

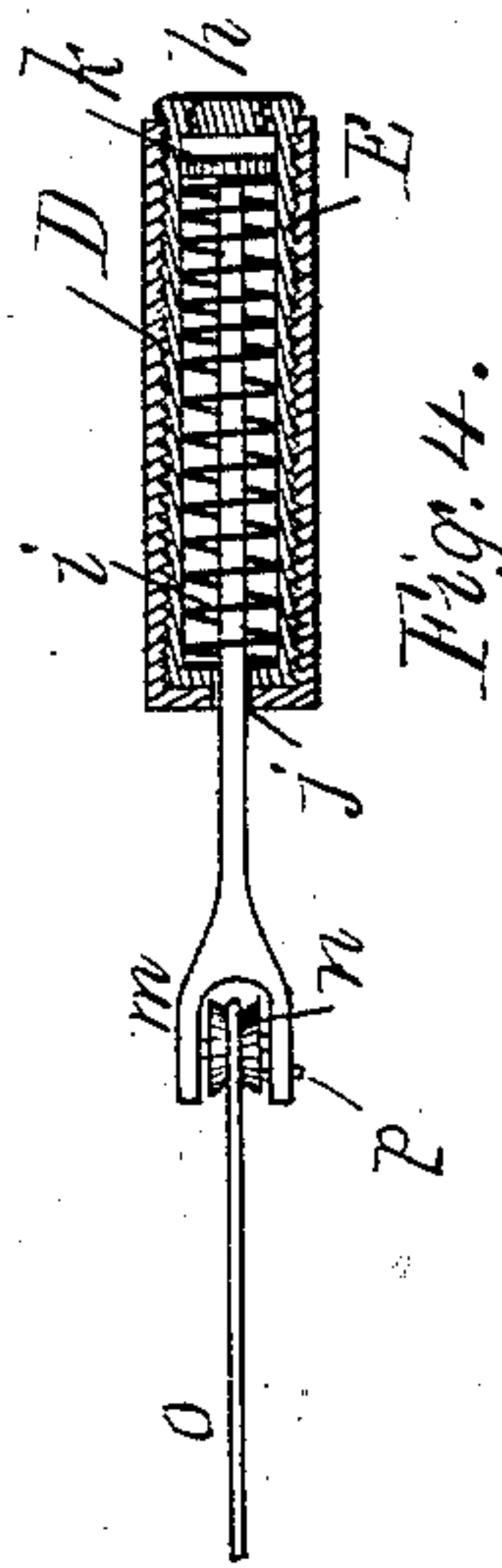
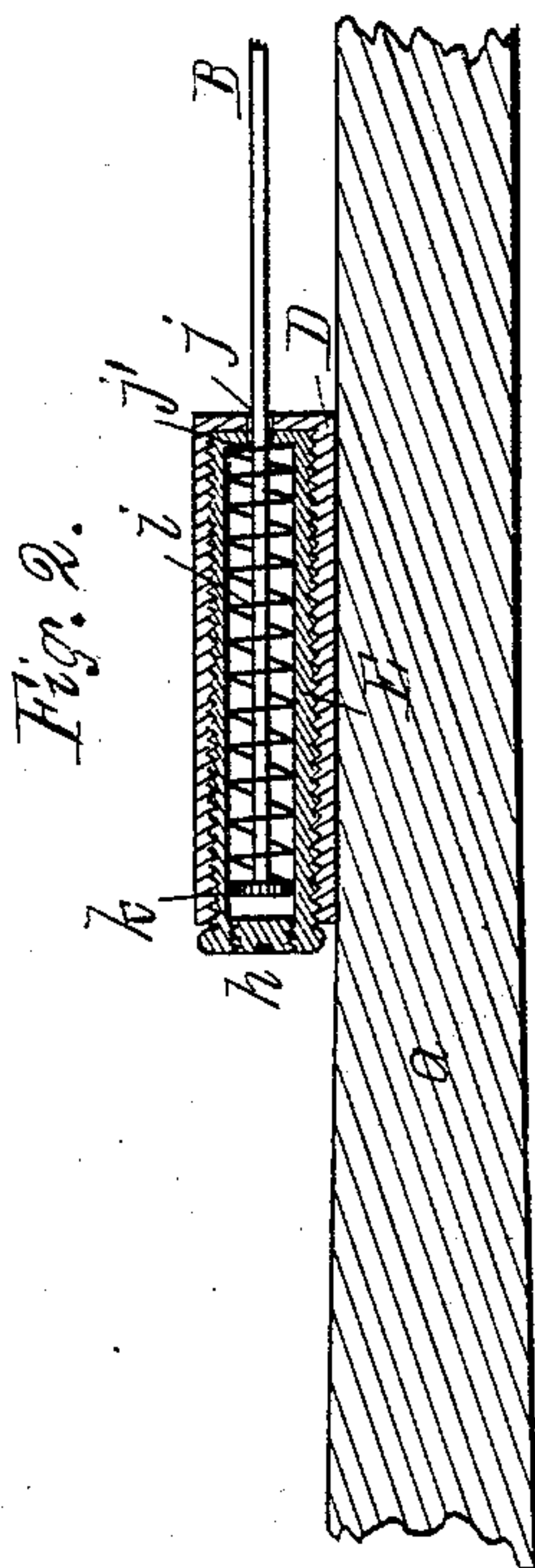
