

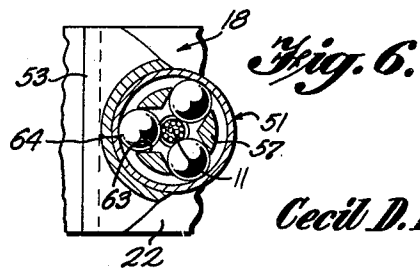
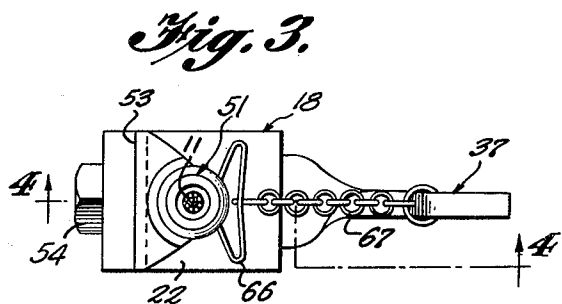
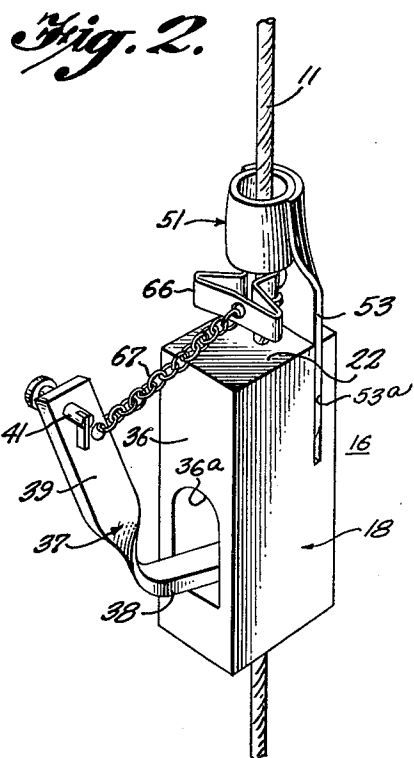
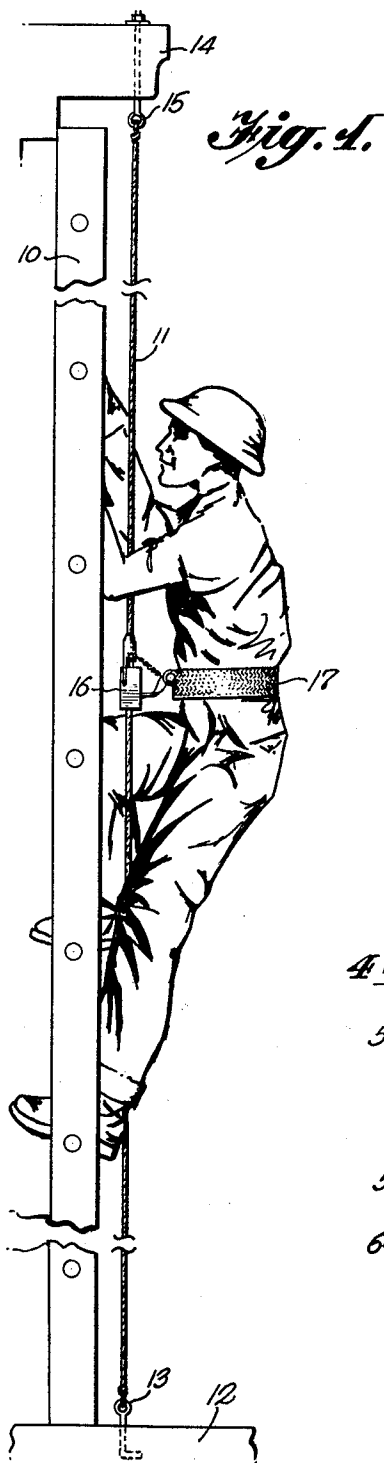
April 13, 1965

C. D. FOUNTAIN
SAFETY LOCKING DEVICE

3,177,543

Filed Nov. 14, 1962

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5.

