

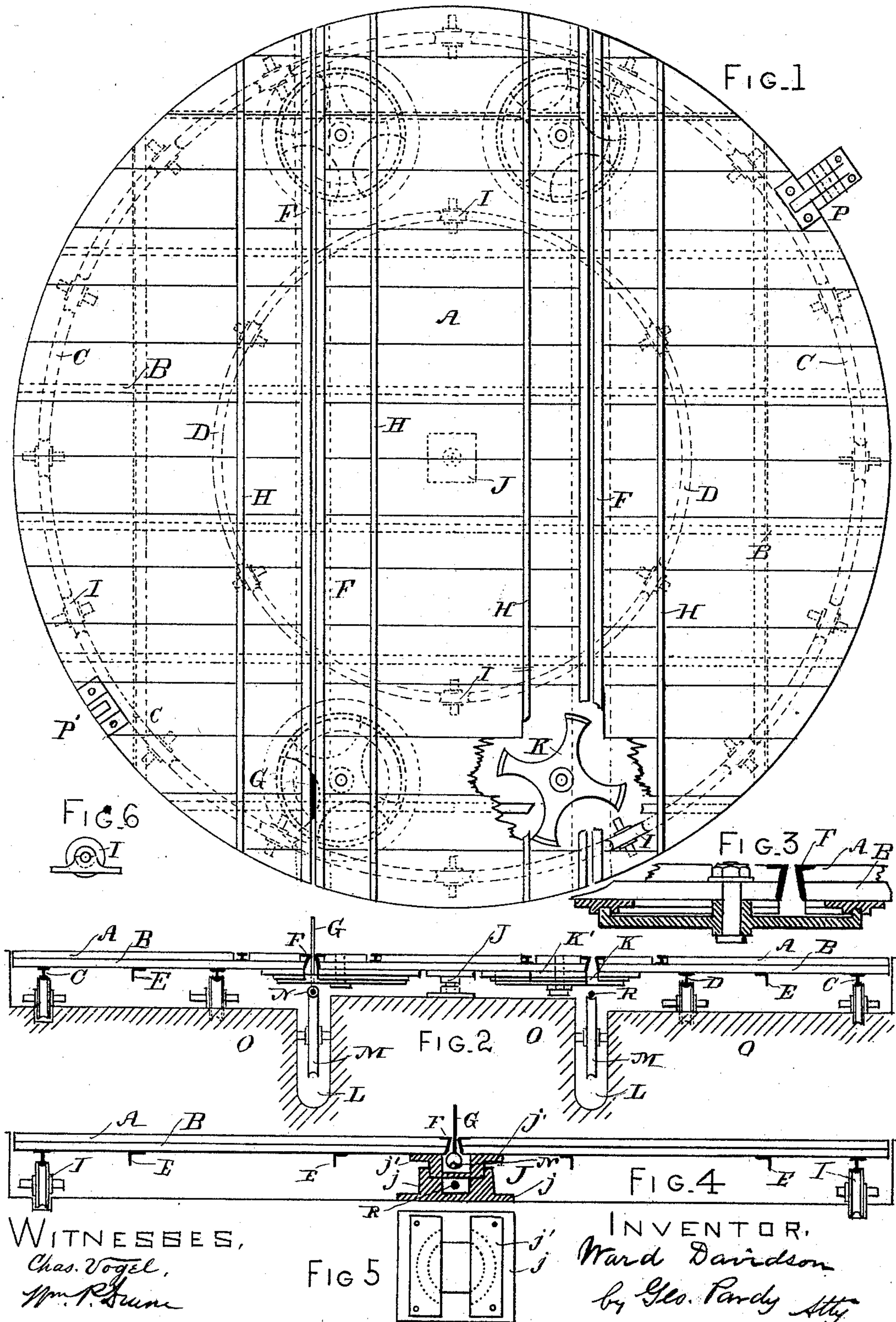
(No Model.)

W. DAVIDSON.

TURN TABLE FOR CABLE OR ELECTRIC RAILWAYS.

No. 396,649.

Patented Jan. 22, 1889.





# UNITED STATES PATENT OFFICE.

WARD DAVIDSON, OF OAKLAND, CALIFORNIA.

## TURN-TABLE FOR CABLE OR ELECTRIC RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 396,649, dated January 22, 1889.

Application filed May 27, 1887. Renewed December 29, 1888. Serial No. 294,940. (No model.)

*To all whom it may concern:*

Be it known that I, WARD DAVIDSON, of Oakland, Alameda county, State of California, have invented an Improved Turn-Table, of which the following is a specification.

The invention relates to street-railways operated by the underground-cable system of haulage; and it consists in a method of constructing the turn-tables sometimes used at the termini of these roads, which permits the cars to be moved on and off the same by the haulage of the main cable direct, as at any point on the line.

Heretofore it has been usual to drop the cable out of the grip before going upon the table, the car moving on, either by momentum or gravity or being pushed on by hand, as the case might be, and being moved off the table by hand or some auxiliary device. In no case has the car been moved while actually upon the table by gripping the main cable. The reason for this has been that as the table was necessarily divided upon its surface from end to end by the slot in which the shank of the grip passed, and as the joining of the parts thus divided was effected by a connection around and underneath the grip-channel, it followed that as the table had to be turned around while the cable remained unaffected by its movement the cable had to be depressed and led permanently below the plane of motion of the table, and hence was never available at this point for moving the car, and other means had to be employed for the purpose.

