A. DA COSTA LYRA.

SLIDING GRIP FOR ROPES.

APPLICATION FILED JAN. 9, 1914.

1,187,754.

Patented June 20, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

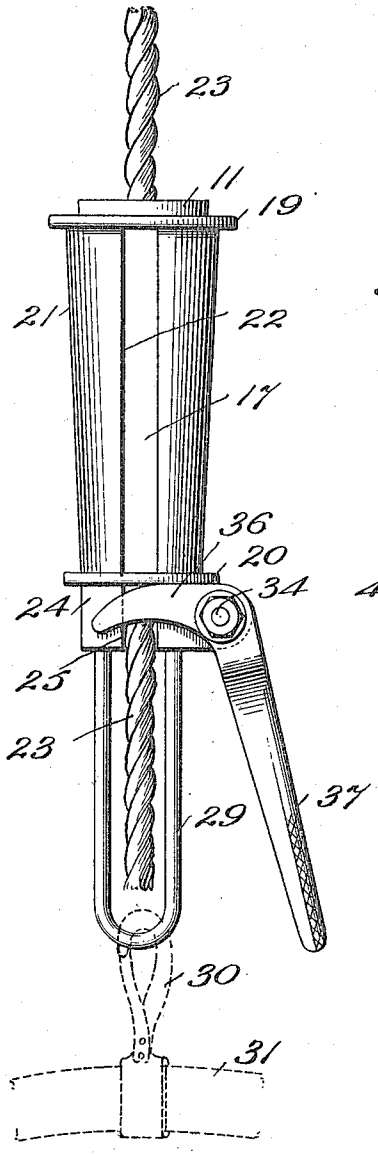
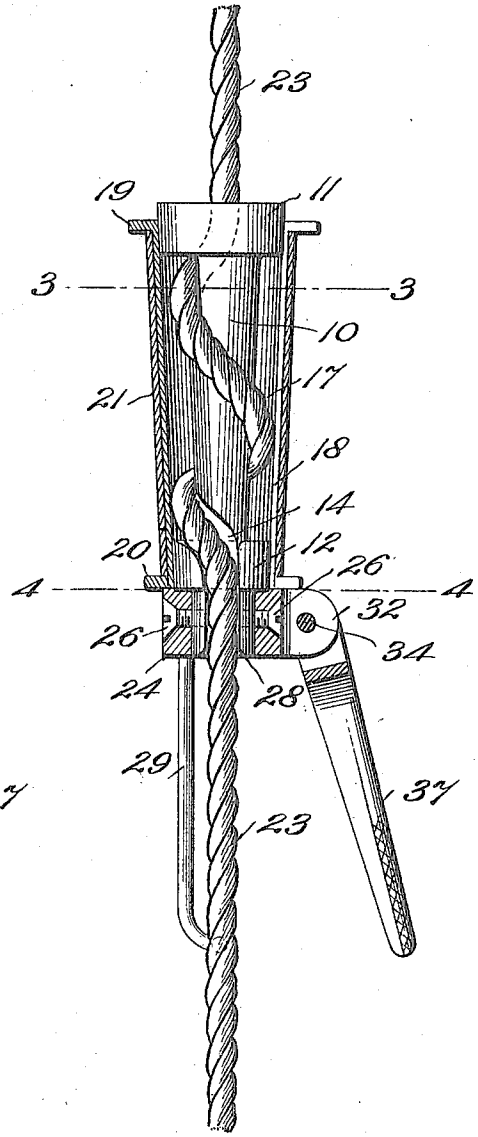


Fig. 2.



Witnesses:

C. James Cronin

Jacob A. Byrne.

Inventor

Anthero da Costa Lyra

By his Attorneys

Wilkinson, Guista and MacKaye

A. DA COSTA LYRA.

SLIDING GRIP FOR ROPES.

APPLICATION FILED JAN. 9, 1914.

1,187,754. Patented June 20, 1916.

2 SHEETS—SHEET 2.

Fig. 3.

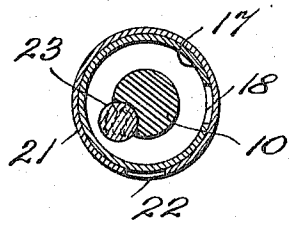


Fig. 4.

