

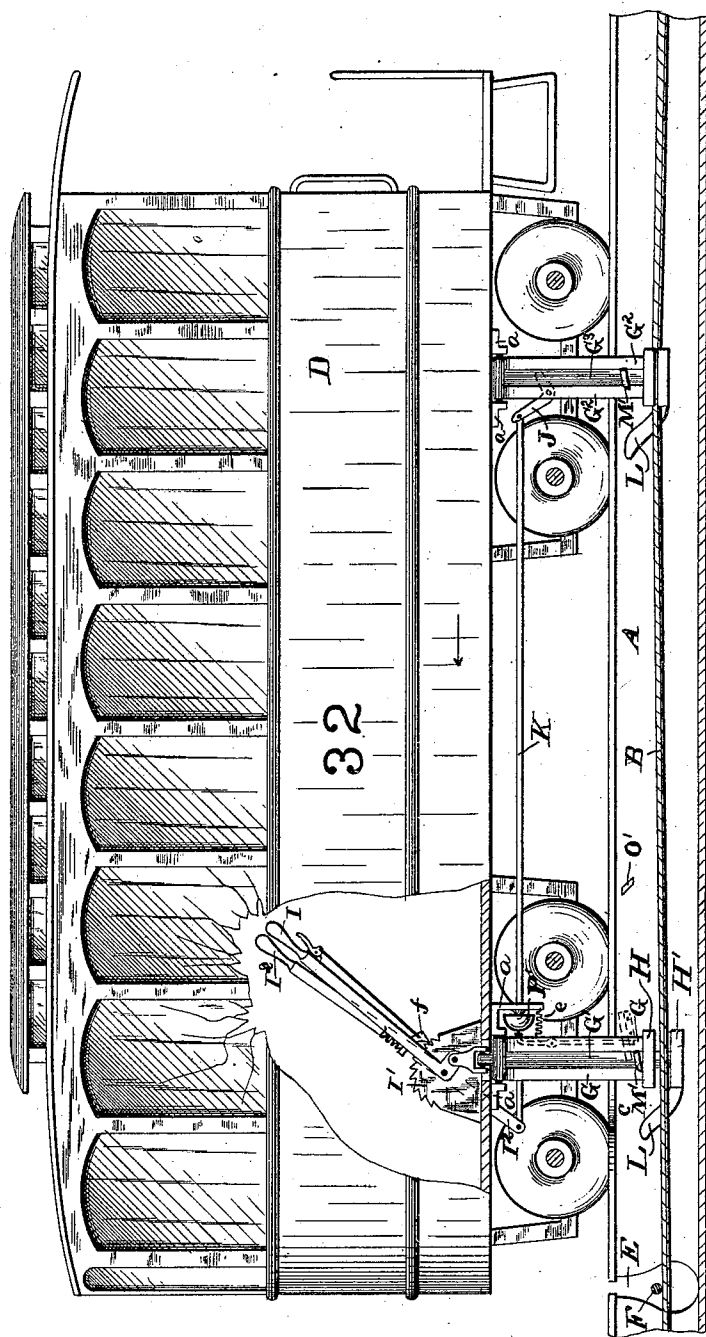
(No Model.)

2 Sheets—Sheet 1.

J. B. MAHAFFEY.
CABLE SYSTEM.

No. 473,233.

Patented Apr. 19, 1892.



UNITED STATES PATENT OFFICE.

JAMES B. MAHAFFEY, OF BALTIMORE, MARYLAND.

CABLE SYSTEM.

SPECIFICATION forming part of Letters Patent No. 473,233, dated April 19, 1892.

Application filed October 29, 1891. Serial No. 410,168. (No model.)

To all whom it may concern:

Be it known that I, JAMES B. MAHAFFEY, a citizen of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Cable Systems, of which the following is a specification.

This invention relates to an improved arrangement of grippers for cable cars.

The object of the invention is to facilitate crossing intersecting cables.

To this end the invention consists of the features of construction and combinations of parts described and claimed hereinafter.

In the accompanying drawings, which illustrate the invention, Figure 1 shows a car with my improvements about to cross an intersecting cable, the conduit being in longitudinal section. Fig. 2 is a view of the gripper hanging in normal position in the conduit, which latter is shown in cross-section. Fig. 3 shows the same parts, but with the gripper swung laterally. Fig. 4 shows a side view of the gripper-levers and one gripper, with a longitudinal section of the conduit, and illustrates the position of the gripper when crossing an intersecting cable. Fig. 5 is a side view of the two grippers, being the side opposite that seen in Fig. 1, and shows the signal device more clearly. Fig. 6 is a plan of the two intersecting tracks and showing the lateral curve in the slot.

The letter A designates the conduit; B, the cable in the same; C, the slot; D, the car; E, the crossing or intersecting conduit, and F the crossing cable. The car is provided with two grippers, one located at the front and the other at the rear end. The forward one comprises the two stationary guide-plates G, carrying at their lower ends the upper grip-bar H and hung or pivoted in suitable bearings a to permit a lateral movement, and the central sliding plate G', carrying the lower grip-bar H', and at its upper end connected with the operating-lever I, which works over a rack I' in the usual manner and is provided with a suitable pawl f to engage the rack. The rear gripper also comprises guide-plates G² and a sliding plate G³, carrying the upper and lower grip-bars, respectively. In this grip the said sliding plate G³ has a pin b, which engages a

slot b' in the short arm of a bell-crank lever J, pivoted to one of the stationary parts G². The long arm of the bell-crank lever is jointed to a rod K, which extends forward and connects with the lower end of an operating-lever I² of the first class, which works beside the lever I. The lower grip-bar of each gripper is provided with an upwardly-inclined arm L, projecting from the forward end and secured to the rear side, so as not to interfere with the moving cable.

