

[54] ADJUSTABLE SKI POLE WITH SPLIT RETAINER RING

[76] Inventor: **John P. Jones**, 1326 Shenandoah Drive, Colorado Springs, Colo. 80910

[22] Filed: **Oct. 26, 1970**

[21] Appl. No.: **90,217**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 842,232, July 16, 1969, abandoned.

[52] U.S. Cl.**280/11.37 F**, 273/80 D, 273/81.2, 287/58 CT

[51] Int. Cl.**A63c 11/22**

[58] Field of Search ..280/11.37 F, 11.37 L, 11.37 D, 280/11.37 B; 287/58 CT; 135/50; 248/188.5; 273/80 D, 81.2

[56] References Cited

UNITED STATES PATENTS

3,235,296	2/1966	Day	287/58 CT
3,004,743	10/1961	Wenger	287/58 CT X
2,832,598	4/1958	Strub	273/80 D UX
3,502,358	3/1970	Alspaugh et al.	287/58 CT

FOREIGN PATENTS OR APPLICATIONS

921,867	1/1947	France	248/188.5
125,026	3/1928	Switzerland	287/58 CT
416,411	1/1967	Switzerland	280/11.37 F
503,714	4/1939	Great Britain	280/11.37 D

Primary Examiner—Leo Friaglia

Assistant Examiner—Milton L. Smith

Attorney—Clarence A. O'Brien and Harvey B. Jacobson

[57] ABSTRACT

A ski pole which allows one to correctly adjust the overall length of the pole to skier's height. It embodies upper and lower pole sections whose adjacent coacting ends are telescopingly joined and are equipped with manually regulatable coupling means. This coupling means embodies an outer nut-like sleeve having an internal stop shoulder at its lower end and wholly encompassing a longitudinally split inner expandible and contractible sleeve which when clampingly contracted provides a friction held retainer. The lower tapered end of the outer sleeve is cooperatively oriented with a graduated pole length measuring scale provided on the peripheral surface of the lower section of the pole.

2 Claims, 6 Drawing Figures

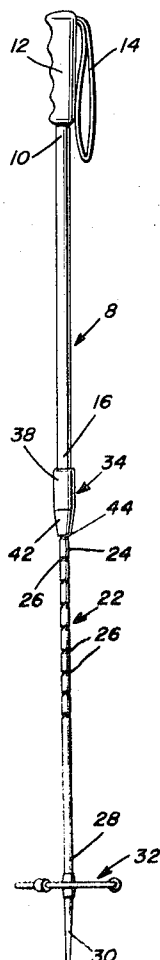


Fig. 1

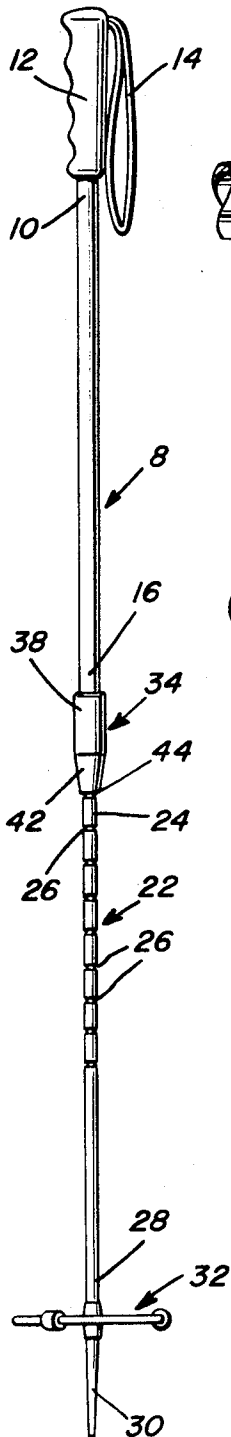


Fig. 2

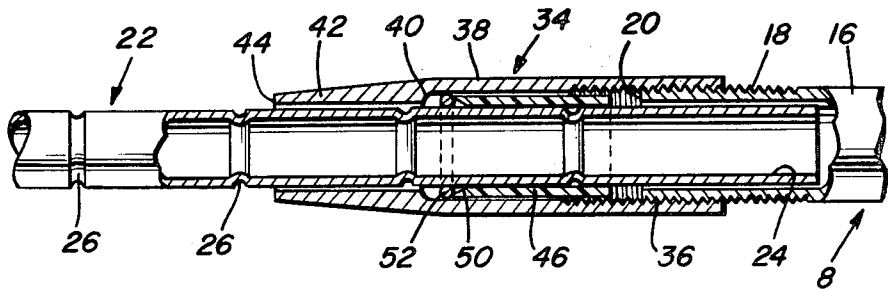


Fig. 3

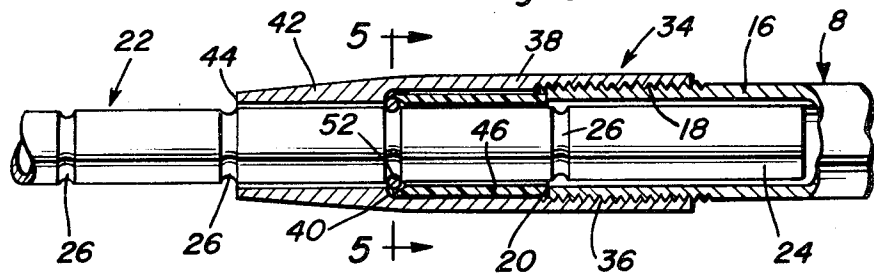


Fig. 4

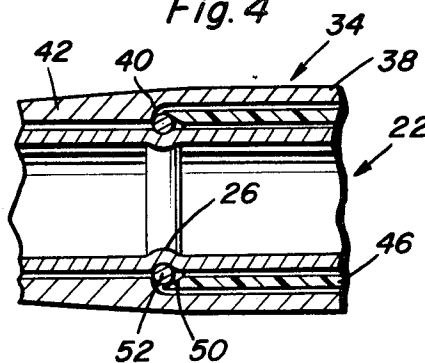


Fig. 5

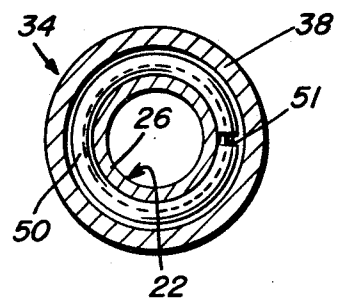
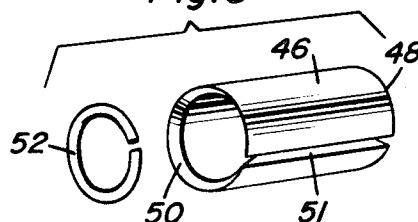


Fig. 6



John P. Jones
INVENTOR.

BY *Alvanice A. O'Brien*
and *Harvey B. Jacobson*
Attorneys

ADJUSTABLE SKI POLE WITH SPLIT RETAINER RING

This application is a continuation-in-part of my copending application Ser. No. 842,232, filed on July 16, 1969 and now abandoned.

This invention relates to a ski pole provided at its upper end with strap-equipped handle means, and at its pointed lower end with a hub-attached basket, said pole being made up of telescopically united pole sections which are united by novel coupling means which is adjustable with requisite nicety and certainty to conform to the height of the skier.

Although the herein disclosed invention pertains to an adjustable sectional ski pole which is best suited for manufacturers, retailers, and users, the essence of the concept has to do with an assembling and coupling joint between adjacent telescopically united tubular pole or equivalent sections, it also lends itself to practical utilization in the sectional handle of implements, such as for example a shuffleboard cue, U.S. Pat. 2,832,598 and rod joints, of which many and varied types are known and used but are not herein cited.

Briefly the extensible and retractable ski pole is characterized by an elongated upper tubular pole section having upper and lower end portions, an elongated lower tubular pole section having an upper end portion fitting telescopically and slidably adjustable in the lower tubular end portion of the upper pole section and having a pointed lower end. A basket is operatively mounted on the lower end portion of the lower pole section. A handgrip is operatively mounted in any suitable manner on the upper end of the upper pole section and is provided, in any suitably provided way with a looped wrist strap which is accessibly mounted on the upper end portion of the upper pole section and is cooperable with the handgrip. Novel self-contained manually regulatable coupling means is provided for and cooperatively mounted on the telescoping end portions of the upper and lower pole sections.

To the ends desired, the outer peripheral surface of the lower section is provided with longitudinally spaced distinctively designated calibrations. These calibrations are preferably in the form of endless longitudinally spaced annular grooves which are predetermined distances apart and define a graduated length measuring scale and, in addition, define keeper seats for selective reception and retention of an adjusting and retaining ring which is embodied in and constitutes a feature of the aforementioned coupling means.

In carrying out a preferred embodiment of the invention the coupling means is characterized by an outer elongated sleeve which has one end portion adjustably screwed on a screw-threaded end of the coaxing end of a first tubular section of the pole. A second elongated tubular section has an end portion passing through the outer sleeve and fitting telescopically and slidably into the bore of the first tubular section. The outer sleeve has an internal stop shoulder which is spaced from a cooperating stop shoulder which is formed at the terminal end of the first tubular section. An inner longitudinally split circumferentially expansible and contractible sleeve surrounds the end portion of the second tubular section and is confined in the outer sleeve and has one end abutting the first-named stop shoulder and its other end coaxing with the internal stop shoulder.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIG. 1 is a view in side elevation of the adjustable ski pole constructed in accordance with the principles of the present invention and featuring the aforementioned coupling sleeve and other measuring and retaining facilities.

FIG. 2 is a fragmentary detail view on an enlarged scale with parts in section and elevation detailing the coupling means and with the component parts thereof in released position and relationship.

FIG. 3 is a view similar to FIG. 2 but showing the manner in which the aforementioned component parts of the coupling means coact in achieving the desired clamping and retaining result.

FIG. 4 is a further enlarged detail view which emphasizes the aforementioned internal stop shoulder, one of the ring seating grooves, the split ring and camming bevel cooperable with the ring.

FIG. 5 is an enlarged cross-sectional view taken approximately on the plane of the section line 5—5 of FIG. 3 looking in the direction of the indicating arrows.

And FIG. 6 is an exploded perspective view of the aforementioned expansible and contractible split sleeve and the coordinating split seating and binding ring.

As is evident from the views of the drawing, the overall ready-to-use extensible and retractable ski pole comprises a first elongated tubular section 8 having an upper end 10 on which an appropriate handgrip 12 is suitably mounted (not detailed) and which is provided with a complementary looped hand strap 14. The lower open end portion of this first tubular section is denoted at 16. This lower portion, as best shown in FIGS. 2 and 3, is provided with external screw threads 18 and the terminal end portion thereof constitutes a stop shoulder 20. The second elongated tubular section 22 is of requisite length and cross-section for cooperation with the first-named section 8. The upper end portion thereof is denoted (FIGS. 2 and 3) at 24 and is fitted telescopically and adjustably into the bore of the lower end portion 16 of the section 8. A major part of the upper end portion of the pole section 22 is provided with longitudinally spaced endless circumferential ring seating keeper grooves 26. These grooves are spaced apart in the manner shown and cooperate in defining a practical easy-to-see measuring scale. The lower end portion 28 is pointed as at 30 and is provided above the pointed end with an appropriately constructed fixedly attached basket 32.

The coupling means comprises an outer elongated assembling and uniting sleeve 34 of requisite length whose upper internal end is provided with screw threads 36 which are adjustably joined to the aforementioned threads 18. The median body portion 38 of this sleeve is provided (FIG. 2) with an endless internal recess defining an annular stop shoulder 40 which constitutes the second shoulder and which is cooperable with the first-named stop shoulder 20. That portion 42 between the stop shoulder 40 and the terminal end 44

is externally tapered and may be described as truncated conical and equal in length to the distance between the respective measuring and seating grooves 26. The free terminal end 44 constitutes an indicator or index and assists in making a quick and reliable adjustment as is evident from the views of the drawing. The median shoulder portion of the outer sleeve is provided with an interior or inner longitudinally split circumferentially expansible and contractible sleeve 46 one end of which is denoted at 48 and the other beveled end at 50. One side is provided with a lengthwise groove 51 which extends and opens through the opposite ends 48 and 50.

As is evident from FIGS. 2, 3, 4 and particularly FIG. 6, it will be noted that the chamfered or beveled end 50 of the split sleeve 46 is structurally cooperable with a complementary resilient split clamping and binding ring 52 of requisite transverse cross-section and diameter. This ring is such that approximately a half portion thereof is capable of being seated and bound in the groove 26 as brought out for example in FIGS. 3 and 4. It is also such that it is oriented with the bevel 50 and in fact with the second named limit stop shoulder 40. It follows that when the pole sections and coupling means and component parts are in the position and relationship shown in FIG. 2 the split sleeve 46 is normally expanded as is the split ring 52. When the adjustment is desired, the pole sections 8 and 22 are adjusted and during this step the aforementioned index end 44 cooperates with an adjacent groove 26 in achieving a quick adjusting step. When the final adjustment is made the nut action of the threaded portions 18 and 36 serves to jam the beveled edge 50 against the ring 52 whereby to bind the ring in the coacting keeper groove as brought out in FIG. 3 and particularly in FIG. 4. Also, suitable indicia may be provided adjacent the grooves to enable the pole to be quickly adjusted to a desired length in accordance with the height of a skier.

In practice the split ring 52 is preferably a spring steel ring and has an internal diameter slightly larger than the exterior of the inner tubular section 22 when in relaxed condition to enable free movement of the sections. The split inner sleeve 46 is preferably made of an appropriate grade of nylon and the bevel in practice is approximately 30° from the inside edge to effectually override the ring 52 and to provide the desired camming and binding action. Briefly it will be understood that as the locking nut or outer sleeve is tightened on the upper shaft or pole section the split nylon sleeve is pushed and forced over the spring steel ring causing the spring steel ring to be clenched and held in the groove in a reliable non-slipping manner thus securely locking the pole in adjusted position. Also, while the coupling has been illustrated and described specifically in a ski pole structure, the telescopic coupling has many other utilities and may be effective wherever a securely locking telescopic joint is desired with the grooves serving as distance indicators as well as indicating when the shoulder 40 is aligned with a groove 26.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous

modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A telescopic coupling comprising a first elongated member of tubular configuration, one end of which constitutes a stop shoulder, said one end being screw-threaded, an outer sleeve having one end portion adjustably screwed on said screw-threaded end and its other end projecting beyond said stop shoulder, a second elongated member having an end portion passing through said outer sleeve and telescoping and slidingly and adjustably mounted in the bore of said first member, said outer sleeve having an internal stop shoulder spaced longitudinally from said first-named stop shoulder, a longitudinally split inner sleeve concentrically surrounding and radially and longitudinally displaceable relative to said end portion of said second tubular section and confined in said outer sleeve and having one end adapted to abut said first-named stop shoulder and its other terminal end being chamfered to provide a substantially annular bevel which is spaced from but longitudinally adjustable toward said internal stop shoulder, and a split resilient expansible and contractible ring encompassing said end portion of said second tubular section and interposed between said internal shoulder and said annular bevel of said inner sleeve, the outer peripheral surface of said second member being provided with encircling longitudinally spaced endless annular grooves defining keeper seats for selective reception and retention of said ring when contracted by said inner sleeve, said inner sleeve being constructed of resilient material to enable it to radially expand and partially override the ring and contract it inwardly, whereby said inner sleeve is radially expanded into flush engagement with said outer sleeve, said split ring being of uniform circular cross section and resiliency and normally having an internal diameter slightly larger than the second member to enable free movement when the split ring is not contracted by the inner sleeve, each of said annular grooves being of circular configuration and of semi-circular cross section of a diameter equal to that of said split ring, whereby the split ring is compressed into snug, retentive engagement with substantially the entire circumference of one of said annular grooves when contracted by said inner sleeve to provide positive locking in both longitudinal directions.

2. The telescopic coupling defined in and according to claim 1 wherein said grooves are spaced apart a predetermined distance, the end portion of said outer sleeve between (1) the internal shoulder and (2) the free leading end of said sleeve being of a length corresponding to the distance between the respective grooves, the free terminal end of the outer sleeve providing an index for visual length measuring registration with a predetermined groove.

* * * * *