

J. JOHNSON.
SAFETY-CARS.

No. 187,761.

Patented Feb. 27, 1877.

Fig. 2.

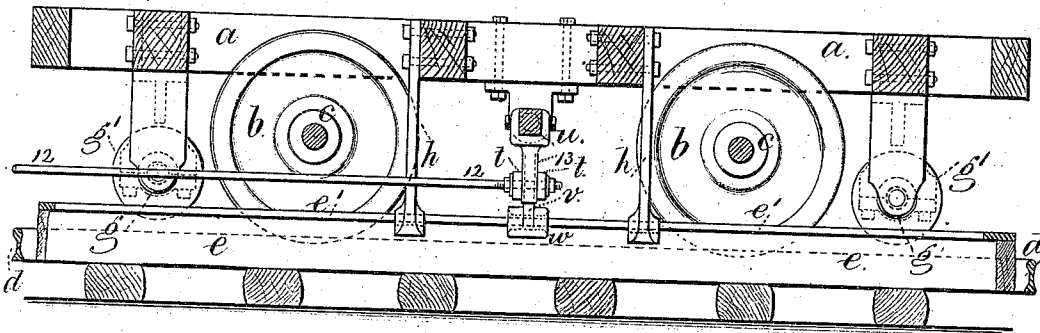


Fig. 1.

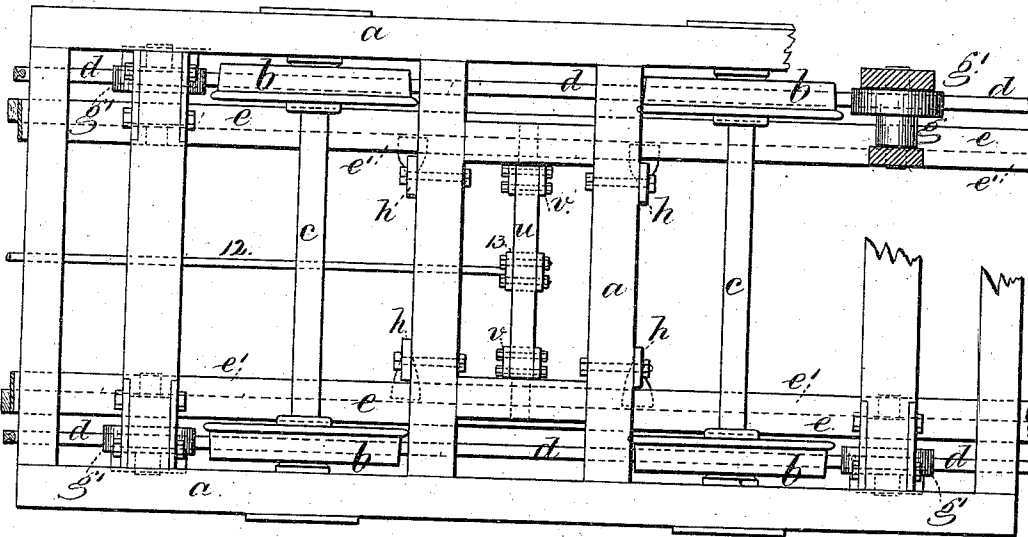


Fig. 3.

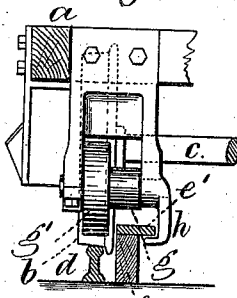


Fig. 4.

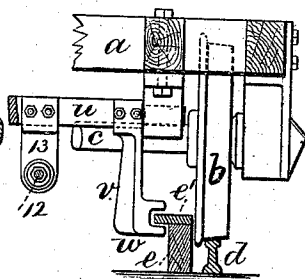
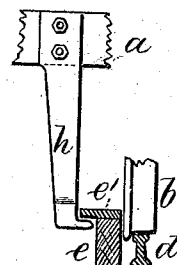


Fig. 5.



Witnesses.

Charles Smith
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UNITED STATES PATENT OFFICE.

JOB JOHNSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN SAFETY-CARS.

Specification forming part of Letters Patent No. 187,761, dated February 27, 1877; application filed December 20, 1876.