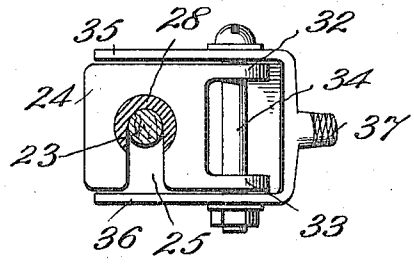


Fig. 5.

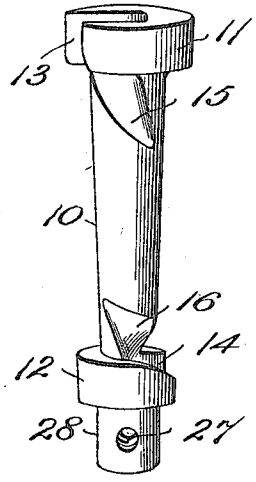


Fig. 6.

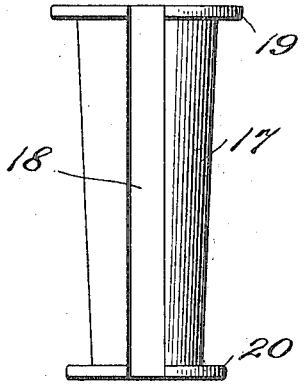
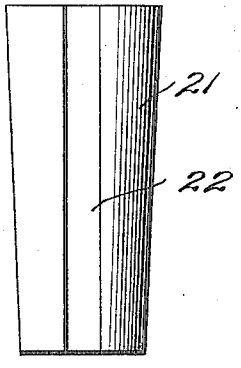


Fig. 7.



Witnesses:
C. James Orgun.
Geo. H. Byrne.

Anthero da Costa Lyra
Inventor

By his Attorneys
Wilkinson, Giusta and MacKaye

THE COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ANTHERO DA COSTA LYRA, OF BROOKLYN, NEW YORK.

SLIDING-GRIP FOR ROPES.

1,187,754. Specification of Letters Patent. Patented June 20, 1916.

Application filed January 9, 1914. Serial No. 811,254.

To all whom it may concern:

Be it known that I, ANTHERO DA COSTA LYRA, a citizen of Portugal, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Sliding-Grips for Ropes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to an improved apparatus capable of ready and rapid application to a suitable rope or cable, by the use of which a person is enabled to grip or engage such rope in such a manner as to permit him to slip down the same, and to control the speed of his movements without danger of hurting his hands.

The principal object of the invention is to supply an efficient, simple, inexpensive and thoroughly reliable apparatus whereby escape from burning buildings is facilitated.

The invention is exemplified in a preferred form in the following description, wherein reference is had to the accompanying drawings wherein—

Figure 1 is a side elevation of the apparatus in its operating position as applied to the rope or cable, Fig. 2 is a medium vertical section of the same, Fig. 3 is a horizontal section of the same on the plane 3—3 in Fig. 2, Fig. 4 is a similar section on the plane 4—4, and Figs. 5, 6 and 7 are side elevations respectively of the pressure core, the pressure sleeve and the preferred outer sleeve.

The improved apparatus comprises a pressure core and a pressure sleeve surrounding the same so arranged as to permit a rope to be readily introduced between them, in combination with means whereby said core and sleeve may be caused to exert a retarding pressure upon the rope or cable, which pressure may be readily graduated, modified or controlled by the user during operation. This general idea of means may be embodied in a variety of forms, and the preferred form which I have devised is constructed as follows:

The interior pressure core 10 is made tapering and has collars 11 and 12 at its ends which may be cylindrical and are deeply slotted at 13 and 14 to permit the rope to extend axially therefrom at top and bottom, as shown in Figs. 1 and 2. I prefer to supply guiding grooves 15 and 16, leading out of said slots in spiral directions (see Fig. 5).

