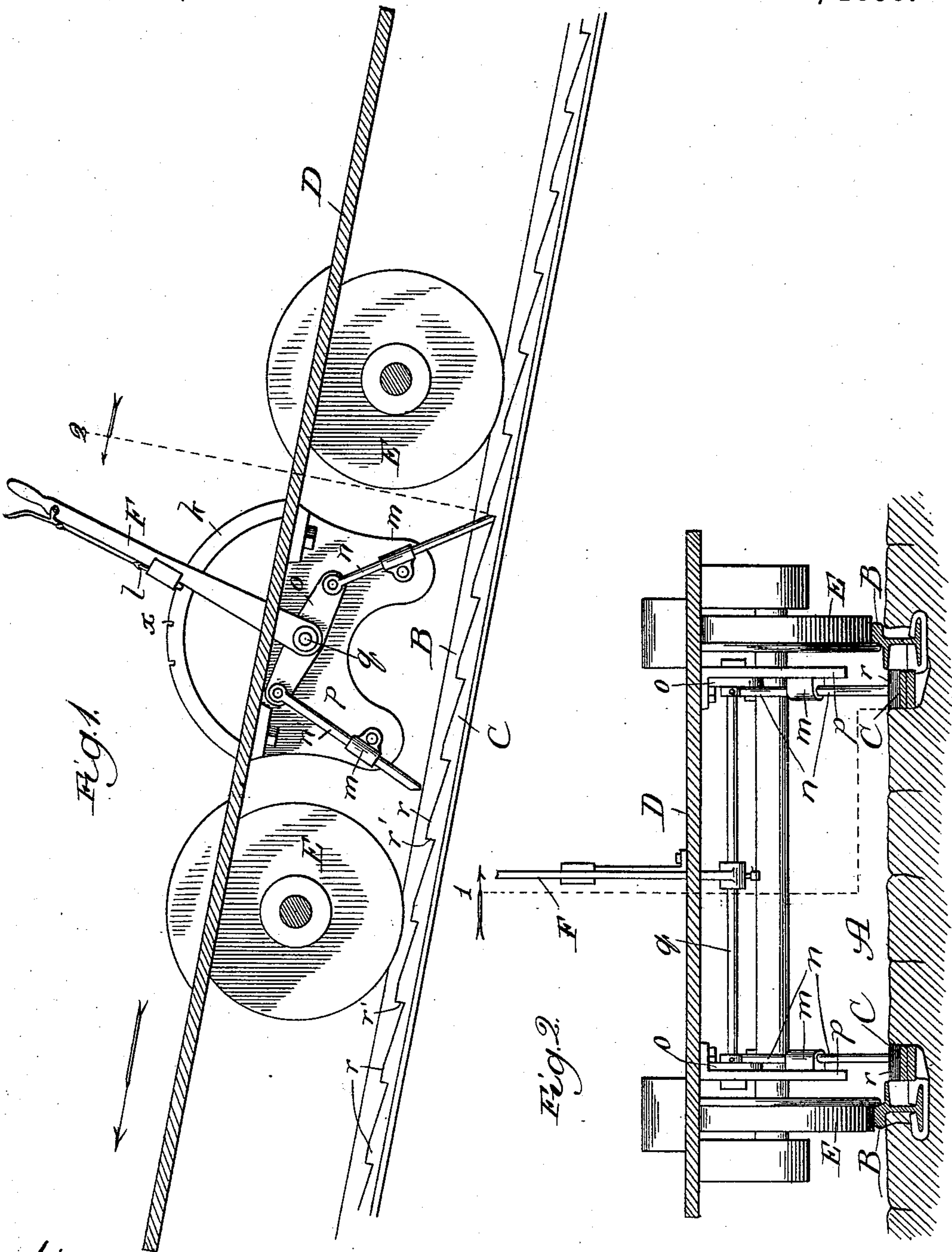


(No Model.)

A. FISCHER.
SAFETY APPARATUS FOR STREET CARS.

No. 540,830.

Patented June 11, 1895.



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UNITED STATES PATENT OFFICE.

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SAFETY APPARATUS FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 510,830, dated June 11, 1895.

Application filed February 26, 1895. Serial No. 539,772. (No model.)

To all whom it may concern:

Be it known that I, AUGUST FISCHER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Safety Apparatus for Street-Cars, of which the following is a specification.

Where the road-bed of a street-car line contains inclined sections, and particularly in tunnels, accidents occur in the ascent and descent of a car or train of cars by its running down the incline and crashing into another car or train ahead of or behind it, owing to the loss of control by the gripman or motorman over the brakes by reason of disarrangement or imperfection of the brake-mechanism.

The object of my invention is to provide a safety apparatus on the car adapted to be engaged, at the will of the brakeman, with a toothed supplemental track on the inclined section of a street-car road-bed to hold the car, when desired, against moving down the incline and thus avoid the occurrence of such accidents as are hereinbefore referred to.