To all whom it may concern:

Be it known that I, JOB JOHNSON, of Brooklyn, Kings county, New York, have invented an Improvement in Trucks for Railway-Cars, of which the following is a specification:

The objects of this invention are, to lessen the risk of the wheels leaving the track, to prevent the car leaving the track if a wheel or axle or rail is broken, to relieve the wheels and axles from the strain consequent upon applying the brakes, to prevent the car tipping sidewise if exposed to a severe gale of wind, and, lastly, to facilitate the stopping of the car.

The devices employed for the aforesaid objects are shown as applied to a truck-frame for a car. In this case springs will be required between the truck-frame and car; but in cases where the ordinary springs and sliding axle-boxes are used, the present improvements will be applied to a frame sustained by the axles of the wheels.

In the drawing, Figure 1 is a plan view representing the improvement. Fig. 2 is a longitudinal section. Fig. 3 is an elevation of the guide-wheels. Fig. 4 is a section of the brakes, and Fig. 5 is an elevation of the clips for preventing the car tipping laterally.

The frame *a* is supported by the wheels *b* and axles *c*, there being pillar-blocks and axle-boxes of any usual kind. The rails *d* are of usual character, and there is an additional guide-rail, *e*, inside of each rail *d*, and this rail *e* has an inward flange, *e'*, along the upper edge.

Near the angle of the truck-frame are placed guide-rollers, that are made with two cylinders, *g* *g'*, of different diameters, to run upon the surfaces of the rails *d* and *e*, and be guided by the cylinder *g'*, which forms a flange to the cylinder *g*, so that if either wheel *b*, or axle *c*, or rail *d* breaks or becomes injured, the frame *a* will not drop upon the track, but it will be supported and guided by the wheels or rollers *g* *g'*.

From the inside of the frame *a* there are hanging arms *h*, with flanges or clips at their ends, passing beneath the upper flange *e'* of the rails *e*, so that an additional protection is given, and the truck prevented from leaving the track; and if there is any sudden gale of wind acting to tip the car laterally, the clips

or flanges *h* prevent injury, and retain the car upon the track. These hanging arms *h* may be separate from the bearings of the rollers *g* *g'*, as seen in Figs. 1, 2, and 5; or the inner bearings of said rollers may extend down to form the said arms *h* and clips, as shown in Fig. 3.

Usually the brakes are applied to the wheels; but this tends to strain the wheels and axles, and to make the wheels slip upon the track and wear flat at places upon the periphery, thus injuring the wheels, and sometimes the wheels leave the rail, especially in turning curves, because the wheels are not free to accommodate themselves to the track. I avoid this difficulty by applying the brake to the inner supplemental rail *e*; and this brake is located midway between the wheels, so as to aid in retaining the wheels on the track, and to prevent any tendency to hold one pair of wheels on the track and throw the others off.

The rock-shaft *u* is in bearings upon the truck-frame *a*, and it is rocked in either direction by the brake rod or chain 12 acting upon the arm 13. This brake rod or chain may be operated by the usual brake wheel and shaft, or it may be moved by the ordinary air or steam brakes.

From the rock-shaft *u* there are brake-arms *v*, with rocking graspers *w* at their lower ends. These graspers *w* are made as flanges to the arms *v*, passing above and below the flange *e* of the supplemental rail *e*, and the edges of the flanges are curved or rounded, and hence when the shaft *u* is rocked and the arms swung, the graspers *w* seize the flange of the rail with a sufficient force to act as a brake and arrest the movement of the car with more or less rapidity, according to the force applied to the brake; and I remark that the india-rubber buffers or springs *t* at each side of the lever-arm 13 upon the brake-rod yield in either direction, according to the power exerted, and prevent injury to the parts by the brake being applied too suddenly.

I claim as my invention—

1. The combination, with the truck-frame and wheels *b*, of the guide-rollers *g* *g'*, each composed of two different-sized cylinders and the main rails *d* and supplemental rail

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e, for the purposes and substantially as set forth.

2. The combination of the truck-frame *a*, wheels *b*, guide-rollers *g g'*, main rail *d*, supplementary rails *e*, and hanging arms *h*, for the purposes and substantially as set forth.

3. The brake-arms *v* and graspers *w*, in combination with the rock-shaft *u* and brake-actu-

ating mechanism and flanged rail *e*, substantially as set forth.

Signed by me this 16th day of December, A. D. 1876.

JOB JOHNSON.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.