(No Model.)

A. G. MIDDLETON.

TRANSFER APPARATUS FOR TRACTION CABLE CARS.

No. 422,352. Patented Feb. 25, 1890.

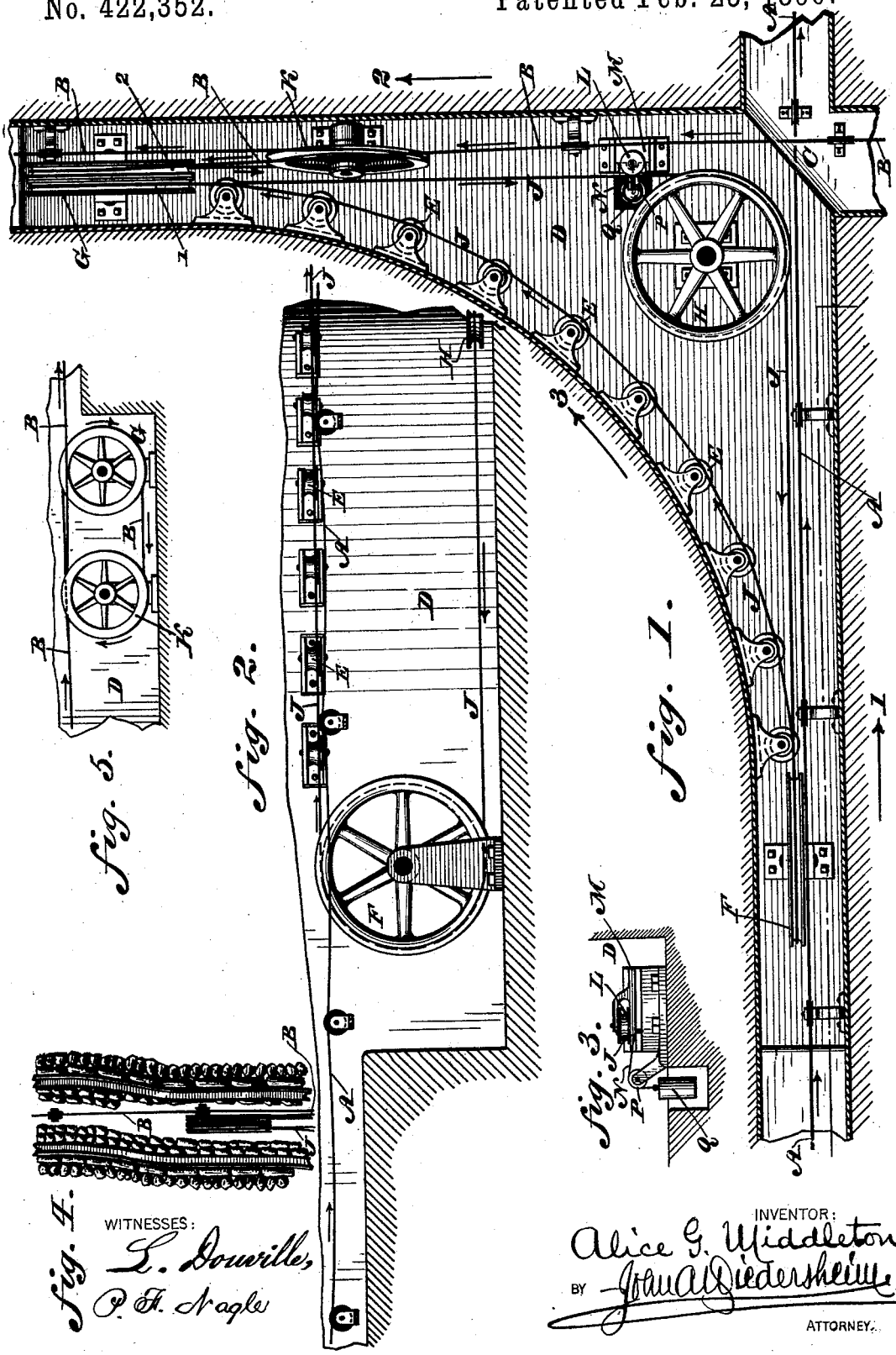

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

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TRANSFER APPARATUS FOR TRACTION-CABLE CARS.

SPECIFICATION forming part of Letters Patent No. 422,352, dated February 25, 1890.

Application filed May 9, 1889. Serial No. 310,108. (No model.)

