United States Patent [19]

Massa

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[54] **SAFETY SKI HARNESS CABLE SYSTEM**

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[52] **U.S. Cl.** ..... **104/113,** 272/57 B, 104/69, 280/11.37 R

[51] **Int. Cl.** **E01b 25/14**

[58] **Field of Search** ..... 280/11.37 R; 272/57 B; 104/53, 62, 69, 70, 112, 113

[56] **References Cited**

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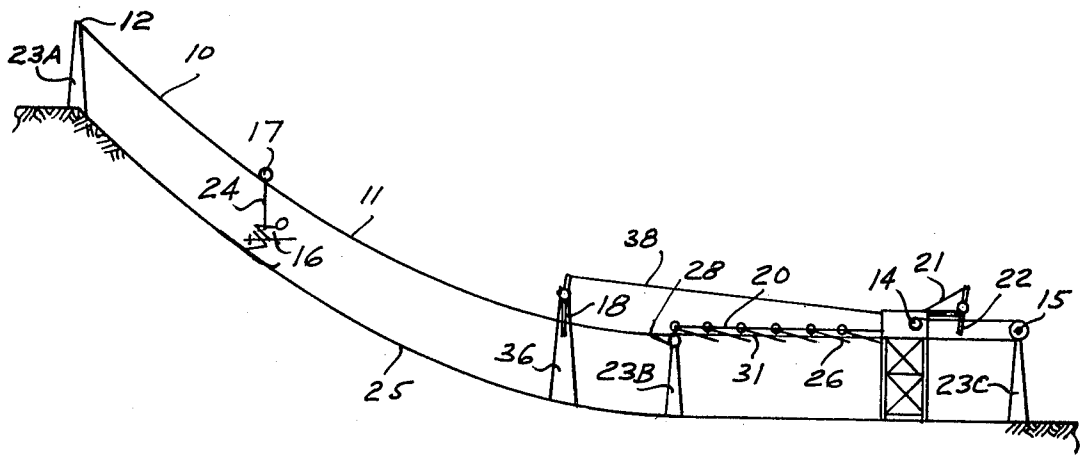
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Assistant Examiner—D. W. Keen
Attorney, Agent, or Firm—Howard I. Podell

[57] **ABSTRACT**

A safety harness cable system to protect a skier from injury while learning the art of skiing. A harness attached about a skier is fastened to a pulley which rides on the cable system suspended above the ski run. The cable system is fitted with a brake mechanism at the end of the run to retard the skier's forward motion.

