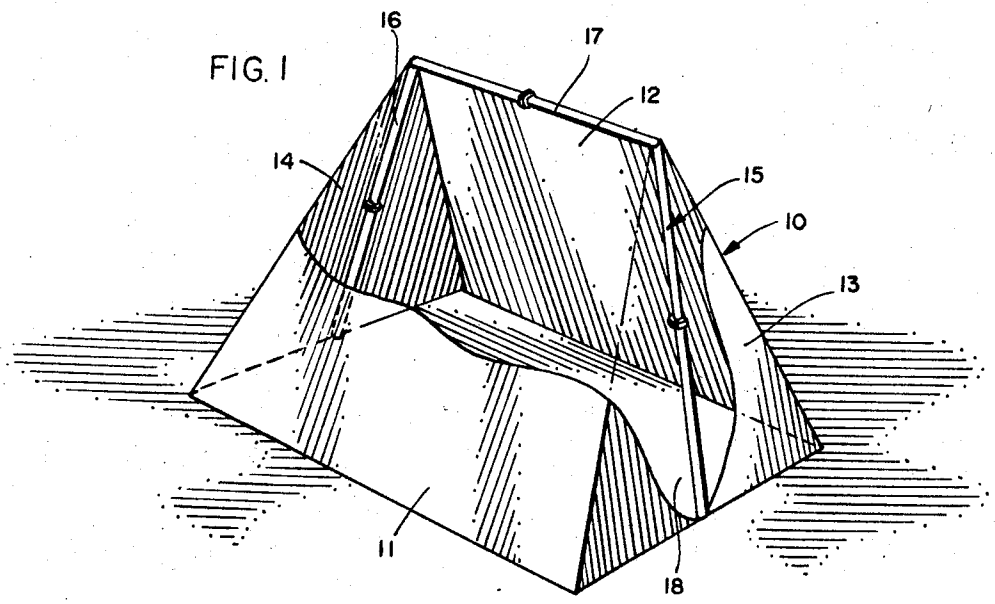
May 27, 1969 E. E. LITTLE 3,446,523

SELF-LOCKING ADJUSTABLE TENT POLE

Filed Oct. 19, 1966 Sheet 1 of 2

FIG. 1



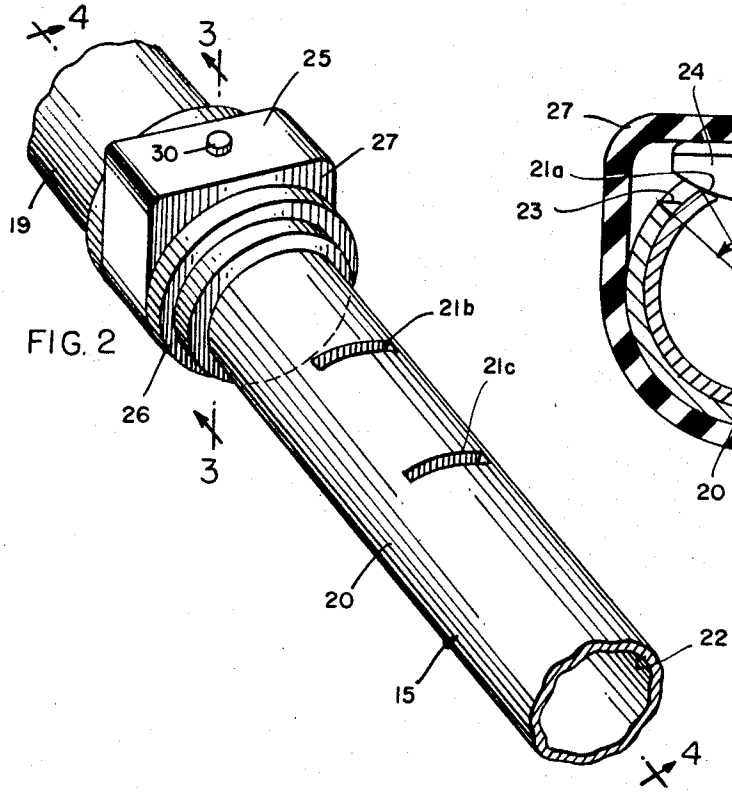
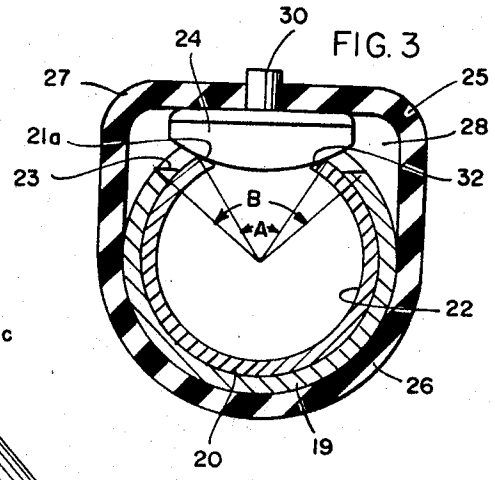




