

No. 708,734.

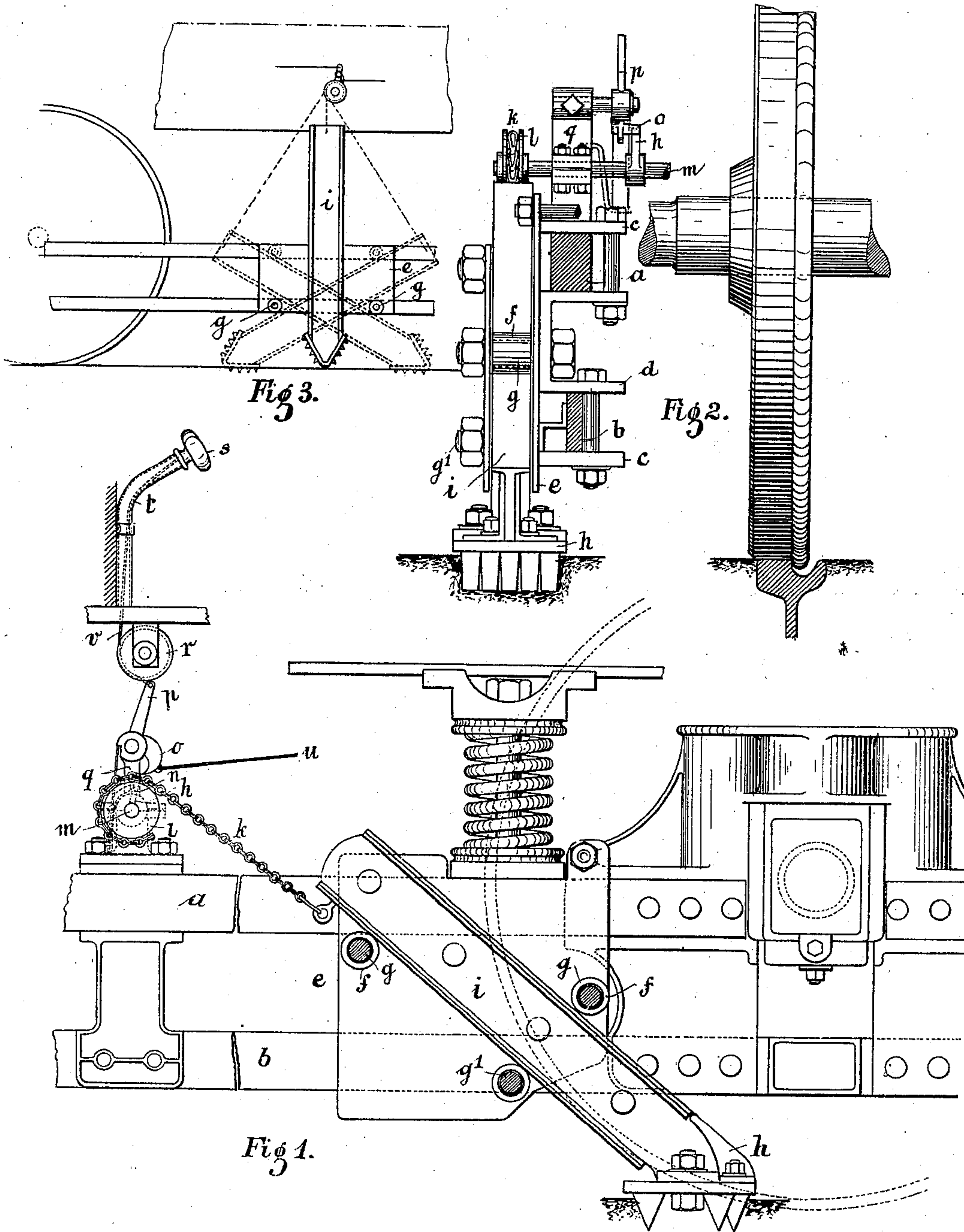
Patented Sept. 9, 1902.

C. REAL.

EMERGENCY BRAKE FOR TRAMWAY CARS.

(Application filed May 29, 1902.)

(No Model.)



WITNESSES
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EMERGENCY-BRAKE FOR TRAMWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 708,734, dated September 9, 1902.

Application filed May 29, 1902. Serial No. 109,449. (No model.)

