

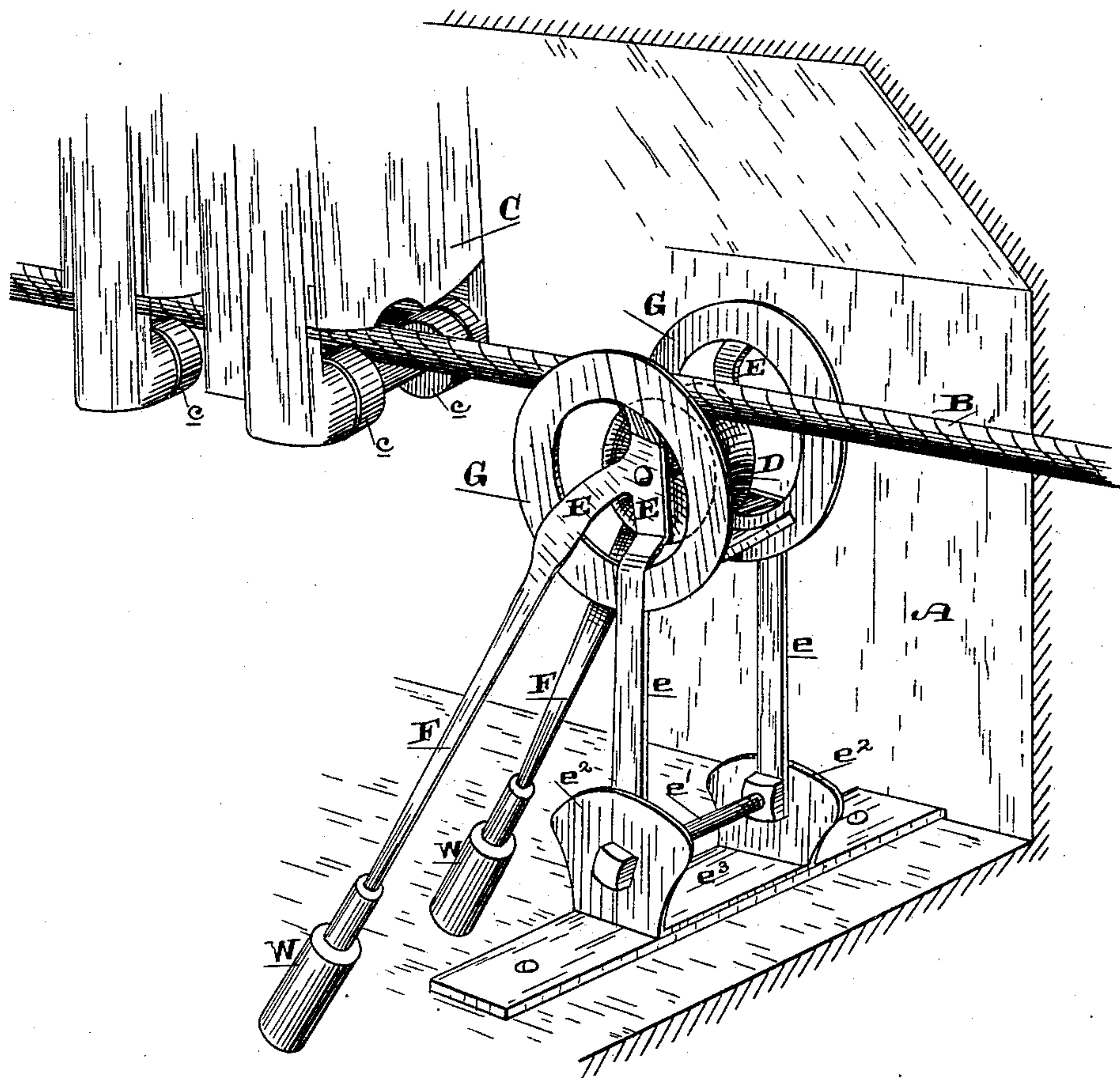
(No Model.)

W. DUNHAM.

BALANCED PULLEY FOR CABLE RAILWAYS.

No. 362,258.

