* and *i*, of which the grooves at *h* are larger than the grooves at *i*.

At *k* is represented a removable guide, consisting of a shaft, *l*, fitted to enter the axial openings *e*, and provided with a cap, *m*, to rest on the upper surface of the overhanging portion of the slotted arm and of the removable cap. These guides are also fitted with locking-lugs *n* and *o*, of which the larger lugs, at *n*, are of a proper size and form to freely enter the larger vertical grooves *h*, and the smaller lugs *o* are of a suitable size and form to freely enter the smaller vertical grooves *i*. These locking-lugs project from the sides of the lower end of the guides at such a distance from the cap thereof that when the removable guide is in place in the arm or cap they can be turned to any position therein in such a manner as to remove the locking-lugs from the grooves through which they entered the axial openings to prevent their accidental displacement.

It will be observed that, by reason of the vertical slots and the locking-lugs varying in size, as hereinbefore stated, the chances of accidental displacement of the guides are reduced over what they would be if they were of uniform size. These removable guides are fitted with axial openings of a proper form and size to freely admit the pump-rod D to slide up and down therein. This pump-rod, in this instance, is rectangular in cross-section, and its lower end is designed to engage the plunger or plunger-rod by screw-thread connection or otherwise, and its upper end is fitted to connect with the pitman-rod or pump-rod of the windmill or other suitable engine employed to operate the pump.

At *p* are represented ears projecting from the base of the slotted arm, and are fitted to receive the lower end of the fulcrum-link E, which is pivoted between the ears on a suitable pivot-bolt, *r*, passed transversely through the parts.

F represents a lever pump-handle of the usual form, and is supported on a pivotal fulcrum-connection in the forked upper end of the fulcrum-link E by means of a suitable pivot-bolt, *s*, which is passed transversely through the parts. The forward end of the lever pump-handle is also slotted to receive the pump-rod, and is pivoted thereto by a suitable pin-bolt connection.

By this arrangement I produce a pump capable of use as a hand or power pump, as circumstances may require, and when used as a power-pump, if desired, the lever-handle may be removed, and when so removed the pump-rod, with the removable guideways, will be free to rotate in their journal-bearings in their supports in the removable cap and overhanging portion of the supporting-arm.

In the use of this class of pumps in connec-

tion with windmills it is customary to place the swivel-joint of the pitman or pump-rod near its upper end and to pass the main portion of the pitman below the swivel at one or more points through guideways, to prevent axial rotation of the pitman. In such instance the removal of the lever pump-handle will permit the pump rod to adjust itself to the position of the pitman with which it is connected, and will prevent cramping or cutting of the working parts.

In the use of pumps employing guideways to direct the movements of the pump-rod it is found that the parts wear rapidly and soon render them worthless, and the repairing of which necessitates the renewal of the entire cap and pump-rod; but with my improved rotary guide it will only be necessary to replace the removable guideways and pump-rod, and in most instances it will only require the renewal of the removable guideways to render the pump complete.

It will also be observed that the employment of my improved removable rotary guideways furnishes a ready means of connecting and disconnecting the pump-rod to or from the plunger or plunger-rod without removing the cap.

I claim as my invention—

1. In a pump, the combination, with a standard-cap provided with an upright having an overhanging arm, of a detachable guide fitted in said arm, and a pump-rod which works in the guide, substantially as set forth.

2. In a pump, the combination, with a standard-cap having a central opening and a detachable guide fitted therein, of an upright formed on said cap and provided with a detachable guide, and a pump-rod which works in both said guides, substantially as set forth.

3. In a pump, the combination, with a standard provided with an annular groove on its upper outer side, of a cap provided with an upright, which latter forms an upper bearing for the pump-rod, and a set-screw which has screw-thread engagement with the cap and end bearing in the standard groove, substantially as set forth.

4. In a pump, the combination, with a pump-rod and an annular bearing in which it is laterally supported, said bearing having its inner side provided with grooves extending from its upper to its lower portion, of a guide fitted in the opening of the bearing and having its lower portion provided with lateral lugs corresponding to said grooves and adapted to engage with the under side of the annular bearing when the guide is in position, one of said lugs and its corresponding groove being larger than the other lug and its groove, substantially as set forth.

5. In a pump, the combination, with an axially-adjustable standard-cap, of a guideway provided with an outwardly-projecting flange which is seated upon the top of the standard-cap and furnished with lugs at its lower end, which engages the under side of the cap and prevents the accidental displacement of the guideway, substantially as described.

6. The combination, with a pump-standard and pump-rod, of a standard-cap having an overhanging arm formed integral therewith, and detachable guideways secured in said cap and arm, said guideways provided with lugs for securing them against displacement, substantially as set forth.

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