The pressure sleeve 17 is made tapering to conform more or less to the taper of the core, and is provided with a longitudinal opening 18, to admit the rope, as hereinafter described. The sleeve 17 is preferably provided with flanges 19 and 20, for confining the outer hand-protecting sleeve 21, which is preferably used. This latter sleeve is also provided with an opening 22 to admit the rope, and is capable of being turned as desired upon the sleeve 17 within it, so as to bring the openings 18 and 22 into and out of mutual registry. It is clear that, when the core 10 and sleeve 21 are applied to a rope 23 (for instance as shown in Fig. 2) and where such rope is thick enough to be grasped or compressed between the surfaces of said core and sleeve, as shown, any means which acts to vary the relative longitudinal positions of the core and sleeve will serve to modify the degree of pressure exerted by them upon the rope. This follows from the tapering form of these elements.

In the preferred embodiment of my invention I mount the pressure-modifying devices upon the base to which the suspending means are attached (where such are used). This base is shown at 24 and is provided with a rope-admitting slot 25, which registers with the slot 14 when the base is fastened to the core 10. This fastening is accomplished by screws 26 which enter threaded holes 27 in an extension 28 of the core 10. This extension is also slotted, so as to admit the rope to an axial position. The suspending bail 29 is fixed to the base 24, and is adapted to engage a snap hook 30 on the belt 31 (shown dotted in Fig. 1) adapted to pass around the user's body.

For mounting the pressure modifying means, the body 24 has two lugs 32, 33, between which there extends a removable pivotal bolt 34 which supports the gripping device. This latter comprises a pair of curved cams 35, 36, pivoted loosely upon the bolt 34, and united to a downwardly extending lever or hand piece 37. The upper curved surfaces of the cams 35 and 36 bear upon the lower end of the pressure sleeve 17, so that, when the handle 37 is pressed inward the sleeve 17 moves upward with relation to the core 10, thereby increasing the pressure upon the rope 23.

In order to apply the rope in the manner illustrated the admission openings in the two sleeves are made to register with each other and the lower admission slot 14 (for instance). Any portion of the rope may then be pressed into an axial position in the admission slot 14, after which the core 10 (in the raised position of Fig. 2) is revolved so as to wind the rope gradually around it until it finally assumes the position shown in Fig. 2, after having been pressed into axial position through the admission slot 13. It is clear that, this application of the apparatus to the rope having been accomplished, it is easy to slip down the rope by suspending the body to the bail 29 and applying one hand to the protecting sleeve 21 and the other to the handle 37. The speed of descent may be regulated by control of pressure on the rope; and, by sufficient pressure progress may be even stopped.

Various modifications of this device are within the scope of my invention, and I do not limit myself to the details herein shown and described.

What I claim is—

1. In a gripping means for use in fire escapes, an inner tapering core, a correspondingly tapering longitudinally movable sleeve surrounding the same at a distance permitting insertion of a suitable cable, and suspending means attached to said core, substantially as described.

2. In a gripping means for use in fire escapes, an inner tapering core, a correspondingly tapering longitudinally movable sleeve surrounding the same at a distance permitting insertion of a suitable cable, and having a longitudinal slot for admitting a cable to such space, and suspending means attached to said core, substantially as described.

3. In a gripping means for use in fire escapes, an inner tapering core, a correspondingly tapering sleeve surrounding the same at a distance permitting insertion of a suitable cable, a second hand-protecting sleeve surrounding said first named sleeve, suspending means attached to said core, and means also attached to said core adapted to vary the relative longitudinal positions of said core and sleeves so as to vary the width of the space between said core and the inner sleeve, substantially as described.

4. In a gripping means for use in fire escapes, an inner tapering core, a correspondingly tapering sleeve surrounding the same at a distance permitting insertion of a suitable cable, and a second hand-protecting sleeve surrounding said first named sleeve, suspending means attached to said core, and a lever pivotally attached to said core and having a cam adapted to press longitudinally upon said inner sleeve, substantially as described.

5. In a gripping means for use in fire escapes, an inner tapering core, a correspondingly tapering sleeve surrounding the same at a distance permitting insertion of a suitable cable, and having a longitudinal slot for admitting a cable to such space, a second hand-protecting sleeve surrounding said first sleeve and having a similar longitudinal slot adapted to be turned into and out of registry with said first named slot, suspending means attached to said core, and means also on said core adapted to cause longitudinal movement of said sleeves along said core, substantially as described.

In testimony whereof, I affix my signature, in presence of two witnesses.

A. DA COSTA LYRA.

Witnesses:
KATHARINE C. MEAD,
HAROLD S. MACKEYE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."