To all whom it may concern:

Be it known that I, ALICE G. MIDDLETON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Transfer Apparatus for Traction-Cable Cars, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of apparatus for transferring or switching cable cars from one track to a crossing track, the several features of the invention being hereinafter fully set forth, and pointed out in the claim, the essential feature of the invention being the provision of an auxiliary cable adjacent to the crossing and the operation of the same by the main or crossing cable.

Figure 1 represents a top or plan view of a transfer apparatus for traction-cables embodying my invention. Fig. 2 represents a side elevation of a portion thereof. Fig. 3 represents a side elevation of another detached portion. Fig. 4 represents a top or plan view of a portion on a reduced scale. Fig. 5 represents a side elevation on a reduced scale.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A and B designate traction-cables which cross each other, as at C.

D designates a trench, which is formed adjacent to the crossing and extends in the directions of the two cables A and B. Within the trench are mounted a number of grooved rollers E, whose axes are vertical and properly supported, said rollers being arranged in a curvilinear direction or row. Near one end of said row of rollers is mounted a grooved pulley F, and near the other end is mounted a grooved pulley G, both pulleys being substantially tangential to said row of rollers and having horizontal axes, the pulley G being formed with two grooves 1 2 in its periphery, or in lieu thereof two grooved pulleys may be employed, the same being placed side by side on the same axis or shaft.

In the trench near the crossing C is a grooved pulley H, having a vertical axis, it being noticed that said pulley occupies the angle of the trench, while the pulleys F G occupy the ends thereof.

J designates an endless auxiliary cable, the same passing around the pulley F against the rollers E, and around the pulley G in the groove 1 thereof and around the pulley H, it being seen that the pulley F is parallel or approximately parallel with the cable A, and the pulley G is parallel or approximately parallel with the cable B.

Mounted in the trench between the crossing C and the pulley G is a grooved pulley K, whose axis is slightly inclined, so that the cable can readily pass around the pulleys G and K without its parts coming in contact and rubbing on each other, or being strained or bent, said pulley being so located that the cable B passes the same, after which it is run around the pulley G in the groove 2 thereof, and then returned and run around the pulley K, by which provision the cable B communicates motion to the pulley G, the effect of which is the operation of the auxiliary cable.

When a car is running on the cable A in the direction of arrow 1, and it is desired to transfer the same to the cable B, running in the direction of arrow 2, the grip is released as the car approaches the pulley F, and the momentum of the car carries it over the switch of the turn-off track at this point. When the grip is again closed, it then engages with the auxiliary cable J, so that the car is drawn by the latter in the direction of the arrow 3. The grip is released as it approaches the pulley G, and after it passes the same it is engaged with the cable B, so that the car is propelled in the direction of the arrow 2.

It is evident that the apparatus may be adapted to transfer the car from the track over the cable B to that over the cable A, and likewise located at any angle of a crossing, according to requirements.

As the cable J may become loose and thus drop or slip, it is important to obviate the same. For this purpose I employ a horizontal roller L, which is fitted to a slide M, mounted in any suitable part of the trench. Connected with said slide is a cord or chain N, which passes over a pulley P, and having at its lower end a weight Q, whereby the roller L is pressed against the cable, so that the

latter has its slack taken up and it is kept in proper taut condition, it being evident that a spring may be employed to bear against the roller L in lieu of the weight Q.

I am aware that it is not new to combine with cross-cables a transfer-cable having motion communicated to it by means of one of said cross-cables, and such I do not claim; but I am not aware that the specific construction herein set forth and claimed is old, wherein one of the wheels of the operating mechanism of the transfer-cable is provided with two grooves, around and in one of which is passed a cross-cable, which is then passed around a pulley in the line of the said cross-cable. Neither is the device herein shown for the automatic adjustment of the transfer-cable thought to be common, the said device being automatic at all times in its action.

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

The combination of the cross-cables A and B, the curvilinear row of pulleys E, having vertical axes, the pulleys F and G on horizontal axes, the said pulley G having grooves 1 and 2, the pulley H on a vertical axis, an endless auxiliary cable J, passing around the pulley F against the rollers E and around groove 1 of pulley G and around the pulley H back to pulley F, an inclined grooved pulley K, passed by the cable B, which encircles groove 2 of pulley G, and then returns backward to encircle pulley K to operate the auxiliary cable J, and a tension device for said cable J, consisting of a slide M, fitted with a horizontal roller L, said slide having a cord or chain N attached thereto, which passes over a pulley P and has a weight Q at its lower end, whereby the roller L is pressed against the cable J, so that the latter has its slack taken up and is kept in proper taut condition, substantially as described.

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