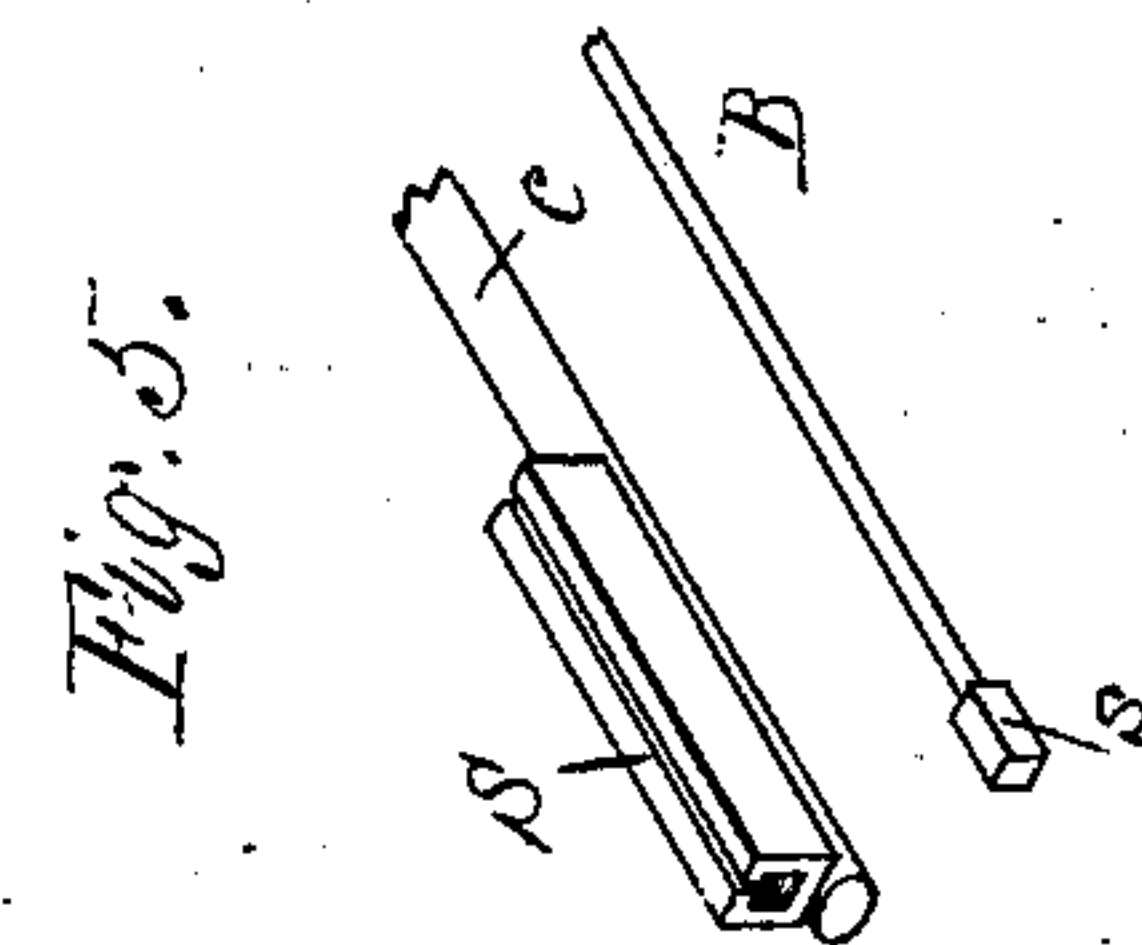
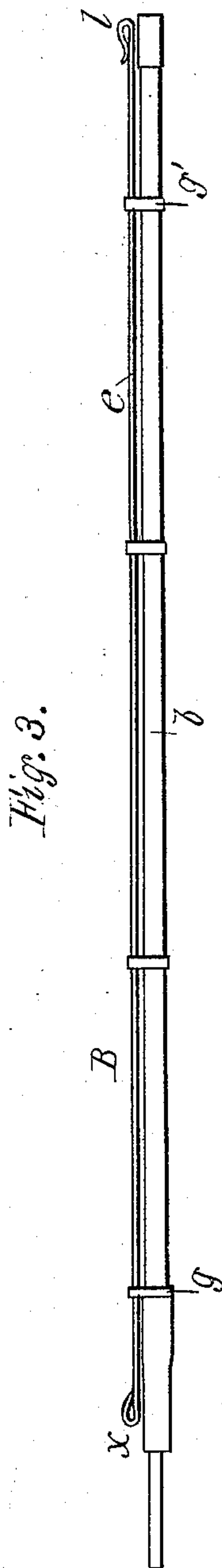
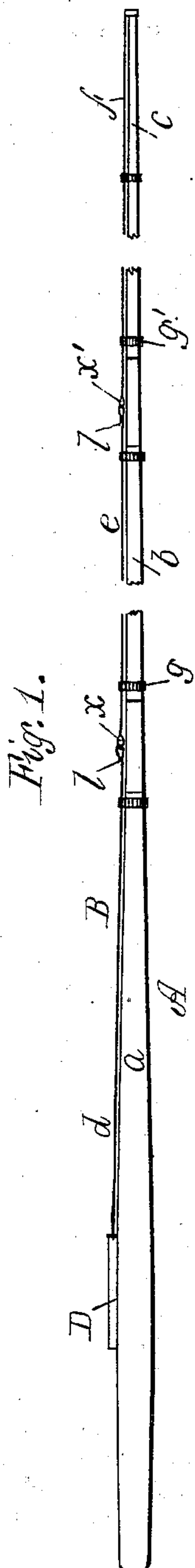
(No Model.)