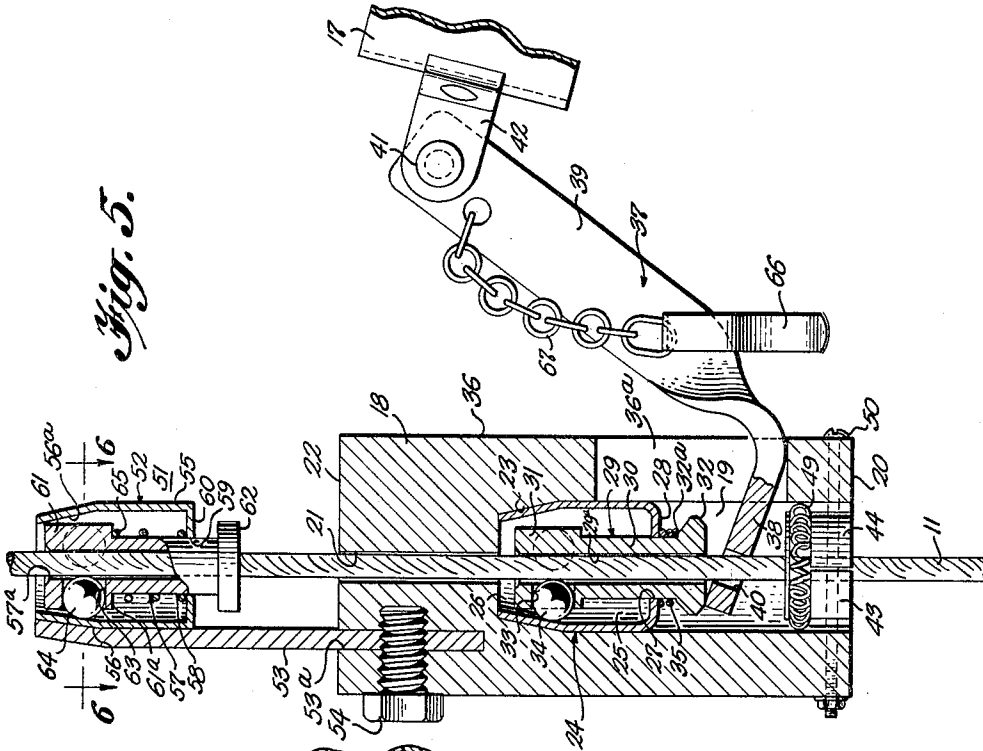
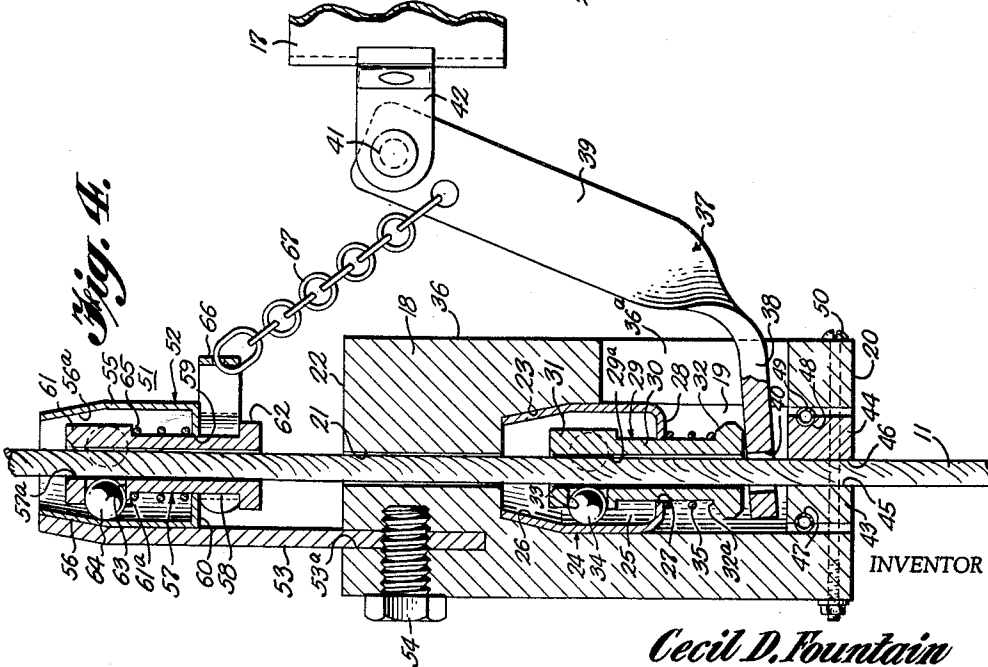


Fig. 4.



