(No Model.)

A. H. LIGHTHALL.

GRIPPER FOR TRACTION CABLES.

No. 274,506. Patented Mar. 27, 1883.

FIG. 1.

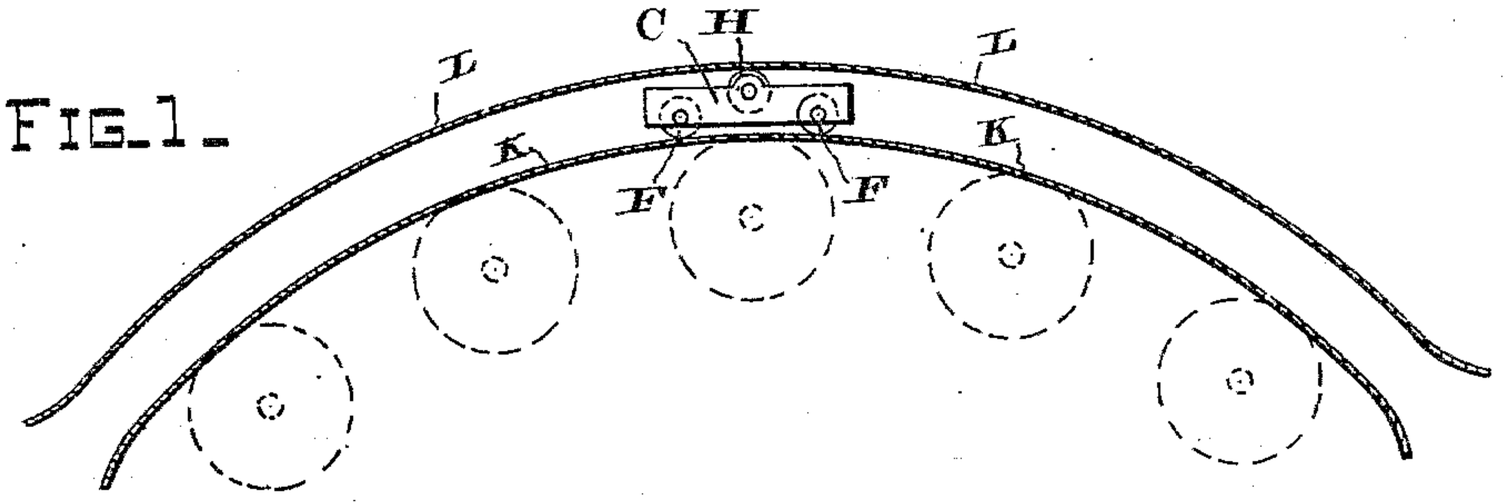


FIG. 2.

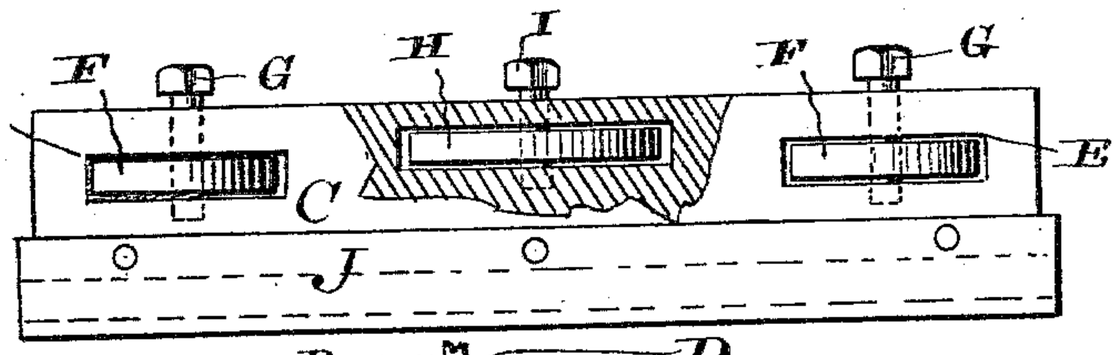
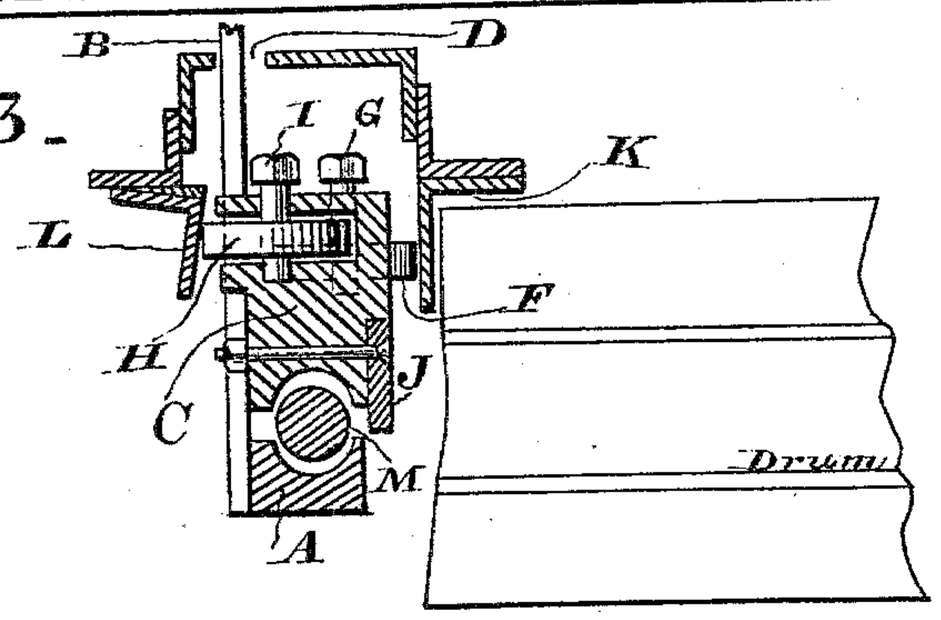


