No. 838,519. PATENTED DEC. 18, 1906.

H. H. BREMER.

TELESCOPIC POLE.

APPLICATION FILED AUG. 20, 1906.

Fig. 1.

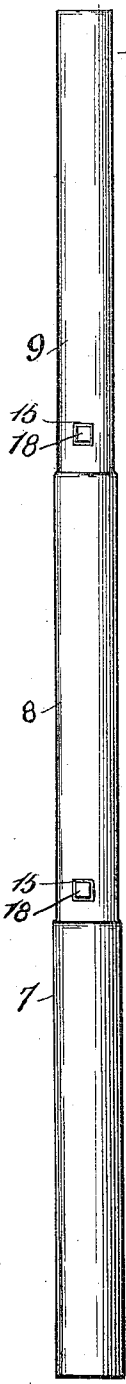


Fig. 2.

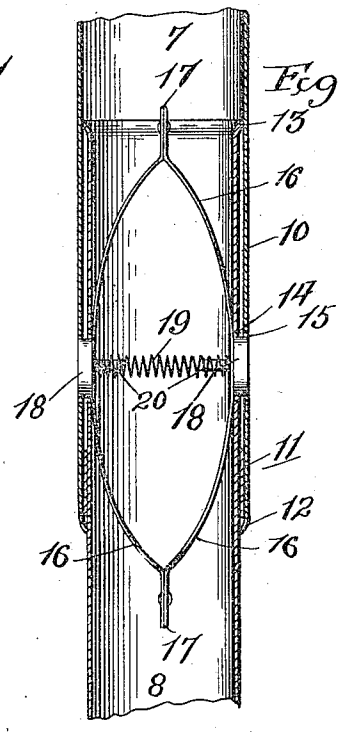


Fig. 3.

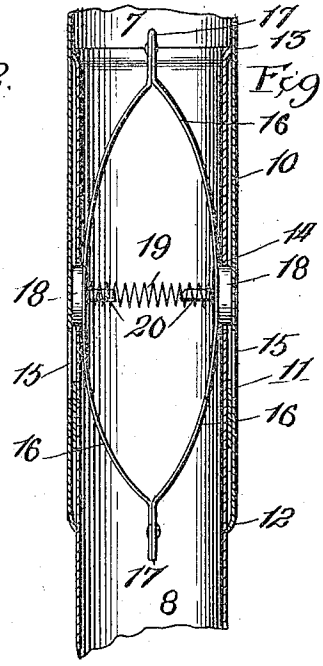


Fig. 5.

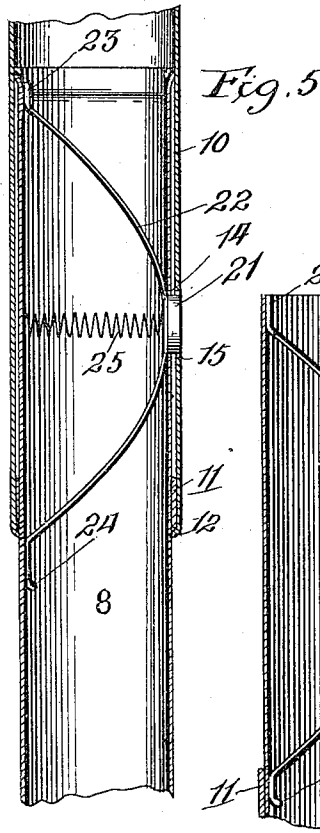


Fig. 4.

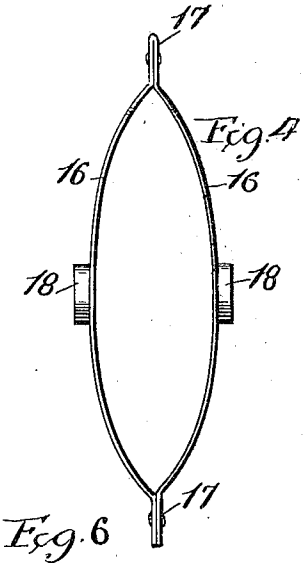
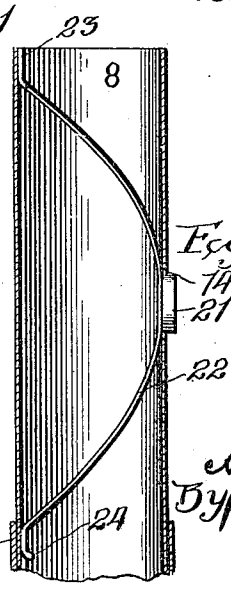


Fig. 6.