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SAFETY LOCKING DEVICE

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12 Claims. (Cl. 24—126)

This invention relates to a safety locking device and more particularly to a locking device suitable for use by a climber ascending or descending heights to prevent his fall when he loses his footing or grip on the object being climbed including ladders and the like.

In the prior art there are many types of safety locking devices intended for use in ascending or descending heights for preventing the fall of the user thereof on occasion when he loses his footing or grip on the particular object being climbed including ladders and the like. Although many of such devices have been found to be suitable in arresting the fall of the climber, they have not been found to be sufficiently effective to instantaneously arrest the fall of the climber when he loses his footing or grip and yet to provide a minimum amount of interference or impediment to the climber during the normal rate of ascent and descent thereof.

Accordingly it is the principal object of this invention to provide an improved safety device suitable for use by climbers ascending and descending heights.

Another object of the present invention is to provide an improved safety device suitable for use by a climber which is effective in instantaneously arresting the fall and supporting the weight of such climber when he has accidentally lost his footing or grip on the object being climbed.

A further object of the present invention is to provide an improved safety locking device suitable for use by a climber which cooperates with a fixed vertical cable disposed coextensively with and adjacent to the object being climbed and which is adapted to be connected to the body of the climber.

A still further object of this invention is the provision of an improved safety locking device suitable for use by a climber which is adapted to permit the normal ascent and descent of the climber but will instantaneously arrest any sudden and abrupt downward movement of the climber.

Another object of the present invention is to provide an improved safety locking device suitable for use by a climber which cooperates with a fixed vertical cable disposed coextensively with and adjacent to the object being climbed, and is connected to the body of the climber, permitting the normal ascent and descent of the climber but becoming locked to the cable in response to any sudden or abrupt downward movement of the climber.

A further object of this invention is to provide an improved safety locking device suitable for use by a climber which is simple in construction and inexpensive to manufacture.

Other objects and advantages of the present invention will become apparent to those skilled in the art from the following description when read in conjunction with the accompanying drawings wherein:

FIGURE 1 is an elevational view of the invention shown in its normal use environment;

FIGURE 2 is a perspective view of the invention;

FIGURE 3 is a top view of the invention;

FIGURE 4 is an enlarged sectional view taken along line 4—4 in FIGURE 3 showing the invention in the unlocked position;

FIGURE 5 is an enlarged sectional view similar to the view in FIGURE 4, showing the invention in the locked position; and

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FIGURE 6 is a sectional view taken along line 6—6 in FIGURE 5, having portions thereof broken away.

In accordance with the broad scope of the present invention, there is provided a locking device suitable for use by a climber which is adapted to be used in cooperation with a fixed vertical cable disposed coextensively with and adjacent to the object being climbed such as a vertically disposed ladder and the like. The device generally comprises a housing means having openings therein for receiving the cable therethrough. The housing means is provided with at least one surface tapered inwardly and upwardly relative to the cable defining a camming surface. Cooperating with the camming surface and the cable are camming means carried by suitable carrier means being urged out of locking engagement therewith by a biasing means thus permitting the device to move relatively freely, upwardly and downwardly, during the ascent and descent of the climber at a normal rate of travel. Additional actuating means are provided, operatively engageable with the carrier means and operatively connected to the climber which is responsive to any sudden or abrupt downward movement of the climber, as when the climber loses his footing or grip on the object being climbed, causing the actuating means to operatively engage the carrier means, overcoming the opposing force of the biasing means to force the camming means into engagement with the camming surface, causing the camming means to be forced radially inwardly to lock the device to the cable thus instantaneously arresting the downward movement of the device and the climber being connected to the actuating means thereof.

Referring to FIGURE 1 of the drawing, there is shown an elevational view of the invention in its use environment including a vertically disposed ladder 10 having a fixed vertical cable 11 disposed coextensively with and adjacent to the ladder. The cable is anchored to the ground 12 by means of a suitable anchor bolt 13 and also suitably secured at its opposite end to an overhanging ledge member 14 by means of a bolt 15. Freely mounted on the cable is a locking device 16 which is provided with means to connect the same to a waist belt 17 worn by the climber.