At the crossing the slot C is deflected or curves laterally in the usual way, the deflection beginning at the point c and ending at the point c'. Located in the conduit at a suitable point in advance of the deflection in the slot is an inclined bar M, projecting from one side of the conduit. A stud M' is on the sliding piece of each gripper, and as the car moves forward this stud rises under the inclined bar M and thereby the gripper is automatically released in the manner described hereinafter. A similar inclined bar M², projecting from the side of the conduit, is located on the opposite side of the crossing conduit and is in such position as to perform its function before the gripper leaves the deflected portion of the slot, as will hereinafter appear.

An alarm or signal device is located on the rear side of the forward gripper, and comprises a vertical rod O, pivoted to the gripper and at its upper end carrying a hammer P, which strikes a gong p', secured on a bracket depending from the car. An arm O' projects from the side of the conduit in the path of the lower end of the rod O and is located in the rear of the inclined bar M. A spring e retracts the hammer and causes it to strike the bell after the rod has passed the said arm O'.

The operation is as follows: As the car approaches the crossing conduit the signal rod O rides over the arm O' and the gong sounds and notifies the gripman to release the pawl of the lever I, so that as the stud M' passes under the inclined bar M the lower grip-bar may be pushed down, which automatically releases the grip from the cable. The gripper then passes into the deflected part of the slot, which swings the gripper to one side and clear of the cable. When the gripper reaches

the crossing cable F, the end of the upwardly-projecting arm L will pass over the latter, and, being inclined, said arm will cause the lower grip-bar to slide up against the upper one, and the gripper will then ride over the cable, slightly depressing the same. The gripper after it rides over the cable in this way and before it leaves the deflected part of the slot encounters the inclined bar M², which, acting on the stud M', pushes down the lower grip-bar to a position where it can pass under the cable when the gripper enters the main portion of the slot again, at which latter time the gripman will again apply the gripper. At the same time that the gripman releases the pawl of the lever I to permit the automatic release of the forward gripper he works the lever I' to apply the rear gripper. This rear grip will thus carry the car while the forward one is released. When the rear gripper reaches the inclined bar M, it will release automatically and ride over the crossing cable in the same manner as the forward gripper.

By my arrangement of grips it will be seen that the car will be carried over the crossing conduit without losing the cable, and there is no danger of the car stopping if the crossing is on an upgrade.

While I have shown but one crossing cable, it is obvious that where there are two crossing cables they may be passed as readily as one.

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

1. A gripper for cable cars, comprising a grip bar or jaw to engage the cable on the upper side and a vertically-movable grip bar or jaw to engage the cable on the under side and having a forwardly-projecting upwardly-inclined arm to facilitate riding over a crossing cable.

2. A gripper for cable cars, hung or pivoted to permit it to swing laterally, and comprising a grip bar or jaw to engage the cable on the upper side and a vertically-movable grip bar or jaw to engage the cable on the under side and having a forwardly-projecting upwardly-inclined arm to facilitate riding over a crossing cable.

3. In a cable railway, the combination of a gripper hung or pivoted to permit it to swing laterally, and comprising a grip bar or jaw to engage the cable on the upper side, a verti-

cally-movable grip bar or jaw to engage the cable on the under side and carrying a projecting stud and a forwardly-extending inclined arm, and a stationary inclined bar located in the conduit in the path of the stud, whereby the movable grip-bar is pushed down to automatically release the cable.

4. A cable car provided with grippers at the forward and rear ends, the lower grip-bar of each gripper having an upwardly-inclined arm projecting from its forward end, and levers at the forward end to work both grippers through suitable connections, in the manner and for the purpose described.

5. In a cable railway, the combination of a gripper at the forward end of a car, hung or pivoted to permit it to swing laterally, and comprising a grip bar or jaw to engage the cable on the upper side, a vertically-movable grip bar or jaw to engage the cable on the under side and carrying a projecting stud and a forwardly-extending inclined arm, a similarly-constructed gripper at the rear end of the car, levers at the forward end to work both grippers through suitable connections, and a stationary inclined bar located in the conduit in the path of the studs on the gripper, whereby the movable grip-bars are pushed down to automatically release the cable.

6. A cable car provided with a gripper at the forward end, a gripper at the rear end, and levers at the forward end to work both grippers through suitable connections, in combination with means to automatically release the forward gripper as it approaches a crossing line, and an automatic signal, arranged substantially in the manner shown.

7. A cable car provided with a gripper at the forward end, a gripper at the rear end, and levers at the forward end to work both grippers through suitable connections, in combination with means to automatically release the forward gripper as it approaches a crossing line, a spring-actuated rod pivoted to the forward gripper, an arm in the conduit projecting in the path of said rod, and a gong to be struck by the upper end of the rod.

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

JAMES B. MAHAFFEY.

Witnesses:

JNO. T. MADDOX,
FRANK P. DAVIS.