My invention consists in the general construction of my improved safety-apparatus; and it also consists in details of construction and combinations of parts, all as hereinafter set forth and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a broken longitudinal sectional view taken at the line 1 on Fig. 2, viewed in the direction of the arrow and representing an inclined section of a street-railway track provided with the supplemental toothed track and mounted by a car equipped with my improved safety apparatus; and Fig. 2 is a section taken at the line 2 on Fig. 1 and viewed in the direction of the arrow.

A denotes an inclined section of the road-bed of a street-car line having the rails B, B. Extending lengthwise along the rails, preferably along each at its inner side, is a toothed rail C, the teeth *r* of which should be equidistant apart and are inclined to present their abutment-ends *r'* in the direction up the incline.

D denotes the floor of a street-car; and E, E are the car-wheels. Between the wheels, by preference, or elsewhere, if desired, is located my improved safety-attachment. It

comprises a rock-shaft *q* journaled in bearings *p, p*, depending from the bottom of the car near its opposite sides and carrying, near its opposite ends cross-heads *o*, from opposite ends of each of which extend the pivotal tongues or bars *n* and *n'* through pivoted guide sockets *m* on the bearings *p*.

F is an operating lever fastened at its lower end to the rock-shaft *q*, preferably near its center, and extending thence upward through the floor to afford a conveniently accessible handle on the car, provided with a spring-dog attachment *l* to engage the teeth of a segmental rack *k*, for holding the shaft in either position of the throw of the operating lever.

The normal positions of the tongues *n* and *n'*, which are extended and withdrawn lengthwise in inclined directions by rocking the shaft *q*, are with both withdrawn from projecting far enough downward to extend into the plane of the teeth of the rails C, in which position they are retained when the operating lever is thrown to engage its dog with the central notch *x* of the segmental rack *k*. In the ascent of the car up the incline illustrated at, say, one end of a tunnel, should the car become uncontrollable or for any reason start to run back down the incline, its progress may be instantly checked, and it may be brought immediately to and held at a standstill by turning the shaft *q* to distend the tongues *n* longitudinally till they project into the plane of the teeth of the supplemental toothed tracks C, which they then engage. The toothed supplemental tracks provided on the inclined section of the road-bed on which cars descend present the abutment-ends of their teeth also toward the upper end of the incline; so that while the car illustrated was descending into a tunnel at the opposite end from the incline shown in Fig. 1, up which it may be supposed to be traveling, as indicated by the arrow, the tongues *n'* would have been the ones to be distended, by rocking the shaft *q* properly, to engage the teeth of the supplemental tracks C.

As will be seen, a car equipped with my improved safety device, in case it should, for any reason, get beyond the control of the brakes, when traveling on an incline, may be surely and easily checked and held against

running down the incline, thus avoiding the possibility of any disastrous consequences such as have occurred owing to the lack of provision of some such safety device as that forming my improvement.

It may be suggested that the supplemental toothed tracks are not indispensable for use with my invention, inasmuch as the tongues n and n' may be adapted to penetrate the road-bed to check the motion of the car. It may also be, under certain conditions, that only one of the longitudinally movable tongues is required for affording the advantages of my improved safety-apparatus. Hence I do not limit my invention to the use of more than one such tongue.

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

1. In combination with a car, a safety-apparatus comprising a rock-shaft journaled in bearings at opposite sides of the car, a lever for rocking the shaft, means for locking said lever at the ends of its throw, a tongue pivotally connected with the lever and a socket pivotally fastened below the tongue-pivot to extend from its pivotal point to one side of that of the tongue and affording a self-adjusting guide through which the tongue projects incliningly to be extended and retracted longitudinally, with relation to the road-bed, by operating said lever, substantially as described.

2. In combination with a car, a safety-apparatus comprising a rock-shaft q journaled

in bearings at opposite sides of the car and provided with an operating lever F equipped with a spring-dog device to engage a rack k on the car, cross-heads o on the shaft near its opposite ends, tongues n and n' pivotally fastened on each cross-head near its opposite ends, and sockets m pivoted on said bearings and affording guides through which the tongues pass to be extended and retracted longitudinally with relation to the road-bed by rocking the shaft, substantially as described.

3. In combination with the inclined road-bed A having rails B , a supplemental toothed rail C extending lengthwise along said rails, and a car mounted on said rails B and provided with a safety-apparatus comprising a rock-shaft journaled in bearings at opposite sides of the car and provided with an operating lever, means for locking the lever at the ends of its throw, a cross-head on said shaft, tongues pivoted to the cross-head near its opposite ends and sockets, each pivotally fastened below a tongue-pivot to extend from its pivotal point to one side of that of said tongue, said sockets affording self-adjusting guides through which the tongues project incliningly to be extended and retracted longitudinally, with relation to the road-bed, by operating said lever, substantially as described.

AUGUST FISCHER.

In presence of—
J. H. LEE,
M. J. FROST.