

S. Penrock. Safety Attachment to
R. Road Cars.
 72891 *Fig: 1.*

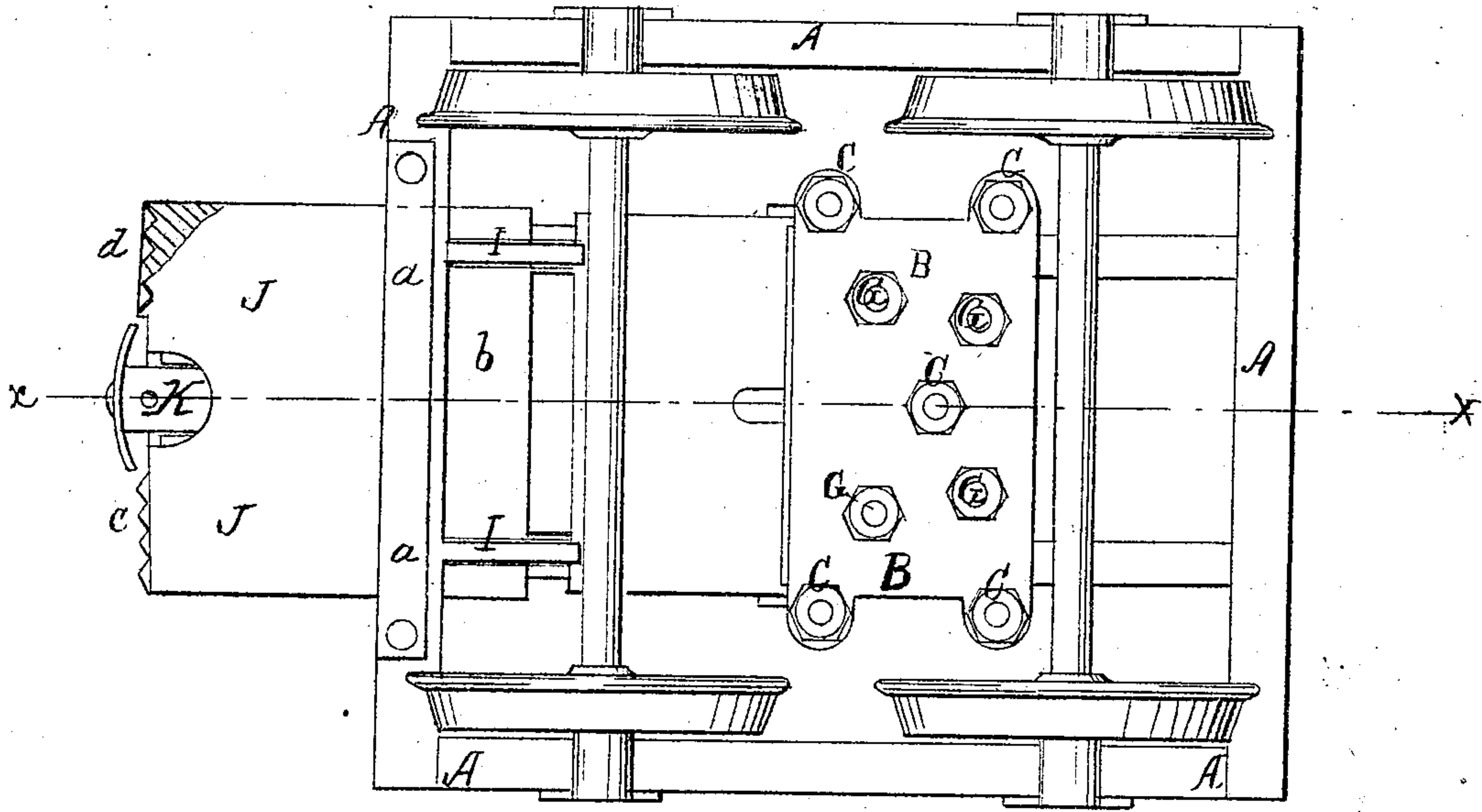
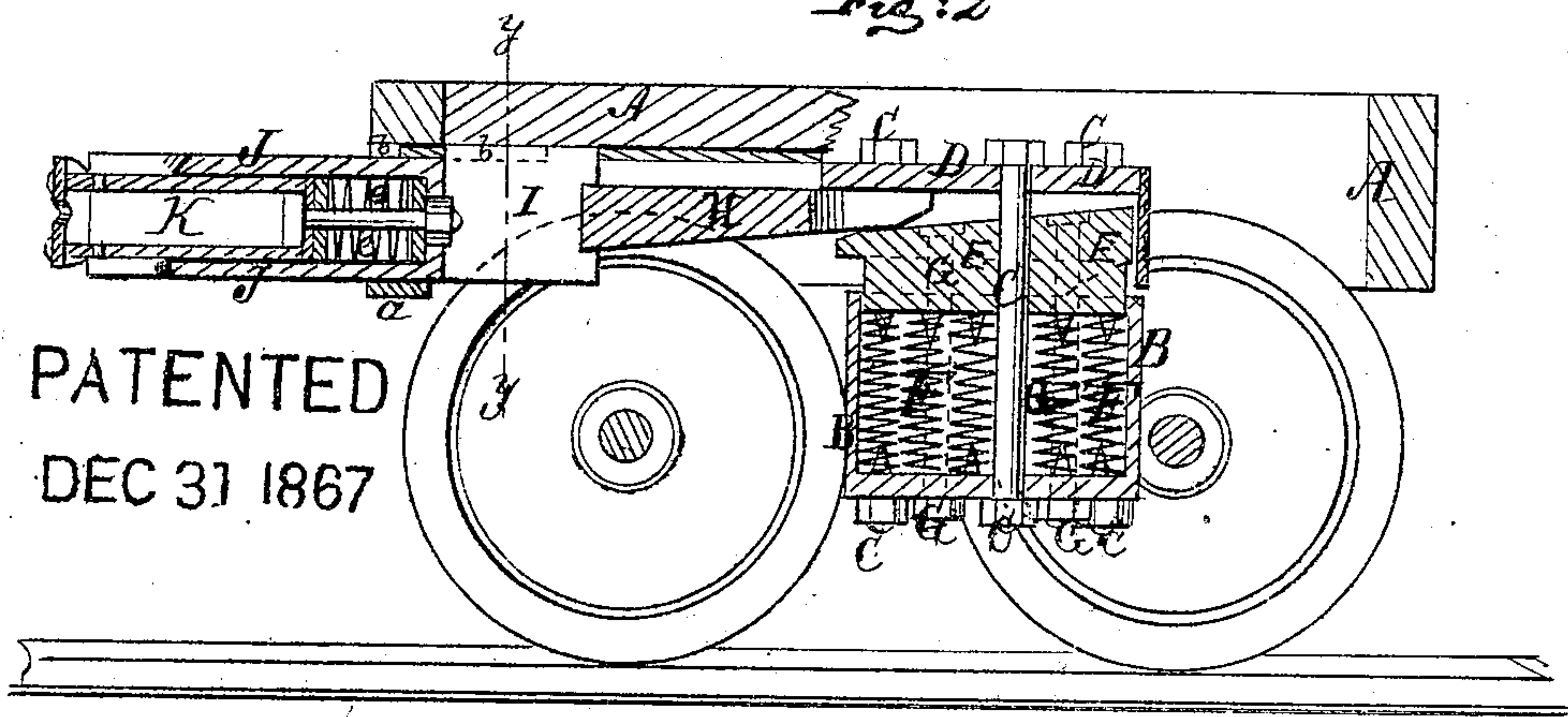