R. SMITH.

TENSION EQUALIZER FOR FISHING RODS.

No. 279,988.

Patented June 26, 1883.



Witnesses.

H. B. Lodge  
A. A. Young

Inventor.

Richard Smith.  
F. Curtis, Atty.



# UNITED STATES PATENT OFFICE.

RICHARD SMITH, OF SHERBROOKE, QUEBEC, CANADA.

## TENSION-EQUALIZER FOR FISHING-RODS.

SPECIFICATION forming part of Letters Patent No. 279,988, dated June 26, 1883.

Application filed August 16, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, RICHARD SMITH, a subject of Great Britain, residing at Sherbrooke, in the county of Sherbrooke and Province of Quebec, Canada, have invented certain new and useful Improvements in a Tension-Equalizer for Fishing-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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to a device for equalizing the tension and compression arising from strains, incidental to fishing-rods, either jointed or otherwise, when in use. Hitherto in the ordinary jointed rod the resistance to strains, both tension and compression, which arise in bending, are borne by the inherent elasticity of the fibers comprising it. It necessarily follows that the various portions comprising the whole cannot possess a like arrangement of fibers, and hence one portion, having less elasticity than others, will be stiffer, and the result is the rod will not bend equally, nor have a uniform curve, but will assume a sharper curve in the less stiff portions thereof. Hence the rod is liable to be crippled, sprung, or broken when undue strain is exerted. Even in the split-bamboo rod, in which the arrangement of the several parts comprising joints are adjusted and arranged to overcome the defect arising from the unequal strength of several individual pieces, full success has not been attained. To overcome the result arising from the unequal strength of the several parts comprising a rod, or in case the rod is integral, in which like defects would exist, I attach to the upper or top portion of the rod a small steel jointed wire. This wire is to be permanently attached to the end or tip, and its rear extremity to the butt-end of the rod. The rear end has attached to it a head or button, which actuates a coiled spring fitting within a small double cylinder fastened to the butt.

Minor details of construction will herein-after be more fully explained.

The drawings accompanying this specification represent, in Figure 1, a side elevation of portions of a jointed rod containing my in-

vention, and Fig. 2 an enlarged view of the double cylinder, while Fig. 3 is an enlarged view of a joint of said rod. Fig. 4 is a modification, in case a continuous wire is used.

In these drawings, A represents a portion of a jointed fishing-rod, and *a b c* the joints comprising the same, in which *a* is the butt; *b*, the center, and *c* the tip or top joint.

B is the jointed steel or other wire composed of the links *d e f*, and I propose that each link shall be approximately the length of the joint to which it may be attached, and inseparable therefrom by eyes *g g'*, which are sufficiently large to admit of free play of said wire B through them. By this means there is no chance of the links being lost or mislaid, and each link always accompanies its individual joint of the rod. The eyes or loops *g g'* are located in such positions upon each joint that when tension is brought upon the wire B the nose of each spring hook *l* shall pass under said eye, thereby securely locking it and obviating the danger of straightening out. These links may be united to form the wire B by various devices; but I prefer the simplest, which consists of an eye formed on the rear end of each link, said end forming the eye being soldered down to prevent straightening out on the front end of said link. I form a small spring-hook, which locks and fastens into the eye adjacent on the next link toward the tip of the rod. The link on the tip-joint has its extreme outer end fastened securely and firmly to said tip, as all the equalizing strain or pull is supported therefrom and transmitted by and through said wire B to the spring-containing cylinder secured to the butt-end of the rod. This butt portion of the rod has permanently attached upon its upper side, at any suitable spot, a small cylinder, D, open at the rear and closed at its front end, said end being pierced with a small hole, *j*, to permit passage of the wire B. This cylinder is interiorly screw-threaded, as shown in Fig. 2, and contains a second cylinder or tube, E, exteriorly screw-threaded and screwing snugly into the bore of the primary cylinder D. The tube E is closed at both front and rear and carries a coiled spring, *i*. The head *h* retains and secures in place the spring, to be of a tension equal to or slightly greater than that ever to be imposed upon the rod. This head *h* is



also the actuary by which the tube E is moved and adjusted. The rear link, *d*, instead of having an eye similar to the other links, has a head, *k*, which is of larger diameter than the spring *i*, but still plays loosely and freely within the bore of the tube E without affecting the action of said spring. The link *d*, passing in through the openings *j j'* in D and E, extends centrally through the coil-spring and is secured to the piston-head *k*.