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TELESCOPIC POLE.

No. 838,519. Specification of Letters Patent. Patented Dec. 18, 1906.

Application filed August 20, 1906. Serial No. 331,411.

To all whom it may concern:

Be it known that I, HERMAN H. BREMER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Telescopic Poles, of which the following is a specification.

This invention relates to tubular poles of telescopic formation, which may be used in any capacity in which it is desirable to employ a pole having collapsible members which may be extended and automatically locked in extended position, thereby affording a firm, rigid, and sightly pole and one adapted for use in any suitable capacity.

A collapsible pole of the type to be hereinafter described may be used as a surveyor's range-pole, a fish-pole, a tent-pole, or for any similar purpose in which economy of space is desired, together with ease of manipulation and rigidity when in extended position.

The object of the invention is to provide a spring mechanism of extremely simple construction and adapted to be easily inserted into place, which will automatically lock the pole when extended to the proper dimensions, and which will hold the pole firmly locked at all times, and which may be easily unlocked by proper manipulation when it is desirable to collapse the pole for purposes of storage or otherwise.

The invention consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of an extended pole having three sections; Fig. 2, a longitudinal sectional view showing the joint and lock between two distended sections; Fig. 3, a similar view showing the joint and lock between two collapsed sections; Fig. 4, a view showing a lock similar to that of Fig. 2, with the omission of a coiled spring; Fig. 5, a slightly-modified form of lock, and Fig. 6 a lock similar to that of Fig. 5 with the omission of the coiled spring.

In the drawings an extended rod comprising sections 7, 8, and 9 has been shown, the sections decreasing in diameter in the order indicated. The inner sections are of suitable diameter to leave a space or clearance 10, which provides for the travel of a ring or abutment 11, which is adapted to be engaged when the parts are extended by a flange 12 at the upper end of the outer or inclosing section of the rod. In order to prevent any lateral play or movement, the inclosed end 13 of the inner section is upset sufficiently to provide an outwardly-extending flange adapted to bridge the space or clearance 10 and contact the wall of the inclosing tubular section. This arrangement permits the parts to slide easily within one another until the pole has been extended to its utmost capacity, and when so extended the rod will be rigid and firm, adapting it for general use.

The inner section is provided with a pair of openings 14, adapted to register with similar openings 15 in the outer section when two cooperating sections have been extended to their limit and when the collar or abutment 11 has been brought into contact with the flange 12. In the form shown in Fig. 2 the locking mechanism consists of a pair of outwardly-divergent bow-shaped spring-sections 16, expanded at their centers to exert a tension against the wall of the inclosed inner tube-section, and the bow-shaped spring-sections are rigidly secured at their ends 17. Each of the spring-sections at its outwardly-bowed center is provided with a lug 18 of suitable size to pass through the coöperating holes 14 and 15 when the holes are brought into register. In some circumstances the natural tension of the coöperating bow-shaped spring-sections will be sufficient to outwardly project the locking-lugs and hold them in locked position; but if the natural tension be insufficient for any reason it can be supplemented by employing a distending coil-spring 19, the ends of which embrace inwardly-extending studs 20 in alinement with the locking-lugs, by which arrangement the resiliency of the spring as a whole may be increased to any desired extent.

When it is desired to elongate the collapsible pole the sections are pulled apart to the limit, the locking-lugs meanwhile being entered only through the hole 14 in the inner section, which engagement, however, serves to hold the spring in place without means for additional attachment. After the parts have been thus extended they can be turned until the holes are brought into register, at which point the oppositely-disposed locking-lugs will be sprung outwardly to engage the holes in the outer or inclosed tubular section, thus locking the parts together. It is preferred to have the two holes of substantially uniform dimensions and of a size to closely embrace the locking-lugs, so that there can be no lateral movement, which of course would tend to impair the rigidity of the parts.