Fig: 2



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Fig: 3

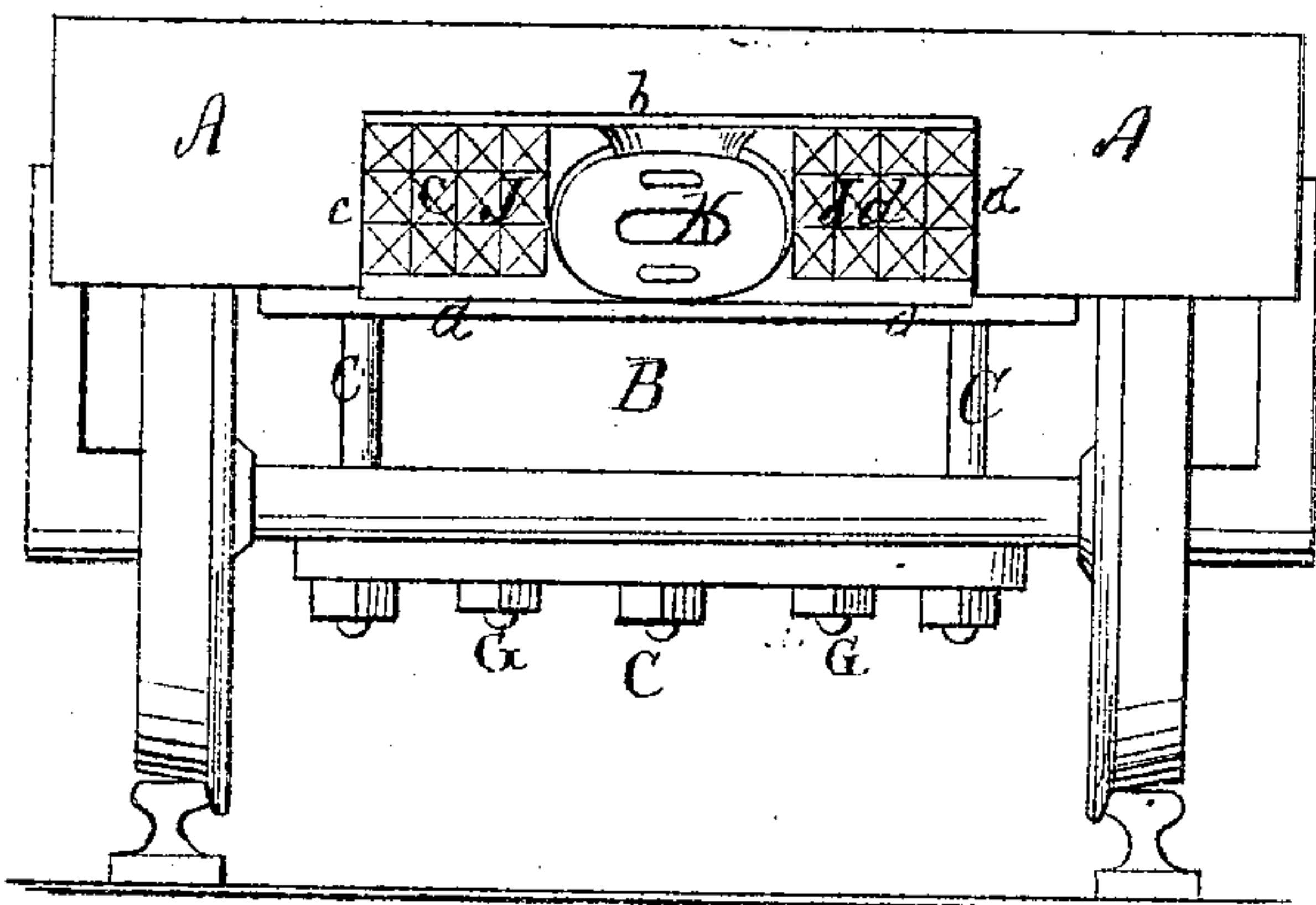
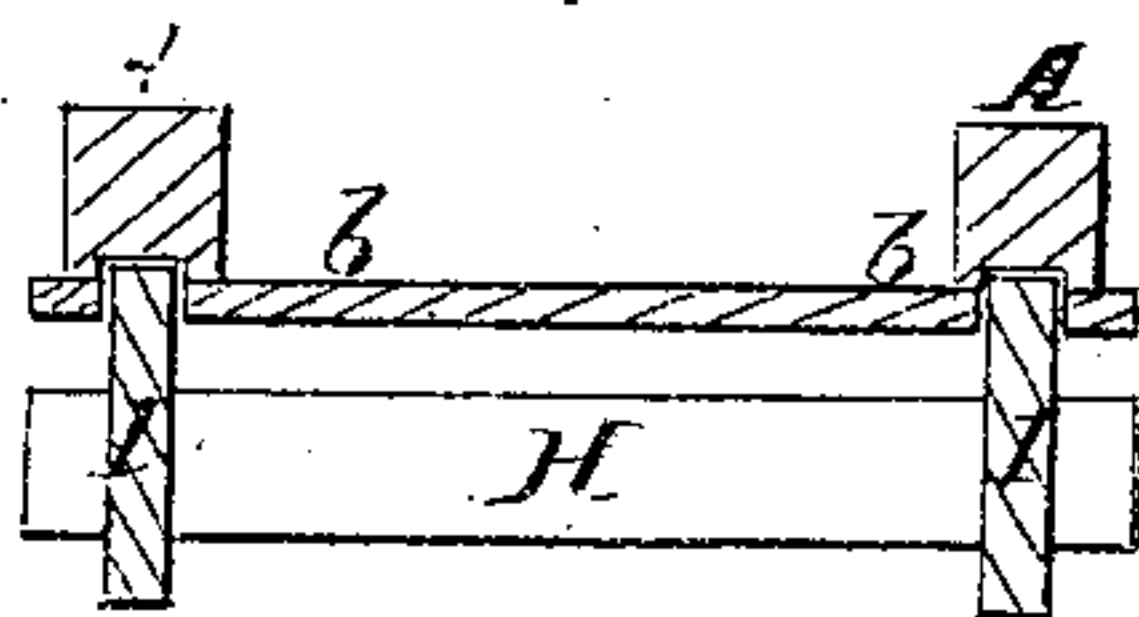


