(No Model.)

W. C. WESTAWAY.

ELASTIC PUMP ROD.

No. 480,756. Patented Aug. 16, 1892.

Fig. 1

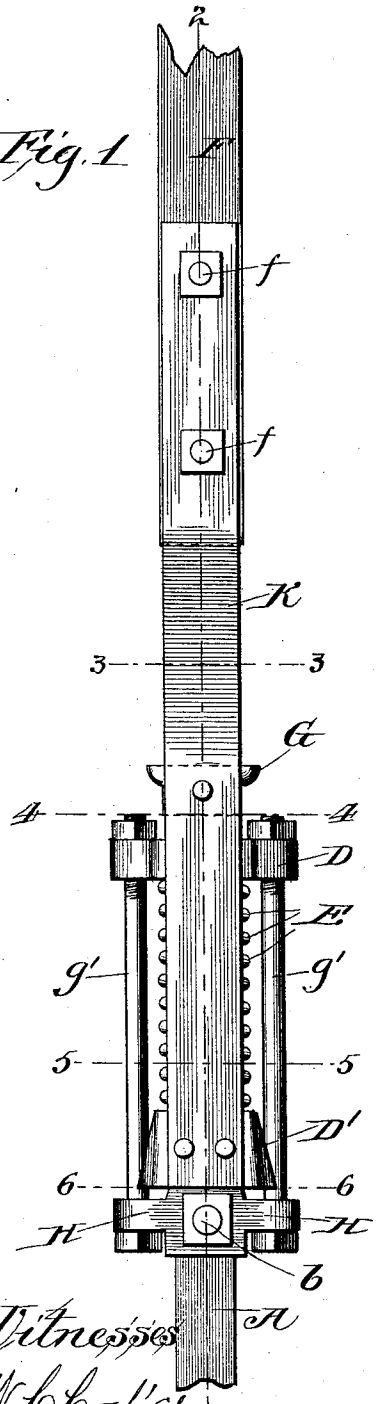


Fig. 2.

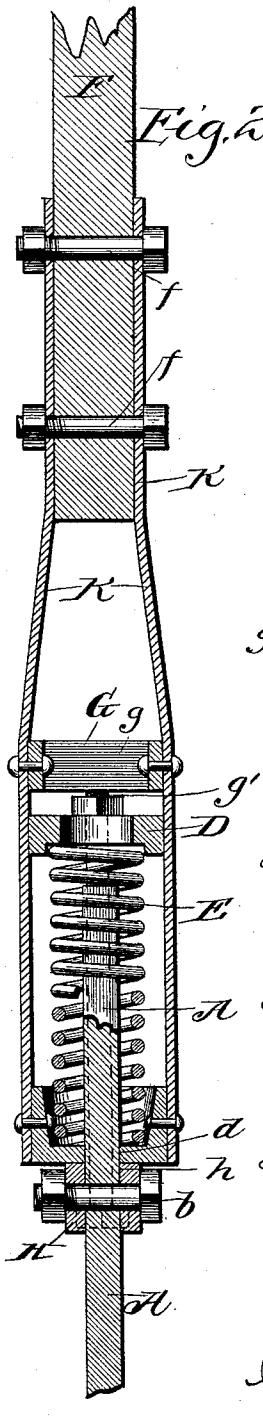


Fig. 3.

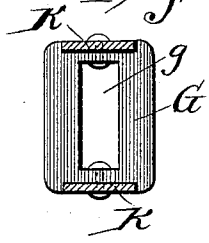


Fig. 4.

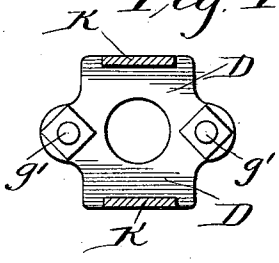


Fig. 5.

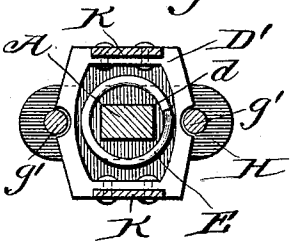
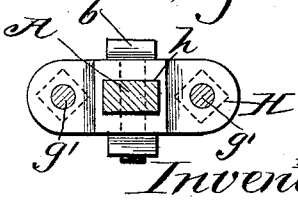


Fig. 6.



Witnesses:
W. C. Coleman.
Martin A. Olsen.

Inventor
Walter C. Westaway
By L. Rice, his Atty.

