

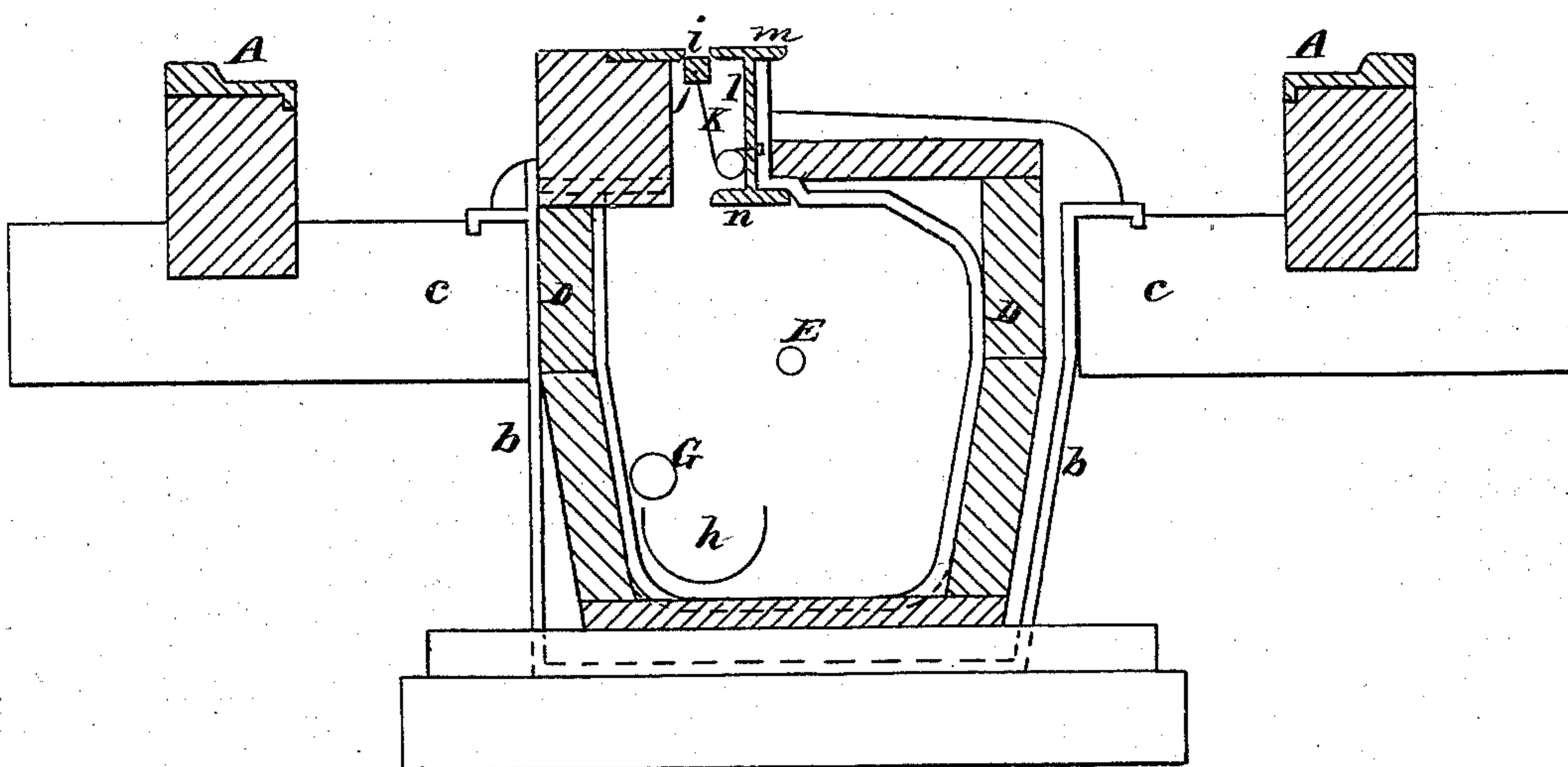
W. EPPELSHEIMER.

Endless Rope-Traction Railways.

No. 157,385.

Patented Dec. 1, 1874.

Fig. 1.



Witnesses
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WILLIAM EPPELSHEIMER, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN ENDLESS-ROPE TRACTION-RAILWAYS.

Specification forming part of Letters Patent No. 157,385, dated December 1, 1874; application filed April 15, 1874.

To all whom it may concern:

Be it known that I, WILLIAM EPPELSHEIMER, of San Francisco city and county, State of California, have invented Improvements in Endless-Rope Traction-Railways; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to improvements in that class of street and other railways in which an endless rope, moving in an underground tube or tunnel, is used for hauling the car or cars along the track.

Referring to the drawing accompanying this description, which represent a transverse sectional view—

A A are the two tracks of a rail or tramway. *b b'* are the two walls of an underground tube, which are united together at intervals by ribs or webs, (not shown,) and between which the wooden filling D is placed; but it may be otherwise constructed, my improvements not relating to the body, form, or method of constructing the tube. This tube is usually placed between the two rails of a track, A A, as at Fig. 1, so that the connection between the endless rope E, which moves in the tube, and the car can be made by a vertical attachment connected with the bottom or floor of the car, and passing down through a slot, *i*, in the upper side of the tube.

In the present instance I have represented the tube as being thus located with reference to the tracks A A; but usually I shall place the tube alongside of one of the tracks, upon the outside of both tracks, and connect the gripping attachment from the side of the car.

As these tunnels have heretofore been constructed the bottom of the tube served as the gutter to convey away the water which enters the tube through the slot; but I provide an independent gutter, *h*, mounted inside of the tube, directly below the slot. By this arrangement I am enabled to obtain an inclination of the gutter where the tube passes across a level street, and has no inclination to give a fall.

My second improvement consists in providing a device for closing the slot *i*, through which the gripping attachment enters the tun-

nel. To do this, I mount a rail or bar, *j*, which is wide enough to cover the slot, and as long as desired, upon springs *k*. One side of the slot *i* I construct by employing a double T-shaped casting, *l*, the upper flange *m* of which forms one side of the slot *i*, while one of its lower flanges, *n*, extends out parallel with the upper flange *m*. The lower ends of the springs *k* are secured to the lower flange *n*, or to the web of the T-iron, so that the springs stand vertical, or nearly so, and support the closing rail or bar *j* at their upper ends, directly across the slot or opening *i*.

If desired, two parallel rails or bars can be used to close the slot, and the bars will meet in the middle of the slot, so that the passing shank of the griper will press them apart.

The springs *k* will be strong enough to support any weight which may come vertically upon the bar *j* through the slot, while they allow the shank of the gripping attachment to force the bar to one side of the slot, in order to let it pass when the car is being moved along by the rope.

By the above means I prevent the wheels of vehicles and other bodies from entering or dropping through the slot, thereby doing away with one of the great objections to this method of propelling street-cars through the streets of cities.

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

1. The double T-shaped casting *l*, in combination with the springs *k* and rail or bar *j*, arranged to operate substantially as and for the purpose above described.

2. The slot-closing bars *j*, operated by springs *k* to close the slot, and permit of the passage of the griper-shank, substantially as and for the purpose above described.

3. The independent gutter *h*, arranged inside of and in combination with the slotted tunnel *b b*, the said gutter being immediately beneath said slot, as described, and for the purpose set forth.

In witness whereof I hereunto set my hand and seal.

WILLIAM EPPELSHEIMER. [L. S.]

Witnesses:

GEO. H. STRONG,
C. M. RICHARDSON.