Fig: 4



Inventor:
S. Penrock
Per Minnott
Attorney

Witnesses:
Theo. Froese
J. A. Franer

United States Patent Office.

SAMUEL PENNOCK, OF KENNETT SQUARE, PENNSYLVANIA.

Letters Patent No. 72,891, dated December 31, 1867.

IMPROVEMENT IN RAILWAY-CARS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, SAMUEL PENNOCK, of Kennett Square, in the county of Chester, and State of Pennsylvania, have invented a new and improved Safety-Attachment to Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents an inverted plan view of my invention.

Figure 2 is a vertical longitudinal section of the same, the plane of section being indicated by the line *x x*, fig. 1.

Figure 3 is a front elevation of the same.

Figure 4 is a detail vertical section of the same, the plane of section being indicated by the line *y y*, fig. 2.

Similar letters of reference indicate corresponding parts.

This invention relates to a device for absorbing the momentum or shock of a collision of railroad-cars, and consists in connecting the inner end of the draught-bar of each car with a wedge, which rests upon a spring-bed. During a collision, the draught-bar is thrown in, and the wedge is pushed over the elastic bed, depressing the same, and thereby transferring the shock from a horizontal to a vertical line. The crushing of railroad-cars is thus prevented, and even the disagreeable shock is overcome.

The invention also consists in the use of a safety-bumper, by which, in case of collision, the ends of the cars are locked together, so that they cannot move laterally, but will remain in proper line.

