(No Model.)

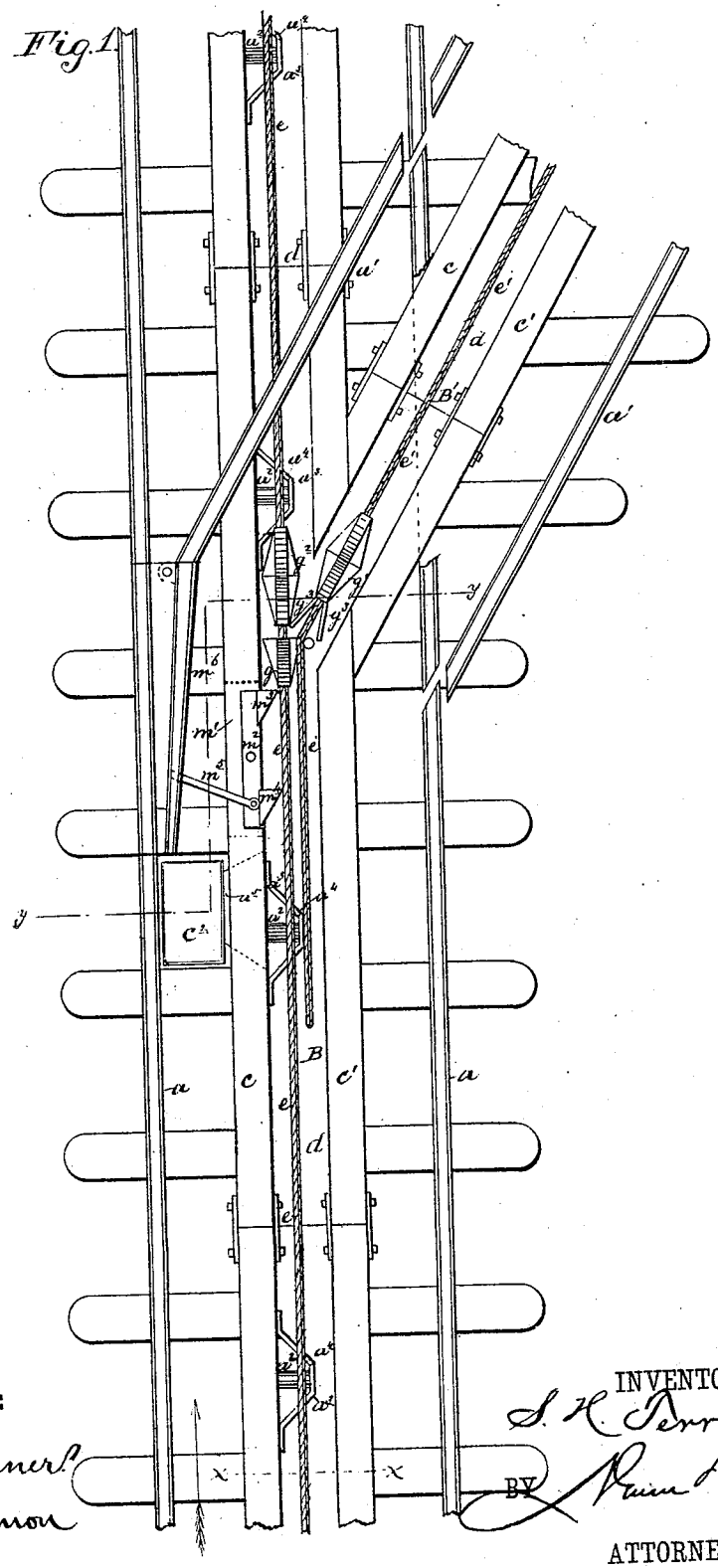
2 Sheets—Sheet 1.

S. H. TERRY.

TRACTION ROPE RAILWAY.

No. 251,317. Patented Dec. 20, 1881.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

S. H. TERRY.

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Fig. 2.

