

J. H. KAUFMAN.
Safety Car.

No. 27,547.

Patented Mar. 20, 1860.

Fig. 1.

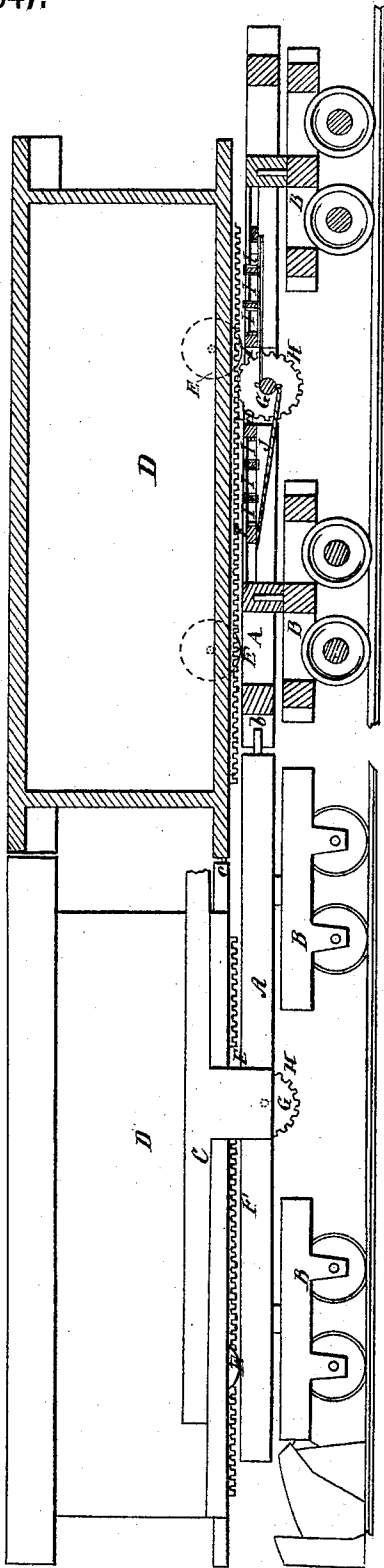
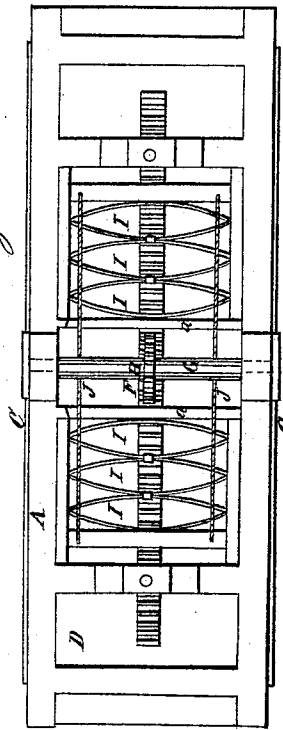


Fig. 2.



UNITED STATES PATENT OFFICE.

JOHN H. KAUFMAN, OF LISBURN, PENNSYLVANIA.

RAILROAD-CAR.

Specification of Letters Patent No. 27,547, dated March 20, 1860.

To all whom it may concern:

Be it known that I, JOHN H. KAUFMAN, of Lisburn, in the county of Cumberland and State of Pennsylvania, have invented a new and useful Improvement in Railroad Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a view of two of my improved cars connected together, the side of one car being shown, and the other car being bisected longitudinally through its center. Fig. 2, is an inverted plan of one of my improved cars, and the platform of its trucks, the trucks being omitted.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to a new and useful improvement in railroad cars, whereby the danger caused by collisions is prevented, the trucks kept upon the track and the cars made to run with a steady and regular motion.

The nature of the invention consists in having the bodies of the cars fitted between ways or guides on the platforms of the trucks, and having racks on the under surfaces of the bottoms of the cars, the racks gearing in pinions attached to shafts on the platforms of the trucks, said shafts being connected to springs or their equivalents on the platforms, the above parts being constructed, arranged and operating as will be hereafter fully shown.

To enable others skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents the platform of the trucks B, B, which are secured to the platform in the usual manner. The platform is provided at each side with a way or guide C, and the car D, is placed or fitted between the ways or guides, the lower part of the car being provided with rollers E, which rest upon the side pieces of the platform, see Fig. 1.

To the under side of the bottom of the car D, there is secured a rack F, and at the center of the platform A, there is a transverse shaft G, having a pinion H, upon it at about its center and in which the rack F, gears.

At each side of the shaft G there are placed a series of elliptic springs I, the ends

of which fit in grooves in the inner surfaces of the side pieces of the platform A, the inner springs or those adjoining or nearest to the shaft being secured to cross pieces (a) 60 of the platform A. The outer springs are connected by chains J, to the shaft G.

In a train of cars the platforms A, are connected together as shown at (b) Fig. 1, the locomotive of course being attached to 65 the platforms. The cars D, are also connected together as shown at (c) Fig. 1, but are free from the locomotive.

As a train of cars moves along the cars are kept steady upon the platforms A, by 70 their own gravity only provided the motion is perfectly regular, but if the trucks are suddenly stopped or retarded the cars will not receive the shock directly from the trucks and platforms because the trucks and plat- 75 forms will be forced backward underneath the bottoms of the cars, see Fig. 1, and the shaft G will be rotated in consequence of the pinions H, gearing into the racks F, and the chains J, will be wound upon the shafts G, 80 the springs I, being compressed thereby. Consequently it will be seen that shocks caused by sudden stoppages of the cars, cannot be transmitted directly to the cars as there is an elastic medium (the springs I) 85 between the platforms and cars. The same effect is produced in cases of the sudden starting of the platforms and trucks, and the springs I, will bring the cars back to their original position after the effect of 90 the concussion is over.

In cases of collision the trucks and platforms are forced backward underneath the cars as before stated and by moving backward the trucks are kept upon the track because the trucks of one platform will pass 95 underneath a portion of the adjoining car, see Fig. 1. The cars not moving simultaneously with the trucks, said cars thereby serve to keep the trucks upon the track. 100

It will be understood that the cars, especially when filled with passengers are much more weighty than the trucks, and consequently the trucks are forced backward when retarded suddenly, the cars resisting 105 the backward movement owing to their inertia.

The above improvement insures a regular and easy motion to the cars, for in case the speed of the train is retarded or increases 110 the unpleasant shocks now daily experienced by railroad travelers are avoided.

The springs I, are shown as being of elliptical form, but other springs may be used and in fact any device that will give the required elasticity may be employed.

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

The combination with the car body D,

and platforms A, of the racks F, pinions and shafts G, H, and springs I, substantially 10 as and for the purpose herein shown and described.

JOHN H. KAUFMAN.

Witnesses:

STEPHEN KEEPERS,
JOHN BOWMAN, Jr.