The preferred embodiment of the locking device as illustrated in the drawings comprises a housing member 18 having an axially disposed cavity 19 in the bottom surface 20 thereof and an axially aligned opening 21 in the top surface 22 thereof communicating with cavity 19 for receiving the cable 11 through the device. The cavity 19 generally is cylindrically shaped for a major portion of its length, having the upper end thereof tapered inwardly and upwardly, providing an inwardly converging or frusto-conical shaped surface 23. Suitably secured in the upper portion of cavity 19 is a receptacle member 24 having a side wall substantially conforming to the shape of the upper portion of the cavity 19, providing a cylindrical inside surface 25 and an inwardly converging tapered camming surface 26. The receptacle member also has an opened upper end and an axial opening 27 in the bottom wall 28 thereof for receiving the cable 11 therethrough.

Mounted on the cable 11 within the cavity 19 is a carrier member 29 having an axial opening 29a comprising an elongated cylindrical body portion 30 passing through opening 27 in the bottom wall of the receptacle, having an upper collar portion 31, the diameter of which is slightly less than the diameter of the opened upper end of the receptacle member, being disposed within the receptacle and a lower collar portion 32 disposed below the bottom wall 28 of the receptacle. The upper collar portion 31 of the carrier member is formed with a plurality of transversely extending openings 33 communicat-

ing with the axial opening 29a, each containing a camming ball 34 having a diameter slightly less than the radial distance between the cable and the inside cylindrical surface 25 of the receptacle member. It will be appreciated that the carrier member is adapted to move axially thus moving the camming balls 34 into and out of camming engagement with camming surface 26, causing them to be forced radially inwardly and outwardly, into and out of engagement with the cable but is normally retained in the unlocked position as shown in FIGURE 4 by means of helical spring 35 mounted on the lower end of the body portion 30 of the carrier member, interposed between the bottom wall 28 of the receptacle and the upper annular surface 32a of the lower collar portion 32 of the carrier member, urging the carrier member downwardly relative to the receptacle member.

The housing member 18 also is formed with a transversely extending opening 36a in the front surface 36 thereof communicating with the lower portion of the cavity 19. Extending into the opening 36a is an actuating lever 37 comprising a flat twisted bar member having a first end portion 38 thereof extending through opening 36a into the cavity 19 and an opposite end portion 39 formed at an angle of about 45° relative to the end portion 38. The end portion 38 of the lever extends into the cavity 19 under the carrier member 29 and is provided with a hole 40 for receiving the cable therethrough, having a diameter slightly greater than the diameter of the cable, to permit tilting of the end portion 38 in a vertical plane, thus permitting it to operatively engage the carrier member 29. The opposite end portion 39 is operatively connected by means of a suitable pin 41 to fastening member 42 rigidly secured to the waist belt 17 worn by the climber. In the lower end of cavity 19 are a pair of semi-cylindrically shaped blocks 43 and 44 having cooperating grooves 45 and 46, respectively, for accommodating the cable 11 therebetween. The upper portions of the cylindrical surfaces of the blocks are formed with aligned annular grooves 47 and 48, positioning a coil spring 49 which urges the blocks together to provide a yieldable clamping action on the cable. The blocks 43 and 44 are carried by a pair of bolts 50 disposed in suitably aligned openings in the housing and the blocks. It will be appreciated that the blocks 43 and 44 serve to center the cable in the lower portion of the housing member and also to provide a drag on the cable.

Disposed above the housing member 18 is a cooperating locking mechanism 51 comprising a receptacle member 52 mounted on a post member 53, the lower end of which is seated in a slot 53a in the top surface 22 of the housing member and which is rigidly secured therein by means of a bolt 54 extending into suitably aligned threaded openings in the housing member and the post member. The receptacle member 52 is similar to receptacle member 24 and is disposed in axial alignment therewith for receiving the cable 11 therethrough. As best shown in FIGURES 4, 5 and 6, the receptacle member 52 comprises a cylindrically shaped side wall portion 55 having the upper portion 56 thereof tapered inwardly and upwardly relative to the cable, to provide an inwardly converging camming surface 56a adjacent the cable passing therethrough.

Mounted on the cable within receptacle member 52 is a carrier member 57 having an axial opening 57a for receiving the cable therethrough similar to carrier member 29, comprising an elongated cylindrical body portion 58 passing through an opening 59 in the bottom wall 60 of the receptacle, having an upper collar portion 61 disposed in said receptacle and a lower collar portion 62 disposed below the bottom wall 60. The upper collar portion of the carrier member having a diameter less than the diameter of the upper opening in the receptacle is provided with a plurality of transversely extending openings 63, each containing a camming ball 64 having a diameter slightly less than the radial distance from the

cable to the inner cylindrical surface of the side wall 55 of the receptacle 52.

