

T. S. MILLER.  
CABLEWAY.  
APPLICATION FILED OCT. 17, 1910.

1,001,597.

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Fig. 1.

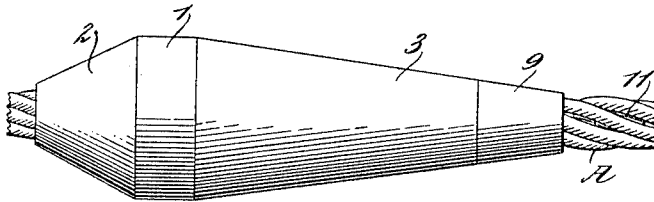


Fig. 2.

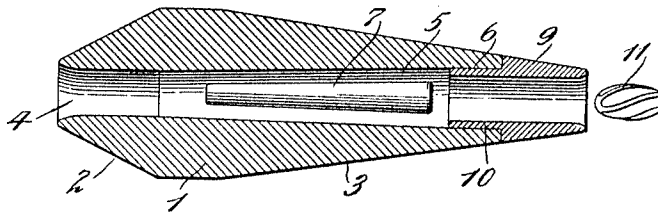


Fig. 3.

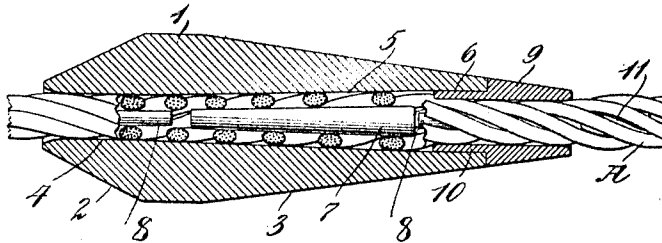
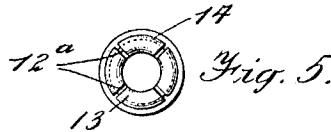
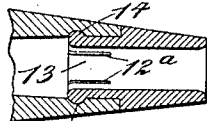


Fig. 4.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

THOMAS SPENCER MILLER, OF ORANGE, NEW JERSEY.

## CABLEWAY.

1,001,597.

Specification of Letters Patent.

Patented Aug. 22, 1911.

Original application filed March 24, 1910, Serial No. 485,406. Divided and this application filed October 17, 1910. Serial No. 587,450.

*To all whom it may concern:*

Be it known that I, THOMAS SPENCER MILLER, a citizen of the United States, and a resident of Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cableways, of which the following is a specification.

My invention relates generally to new and useful improvements in cableways, and more particularly to button stops employed for the purpose of arresting the motion of parts or mechanism movable along the cableway; for instance, the movement of fall rope carriers for supporting a fall rope which passes over a load carriage which travels along the cableway to transfer a load.

Among the objects of the invention are, to provide a button stop which will be of simple construction and of increased durability in use and which will be capable of arresting the movement of rapidly moving objects with a minimum danger of being injured or dislodged from its determined position.

This application is filed as a division of my prior application filed March 24, 1910 and bearing Serial Number 485,406.

The invention consists in the improvements to be fully described hereinafter and the novelty of which will be particularly pointed out and distinctly claimed.

I have fully and clearly illustrated my invention in the accompanying drawings to be taken as a part of this specification and wherein—

Figure 1 is a view in side elevation of a structure exemplifying the invention the same being shown as applied to a cable, for instance a button rope. Fig. 2 is a view in longitudinal section of the improved button showing the same detached from the rope but in the same relative position it bears when applied to the rope. Fig. 3 is a view in longitudinal section showing the improved button applied to a rope. Figs. 4 and 5 illustrate a modification in section and end elevation respectively.

Before entering into a detailed description of the preferred embodiment of my invention, I would state that the same is intended to be used in connection with cableways of the general form shown and described in my application to which reference is above made, in which is employed a

traction rope upon which travels a load carriage, and a fall rope running lengthwise of the traction rope and extending over the load carriage, fall rope carriers being provided to support the fall rope, which fall rope carriers are adapted to be carried by the carriage and dislodged therefrom by engagement with button stops as the carriage progresses along the traction rope, the stops being preferably arranged on what is known as a button or stop rope.

It will be understood that I do not limit myself to the use of the invention as solely being applicable to arrest the movement of fall rope carriers, as the same is capable of use in a number of situations where it is desired to arrest the movement of bodies traversing the cableway system.

Referring to the drawings by characters of reference, A designates a rope upon which the button stop is mounted, for instance, such as known in cableway structures as a button-rope or stop-rope. The button comprises a sleeve 1, adapted to be threaded onto the said rope and be fixed thereon against movement longitudinally of said rope. This sleeve is abruptly or bluntly tapered as at 2, on its contact end, or that end against which the fall rope carrier, or other moving body, is adapted to strike in being dismounted from the carriage, but the opposite end of said sleeve is more gradually or sharply tapered as at 3. It will be noted that the sleeve, as shown for the purposes of this application, is an integral body which is of considerable importance in that its durability over buttons hitherto known, as made of a plurality of parts is greatly enhanced. The sleeve 1 is formed with a longitudinal bore to receive the button rope, this bore at the end of the sleeve adjacent the contact face of the latter being substantially cylindrical as at 4, for a portion of the length of said bore, the latter from a point intermediate the length of the shell being flared outwardly as at 5, to a point adjacent the rear end of the shell where it is again made of cylindrical form, as at 6.

7 designates a spreading device consisting of a tapering pin which preferably tapers at an angle corresponding with the tapered internal bore 5, so that when this pin is inserted within the strands of the rope, and extended longitudinally of said rope, the strands of the latter will be bulged or spread

out to conform with the tapered bore and engage the inner surface of said bore.

The button above described is designed so as to hold against a blow in one direction equal to the strength of the rope upon which it is fastened, while in the opposite direction it need not be so securely held, and in order to accomplish this the tapered bore 5 of the button is made long and gradual, and the pin 7 which is placed inside the rope is likewise made long and with a gradual taper, preferably at an angle less than the angle of repose. By this arrangement, however violent may be the blows on the button there will be no movement of the spreading pin, and furthermore, the pressure on the rope between the pin and the button is distributed over a large area and the wires or strands of the rope are not crushed by the impact. In other words, the pressure per square inch is small but the area of pressure on the rope is large.

In Fig. 3 of the drawings, 8 designates the center or core of the cable which it will be understood is removed within that section in which the pin 7 is inserted. The tapered enlargement of the rope produced by the pin 7 within the tapering bore 5 prevents the button from being driven backward by any blow received from an object, for instance, a rope carrier; each succeeding blow having a tendency to wedge the button more tightly in its position upon the rope. The friction of the button on the tapered enlargement of the rope is, under ordinary circumstances, sufficient to hold the button from sliding on the rope in the opposite direction from that which it takes when it receives the impact. However, in order to secure the button from moving in said opposite direction, I introduce a filler on the small tapered end of the button, said filler surrounding the rope and projecting within the button between the rope and the button. Further functions of this filler are to fill the space made by the large bore at the sharper end of the button and to carry the taper to the rope so that the latter is not shouldered at the rear end of the button. This filler consists of a thimble or sleeve 9 within which the rope extends, which thimble or sleeve is provided with a cylindrical part 10 which is adapted to be forced into the cylindrical part 6 of the bore of the button, thus serving to close the annular opening between the bore and the surface of the rope. The outer portion of this thimble is tapered coincidentally with the surface 3 of the sleeve, so that when the thimble is in position the sleeve and thimble have a substantially continuous tapered surface.

The invention also contemplates providing means whereby this filler, consisting of the thimble 9, may be securely held in its

place relative to the button so that it will not be separated therefrom to provide a gap between it and the button. In order to accomplish this result I may form the interior of the rear end of the button with an annular recess 12 and split the cylindrical part 10 of the thimble as shown at 12<sup>a</sup>, the extreme rear end of said thimble being formed with an annular bead 14, which engages the groove 12 when the thimble is in place, the splitting of the part 10 giving said part sufficient elasticity to permit it to be compressed to enter the button and to expand to place the bead 14 in engagement with the groove 12. A spreader 11 may be inserted in the rope adjacent the thimble as additional means to prevent displacement of the same from its position in the sleeve, and prevent creeping of the button under force of the blows received thereby.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A rope stop button containing a tapering bore intermediate two cylindrical bores and a pin inserted within the rope within said tapering bore.
2. A rope stop button containing a tapering bore intermediate two cylindrical bores, and a tapered pin inserted within the rope within said tapering bore.
3. A rope stop button containing a tapering bore intermediate two cylindrical bores, and a pin tapered coincidentally with said tapering bore inserted within the rope which is located within said tapering bore.
4. A rope stop button containing a tapering bore, a cylindrical bore at the large end of said taper, a pin inserted within the rope within said tapering bore, and a plug inserted in said cylindrical bore.
5. A rope stop button containing a tapering bore, a cylindrical bore at the large end of the taper, a pin inserted within the rope within said tapering bore, and a thimble mounted on the rope and extending into said cylindrical bore between the rope and the body of the stop.
6. A rope stop button containing a tapering bore, a cylindrical bore at the large end of the taper, a pin inserted within the rope within said tapering bore, a thimble mounted on the rope and extending into said cylindrical bore between the rope and the body of the stop, and a spreader in the rope adjacent the outer end of said thimble and exterior to the latter.
7. A rope stop button containing a tapering bore, a pin inserted within the rope within said tapering bore and extending longitudinally of the latter, an annular plug surrounding the rope inserted in said bore, between the rope and the button, and means whereby said plug is held in position.
8. A rope stop button containing a taper-

ing bore, a pin inserted within the rope within said tapering bore and extending longitudinally of the latter, an annular plug adapted to be inserted in said bore between the rope and the button, and interlocking means between the stop and said plug whereby the latter is held in position.

9. A rope stop button containing a tapering bore, a pin inserted within the rope within said tapering bore and extending longitudinally of the latter, said bore having an annular groove, and an annular expansible plug surrounding the rope and inserted in said cylindrical bore between the rope and the button and adapted to engage said groove whereby the plug is held in position.

10. A rope stop button containing a tapering bore, a pin inserted within the rope within said tapering bore and extending longitudinally of the latter, said bore having an annular groove, and an annular expansible plug surrounding the rope and having a bead inserted in said bore and adapted to engage said groove whereby the plug is held in position.

11. A rope stop button containing a taper-

ing bore, a pin inserted within the rope within said bore and extending longitudinally of the latter, said bore having an annular groove and an annular plug having an expansible split part adapted to enter said groove whereby said plug is held in position, said plug surrounding the rope and filling the space between the rope and the stop.

12. A rope stop button containing a tapering bore, a pin inserted within the rope within said bore and extending longitudinally of the latter, said bore having an annular groove and an annular plug having an expansible split part adapted to enter said groove whereby said plug is held in position, said plug surrounding the rope and filling the space between the rope and the stop, and a projection on the rope outside the outer end of said plug.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS SPENCER MILLER.

Witnesses:

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