FIG. 2

FIG. 3




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FIG. 4

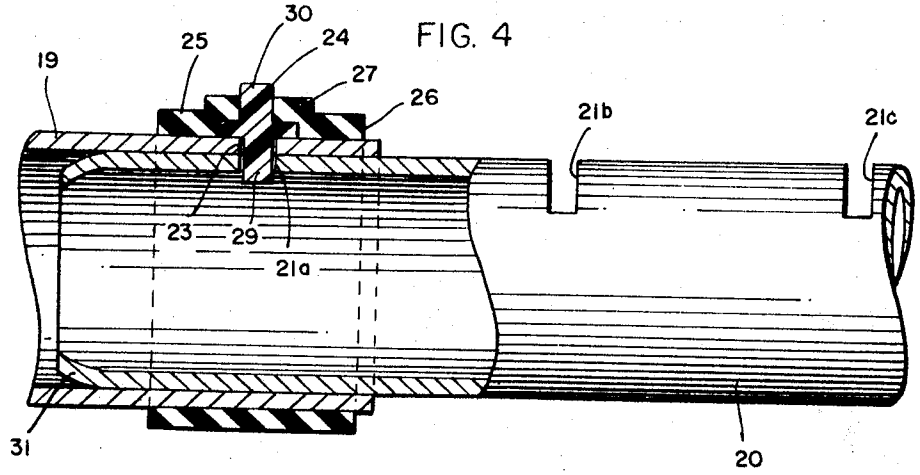



FIG. 5

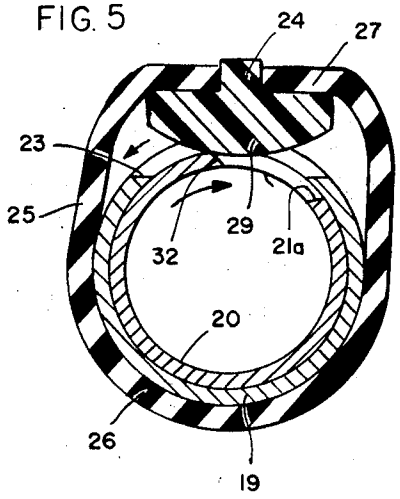
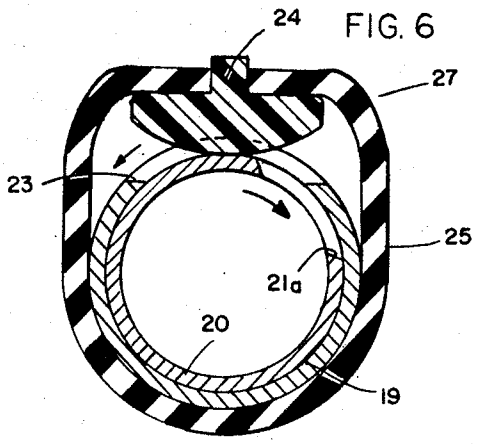



FIG. 6




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United States Patent Office 3,446,523
Patented May 27, 1969