The carrier member 57 normally is urged upwardly to move the camming balls 64 into engagement with camming surface 56a by means of a helical spring 65 mounted on the upper end of the body portion 58 of the carrier member, interposed between the bottom wall 60 of the receptacle and the lower annular surface 61a of the collar portion 61 of the carrier member. To retain the carrier member 57 in the unlocked position as shown best in FIGURE 4, there is provided a spring clip 66 which is adapted to be clipped onto the lower portion of the carrier member between the bottom wall 60 of the receptacle and the lower collar portion 62. It will be noted that the spring clip releasably retains the carrier member in the unlocked position against the biasing action of compressed helical spring 65. The spring clip 66 is connected to the end portion 39 of the actuating lever 37 by a chain 67, the length of which is sufficient to keep the chain taut when the entire device is in the unlocked position as illustrated in FIGURE 4.

As disclosed in the drawings, the safety locking device is adapted to be mounted on a fixed vertical cable disposed coextensively with and adjacent to a vertical ladder and the like. The device also is adapted to be attached to a waist belt of a climber and to be moved either upwardly or downwardly without locking while the climber is ascending or descending at a normal climbing rate. Referring to FIGURE 4, there is shown the position of the operative parts of the device in the unlocked position, thus permitting the climber to move freely upwardly and downwardly without any interference from the locking device. It will be noted that the cooperating locking mechanisms are retained in their unlocked positions whereby the carrier member 57 is held in the retracted position by the spring clip 66 interposed between the bottom wall 60 of the receptacle and the bottom collar portion 62 of the carrier member, and the carrier member 29 is held in the retracted position by means of the biasing action of helical spring 35, thus preventing the camming balls 64 and 34, respectively, from moving upwardly into camming engagement with inwardly converging camming surfaces 56a and 26, causing them to be forced radially inwardly relative to the axis of the device, thus restricting the axial movement of the device relative to the cable.

The normal upward or downward movement of the climber provides a sufficient amount of force to carry the device upwardly and downwardly on the cable, yet insufficient to pivot the lever member a sufficient amount, causing it either to force the carrier member 29 upwardly against the biasing action of helical spring 35 to move the camming balls 34 into camming engagement with the camming surface 26 or to pull the spring clip 66 out of position, to permit compressed helical spring 65 to move the carrier member 57 upwardly, so that the camming balls 64 engage the camming surface 56a. Accordingly, it will be noted that barring any sudden downward movement of the climber as when he either loses his footing or grip on the ladder, causing the actuating lever 37 to be pulled abruptly downward, the device is free to move vertically without any appreciable interference.

Whenever the climber loses his grip or footing on the ladder and begins to fall, the weight of his body immediately will pull the end portion 39 of the actuating lever 37 downwardly, simultaneously causing the lever to pivot in a substantially clockwise direction to pull out the spring clip 66, and causing the end portion 38 of the lever to move upwardly into operative engagement with the bottom surface of carrier member 29. When this occurs, the carrier member 57 under the biasing action of helical spring 65, moves upwardly, urging camming balls 64 into engagement with camming surface 56a so that the balls are caused to move radially inwardly against the cable, arresting the movement of the device relative to the cable. Simultaneously the end portion 38

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of actuating lever 37 engages the bottom surface of carrier member 29, whereby the carrier member is forced upwardly, overcoming the biasing action of helical spring 35. Accordingly, the camming balls 34 engage camming surface 26, causing them to be forced radially inwardly against the cable to arrest the axial movement of the device relative to the cable.

It will be noted that normally the actuating lever has a considerable amount of freedom of movement prior to engaging the bottom surface of the carrier member 29 to actuate it into the locking position. However, any abrupt downward movement of the climber will cause the actuating lever to be forced downwardly, so that the intermediate portion thereof comes to rest on the bottom ledge of the opening 36a, utilizing the same as a fulcrum, to permit the end portion 38 thereof to move upwardly into operative engagement with the bottom surface of the carrier member 29.