The present invention obviates the difficulty by dispensing with the ordinary connection below the grip-channel and applying a peculiar locking-wheel connection between the divided parts, which offers no obstruction to the passage of the grip, firmly holds the parts in relation an exact distance apart, and permits the rotation of the table without depressing the cable, so that it is available for the grip to take hold of as well upon the table as at any portion of the line.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan of a table having two tracks, a portion being broken away to exhibit a locking-wheel below. Fig. 2 is a sectional elevation of the same. Fig. 3 is a sectional elevation of the

locking device on a larger scale. Fig. 4 is a sectional elevation of a table having but one track and being divided in the middle into two parts. Fig. 5 is a plan of the center bearing for same. Fig. 6 is a side elevation of one roller and its bearing.

In all the figures the same letters of reference are used to indicate the same parts.

A is a wooden plank table supported upon an iron frame composed of a series of parallel bars, B, bound together by the outer circular track, C, inner circular track, D, and the cross-ties E, the different members of the frame being bolted or riveted to those joined to them in a substantial manner.

F are channel-irons for the shank of the grip G to pass between.

H are the rails of the car-track.

I are grooved rollers receiving the track-irons C and D, and thus supporting the table and preventing lateral movement, though facilitating the circular motion of the table.

J is a center bearing, desirable, but not absolutely necessary. It may be in the form of a vertical pintle stepped in socket, as shown in Figs. 1 and 2, or it may take the form of a circular tongue-and-grooved pair of disks, as illustrated in Figs. 4 and 5.

K are locking-wheels, which are applied on each end of the tracks upon the table—two for a single-track table and four for a double-track table. These locking devices operate automatically, and they consist in four arms radiating from a common hub, which is bolted through its exact center by a single bolt to the under side of the table, all the arms having upturned edges at their extreme ends, these being segments of one true ring. These upturned edges insert themselves in a circular groove formed on the two-part plate K', which is also bolted by several bolts to the under side of the table, one part of the plate being bolted on one side and the other on the opposite side of the slot. The parts are so proportioned that at all times two opposite arms of the wheel will be engaged with the two parts of the grooved plate, thus forming a binding connection between the otherwise divided parts of the table.

L is the channel-way for the cable and carrying-pulleys M.

N is the grip.



O is the concrete, stone, or other form of foundation for the table.

In Figs. 4 and 5 a modification of the center bearing is shown to suit a case where the table has but one track and is divided in the middle. In this case the lower plate, *j*, is one solid piece, its foundation being square and passing a trifle below the lowest point the cable *R* sags to. It has a raised circular seat with outer curb-rim, in which the upper plate, *j'*, which is attached to the two halves of the table, is seated. The cable and grip-channel will cut through the lower and upper plate, leaving only the foundation-plate as a connection between in case the cable is held in the grip as it passes over or through the center; but if the cable is dropped out of the grip before reaching the center plate—as, for instance, when the car moving on a down-grade passes onto the table by gravity—then the two parts of the upper plate may be joined by a band of metal, as shown, which must be below the plane in which the grip moves and above that of the cable. This connection between the two parts of the table is not, however, designed to supplant the locking devices at each end. When the grip passes the center plate coming onto the table, it will be in advance of the same plate after the table is turned around, and hence it may take the cable again to be hauled off.

The many forms of grips in use will make it necessary to dispose of the rope as it passes under the table to suit the particular grip used—as, for instance, if the grip opens its jaws upon the side, the rope must be led out of the grip or the grip led away from the rope before the table is turned, while if the grip is of a pattern which permits the rope to fall out through a bottom opening of the jaws then the rope will simply be allowed to drop low enough to avoid the grip as it passes over it.

In all cases after the table has been turned around and the grip is in position to resume the cable the cable must be raised to a point where the gripping-jaws can again close upon it, if desired, to utilize the cable to haul the car off.

*P* is the lock which holds the table in position to match the track of the line, *P'* being the opposite socket for the bolt of the lock with which it engages at the half-turn. It will not be necessary to enter into a detailed description of this lock, for it is a common well-known device.

These turn-tables are frequently moved around by machinery, though small ones are mostly moved by hand. I have omitted showing any machinery for moving the table, though it may be applied, if desired.

The automatic lock herein shown may be replaced by a lock of any other suitable form, either automatic or otherwise. All that is necessary is that the table shall be firmly held together by means which shall not interfere with the grip passing through the table.

Although this table is described in connection with the cable system, it will be found applicable to the electric system, employing an underground conductor.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In railways having subways for the means of propelling their cars, a turn-table consisting, essentially, of divided sections between which the device connecting between the car and the propelling medium may pass, and suitable means for connecting said sections together, so that the table they form may be revolved as one connected whole, said means of connection being arranged within the path of the said device connecting between the car and the propelling medium and adapted to be moved to permit said device to pass it as the car moves on or off the table, substantially as and for the purpose herein described.

2. A turn-table for cable, electric, or other railways having subways for the power appliances, consisting, essentially, of divided sections supported on rollers set below a circular track secured to the under side of the table and connected together at opposite ends by suitable locking devices adapted to be moved to permit the passage of the grip as the car moves on or off the table, substantially as and for the purpose set forth.

3. The lock for railway turn-tables having divided sections, consisting of the wheel *K*, having radiating arms with upturned ends, in combination with the plate *K'*, having grooved surface to receive the upturned ends of the arms of the wheel, both wheel and plate being secured to the sections of the table, substantially as and for the purpose herein described.

4. As a means for operating to turn and move the cars at the termini of cable or electric railways, the combination of a turn table divided by the grip-slot into practically separate sections, suitable means for connecting these sections together by or through which the grip may pass, and a cable or conductor supported under the table, so as to be accessible to be engaged with the gripper while the car is upon the table, substantially as and for the purpose described.

WARD DAVIDSON.

Witnesses:

GEO. PARDY,  
CHAS. VOGEL.