3,446,523

# SELF-LOCKING ADJUSTABLE TENT POLE

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Filed Oct. 19, 1966, Ser. No. 587,925
Int. Cl. F16b 7/10; E04g 25/02; E21d 15/14
U.S. Cl. 287—58 1 Claim

## ABSTRACT OF THE DISCLOSURE

A self-locking adjustable tent pole which includes telescoping inner and outer tubular members. The outer tubular member is provided with a recess in its wall, and the inner tubular member is provided with a plurality of axially spaced recesses. An arcuately shaped locking key is received by the recess in the outer tubular member and is resiliently urged inwardly by a flexible, resilient perimetric jacket which is ensleeved on the outer tubular member. The jacket urges the locking key against the inner tubular member, and the length of the telescopic pole may be selectively fixed by moving the tubular members axially with respect to each other until the locking key is received by the appropriate recess in the inner tubular member. The tubular members may be easily unlocked merely by rotating one with respect to the other to force the locking key out of the recess in the inner member.

### *Background of the invention*

This invention relates to tent poles, and more particularly to a telescopic tent pole whose length can be selectively varied. The tent poles of this invention have utility as upright poles, ridge poles, and inclined braces, and may be used both interiorly or exteriorly of the tent cover.

A tent assembly usually includes several poles. An upright pole is generally provided at each end of the tent to support the tent in a raised position, and a ridge pole is frequently provided at the top of the tent, which extends between the ends of the tent and over which the tent is draped. Inclined brace poles may also be used for certain types of tents.

A major difficulty in the assembly of tents has been the problem of stretching the tent material with respect to fixed-length poles. It is desirable to assemble the tent in a stretched condition so that the sides and top of the tent are taut, but not only is the stretching of the tent material to fit over the ends of the poles extremely difficult, the necessity of this stretching step prolongs the assembly of the tent. Rapid and simple erection is desirable when the tent is being assembled in inclement weather.

Conventional tent poles present additional problems when it is desired to construct the tent in such a manner that the sides of the tent are at a lesser inclination with respect to the ground. This may be desirable either to decrease the height of the tent when required by the environment or to provide a larger covered floor area within the tent. Such changes in the height or floor area of the tent are not possible with conventional tent poles of fixed length.

Collapsible or telescopic tent poles have been provided in the past whose length may be varied. However, the length of these poles cannot be easily and conveniently varied by one man while he is at the same time assembling the tent. These poles generally contain some sort of locking device which must be held in a released position while the telescoping members of the pole are extended or contracted. This operation is extremely difficult to perform by a single person while the stretched material is maintaining the tent pole under considerable tension.



It is, therefore, an object of this invention to provide an adjustable tent pole of improved construction which substantially overcomes the foregoing problems and difficulties. More particularly, it is an object of this invention to provide a tent pole, the length of which may be selectively varied by a single person while the pole is maintained in a state of tension.

A further object of this invention is to provide a telescopic tent pole which may be locked in a variety of lengths without the necessity of pressing or directly contacting the locking device.

Still another object of this invention is to provide a telescopic tent pole the length of which can be increased or decreased merely by rotating the telescoped members of the pole and pulling or pushing the members relative to each other.

Other objects and advantages of the invention will be apparent as the specification proceeds.

The invention is explained in conjunction with an illustrative embodiment in the accompanying drawing, in which:

FIG. 1 is a perspective view of a tent assembly including the inventive tent poles;

FIG. 2 is a fragmentary perspective view of a tent pole made in accordance with the invention, illustrating the unique locking device;

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 2;

FIG. 4 is a fragmentary view partially in section taken along the line 4—4 of FIG. 2;

FIG. 5 is a view similar to FIG. 3 showing the locking device in the process of being moved to an unlocked condition; and

FIG. 6 is a view similar to FIGS. 3 and 5 showing the locking device in an unlocked position.