It will be appreciated that the device as disclosed having all of its parts in the unlocked position as shown in FIGURE 4 permits the climber to ascend or descend without any interference from the device. Particularly during the normal rate of descent by the climber, it is to be noted that the restraining means for disposing the locking means of the cooperating mechanisms in the unlocked position are sufficient to oppose the counteracting force of the lever means tending to actuate the locking means into the locked position. However, the cooperating mechanisms are adapted to be instantaneously responsive to any abrupt downward movement of the climber to arrest his fall, thus permitting him to reacquire his grip and footing on the ladder.

From the foregoing detailed description, it will be evident that there are a number of changes, adaptations, and modifications of the present invention which come within the province of those skilled in the art. However, it is intended that all such variations not departing from the spirit of the invention be considered as within the scope thereof as limited solely by the appended claims.

What I claim is:

1. A locking device suitable for use with an upwardly extending cable for preventing the fall of a user and permitting free movement during normal ascending and descending of the user along the cable thereof comprising a housing means having openings therein for receiving said cable therethrough, locking means provided in said housing for locking said device to said cable, biasing means provided in said housing for retaining said locking means in an unlocked position, said biasing means having a force sufficient for retaining said locking means in the unlocked position during normal ascending and descending movements of said user, movable actuating means mounted on said device responsive to a predetermined movement of said user of said device for moving said locking means into a locking position, and said actuating means having means for operatively connecting said actuating means to said user.

2. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof and permitting free movement during normal ascending and descending of the user along the cable comprising a housing means having openings for receiving said cable therethrough, said housing means being provided with at least one surface converging upwardly and inwardly relative to said cable defining a camming surface, camming means cooperating with said camming surface and said cable, biasing means provided in said housing for retaining said camming means out of locking engagement with said camming surface and said cable, said biasing means having a force sufficient for retaining said camming means out of locking engagement with said camming surface and said cable during normal ascending and descending movements of said user, movable actuating means mounted on said device responsive to a predetermined movement of the user in a downward direc-

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tion to move said camming means into locking engagement with said camming surface and said cable, and said actuating means having means for operatively connecting said actuating means to said user.

3. A locking device suitable for use with an upwardly extending cable for preventing the fall of a user thereof and permitting free movement during normal ascending and descending of the user along the cable comprising a housing means having openings therein for receiving said cable therethrough, locking means provided in said housing for locking said device to said cable normally occupying an unlocking position, movable lever means provided on said device for moving said locking means into a locking position responsive to a predetermined movement of said user, biasing means operatively connected to said housing means retaining said locking means in said unlocking position having sufficient force to prevent displacement of said locking means by said lever means from said unlocking position during normal ascending and descending movements of said user, and said lever means having means for operatively connecting the actuating arm thereof to said user.

4. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof and permitting free movement during normal ascending and descending of the user along the cable comprising a housing means having openings for receiving said cable therethrough, said housing means being provided with at least one surface converging upwardly and inwardly relative to said cable defining a camming surface, camming means cooperating with said camming surface and said cable normally occupying a position out of locking engagement with said camming surface and said cable, movable lever means mounted on said device responsive to a predetermined movement of said user in a downward direction for moving said camming means into locking engagement with said camming surface and said cable, biasing means operatively connected to said housing means retaining said camming means out of locking engagement with said camming surface and said cable having a sufficient force to prevent displacement of said camming means from said unlocking position by said lever means during normal ascending and descending movements of said user, and said lever means having means for operatively connecting the actuating arm thereof to said user.

5. A locking device suitable for use with a vertically disposed cable for preventing a user thereof from falling comprising a housing means having a pair of longitudinally aligned openings communicating with an interior cavity thereof for receiving said cable through said housing means, said cavity having means forming at least one surface converging upwardly and inwardly relative to a cable portion passing therethrough defining a camming surface, camming means provided for movement in said housing means and cooperating with said camming surface and said cable, biasing means mounted in said housing means for urging said camming means out of locking engagement with said camming surface and said cable, said housing means having a transverse opening communicating with the interior cavity thereof, and movable lever means mounted on said device having one end thereof provided with means for connecting said lever means to the user of said device and the opposite end thereof extending into said housing means through said transverse opening for moving said camming means against the action of said biasing means into a locking position with said camming surface and said cable responsive to a predetermined downward movement of the user of said device.

6. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof comprising a housing means having longitudinally aligned openings communicating with a cavity therein for receiving said cable therethrough, said cavity having means

forming at least one surface converging inwardly and upwardly relative to a cable portion passing therethrough defining a camming surface, carrier means mounted for axial movement on said cable in said housing means, camming means carried by said carrier means for co-operation with said camming surface and said cable, biasing means provided in said housing means for urging said carrier means in a direction to withdraw said camming means out of locking engagement with said camming surface and said cable disposing the camming means in an unlocked position, said housing means having a transverse opening communicating with said cavity, and movable lever means having one end thereof provided with means for connecting said lever means to the user of said device and the opposite end thereof extending into said housing means through said transverse opening into operatively engageable relation with said carrier means for moving said carrier means against the action of said biasing means and said camming means into operative engagement with said camming surface and said cable whereby the camming means are moved into a locking relation with said cable responsive to a predetermined downward movement of the user of said device.

7. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof comprising a housing means having longitudinally aligned openings therein communicating with a cavity therein for receiving said cable therethrough, said cavity having an axially disposed receptacle member receiving a portion of the cable therethrough, said receptacle member having a cylindrical body portion, an inwardly and upwardly converging portion relative to said cable providing a camming surface and a bottom wall having an opening therein, a carrier member mounted for axial movement on said cable disposed in said housing means extending through said opening in said receptacle member, camming means disposed in said receptacle member and carried by the upper portion of said carrier member for cooperation with said camming surface and said cable, biasing means interposed between the bottom wall of said receptacle member and the lower portion of said carrier member for urging said carrier member in a direction to withdraw said camming means out of operative engagement with said camming surface and said cable disposing the camming means in an unlocked position, said housing means having a transverse opening communicating with said cavity, and movable lever means having one end thereof provided with means for connecting said lever means to the user of said device and the opposite end thereof extending into said housing means through said transverse opening into operatively engageable relation with the carrier member for moving said carrier member against the action of said biasing means and said camming means into operative engagement with said camming surface and said cable whereby the camming means are moved into a locking relation with said cable responsive to a predetermined downward movement of the user of said device.

8. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof comprising a housing means having a longitudinally extending cavity in a bottom surface thereof, said housing means having an opening in a top surface thereof communicating with said cavity for receiving said cable through said housing means, said cavity having an axially disposed receptacle member receiving a portion of the cable therethrough, said receptacle member having a cylindrical body portion, an inwardly and upwardly converging portion relative to said cable providing a camming surface and a bottom wall having an opening therein, a carrier member mounted for axial movement on said cable disposed in said housing means extending through said opening in said receptacle member, the upper portion of said carrier member having a plurality of radial openings, each radial opening in said upper por-

tion of said carrier member containing a camming ball having a diameter substantially equal to the radial distance between the cable and the inner surface of the cylindrical portion of said receptacle member, biasing means interposed between the bottom wall of said receptacle member and the lower portion of said carrier member for urging said carrier member in a direction to withdraw said camming ball out of operative engagement with said camming surface and said cable disposing the camming means in an unlocked position, said housing means having a transverse opening communicating with said cavity, means carried by said housing means at the lower end of said cavity for yieldingly clamping said device to said cable and movable lever means having one end thereof provided with means for connecting said lever means to the user of said device and the opposite end thereof extending into said housing means through said transverse opening into operatively engageable relation with said carrier member and having an opening therein for receiving the cable therethrough, for moving said carrier member against the action of said biasing means and said camming means into operative engagement with said camming surface and said cable whereby the camming ball are moved into a locking relation with said cable responsive to a predetermined downward movement of the user of said device.

9. A locking device suitable for use with an upwardly extending cable for preventing the fall of a user thereof comprising a housing means having openings therein for receiving said cable therethrough, first locking means provided in said housing means for locking said device to said cable, first biasing means provided in said housing means for urging said first locking means in an unlocked position, receptacle means mounted on said housing means having openings therein for receiving said cable therethrough, second locking means provided in said receptacle means for locking said device to said cable second biasing means disposed on said receptacle means for biasing said second locking means into a locked position, releasable retainer means disposed on said receptacle means for retaining said second locking means in an unlocked position against the action of said second biasing means, movable lever means provided on said device for moving said first locking means into a locked position responsive to a predetermined movement of said user, means interconnecting said retainer means and said lever means for releasing said retainer means responsive to said predetermined movement of said user disposing said second locking means into a locked position, and said lever means having means for operatively connecting the same to said user.