UNITED STATES PATENT OFFICE.

WALTER C. WESTAWAY, OF DECORAH, IOWA.

ELASTIC PUMP-ROD.

SPECIFICATION forming part of Letters Patent No. 480,756, dated August 16, 1892.

Application filed December 14, 1891. Serial No. 415,028. (No model.)

To all whom it may concern:

Be it known that I, WALTER C. WESTAWAY, a citizen of the United States of America, residing at Decorah, in the county of Winneshiek and State of Iowa, have invented certain new and useful Improvements in Elastic Pump-Rods, of which the following is a specification.

Referring to the accompanying drawings, wherein like reference-letters indicate like parts, Figure 1 is a side elevation; Fig. 2, a section in line 2 2 of Fig. 1; and Figs. 3, 4, 5, and 6, sections taken, respectively, in lines 3 3, 4 4, 5 5, and 6 6 of Fig. 1.

In Letters Patent No. 397,882, granted to me February 12, 1889, I have described and illustrated an elastic pump-rod adapted to windmill-pumps. The practical use of said pump-rod has demonstrated that it is unnecessary to give the rod any elasticity in its downward stroke, that it is quite difficult to fit the upper end of the spring-holder accurately to the upper section of the plunger-rod, and that it is desirable to improve the form of the spring-holder to simplify and cheapen its construction. Hence as a substitute for the spring-holder and its rigid connection to the upper section of the plunger-rod, as described in my said Letters Patent, No. 397,882, I have devised a simpler and cheaper spring-holder with a flexible connection to said upper section, and so arranged that the spring yields only during the upward movement of the rod, and I have found by practical experience that these improvements remedy all the defects and disadvantages of my former device.

In the drawings, F is the upper and A the lower section of the plunger-rod, and E the spring which renders the rod elastic. I now make the spring-holder as follows: To the section A, at a suitable distance below its upper end, a cross-head H is affixed, preferably by a bolt *b*. From the ends of the cross-head H two parallel rods *g' g'* extend upward through and are attached to an upper cross-head D, thus connecting the two cross-heads rigidly together. Bolted at *f f* to the upper section F are two flat metal straps K K, of common bar iron or steel, which extend downward to the cross-head H, and are there connected together by a block D', through which loosely passes the upper part of section A. The spring E is arranged between the block D' and the cross-head D, and may be adjusted in tension by means of screw-nuts on the end of rods *g'*. A strut G is interposed between the flat straps K just above the cross-head D, and may be provided with a vertical mortise *g* to receive the lower end of section F, if preferred. The two straps are parallel with each other below the strut G and serve as guides for the cross-head D, the sides of which are grooved or rabbeted to fit the straps.

It will be observed that the parts H D *g' g'* constitute a rectangular frame attached to the lower section A, while the parts D' G and those portions of the bars K which intervene between D' G constitute a similar frame attached to the upper section F, the spring E being arranged between the members D' D and bearing against each. The two frames together constitute what I have termed the "spring-holder." Above the strut G the straps converge to the sides of the section F and are sufficiently flexible to enable them to be bent flat against said sides and to be sprung out or in to accommodate them to sections F of larger or similar sizes.

By making the sides K of the upper frame of flat bar iron or steel, extended upward to connect to the rod F, a considerable saving is effected in cost of construction, while the flexible strap connection to the upper section thus obtained adapts the spring-holding device to be readily and easily fitted and attached to plunger-rods of different sizes and shapes. It will be seen that when the plunger is depressed the block D', seating upon cross-head H, will not allow the spring to come into action; but that when the plunger is lifted the block D' will compress the spring against cross-head D, thus lifting section A without shock. No further provision for elasticity is necessary, because the pump-rod is subjected to no shock in changing from its upward to its downward stroke, and is put under sudden strain only at the beginning of its upward movement.

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

In an elastic pump-rod, the combination of the pump-rod sections A F, the spring E, the

fixed block D′, the movable block D, and the connecting members *g′*, with two flat flexible metal straps K K, fastened to the lower block D′, serving as guides for the upper movable block D, above which block said straps are secured to an interposed strut G for the purpose of holding them parallel to each other between the blocks D D′, said straps extending upward from the strut G to the upper section F and attached to the sides of the latter section at a sufficient distance above the strut G to enable them to be flexed to conform to rod-sections of various sizes, substantially as and for the purpose set forth.

WALTER C. WESTAWAY.

Witnesses:
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