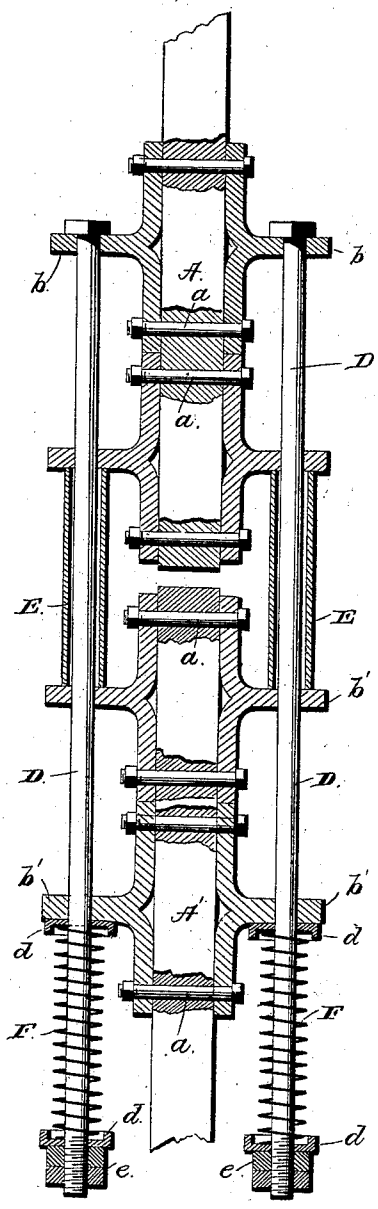
(No Model.) 2 Sheets—Sheet 1.

J. F. LOOMIS.

ELASTIC PUMP ROD.

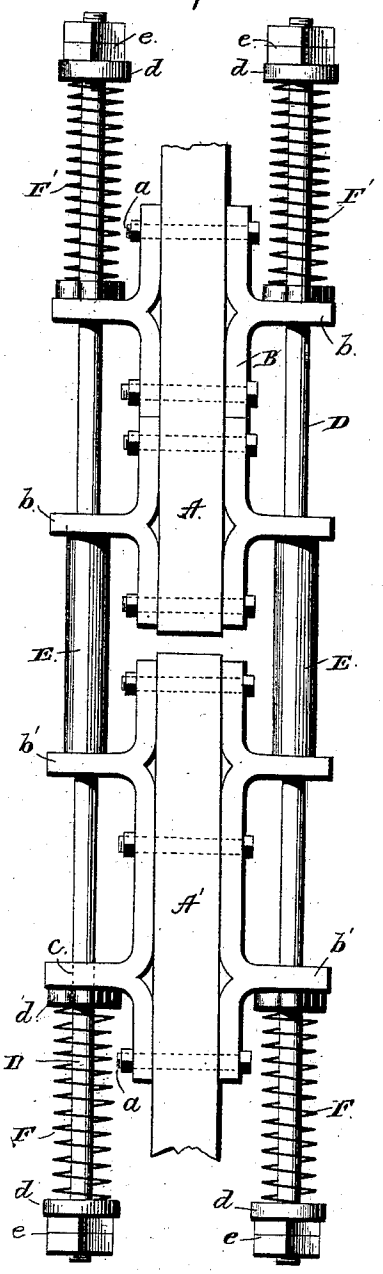
No. 416,229. Patented Dec. 3, 1889.

Fig. 1.



Witnesses:-
Jas. E. Hutchinson
G. F. Downing

Fig. 3.



Inventor
John F. Loomis
By H. C. Dodge
Atty.

(No Model.) 2 Sheets—Sheet 2.

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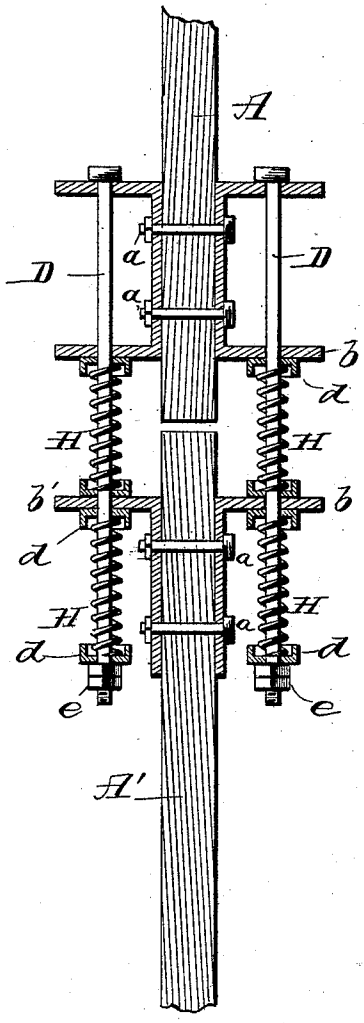

Fig. 2.