After putting the rod together in the usual manner the links are united by means of the spring-hooks *l l*, &c., and the eyes *x x'*, &c.; but before uniting the individual links the head *h*, and with it the tube E and its spring *i*, is turned up into the tube D. After the links are united the tube E is unscrewed and the action of the spring permitted to bear on the entire wire by pressing against the end of its inclosing-tube E, and the strain can be diminished or increased at option by the position of the tube E, containing the spring *i*, with reference to the cylinder D.

It is evident that upon the use of the rod, whether in casting a fly or in playing a fish, the rod will be necessarily bent, and this wire B will transmit the strain equally throughout the rod by means of the spring. As the rod is bent the wire lies upon its outer surface, and consequently must be longer at these times than when the rod is at rest. This adjustment is effected by said spring, which yields and acts precisely in the manner in which wood fiber acts—that is, the greater the strain the greater the tendency to spring back and regain its normal position.

If there is any tendency of the rod to buckle or cripple in any one place, the wire, by the compression of the spring, acts as a backing to resist it, and by receiving said pressure at that point distributes it along the wire and thence diffuses it throughout the entire rod, and saves it from being spoilt. In other words, the wire acts as a strengthener to the rod by the amount or degree of curvature which the rod assumes at any one time, as the compression of the spring is dependent on the bend of the rod, the wire and rod being of the same length when in a straight position; hence I can obtain a much stiffer rod with no material increase of weight.

Instead of using a link or jointed wire, a continuous wire or cord may be employed, and in this latter case, instead of the link *d*, I employ a rod with the head, *k*, within the cylinder terminating outwardly in a U-shaped piece, *m*, to contain a small reel, *n*, upon which said continuous wire *o* is to be wound or coiled. This reel is made to receive a stud or pin, *p*, to maintain it in a fixed position when the desired length of wire has been uncoiled. The tension, when said reel is fixed to said piece

*m*, then comes directly upon the spring *i*. In case the continuous wire is used I make its outer end separable from the tip, and upon the extremity of such wire B, I form a small rectangular knob, *s*, as shown in Fig. 5. This fits into a similarly-shaped opening formed in the end of a metal piece, S, firmly attached to the tip of the rod *c*. By withdrawing the pin *p* and relaxing the wire on the coil, the knob *s* is easily adjusted to or removed from the tip piece. The slit in the top of the portion S is to admit of the wire B drawing in a line parallel with the axis of the rod.

A cord may be used in place of the wire. In this event a knot is to be tied upon the end of the cord to prevent its being pulled through the metal eye of the tip.

I claim—

1. The combination, with a fishing-rod, of a tension wire or cord secured thereto, and an elastic connection, which permits the wire or cord to accommodate itself to the varying curvature of the rod, for the purposes set forth.

2. A fishing-rod provided with a back-bone or support, consisting of a continuous or linked wire or cord attached to the tip and butt-ends of said rod, the rear end being secured to the butt indirectly by a coiled or other spring contained and carried within a tube screwing within another tube or cylinder attached securely to the butt, substantially as herein described.

3. In a fishing-rod, the individual joints furnished with a wire link attached thereto by suitable devices, and when united forming an entire rod with a continuous linked wire, the latter adjustable to the curvature of said rod, and provided with a spring to equalize and distribute strains brought upon any weak point, substantially as stated.

4. A fishing-rod, in combination with a wire or cord extending along its upper or top portion, an adjustable coiled spring to which said wire is attached, and a movable tube which incloses said spring, said wire accommodating itself to the bending of the rod by the yielding of the spring, substantially as set forth.

5. In a fishing-rod, A, the combination of the continuous or linked wire B, whose tension is adjustable by means of a coiled spring, *i*, with the closed movable cylinder E, screwing within a primary cylinder or tube, D, securely fastened to the butt-end of the rod, substantially as stated.

In testimony whereof I affix my signature in presence of two witnesses.

RICHARD SMITH.

Witnesses:

H. E. LODGE,  
F. CURTIS.