FIG. 3.



WITNESSES

Wilmer Bradford

George Derby.

INVENTOR

Alonzo H. Lighthall

By Wm. S. Smith

Attorney.

UNITED STATES PATENT OFFICE.

ALMERIN H. LIGHTHALL, OF SAN FRANCISCO, CALIFORNIA.

GRIPPER FOR TRACTION-CABLES.

SPECIFICATION forming part of Letters Patent No. 274,506, dated March 27, 1883.

Application filed November 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALMERIN H. LIGHTHALL, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented a certain new and useful Gripper for Endless-Cable Railways, of which the following is a specification.

My invention relates to certain improvements in grips for use in connection with a moving endless cable, and is more particularly adapted for use upon such portions of the road or cable-tunnel as are curved in the direction of their length.

In the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of the grip and the guide-rails between which it travels. Fig. 2 is a sectional side view of the upper grip-jaw or die. Fig. 3 is a cross-section of the grip and guide-rails.

Similar letters of reference are used to indicate like parts throughout the several views.

The grip consists of a lower die, A, rigidly attached to the body of the dummy-car by means of a bar, B. The upper side of this die is made concave, so as to conform to the diameter of the cable M. The upper die, C, is adapted to be raised and lowered upon the moving cable by means of a lever attached to it in any suitable manner, and which extends upward through the slot D. Upon that face of the upper grip-die which is next the inner side of the curve I make two slots, E E, within which I place the friction-rollers F F, and pivot them by means of the vertical set-bolts G G. Intermediate between these friction-rollers, but upon the opposite face of the grip-die, I place a friction-roller, H, secured in place within its slot by means of the set-bolt I. The lower face of the upper grip-die is curved or hollowed out, as seen in Fig. 3, and a steel plate, J, is bolted upon the face next the inner side of the curve, and extends downward and below the lower edge of the movable die and overlaps the upper edge of the lower or fixed die. As the grip is carried around the curve the friction-rollers F F bear against the inner guide-rail, K, and the friction-roller H bears against the outer guide-rail, L, and thus all vibration of the grip is prevented, and the grip and dummy or car is carried steadily forward along and around the curve. Should it become necessary to stop the dummy while on its route around the curve, the jaws or dies of the grip can be spread apart, and the cable will be permitted to slide or travel freely through the grip, but will be prevented from passing out of or from between the grip-jaws by means of the steel plate J.

With a grip constructed as above described I am enabled to stop and start on any portion of the curve, and to dispense with all carriages and other auxiliary devices for carrying the grip around a curve.

I am aware that gripping devices for cable railways have heretofore been provided with rollers adapted to bear against guide-rails, and thereby carry the cable around a curve in either direction without interference with the supporting pulleys or guides. This, however, I do not broadly claim.

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

A grip for cable railways, consisting of the lower fixed jaw, A, having a bar, B, for attachment to the car, the upper movable jaw, C, having on one side a plate, J, adapted to overlap the lower jaw, and the friction-rollers F F and H, journaled in slots formed on opposite sides of the upper jaw, the roller on one side of said jaw being placed at a point intermediate the rollers on the opposite side, and said rollers being adapted to operate respectively against the guide K and inclined guide L, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 3d day of November, 1882.

ALMERIN H. LIGHTHALL. [L. S.]

Witnesses:

WILMER BRADFORD,

C. W. M. SMITH.