A represents the framework which supports the flooring of a railroad-car. The same is supported upon suitable trucks or wheels in any suitable manner. B is a box, made of wood or metal, of sufficient strength to withstand the shock of the collision. It is suspended from the under side of the car by means of strong bolts, C C, as shown in fig. 2. The under side of the car-floor is, above the box B, lined with a strong metal plate, D. In the box B, which is enclosed at the ends, sides, and bottom, is arranged a follower, E, which is a block or plate of metal, or other material, supported by strong springs, F F, which are arranged within the box, and rest upon the bottom of the same, as is clearly shown in the drawing. The follower is guided by bolts G, the upper ends of which are secured in it, as shown by dotted lines in fig. 2. Their lower ends pass loosely through holes in the bottom of the box, and have nuts at their extreme lower ends, below the said bottom. If the follower is forced down into the box by pressure from above, the bolts move downward with the same, and by screwing the nuts up, the follower can then be drawn down still more, to release the wedge or other article by which it is forced down, said wedge or article being clamped between the follower E and plate D. H is a wedge-shaped metal plate or bar, which is secured by means of connecting-rods I I to the platform J, at the end of the car. The rods I are oblong in cross-section, and are set on edge, so that they can never be bent up or down. The platform fits into a recess provided for its reception in the front beam of the car, and rests upon a strong bottom-plate, *a*, which closes the under side of the recess. The bars I are guided in slots provided in a plate, *b*, which is attached to the under side of the car-floor, as shown in figs. 2 and 4. The front termini of these slots are the upper stops, for preventing the platform J and its appendages, I and H, from being drawn out. The platform is a hollow wooden or metal shell, made of sufficient strength and of suitable shape. In its front plate are formed, on each side of the draught-bar, rough surfaces *c* and *d*. The same I prefer to make, as in figs. 1 and 3, that is, on one side, projecting diamonds *c*, on the other side, corresponding recesses *d*, for receiving such diamonds. When two cars collide, the diamonds on one will fit into the recesses on the other car, and will lock the two together, so that they cannot move laterally apart, and so that no car in the train can leave the line. In the centre of the platform is arranged the coupling or draught-bar K, being held by a bolt to the rear or inner plate of the platform. A spring, *e*, around the bolt allows a limited motion of the bar K, the bolt moving in the back plate, the spring always throwing the bar K forward. For ordinary coupling of cars, the motion allowed to the bar K is sufficient, and the platforms will not meet; but when a heavy collision occurs, the bars K of two colliding cars are moved in, and the platforms meet and are moved in, thereby throwing the wedge in between the follower E and plate D. The follower will be pressed downward upon the springs, and the momentum of the shock will be absorbed by the same. After the collision, the platform can be drawn out

again. The wedge will be clamped, but can be released by means of the nuts on the bolts G. The box B and its appendages can be arranged close to the platform, or under the centre of the car. In the latter case, one box B may be sufficient for both ends of the car. The connecting-rods I can be altogether dispensed with, if the wedge is secured directly to the rear end of the movable platform J. The springs F F, in the box B, may be of any suitable kind, made of rubber or metal spiral, in blocks or plates, as may be desired.

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

1. A momentum-absorbing attachment to railroad-cars, tenders, or locomotives, which is made and operated substantially as herein shown and described.
2. The movable platform J, when provided with roughened, partly-projecting, partly-receding surfaces, substantially as herein shown and described.
3. The movable platform J, when connected by rods I, or directly with a wedge or wedges, H, which work upon a follower, E, resting upon spring F, in a box, B, arranged on a car, substantially as herein shown and described.
4. The movable platform J, when provided with a movable coupling-bar, K, the same moving independent of the platform and within it, substantially as and for the purpose herein shown and described.
5. The follower E, when combined with the bolts G and springs F in the box B, and with the wedge H and platform I, substantially as herein shown and described.
6. The connecting-rods I I, when set on edge, and when working in the slotted plate b, in combination with the sliding platform J and wedge H.

SAMUEL PENNOCK.

Witnesses:

WM. F. McNAMARA,
ALEX. F. ROBERTS.