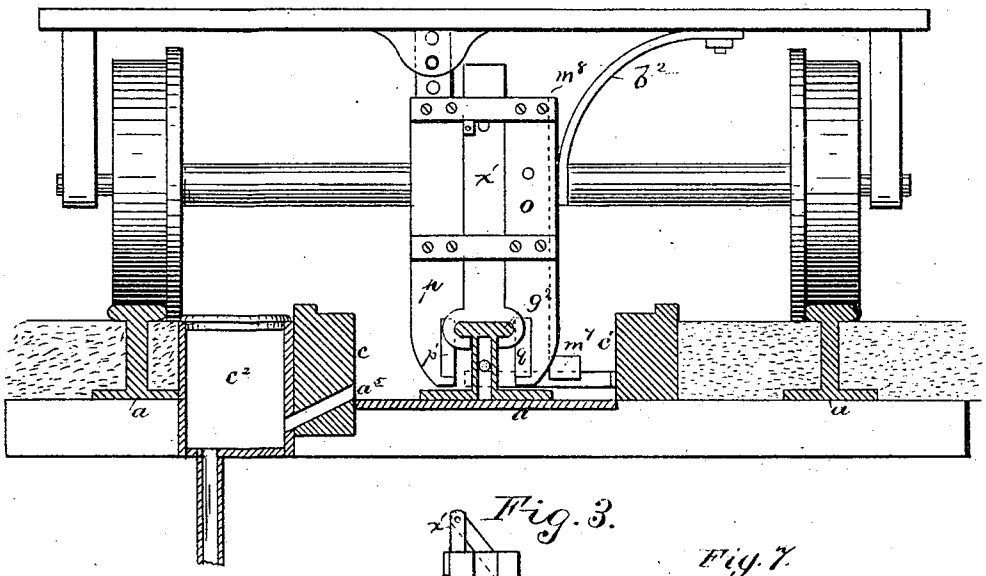


Fig. 3.

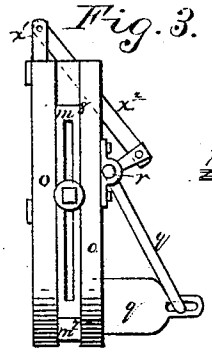


Fig. 7.

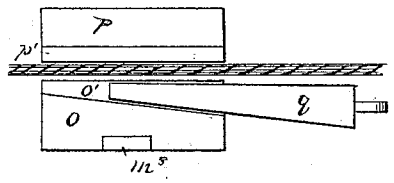


Fig. 4.

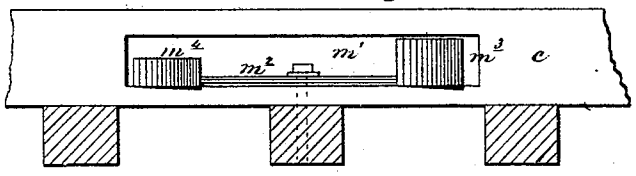
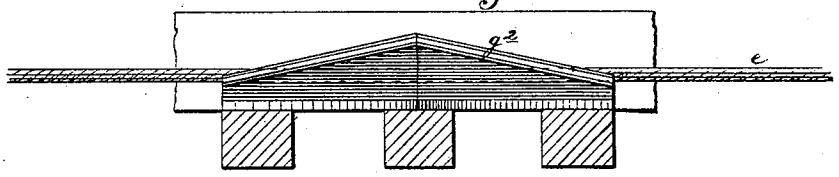


Fig. 5.



WITNESSES:

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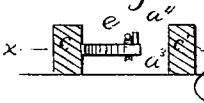
Fig. 6.



INVENTOR:

S. H. Terry

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL H. TERRY, OF GUTHRIE, MISSOURI.

TRACTION-ROPE RAILWAY.

SPECIFICATION forming part of Letters Patent No. 251,317, dated December 20, 1881.

Application filed March 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HOPKINS TERRY, of Guthrie, Callaway county, Missouri, have invented a new and useful Improvement in Traction-Rope Railways; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a main and a side track with my improvements applied thereto. Fig. 2 is a transverse section of the main track, gutter, and a covered opening in the line *y y* of Fig. 1, and a front view of a car on the track, looking in the opposite direction from the arrow in Fig. 1. Fig. 3 is a side elevation of the traction-rope clutch. Fig. 4 is a side elevation of a switch-bar pivoted in a slot in the gutter. Fig. 5 is a side view of a guide for the clutch. Fig. 6 is a cross-section of the gutter in the line *x x* of Fig. 1.