Referring to FIG. 1, there is shown a typical tent assembly designated generally by the number **10**. The tent **10** is seen to include inclined sides **11** and **12** and front and back sides **13** and **14**. Supporting the tent in a raised position are upright poles **15** and **16**. Ridge pole **17** may also be provided to keep the top of the tent from sagging and to prevent the upright poles from moving inwardly. The sides of the tent are seen to provide a covered floor **18**.

Upright poles **15** and **16** and ridge pole **17** are identically constructed, and, for convenience, the remainder of the specification will describe pole **15** illustrated in fragmentary perspective in FIG. 2. Pole **15** is seen to include an outer hollow tubular member **19**. Received within the hollow outer tube **19** is inner tubular member **20**. Inner tubular member **20** is sized so that it fits relatively tightly within the outer tubular member but is also freely rotatable and slidable therein. Tubular members **19** and **20** may be made of almost any metal such as steel, aluminum, brass and others, or may be made of plastic. All that is required is that they have sufficient strength to support the assembled tent.

Inner tubular member **20** is provided with a plurality of longitudinally spaced notches **21***a*, **21***b*, **21***c*, etc. In the embodiment illustrated, the notches are seen to communicate with a longitudinally extending bore **22** provided in inner tubular member **20**. Inner tubular member **20** may also be solid but is advantageously hollow in order to reduce the weight of the pole.

Referring now to FIGS. 3 and 4, outer tubular member **19** is provided with a transversely extending recess **23** adjacent one end. Recess **23** extends through the wall of tubular member **19** and communicates with the bore provided therein.

Locking key **24** is resiliently urged toward outer tubular member **19** by key holder **25**. In the particular embodiment illustrated, key holder **25** comprises an integral

jacket of resilient, flexible material ensleeved on the end of tubular member **19**. The jacket **25** can be formed of natural or synthetic rubber or other elastomeric-type material. Referring to FIG. 2, holder **25** is seen to include a cylindrical lower portion **26** which is received on tubular member **19**, and an upper portion **27** extending tangentially from opposide sides of cylindrical portion **26**. As can be seen in FIG. 3, key holder **25** is provided with a chamber **28** which receives locking key **24**.

Upper portion **27** of key holder **25** resiliently urges locking key **24** into recess **23** of the outer tubular member. Locking key **24** includes a lower actuating portion **29** which is received in recess **23** and an outwardly extending pin **30** which is fitted in an opening provided in the upper portion **27** of the key holder and which serves to hold the locking key in place. Actuating portion **29** may be generally arcuate, as shown, or it may be beveled or otherwise shaped to provide the desired camming action for engaging and disengaging the key.

The end of the inner tubular member that is inserted into the outer member may be rounded or formed inwardly as at **31** (see FIG. 4) for ease of insertion.

The tent pole illustrated in FIGS. 2–4 is shown locked in one of the various lengths to which the tent pole may be adjusted. The inner end of the actuating portion **29** of the locking key extends through recess **23** of the outer tubular member and is received in one of the longitudinally spaced notches provided in inner tubular member **20**. The locking key is restrained against displacement from the notch **21***a* by the elastic key holder **25** which urges the key inwardly. As can be seen best in FIG. 3, the transverse sides **32** of notch **21***a* define an included angle A less than the angle B defined by the sides of recess **23** so that key **24** is seated firmly within notch **21***a* and is not supported by the sides of recess **23**.

When it is desired to adjust the length of the tent pole, one need merely grasp the tubular members and rotate them with respect to each other in either direction. Referring now to FIG. 5, the inner tubular member **20** is seen to be rotating in a clockwise direction in respect to outer tubular member **19**. The sides **32** of notch **21***a* slide along the surface of arcuate portion **29** of locking key **24** and force the locking key upwardly and slightly to the right, or the direction of rotation. For this purpose the sides **32** of notch **21***a* are advantageously beveled, and in the preferred embodiment the sides **32** are beveled so that they are tangential with the lower surface of arcuate portion **29** when the locking key is seated in notch **21***a*. As the locking key is being forced upwardly out of notch **21***a* by the rotation of the tubular members, the upper portion **27** of key holder **25** is stretched upwardly and to the right, as shown in FIG. 5. The elasticity of key holder **25** together with the curved lower surface of locking key **24** and the beveled side of notch **21***a* all contribute to the ease of forcing the locking key out of the notch as the tubular members are rotated. However, as can be seen in FIG. 4, the longitudinally spaced sides of locking key **24** are perpendicular to the depth of the notch **21***a* and provide a secure lock against longitudinal movement of inner tubular member **20** with respect to outer tubular member **19**.