2 Claims, 6 Drawing Figures



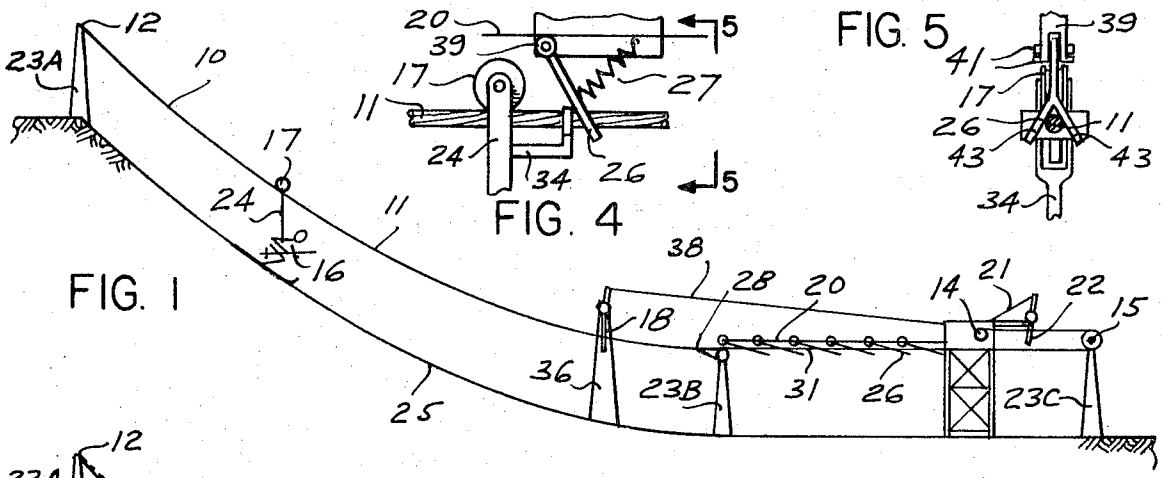


FIG. 1

FIG. 4

FIG. 5

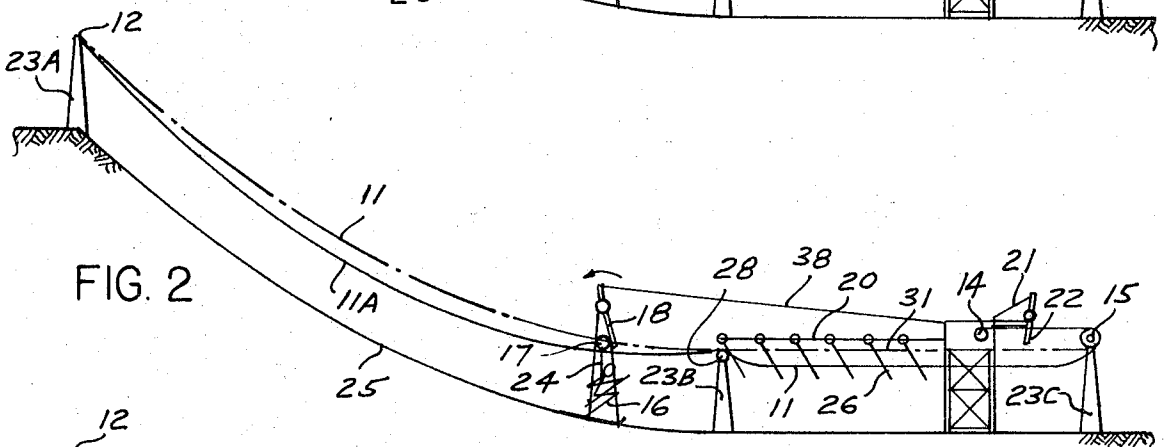


FIG. 2

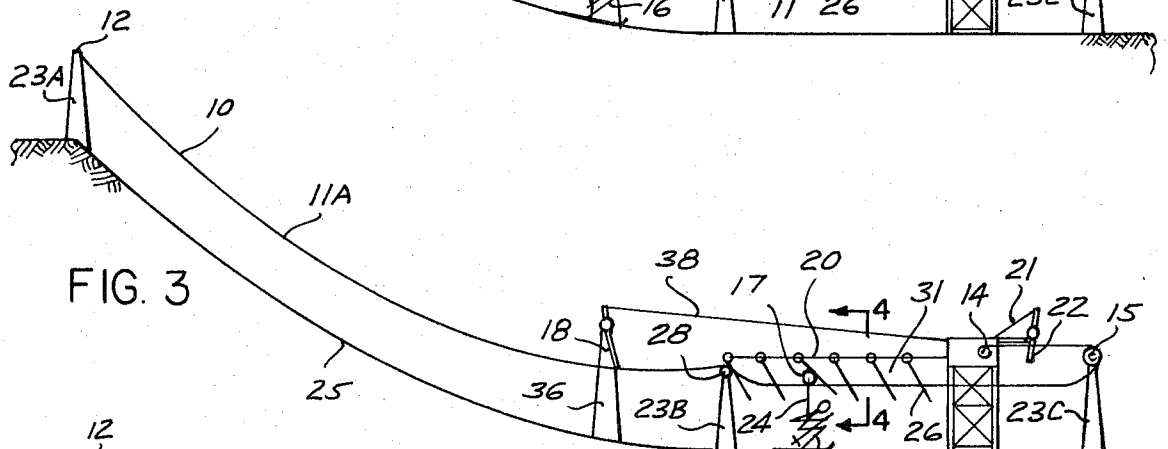


FIG. 3

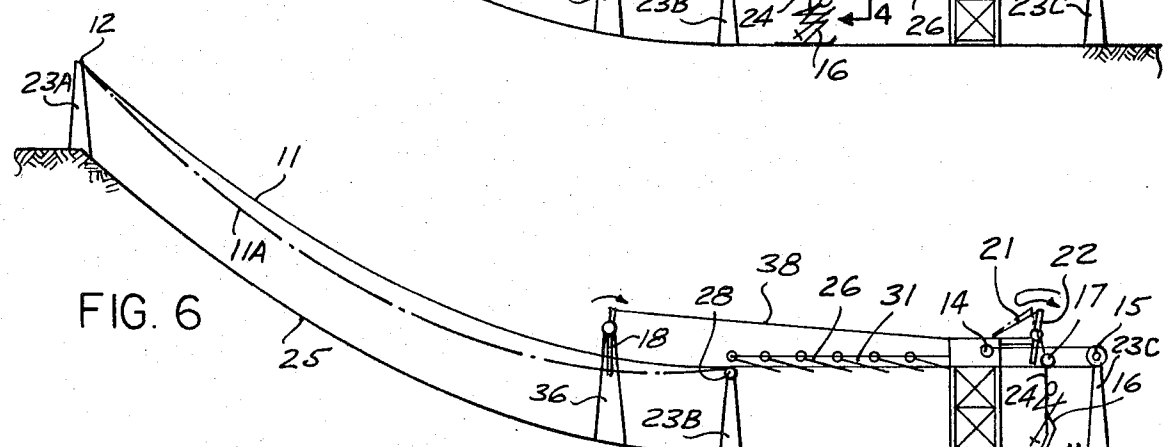


FIG. 6

SAFETY SKI HARNESS CABLE SYSTEM

SUMMARY OF THE INVENTION

My invention is a safety harness and cable system which enables a new skier, attached by the harness to a pulley-cable system, to descend a slope safely and which retards his progress to a gradual and safe stop at the end of the run.