Patented May 3, 1887.



Witnesses,
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UNITED STATES PATENT OFFICE.

WARREN DUNHAM, OF IGO, CALIFORNIA.

BALANCED PULLEY FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 362,258, dated May 3, 1887.

Application filed August 2, 1886. Serial No. 209,802. (No model.)

To all whom it may concern:

Be it known that I, WARREN DUNHAM, of Igo, county of Shasta, and State of California, have invented an Improvement in Balanced Pulleys for Cable Railways; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to the class of cable railways and to a new and useful improvement in connection therewith; and my invention consists in the peculiarly-constructed cable-supporting pulleys hereinafter described, the object of which is to prevent accidents by reason of the traveling grip coming in contact therewith.

In cable railways the traveling cable from which the car, through its grip attachment, derives its motion is supported and moves within its tunnel or tube upon pulleys from which the grip raises the cable as it passes, and thus avoids interference. These pulleys are usually fixed in position, and it will be readily seen that if the grip should come in contact with one of them there would be serious injury; but by making the pulley yield to the grip and return to position after it has passed there can be no accident of this character.

Referring to the accompanying drawing, the figure is a perspective view showing my pulley and its application.

A is the tube or tunnel of a cable railway.

B is the traveling cable, and C is the grip which connects the car with said cable.

D is one of the cable supporting or carrying pulleys within the tube or tunnel. This pulley is mounted in a bracket, E, the arms or legs *e* of which extend downwardly and are pivoted upon a small cross-shaft, *e'*, mounted in the arms *e*² of the bed-plate *e*³, secured suitably in the bottom of the tube or tunnel. This bracket is provided also with inclined arms F, to the lower ends of which are secured weights W. Formed with or secured to the bracket, and on each side of the pulley, are the curved guard rims or flanges G. These are considerably larger in diameter than said pulley, and therefore protect it from contact with the grip. The grip C, as will be seen, is provided with rollers *c* upon its under side.

These rollers are here shown as being the jaws of the grip by which the traveling cable is clamped, though for the purposes of the present invention the rollers may be any other portion of said grip, their function being to come in contact with the curved guard rims or flanges G on each side of the pulley.

The operation is as follows: When the cable is carried by the pulley D, the bracket E, in which it is mounted, stands in a perfectly upright position. Now, if the grip be lowered, for any reason, farther than it usually travels, and should thereby be on a level with the pulley, its rollers *c*, coming in contact with the guard-rims G on each side of the pulley, and at a point above their horizontal center planes, force them over in front of it, the bracket E turning on its pivotal shaft below, so that the grip will pass over easily and without injury. After its rollers have passed the vertical center plane of the rims the weights W, which have been elevated, now begin to act to bring the device up again, and the forward portions of the curved rims, traveling backwardly on the rollers of the grip, enable it to resume its proper position easily and gradually. In this operation it will be seen that there is no sudden jar, the tilting movement of the pulley being gradual and accurate.

I am aware that accommodating and pivoted pulleys which are operated to return to their position by weights are known, and I do not claim such, broadly, but confine myself to the particular construction I have described, in which the curved guard rims or flanges form an essential part.

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

1. In a cable railway, the cable supporting and carrying pulley D, mounted on a pivoted balanced frame, in combination with curved guard rims or flanges on each side of said pulley for receiving the contact of the passing grip, substantially as described.

2. In a cable railway, the cable supporting and carrying pulley D and the pivoted bracket E, in the top of which it is mounted, in combination with the weighted arms F, secured to said bracket and balancing it, and the curved

guard rims or flanges G, secured to said bracket on each side of the pulley, substantially as described.

5 3. In a cable railway, the cable supporting and carrying pulley D, the pivoted bracket carrying the pulley in its upper end, the weighted balancing-arms F, and the curved guard rims or flanges G, secured to said bracket on each side of the pulley, in combination with a

traveling grip, C, having rollers c, adapted to come in contact with the curved guard rims or flanges, substantially as described.

In witness whereof I have hereunto set my hand.

WARREN DUNHAM.

Witnesses:

C. D. COLE,
J. H. BLOOD.