The lugs should be of suitable thickness to lie flush with the outer face of the outer tube, so that a smooth uniform surface will be presented.

In some circumstances the spring mechanism of Figs. 5 and 6 may be employed, in which case but a single locking-lug 21 is used, supported by a bow-spring 22, having one of its ends 23 rigidly secured to the wall of the tubular section and having its other end 24 held in slidable contact therewith. As shown in Fig. 5, the resiliency of the bow-spring may be supplemented by the use of the coil-spring 25, although in some instances such coil-spring may be omitted, as indicated in Fig. 6. It will be understood that in speaking of "tubular" sections it is not intended to limit the invention to tubular sections of cylindrical shape, since sections of other shapes might be employed; and it will be further understood that I do not desire to limit myself to the exact spring-locking mechanism herein shown and described, since the arrangement of the springs might be modified more or less without departing from the spirit of the invention. It will be further understood that the locking mechanism heretofore described may be duplicated at each joint of the tubular pole.

The locking mechanism illustrated in Figs. 2, 3, and 4 has a distinct advantage in that it can be made separate and apart from tubes into which it is intended to be inserted and requires no means of attachment thereto save only the engagement of the locking-lugs with the holes, by reason of which the locking-spring can be constructed outside of and apart from the tube and thereafter inserted without the difficulty which might be experienced in providing a rigid attachment between the spring and the walls of the tube.

What I claim as new, and desire to secure by Letters Patent, is—

1. A tube of telescopic formation, consisting of sections, the sections being provided with holes adapted to register with one another, a lug adapted to be outwardly projected through the registering holes, and a spring of bow shape to which the lug is secured and adapted to outwardly project the lug through both holes when in register, substantially as described.

2. A tube of telescopic formation, consisting of sections, the sections being provided with holes adapted to register with one another, a lug adapted to be outwardly projected through the registering holes, a spring of bow shape to which the lug is secured and adapted to outwardly project the lug through both holes when in register, and a supplemental coil-spring adapted to bear against the bow-spring, substantially as described.

3. A pole of telescopic formation, consisting of an inner and an outer section each provided with a hole adapted to register with the other when the sections are extended, a bow-spring consisting of two sections outwardly distended in their sections and connected at their ends, and a pair of locking-lugs on the outwardly-distended sections adapted to be projected through the holes when in register for locking the parts together, substantially as described.

4. A pole of telescopic formation, consisting of an inner and an outer section each provided with two holes the holes in one section adapted to register with the holes in the other section when the sections are extended, a bow-spring consisting of two sections outwardly distended in their centers and connected at their ends, a pair of locking-lugs on the outwardly-distended sections adapted to be projected through the holes when in register for locking the parts together, and a supplemental coil-spring located within the opening between the bow-spring sections for exerting a pressure thereon, substantially as described.

5. A pole of telescopic formation, consisting of inner and outer tubular sections, the inner section being provided with a stop or abutment on its outer surface and having its end upset to form an outwardly-projecting rim, and the outer section having its end inwardly flanged to coact with the stop or abutment, a hole in each of the sections, the holes being adapted to register with one another when the flanged end of the outer section is brought into contact with the stop or abutment on the inner section, a locking-lug adapted to be projected through the registering holes, and a spring for outwardly projecting the locking-lug, substantially as described.

6. A pole of telescopic formation, consisting of inner and outer tubular sections, the inner section being provided with a stop or abutment on its outer surface and having its end upset to form an outwardly-projecting rim, and the outer section having its end inwardly flanged to coact with the stop or abutment, oppositely-disposed holes in each of the sections, coöperating holes being brought into register when the flange of the outer section contacts the stop or abutment of the inner section, a spring consisting of two oppositely-disposed bow-sections divergent at their centers and connected at their ends, and locking-lugs secured to the divergent portions of the spring-sections and adapted to be projected through the registering holes, substantially as described.

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Witnesses:
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