My invention relates to traction-rope railways; and it consists in certain improvements in my invention for traction-rope railways for which an application for Letters Patent filed November 23, 1880, was made by me, said present improvements consisting, first, of a series of friction-rolls for the traction-rope, secured to and arranged on one side of removable sections of the gutter, said sections being provided with suitable openings arranged in connection with covered basins or wells in the street, whereby an open channel without obstructions on one side is formed, and the refuse matter in the gutter may readily be swept into the covered basins and removed therefrom, the covered basins being connected preferably with a sewer or water-way, and the sections may be removed when necessary to adjust said rollers, or for other purposes.

My invention further consists in certain improvements in automatic switches; and my invention also consists in certain devices whereby the clutch may be released from the traction-rope of the main or other line and made to clamp the traction-rope of any branch line, as hereinafter more fully set forth.

At *a a* are shown the rails of the road laid upon cross-ties, as usual; and *a' a'* are the rails of a side track.

B B' are the gutters of the main and side track roads, placed midway between the rails, and covered or not, as desired. The construction of the gutters is the same in both tracks, consisting of side pieces, *c c'*, resting on the cross-ties or laid upon plates *d* resting on the cross-ties.

e e' are endless traction-ropes passing around drums driven by stationary engines, and extending through the gutters of the main and side tracks, and supported by anti-friction rolls a^2, journaled at one end in the side piece *c* of a gutter, and supported by the frames a^3, bolted to the side piece, *c*, in which the opposite or inner ends of said friction-rolls are journaled. A lug or projection, a^4, is preferably secured to the inner part of each frame a^3 to prevent the traction-rope from being drawn off the rolls.

The gutters B B' are made in sections, bolted together, and provided with openings a^5, preferably made in the side *c* of the gutter, which lead into the covered openings, basins, or wells c^2 in the street. By this construction it will be seen that an open channel is formed without obstructions on one side thereof, and any refuse matter contained in the gutter may be swept into the openings in the same leading into the covered basins in the street, from which the refuse matter may readily be removed, any water collecting in the covered basins passing off into the sewer.

By making the gutters in sections any section may be removed and the rolls, if necessary, adjusted or any repairs made.

The car is connected to the rope by a clutch secured to the under side of the car and fitted for operation from the platform to catch and release the rope.

The clutch is of the same construction, as far as clamping the rope is concerned, as described and claimed in my application for Letters Patent filed November 23, 1880, above alluded to, with the exception that in lieu of employing two wedges, secured to two arms connected with the spindle *r*, I employ but one arm, *q'*, and wedge *q*, sliding in a mortise, *o'*, in the standard *o*, a removable plate, *p'*, being mortised in the opposite standard, *p*, and the traction-rope clamped between the wedge and removable plate.

m' represents a longitudinal slot in the side c of the gutter B of the main track, near its intersection with the side track, in which slot is pivoted a lever, m^2, provided with cams m^3 m^4, the former being higher than the latter. One end of the lever m^2 is connected by a rod, m^5, with a pivoted frog, m^6, connected with the side track. In case two frogs are employed for right and left side tracks at the same point, two similar levers may be employed, operating in slots in the sides of the gutter to operate both frogs.

The clutch on each car is provided with a projection, m^7, on a vertically-adjustable bar, m^8, connected with the clutch, which may be adjusted at the starting of a car to strike the cam for operating the frog and guiding a car on the main or side track, as desired.

If it is desired that a car should run on the side track, the rod m^8 is adjusted so that the projection m^7 will strike the cam m^4 as the car moves along and throw the pivoted frog m^6 over to the main-track rail adjacent thereto, so that the car will run on the side track. In like manner if it is desired that a car should run on the main track, the switch having been set for the siding, the rod m^8 is adjusted so that the projection m^7 will ride over the cam m^4 without touching it, and will strike the projection m^3 and throw the frog m^6 into the position shown in Fig. 1.