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By his Attorney
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UNITED STATES PATENT OFFICE.

JOHN FAY LOOMIS, OF SHELBY, ASSIGNOR TO CHARLES A. ALTMANNSPERGER, OF POTTAWATTAMIE COUNTY, AND ALICE M. LOOMIS, OF SHELBY COUNTY, IOWA.

ELASTIC PUMP-ROD.

SPECIFICATION forming part of Letters Patent No. 416,229, dated December 3, 1889.

Application filed August 28, 1889. Serial No. 322,211. (No model.)

To all whom it may concern:

Be it known that I, JOHN FAY LOOMIS, of Shelby, in the county of Shelby and State of Iowa, have invented certain new and useful Improvements in Elastic Pump-Rods; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in elastic pump-rods, designed more especially for extended pump-rods to which wind-wheels are attached.

The object is to provide simple means for relieving both the pump and wind-wheel from sudden and excessive strains when the wheel is driven out of its accustomed speed or struck by a sudden gust of wind.

A further object attained by my invention is that the pump may be operated by an unusually small amount of wind, due to the fact that the column of water in the pump or tubing is raised or started more gently by the yielding of the rod.

A still further object is to prevent the breakage of the pump-couplings, jerking of the pump from its fastenings, and to dispense with the use of braces to hold the pump down in place.

A still further object is to provide means for readily changing the tension to correspond with the depth of the well or of the forcing-power required, and also means for changing the spring mechanism or compensating for any wear or permanent compression of the springs.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section through the adjacent ends of the rod-sections, showing the connected parts. Figs. 2 and 3 are modifications.

A A′ represent sections of a pump-rod. To the upper section A brackets B are securely bolted. These are preferably four in number, placed opposite each other, or, in other words, with two on one side of the rod and two on the opposite side, so that each bolt *a* may extend through a flange of two brackets. The brackets are placed adjacent to each other and provided with lugs *b*, projecting at right angles to the rod-sections. Similar brackets B′ are secured to the other section A′ of the pump-rod, and the lugs *b′* of these brackets are in alignment with the lugs *b* of the brackets B. These lugs are provided with bolt-holes *c*, and through them a pair of bolts D pass, so that their heads rest upon the upper lugs *b* and their lower ends extend some distance beyond the lugs *b′*. Sleeves E are mounted on the bolts between the lugs *b* and *b′*, and they are preferably of sufficient length to permit the rod-sections A A′ to rest normally a short distance apart.

The followers *d*, mounted on bolts D below the lugs *b′*, receive the ends of spiral springs F, which latter are mounted on the bolts. The tension of the springs is regulated by the nuts *e*, and washers may be placed between the lugs and followers in order to prevent lost motion to the reciprocating pump-rod without necessitating a change in the length of the latter. Also, it is well to mention that I may apply large coils of springs made of heavy steel. These parts, of course, are all susceptible of variation in accordance with the power exerted and required to be exerted.

In the modification shown in Fig. 2 springs H are employed in place of the sleeves E in the former construction. Otherwise the two constructions are precisely the same. These springs are used when it is expedient to force water. For most farm wind-wheels these springs H are unnecessary.

In the modification shown in Fig. 3 the bolts are lengthened, and springs F′, similar to springs F, are resorted to, the usual followers being used to receive the ends of the springs. All these springs act with the upstroke of the pump-rod when a greater tension is required for very deep wells. Thus all four springs are brought into action on the upstroke of the pump-rod and the upper two springs on the downstroke, providing water is to be forced.

In the construction of my invention I reduce the parts to a minimum, cut down expense, prevent unnecessary friction, and at the same time attain all the beneficial results herein set forth.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention. Hence I do not wish to be limited to the precise construction herein set forth; but,

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

1. The combination, with a sectional pump-rod having projections thereon, of bolts extending loosely through said projections and spiral springs on the bolts outside of the projections, substantially as set forth.

2. The combination, with a sectional pump-rod having projections thereon, of bolts extending loosely through the projections and spiral springs on the ends of the bolts outside of the projections and also between the adjacent projections on the two sections, substantially as set forth.

3. The combination, with a sectional pump-rod having projections thereon, of bolts extending loosely through said projections, followers on said bolts, and spiral springs on the bolts outside the projections and having their ends resting in the followers, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN FAY LOOMIS.

Witnesses:
C. G. SANFORD.
CLINTON MORGAN.