To all whom it may concern:

Be it known that I, CARL REAL, a citizen of Switzerland, residing in Schwyz, in the canton of Schwyz, Republic of Switzerland, (whose post-office address is Schwyz,) have invented certain new and useful Improvements in Emergency-Brakes for Tramway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

I have applied for patents in the following countries: Application in Switzerland on November 19, 1901; application in Austria on March 15, 1902; application in Germany on March 19, 1902; application in France on April 25, 1902; application in Belgium on April 28, 1902; application in Great Britain on April 29, 1902.

This invention relates to a spare or emergency brake for tramway-cars. The distinguishing feature of this brake is that on the necessity for braking arising one or more brake-beams are lowered from the vehicle, which beams are provided with grippers or such like arrangement, so that these anchor themselves into the roadway, and thus bring the conveyance to a stand within a very short distance. The arrangement of the braking-beam on the vehicle is of such a kind that not only the momentum of the conveyance, but also its weight, is applied in order to increase the efficiency of the brake.

In the accompanying drawings, Figure 1 is a side view of the under frame of a tramway-car equipped with the emergency-brake. Fig. 2 is a side view in which the parts which do not relate to the invention are omitted. Fig. 3 shows a further means of carrying out the invention.

In the example shown in Figs. 1 and 2 a plate *e* is fastened to the under frame *a b* of the car by means of flanges or plates *c*, projecting from said plate, a U-shaped beam *d* and suitable clamping-bolts being passed through the U-shaped beam *d* and flange *c*. The plate carries two bolts *g*, provided with

rollers *f* and a bearing-bolt *g'*. Between the latter there is fastened a brake-beam *i*, provided with a gripper *h*, which beam *i* can be raised and lowered by means of a chain *k*, wound around a roller *l*, which is supported on the underframe and capable of being turned. On the shaft *m* of the roller *l* is secured a catch-lever *n*, which abuts against the arm *o* of a bell-crank lever *o p*, which latter is capable of being turned on the plumb-block support *q* of the shaft *m*. From the arm *p* a wire rope or other pull *v* is led over a roller *r* to the driver-platform and ends there with a hand-grip *s* in a tube *t*. Another rope or pulling device *u* extends from the arm *o* to the other driving-platform of the car. During the journey the brake-beam *i* is normally held in raised position. On desiring to apply the brake the arm *o* of the bell-crank lever *o p* is lifted up by the driver pulling the wire rope or other drawing means *u v*, so that the arm *o* is freed from the catch-lever *n*, whereupon the brake-beam *i* slips down by its own weight to the roadway. (See position of brake-beam in the drawings.) The momentum of the vehicle now impels the underframe onto the sloping part of the braking-beam *i*, whereby the latter is caught and fixed between the rollers *f* and is loaded with a part of the weight of the vehicle as the latter tends to ride up the inclined beam *i*, so that the gripper *h* buries itself deeply in the roadway. The braking action brought about by this method is of such effect that the vehicle is brought to a standstill within quite a short distance even on steep gradients. After use the brake can be again wound up to its elevated position by winding the chain *k* onto the roller *l*. It is evident that such an arrangement can be placed on both sides of the vehicle if such is preferred, or, as in the example shown, one brake may be arranged in the middle of the vehicle-body.

In the method of carrying out the invention according to Fig. 3 the braking-beam is hung vertically, and an arrangement for lowering and raising the brake is provided similar to that shown in the method already described. The beam *i* is lowered either to right or left, according to the direction in which the vehicle is traveling, and by this

means an anchoring of the vehicle in the roadway is effected.

I claim—

1. An emergency-brake for tramway-cars
5 comprising a brake-beam, provided with
means for gripping the roadway, and capable
of being lowered from the driver's platform,
said brake being fitted between two or more
bolts secured to the underframe of the car in
10 such a manner that the brake-beam, when
released, is capable of fastening itself into
the roadway so that as the vehicle tends to
ride up the inclined part of the brake-beam,
thereby causing the weight of the car to as-
15 sist the braking action.

2. In combination with a car or like ve-
hicle, a roadway-engaging brake device car-
ried thereby, and means whereby said brake
device may be inclined in the direction the
car is going and caused to engage the road- 20
way whereby the momentum of the car causes
said car to be raised by said inclined brake
device, substantially as described.

In testimony that I claim the foregoing I
have hereunto set my hand this 17th day of 25
May, 1902.

CARL REAL.

Witnesses:

A. LIEBERKNECHT,
HERMANN HUBER.