10. A locking device suitable for use with a vertically disposed cable for preventing the fall of a user thereof comprising a housing means having openings for receiving said cable therethrough, said housing means having means forming at least one surface converging upwardly and inwardly relative to said cable defining a first camming surface, first camming means cooperating with said first camming surface and said cable, first biasing means provided in said housing means for urging said first camming means out of locking engagement with said first camming surface and said cable, receptacle means mounted on said housing means having openings therein for receiving said cable therethrough, said receptacle means having means forming at least one surface converging upwardly and inwardly relative to said cable defining a second camming surface, second camming means disposed in said receptacle means cooperating with said second camming surface and said cable, second biasing means provided in said receptacle means for urging said second camming means into locking engagement with said second camming surface and said cable, releasable retainer means disposed on said receptacle means for retaining said second camming means out of locking engagement with said second camming surface and

said cable, movable lever means mounted on said device responsive to a predetermined movement of said user in a downward direction for moving said first camming means into locking engagement with said first camming surface and said cable, means interconnecting said retainer means and said lever means for releasing said retainer means responsive to said predetermined movement of said user disposing said second camming means into locking engagement with said second camming surface and said cable, and said lever means having means for operatively connecting the actuating arm thereof to said user.

11. A locking device suitable for use with a vertically disposed cable for preventing a user thereof from falling comprising a housing means having a pair of longitudinally aligned openings communicating with a cavity therein for receiving said cable therethrough, said cavity having means forming at least one surface converging upwardly and inwardly relative to a cable portion passing therethrough defining a first camming surface, first camming means provided in said housing means cooperating with said first camming surface and said cable, first biasing means mounted in said housing means for urging said first camming means out of locking engagement with said first camming surface and said cable, receptacle means mounted on said housing means having openings therein for receiving said cable therethrough, said receptacle means having means forming at least one surface converging upwardly and inwardly relative to said cable defining a second camming surface, second camming means disposed in said receptacle means cooperating with said second camming surface and said cable, second biasing means provided in said receptacle means for urging said second camming means into locking engagement with said second camming surface and said cable, releasable retainer means disposed on said device for retaining said second camming means out of locking engagement with said second camming surface and said cable, said housing means having a transverse opening communicating with said cavity therein, movable lever means mounted on said device having one end thereof provided with means for connecting said lever means to said user of said device and the opposite end thereof extending into said housing through said transverse opening for moving said first camming means against the action of said first biasing means into a locking position with said first camming surface and said cable responsive to a predetermined downward movement of the user of said device and means interconnecting said retainer means and said lever means for releasing said retainer means responsive to said predetermined movement of said user disposing said second camming means into locking engagement with said second camming surface and said cable.

12. A locking device suitable for use with a vertically disposed cable for preventing a user thereof from falling comprising a housing means having a pair of longitudinally aligned openings communicating with a cavity therein for receiving said cable through said housing means, said cavity having means forming at least one surface converging inwardly and upwardly relative to a cable portion passing therethrough defining a first cam-

ming surface, a first carrier member mounted for axial movement on said cable in said housing means, first camming means carried by said first carrier means for cooperation with said first camming surface and said cable, first biasing means provided in said housing means for urging said first carrier means in a direction to withdraw said first camming means out of locking engagement with said first camming surface and said cable disposing the camming means in an unlocked position, receptacle means mounted on said housing means having openings therein for receiving said cable therethrough, said receptacle means having means forming at least one surface converging inwardly and upwardly relative to a cable portion passing therethrough defining a second camming surface, a second carrier member mounted for axial movement on said cable in said receptacle means, second camming means carried by said second carrier means for cooperation with said second camming surface and said cable, second biasing means providing in said receptacle means for urging said second carrier means in a direction to move said second camming means into locking engagement with said second camming surface and said cable, releasable retainer means disposed on said device for retaining said second carrier means in a withdrawn position against the action of the second biasing means disposing said second camming means out of locking engagement with said second camming surface and said cable, said housing means having a transverse opening communicating with said cavity, movable lever means mounted on said device having one end thereof provided with means for connecting said lever means to said user of said device and the opposite end thereof extending into said housing means through said transverse opening into operative engageable relation with said first carrier means for moving said first carrier means against the action of said first biasing means, and said first camming means into operative engagement with said first camming surface and said cable whereby the camming means are moved into a locking relation with said cable responsive to a predetermined downward movement of the user of said device and means interconnecting said retainer means and said lever means for releasing said retainer means responsive to said predetermined movement of said user disposing said second camming means into locking engagement with said second camming surface and said cable.

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