As the inner tubular member continues to be rotated the locking key continues to be urged outwardly until it is entirely displaced from notch **21***a*, as seen in FIG. 6. In this position the upper portion **27** of key holder **25** is stretched radially outwardly and urges locking key **24** radially inwardly against the outer surface of inner tubular member **20**. When the key is in this position the tubular members may readily be moved longitudinally with respect to each other. When the tent pole has been adjusted to the desired length, one of the notches will be adjacent the locking key **24**. The inner tubular member **19** may then be rotated until the locking key is forced into the notch.



It will be appreciated that the longitudinal spacing of the notches **21** may be varied in order to give almost any degree of selectivity in the adjustability of the tent pole. The notches may all be positioned on one side of inner tubular member **20**, or they may be positioned at various points around the circumference of the inner tubular member either for design purposes or to provide a stronger member.

From the foregoing it is seen that a tent pole has been provided whose length may readily be adjusted by using only two hands. The pole may be securely locked in the desired position, and the lock may easily be released without the necessity of pressing buttons or loosening clamps. The tubular members comprising the telescopic structure need merely be rotated to release the locking mechanism and then moved longitudinally to adjust the length of the pole. When the desired length is attained, the locking mechanism will snap back into place merely by again rotating the tubular member.

While in the foregoing specification a detailed embodiment of the invention was set forth for the purpose of illustration, it is to be understood that many of the details herein given may be varied by those skilled in the art with out departing from the spirit of the invention.

I claim:

**1.** A telescopic pole for use in a tent assembly, comprising an outer tubular member having a longitudinally extending bore provided therein, an inner tubular member rotatably and slidably received in said bore, said outer tubular member having a circumferentially extending recess defined by parallel sides extending normal to the axis of the outer tubular member communicating with said bore, said inner tubular member having a plurality of longitudinally spaced circumferentially extending notches of substantially the same width as said recess and defined by parallel sides extending normal to the axis of the inner tubular member provided therealong, a locking key, said key having an actuating portion received in said recess and extending into said bore, and a resilient key-holder received on said outer tube and resiliently urging said locking key against said inner tubular member, the inner end of said key actuating portion being selectively engageable with said notches, the transverse sides of said notches being beveled and said key actuating portion having a generally arcuate shape for cooperation with said beveled notches to unlock said key when said inner and outer tubular members are rotated relative to each other, said key-holder being in the form of an internal jacket of resilient, flexible material ensleeved on said outer tubular member, said jacket providing a chamber in which said key is received, said key including a pin extending outwardly from said arcuate portion, said pin being received in an opening in said key-holder, and said key-holder being effective to restrain said key against movement except when said inner and outer tubular members are rotated relative to each other.


**References Cited**

UNITED STATES PATENTS

| | | | |
|---|---|---|---|
| 2,885,223 | 5/1959 | Duff | 285—7 |
| 3,336,060 | 8/1967 | Bradford | 287—58 |

FOREIGN PATENTS

| | | |
|---|---|---|
| 629,729 | 9/1949 | Great Britain. |
| 1,139,337 | 11/1962 | Germany. |



THOMAS F. CALLAGHAN, *Primary Examiner.*

U.S. Cl. X.R.

135—15; 284—303

PO-1050
(5/69)

# UNITED STATES PATENT OFFICE
# CERTIFICATE OF CORRECTION

Patent No. 3,446,523 Dated May 27, 1969

Inventor(s) Ellwood E. Little

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In Claim 1, line 51, cancel "internal" and substitute - integral -.

SIGNED AND
SEALED
SEP 30 1969

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents