Aug. 15, 1967 B. D. STRATTON 3,335,585

SKI POLE WITH LOCK

Filed March 15, 1965

Fig. 1.

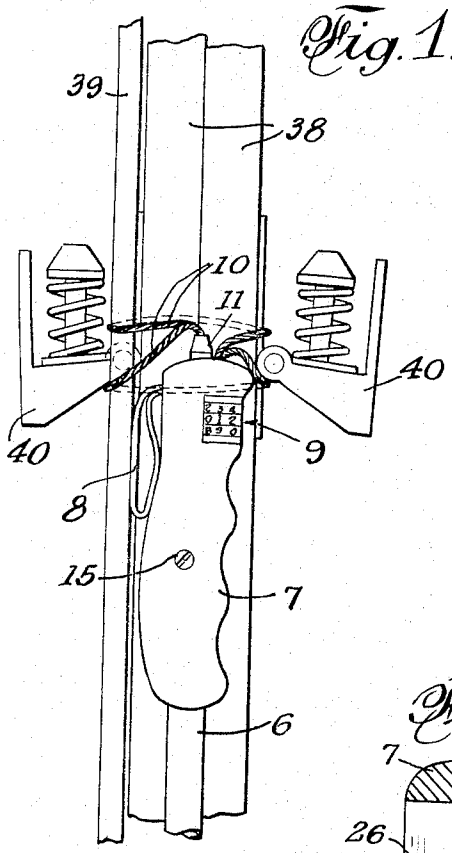


Fig. 2.

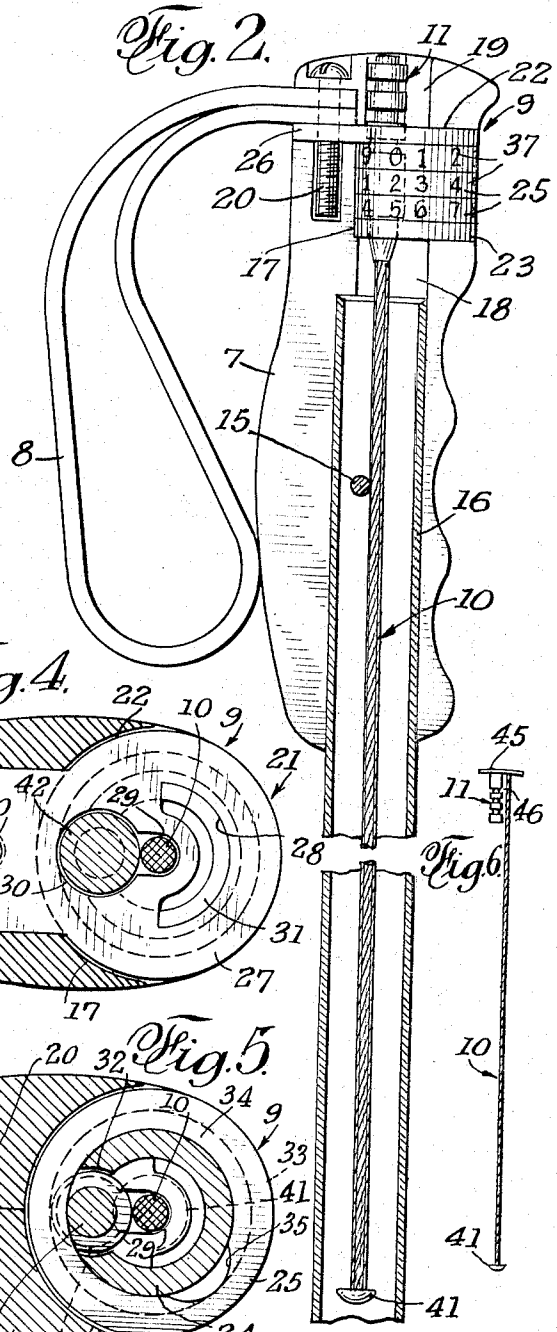


Fig. 3.

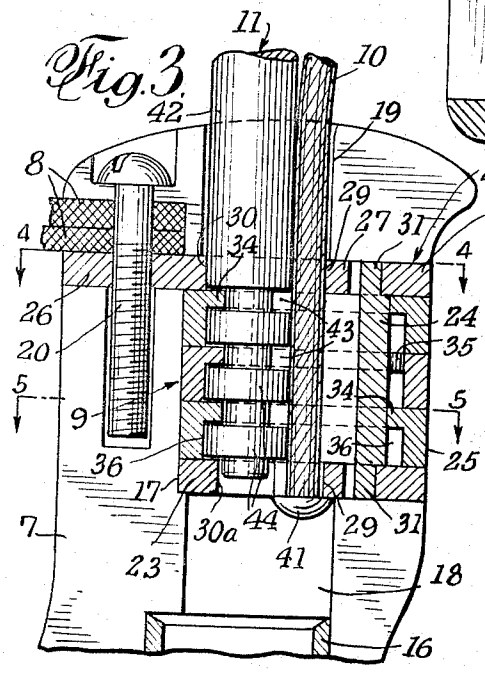


Fig. 4.

Fig. 5.

Fig. 6.

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United States Patent Office 3,335,585
Patented Aug. 15, 1967

3,335,585

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Filed Mar. 15, 1965, Ser. No. 439,834
12 Claims. (Cl. 70—58)

ABSTRACT OF THE DISCLOSURE

A ski pole with a handle at one end and a combination lock in the handle, the pole, handle and lock having an aligned passage or hollow; a loop-forming cable normally extending loosely in said hollow, the same having an enlargement on its inner end adapted to engage a stop in the hollow of the pole when drawn outwardly, to limit such position of the cable; a keeper on the outer end of the cable and having reversible locking positions in the lock, one when the cable is in its normal inward position, and the other when the cable is drawn outwardly and the outer end bend to form a locking loop.

This invention relates to a ski pole with a lock that deters theft of the pole and other articles connected thereto.

An object of the present invention is to provide a ski pole in which the lock is of the combination type and is incorporated in the pole handle or grip, and available for easy access and manipulation without a key.

Another object of the invention is to provide a structure as above characterized, that includes a flexible member held captive in the pole and capable of forming a loop by which the pole and other articles strung on or engaged with the loop may be so connected to a fixed rack or other member in order that theft of the pole and said articles is rendered difficult.

A further object of the invention is to provide a structure as above, further characterized by the provision of a free end on the flexible member, said end extending axially through the lock with a keeper on said free end which has releasable locking engagement with the lock.

A still further object of the invention is to provide, in a lock as characterized, a flexible loop-forming member advantageously formed of either one or two lengths of cable, as desired.

This invention also has for its objects to provide such means that are positive in operation, convenient in use, easily installed in a working position and easily disconnected therefrom, economical of manufacture, relatively simple, and of general superiority and serviceability.

The above objects are realized in a ski pole with a lock structure that has a combination lock that is embodied in the grip of the pole and which has an axial passage through which a cable passes. One end of said cable extends into the hollow of the pole with the inner end thereof enlarged to be held captive by the lock. The opposite end of the cable carries a keeper. In one embodiment of the present invention, when the cable is within the ski pole, the keeper extends longitudinally of the grip in one direction, and, when the keeper is inserted into the lock from the outside after a loop is formed in said cable, the keeper extends in the opposite direction in the grip. The keeper has releasable locking engagement with the combination lock according to the rotational manual adjustment of the lock rings of said lock, during said loop-forming position of the cable. The cable may be single or double, as desired, the loop formed therein and retained by the lock being adapted to encircle or have strung thereon a fixed, non-portable member, the other

ski pole of a pair thereof, a pair of skis, and other related or even unrelated items.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description, which is based on the accompanying drawing. However, said drawing merely shows, and the following description merely describes, preferred embodiments of the present invention, which are given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

FIG. 1 is a side elevational view showing the present ski pole and lock structure in operative position with respect to a non-portable fixed member that, by means of a double cable, holds said pole and related items captive.

FIG. 2 is an enlarged longitudinal sectional view of the grip end of said structure, showing the cable as a single cable and the same retracted within the hollow of the pole in non-operating position.

FIG. 3 is a further enlarged longitudinal sectional view of the lock and showing the condition thereof that forms and holds the cable into an item-encircling loop.

FIGS. 4 and 5 are cross-sectional views as taken on the respective lines 4—4 and 5—5 of FIG. 3.

FIG. 6, to a reduced scale, shows a modification.

The present ski pole **6** is provided with a grip or handle **7** that, near its upper end, has a wrist strap **8** of generally conventional form. A combination lock **9** is incorporated in said grip or handle **7** in a manner that does not interfere with the hand gripping the handle; in fact, the exterior of the lock conforms with the outer surface of the grip for comfortable gripping. A loop-forming cable **10**, in the unlocked condition of the structure, extends through said lock **9** into the hollow of the ski pole **6**. A keeper **11** is affixed to an end of said cable **10** and is engaged with the lock both when the cable is within the pole and when it is in the loop-forming, locked position. The keeper extends lengthwise of the grip when the cable is in a retracted position within the pole **6**, as shown in FIG. 2. The keeper extends in the opposite direction in the grip when the cable is in a loop-forming position and the keeper is locked in the combination lock, as shown in FIG. 3.

The tube **6** is typical of ski poles, being provided at its lower end with the usual encircling disc above the point of the pole.

The grip or handle **7** may be of any suitable form, but in this case is made of two longitudinally split halves that, by means of a bolt or screw **15**, are affixed to the upper end of the ski pole **6**. Said grip **7** has a bore **16** in which the tube **6** is received, a forwardly open recess **17** in which the lock **9** is disposed, a connecting passage **18** between the bore **16** and the recess **17**, and a passage **19** extending from the recess **17** through the upper end of the grip **7**. The grip includes the wrist strap **8**, which is shown as a doubled-over length of leather or other flexible material which is secured by a screw **20** to the lock **9**. Said strap preferably extends from the side of the grip that is opposite to the side at which recess **17** opens.

The combination lock **9** is shown as a frame **21** that comprises an upper plate **22**, a lower plate**23**, and a connecting arbor **24** that extends between and spaces said plates, and a set of combination rings **25** arranged in stack form between the plates **22** and **23**.

The plate **22** has an extension **26** with which the screw **20** may be self-tapping and to which plate the doubled-over ends of the strap **8** are clamped. Said plate **22** has a round portion **27** that fits the recess **17**. A semi-circular slot **28** in said plate portion **27** is described about the

center of said portion. On said center is a hole **29** and in a direction away from the slot **28**, said hole **29** opens into an enlargement **30** in said plate portion **27**.

The lower plate **23** has the same round size as the plate portion **27** and is provided with a slot **28**, hole **29** and enlargement **30** similar to those in plate portion **27**, except that said latter enlargement is of smaller diametrical size than the upper enlargement. Said smaller enlargement is designated **30***a*.

The connecting member **24** is tubular and its ends **31** fit into slots **28** to located an opening **32** in said tubular member **24** in register with and between the hole enlargements **30** and **30***a*.

The combination rings **25** are all alike in that each one comprises a ring portion **33** with an inreaching flange **34**, the latter having a single arcuate recess or notch **35**. Said rings **25** are shown stacked with the flanges **34** at the tops thereof, but the same may be inverted provided there are spaces **36** of the same number as the number of rings **25**. Three rings **25** are shown, but two, or more than three, may be used. It will be seen from FIGS. 3 and 5 that the rings are rotational around the arbor **24** which constitutes a bearing for said rings. Also, it will be seen that the outer size of the rings conforms to that of the plate portion **27** and the plate **23**.

The rings **25** differ from each other only in the location of notches **35** with respect to figures **37** inscribed or otherwise provided on the outer faces of the ring portions **33**. Any number of figures **37** may be used on each ring, but the same are preferably uniformly angularly spaced. It will be clear that when the notches **35** of the bank of combination rings are in register with each other and with the opening **32** in the connecting member **24**, the figures **37** that are opposite to said registered notches will be vertically aligned at the front of the lock and in registration with an index or other mark that may be provided on the outer edges of the plate portion **27** and the plate part **23**. As will later be clear, this is the unlocked position of the lock **9**.

The cable **10** is flexible so the same may be readily trained around items such as skis **38** and fixed members **39** to which the poles **6** and such skis, as well as other items, are secured. Braided cables are advantageous for this purpose. A single cable **10** may be used, as shown in FIGS. 2 to 6, or, if desired, so as to span around the ski bindings **40**, two cables connected only at their opposite ends may be used.

Said cable **10**, as shown in FIGS. 1 to 5, is provided with a head **41** at one end and the mentioned keeper **11** at the opposite end, said head and keeper comprising the members that connect the opposite ends of the cables, if two of them are used. In practice, the cable **10** may be about two feet in length, although longer or somewhat shorter cables may be used. It will be seen from FIGS. 3, 4 and 5 that the cable **10** extends longitudinally through the lock and resides in the holes **29** of the plates **22** and **23** when the keeper **11** is in locked position. In this position, the cable is formed as a loop in which the head **41** is abutted against the lower face of the plate **23** and the keeper **11** is locked by the rings **25**, as will be seen later. In the non-locking position of the lock, the keeper **11** is locked by at least one of the rings **25**, while the cable extends freely into the hollow of pole tube **6**.

The keeper **11** comprises a bar **42** of a size to fit the enlargement **30** and has grooves **43** that are spaced by lands **44**. The lands are so spaced longitudinally that the grooves may register with the flanges **34** of the rings **25**. With the rings **25** manually set, according to the combination of the lock, so that the notches **35** thereof are in register with each other and in register with the slot or opening **32**, the keeper is entered through passage **19** into the enlargement **30** of plate **22** and the registering ring notches **35**. The insertion is stopped by the endmost land **44** encountering the plate **23** due to the smaller size of enlargement **30***a*. In this position, the grooves **43** of the keeper are in register with the notches **35**. Now, by turning one or more of the rings **25**, the flanges **34** thereof will enter said grooves **43** (see FIGS. 3 and 5), locking the keeper to the lock. The lock combination is disarranged by such turning of the rings **25** and will keep the items **6**, **38**, **39** and others locked within the loop of the cable **10**, as well as items that may be strung over the keeper onto the cable.

Said smaller enlargement **32***a* prevents the head **41** of the cable from pulling through, thereby securely holding the cable captive in the lock.

FIG. 2 shows the keeper **11** locked by the topmost ring **25** so that the cable **10** will not accidentally slide out of the pole. It is believed clear without further illustration that for certain purposes, a flat spring may be employed in the grip or lock, to resiliently hold the keeper against escape from the position shown in FIG. 2. It will be noted that said keeper is inverted in its locked position of FIG. 3 relative to its position of FIG. 2. The structure shown appears to be the simplest form. However, if desired, the keeper and the cable, at one end of the latter, may be connected to each other in an arrangement as seen in FIG. 6. This side-by-side arrangement will have the head **41**, as before, at one end of the cable. At the opposite end, the cable and the keeper are shown rigidly connected by member **45** that may set into a recess provided in the upper end of the grip **7**. The cable, in this modification, will be required to have sufficient limberness so the loop therein may be readily formed. In this form, the keeper has the same position in the lock both when the cable **10** is retracted into the pole tube **6** and when trained as a loop. It will be noted that the keeper **11** and the cable **10** are spaced from each other at **46**. The space is necessary so that cable at the keeper end of the loop may extend along the front of the lock with the part **45** back in its position at the end of the grip, and from which it had been removed when the loop was formed.

The term "ski pole" used in this specification and in the claims is intended to include other elongated articles, as canes, umbrellas, etc.

Only one ski pole of a pair thereof need be provided with the present lock means, since the other pole may be connected as by its wrist loop to the looped cable.

While the foregoing has illustrated and described what is now contemplated to be the best mode of carrying out the invention, the constructions are, of course, subject to modification without departing from the spirit and scope of the invention. Therefore, it is not desired to restrict the invention to the particular forms of construction illustrated and described, but to cover all modifications that may fall within the scope of the appended claims.

Having thus described the invention, what is claimed and desired to be secured by Letters Patent is:

1. A hollow ski pole and lock structure comprising:
   (a) a grip with a longitudinal passage that connects with the hollow interior of the ski pole, said passage having a side opening extending to the exterior of the grip,
   (b) a hollow combination lock fitted into said opening and including a plurality of locking rings in longitudinal stacked relation, and upper and lower plates, one of each end of the stack of rings, with a hollow spacing arbor connecting said plates and constituting a bearing on which the locking rings are manually rotationally adjustable,
   (c) a flexible cable extending through the hollow of the lock and provided at one end thereof with a head having movement-limiting engagement with the mentioned lower lock plate, and
   (d) a keeper connected to the opposite end of the cable, said keeper being disposed in releasable locking engagement with all of said locking rings when the cable is retracted from the pole with the head

thereof adjacent said lower plate and the cable trained as a loop for retaining articles.

2. A ski pole and lock structure according to claim 1, in which the cable comprises two coextensive lengths of cable that are connected only at both ends thereof.

3. A ski pole and lock structure according to claim 1, in which the keeper is disposed in releasable locking engagement with at least one locking ring of the lock when the cable is projected into the hollow of the pole.

4. A ski pole and lock structure according to claim 1 further comprising:

(a) a wrist strap at the upper end of the grip,

(b) an extension on said upper plate of the lock, and

(c) a single screw fastening the wrist strap and the extension, and thereby the lock, to the grip.

5. A ski pole and lock structure according to claim 1, in which

(a) cable-guiding holes are provided in the mentioned upper and lower lock plates, the upper hole having a connecting enlargement for accommodating the keeper,

(b) the arbor having a longitudinal opening extending from the hole enlargement in the upper plate, and

(c) said hole enlargement and longitudinal opening constituting a longitudinal guide for the keeper.

6. A ski pole and lock structure according to claim 4, in which the cable-guiding hole in the lower plate has an aligned enlargement that is smaller than the arbor opening and constitutes a stop for the end of the keeper inserted into the lock with the cable in loop form.

7. In a ski pole,

(a) a combination lock located adjacent to the upper end of the pole and including a plurality of locking rings in longitudinal stacked relation, and upper and lower plates, one on each end of the stack of rings, wtih a hollow spacing arbor connecting said plates and constituting a bearing on which the locking rings are manually rotationally adjustable,

(b) a flexible cable extending through the hollow of the lock and provided at one end thereof with a head having movement-limiting engagement with the mentioned lower lock plate, and

(c) a keeper connected to the opposite end of the cable,

(d) said keeper being disposed in releasable locking engagement with at least one locking ring of the lock when the cable is projected downwardly below the lower plate of the lock, and disposed in releasable locking engagement with all of said locking rings when the cable is drawn to a position having the head thereof adjacent the lower lock plate with the protion of the cable retracted from the lock formed in an article-retaining loop.

8. In a hollow ski pole,

(a) a hollow grip adjacent the upper end thereof,

(b) a hollow, releasable, combination lock on the grip,

(c) a flexible cable extending loosely through the hollow grip and the hollow lock, and lengthwise in the hollow ski pole,

(d) an enlarged member on the inner end of the cable and normally longitudinally spaced from said lock, and a stop member in the hollow of the pole to prevent escape of the cable from the ski grip when the cable is drawn in an outward direction to engage said members, and

(e) a keeper on the opposite end of the cable and disposed to be lockingly engaged by the combination lock after the cable, as mentioned, is drawn lengthwise of the ski pole, of the grip and of the lock, and is doubled back to form a member locking loop.

9. In a grip and lock combination for a locking ski pole,

(a) a hollow grip,

(b) a hollow, releasable, combination lock on the grip,

(c) a flexible cable extending loosely through the hollow grip and through the hollow lock,

(d) an enlarged member on the inner end of the cable and normally longitudinally spaced from said lock, and a stop member in the hollow of the pole to prevent escape of the cable from the ski grip when the cable is drawn in an outward direction to engage said members, and

(e) a keeper on the opposite end of the cable and disposed to be lockingly engaged by the combination lock after the cable, as mentioned, is drawn through the grip and through the lock, and is doubled back to form a member locking loop.

10. In a grip and lock combination for locking a ski pole,

(a) a hollow grip,

(b) a combination lock on the grip, the lock having a hollow body provided with an opening having two different widths,

(c) a flexible cable extending loosely through the opening in the lock,

(d) an enlarged member on the inner end of the cable and normally longitudinally spaced from the lock, and a stop member in the hollow of the pole to prevent escape of the cable from the grip when the cable is drawn in an outward direction to engage said members, and

(e) a keeper on the opposite end of the cable and disposed to be lockingly engaged by the combination lock when the keeper is in the larger portion of the opening in the lock and the cable is in the smaller portion of the opening after the cable, as mentioned, has been drawn through the opening and is doubled back to form a member locking loop.

11. In combination with a hollow ski pole,

(a) a hollow grip adjacent an end of the ski pole,

(b) a combination lock on the grip, the lock having a hollow body,

(c) a flexible cable extending loosely in the hollow grip, in the hollow lock and in the ski pole when in a retracted position,

(d) an enlarged member on the inner end of the cable and normally longitudinally spaced from said lock, and a stop member in the hollow of the pole to prevent escape of the cable from the grip when the cable is drawn in an outward direction to engage said members, from the lock, and from the ski pole and

(e) a keeper on the outer, free end of the cable, the keeper having reversible positions in the lock, one position being when the cable is withdrawn into the hollow of ski pole and the keeper is disposed to be locked by the combination lock and in a reverse position after the cable has been withdrawn with respect to the ski pole and a loop formed by the cable.

12. In the combination called for by claim 11, the combination lock being provided with means to lock the keeper in each of its reverse positions.

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