The traction-ropes e e' of both tracks are parallel with each other for a short distance along the main track, the traction-rope e' of the side track diverging from the main-track traction-rope at the intersection of the tracks, and following the side-rail track. As a car approaches a side track in the direction of the arrow the main-track traction-rope passes between the vertical parts of an inclined half-guide, g, (see Fig. 1,) made of T shape and secured to the bottom of the gutter B, which half-guide acts by its wedge shape to raise the box x' and open the clutch. By means of a spring, b^2, attached to the bottom of the car the flexible clutch is thrown over or aside toward the traction-rope e', where, guided by V-shaped flanges or lips g^3 to the double-inclined guide g' in the gutter of the side track similar to g above described, it is opened and forced down by the T form of the guide to seize the traction-rope of the side track, by reason of the slide x', (see Figs. 2 and 3,) the lower end of which grasps the top of the guide g', and rises with the inclination of the guide, thus drawing out the wedge q by means of the bell-crank lever q' and connecting-rod x'', by which the wedge q is connected to the slide x'. In the descent of the clutch on the opposite side of the double-inclined guide g' the slide x' is forced down by the T form of the guide, and the connecting-rod x'' will descend with it, and being connected to the bell-crank lever q' will force the wedge q into its mortise o' and clamp the traction-rope. It will be thus seen that the clutch is secured to the traction-rope during the transit of the car by the wedge mechanism described, and is released at the junction of the main with a side track by the guides, which also force it to seize the traction-rope. The clutch is secured flexibly to the bottom of a car by a pin secured to a lug attached to the bottom of a car, said pin passing through one of a series of adjusting-holes; or the clutch may be secured flexibly by a hinge to the bottom of the car, or in any other suitable manner. The clutch is also released from the traction-rope by a lever operated by the conductor, when it is desired to stop the car to let off or take up passengers.

The clutches of the cars intended to be run on the main line only are in general not provided with a spring, b^2, but by the construction above described the clutch, in such case having been released from the traction-rope of the main track, passes along the main track and comes in contact with a double guide, g^2, in the gutter of the main track, which causes the clutch again to be opened and forced down to seize the traction-rope of the main track.

The spring b^2 may be adjusted by a lever applied to each car, so that the clutch may be thrown over by the driver if desired to run on a side track, or not thrown over so as to run on the main track.

What I claim as my invention is—

1. The combination, with the gutter B, provided with side openings, a^5, of the rolls a^2, arranged on one side of the gutter, traction-rope e, and covered basins or wells c^2, substantially as described, and for the purpose set forth.

2. The combination, with the gutter B, having side openings, a^5, of frames a^3, bolted to one side of the gutter and provided with lugs a^4, rolls a^2, arranged on one side of the gutter, traction-rope e, and covered basins or wells c^2, substantially as described.

3. The combination, with a gutter, B, provided with a longitudinal slot, m', in its side, of the lever m^2, pivoted in the slot and provided with the cam ends m^3 m^4, rod m^5, frog m^6, and a traction-rope clutch pendent from a car, substantially as described, and for the purpose set forth.

4. The combination, with the gutters B B′, provided with a main line and a siding traction-rope, of a half-guide, g, secured to the gutter of the main track, a clutch constructed substantially as described, a spring or lever, b^2, and a double guide, g', in the gutter of the side track for opening the clutch and clamping it to the traction-rope of the side track, substantially as described.

5. The combination, with the gutters B B′ and traction-ropes e e', of the half-guide g, spring b^2, pivoted clutch, and double guide g', substantially as described.

6. In a traction-rope railway, the combination, with a car, of a clutch flexibly secured thereto, and spring b^2, substantially as described.

7. In a traction-rope railway, a clutch pro-

vided with an adjustable rod, m^8, having a projection, m^7, thereon, in combination with the lever m^2, substantially as described.

8. In a traction-rope railway, the combination, with the lever m^2, provided with cams m^3 m^4 on its ends, of a clutch provided with an adjustable rod, m^8, having projection m^7, rod m^5, and frog m^6, substantially as described, and for the purpose set forth.

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