A major advantage of my invention is that an untrained skier is protected from injury and can ski with ease of mind.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects and features of the invention may be understood with reference to the following detailed description of an illustrative embodiment of the invention, taken together with the accompanying drawings in which:

FIG. 1 is a side view of the invention, in use, with an attached skier in mid-run;

FIG. 2 is a side view of the invention in use with an attached skier approaching the end of the run;

FIG. 3 is a side view of the invention in use with the attached skier in the retard section of the apparatus;

FIG. 4 is a detail side view of the braking mechanism taken along lines 4—4 of FIG. 3;

FIG. 5 is an end view of the braking mechanism taken along line 5—5 of FIG. 4; and

FIG. 6 is a side view of the apparatus, with the attached skier at the release end.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1–3 and FIG. 6 illustrate the ski-run cable system **10.** A cable **11** is suspended on towers **23A, 23B** and **23C** over a sloping ski run **25,** with one end of the cable **11** fixed to the top **12** of tower **23A** at the start of the run and the other end of the cable **11** fixed to the drum **14** of a winch at the end of the run.

The skier **16** is fastened into a harness (not shown) which is fastened to the end of a suspension rope **24** fastened to a pulley **17** which rides on cable **11.**

Cable **11** is supported by a pulley **28** mounted to the top of tower **23B** which is located at the entrance to the retard section **31** of the system **10** and a pulley **15** mounted to the top of the tower **23C** at the end of the run, with cable **11** passing about pulley **15** and running to a winch drum **14.**

Pulley **28** on tower **23B** is mounted so that pulley **17** of the suspension rope may freely ride on cable **11** over pulley **28.** As shown in FIGS. **4–5,** a bracket **34** is fitted to pulley **17** and loosely about cable **11** so as to ride ahead of pulley **17** and engage trigger **18** pivotably mounted on tower **36,** ahead of retard section **31,** to frictionally engage retard flippers **26** in the retard section **31,** and to engage trigger **22** at the end of the retard section **31.**

As shown in FIG. **1,** the cable **11** is pulled taut at the start of the skier's run and until the skier **16** reaches trigger **18.** As shown in FIG. **2,** the cable tension is slackened by rotation of winch drum **14** to the position of cable **11A** shown in FIG. **2,** from the taut position of cable **11** shown in dotted lines, when the bracket **34** of pulley **17** hits trigger **18** on tower **36** at the foot of the slope of ski run **25.**

Trigger **18** is joined by cable **38** to the winch control mechanism (not shown). Slackening of cable **11** is accompanied by movement of cable **20** which is also wound at its end about winch drum **14,** so as to move attached flippers **26** into position to each hit pulley **17** and attached bracket **34** as the skier **16** passes through retard section **31,** and to slow his progress.

After passing through retard section **31,** pulley bracket **34** hits trigger **22** which is fastened by cable **21** to the winch control mechanism so as to activate winch drum **14** to rotate and tighten cable **11** to the initial taut position shown in solid lines in FIG. **6** from the slack position indicated by dotted lines **11A.**

Each brake flipper **26** is fixed by bolts **41** to a pulley **39** which is frictionally engaged to cable **20.** An individual tension spring **27** serves to maintain each flipper **26** in a horizontal plane shown in FIGS. **1** and **4** when cable **20** is slack, with tightening of cable **20** by winch drum **14** rotating pulleys **39** so as to move brake flippers **26** into a vertical plane where they may engage pulley **17** of the skier, and act to retard the forward progress of the skier **16.** Each brake flipper **26** and attached pulley **39** can individually rotate, when struck by a moving pulley **17** since flipper pulley **39** is in frictional engagement with cable **20.** The free end of each flipper **26** is formed in the shape of a double fork **43** that rides on the top of cable **11.**

Since obvious changes may be made in the specific embodiment of the invention described herein, such modifications being within the spirit and scope of the invention claimed, it is indicated that all matter contained herein is intended as illustrative and not as limiting in scope.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A cable suspension system for guiding and protecting a skier, attached by a harness and suspension rope to the apparatus, comprising a suspension cable mounted on towers along the length of a ski run, with the suspension rope attached to the harness of the skier and fastened by a pulley to the said suspension cable, with the apparatus fitted with a retard means for slowing the forward progress of an attached skier at the end of the run, in which the suspension system is maintained in a taut condition by winch drum means.

2. The combination as recited in claim **1** in which the retard means is actuated by operation of the winch drum means to slacken the cable.

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