C. DAVENPORT.

Bumper for Railway Cars.

Patented Sept. 9, 1835.

9071X

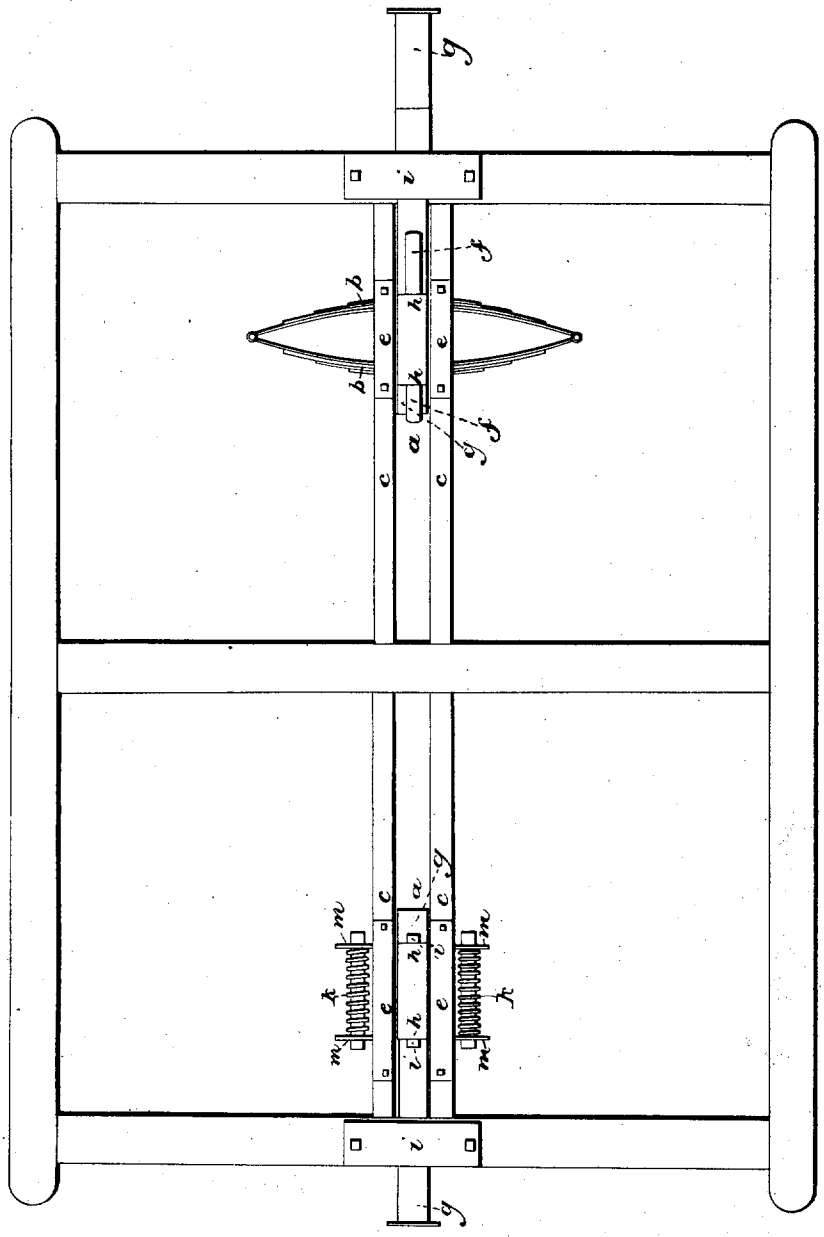


Fig. 1.

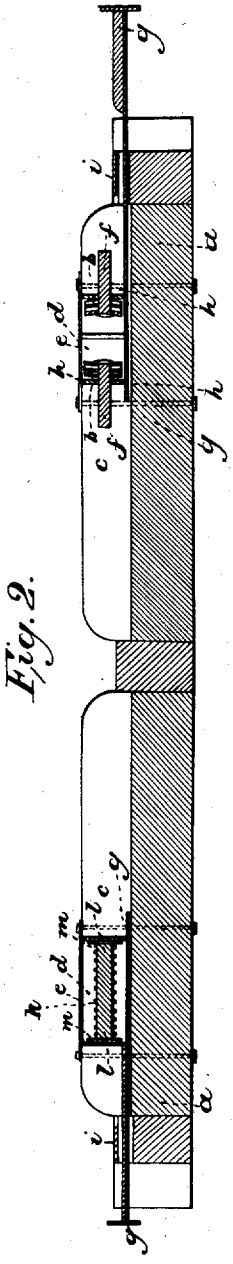


Fig. 2.

Witnesses:

R. Hluly

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Inventor:

Charles Davenport.

9-9-1835 Sept. 9. 1835 17

Charles Davenport Cambridge Mass. 9071X

Letters Patent

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Charles Davenport himself of his improvement in Rail Road Cars by means of Springs for easing the motion or Shock produced at the moment of Stopping or Starting.

To all to whom these presents shall come, Be it known that I Charles Davenport of Cambridge in the County of Middlesex and State of Massachusetts have invented a new and useful improvement in Rail road Cars by means of Springs for easing the motion or Shock produced at the moment of Stopping or of Starting, and that the following is a full and exact description of the construction and operation of the said Machine as invented or improved by me.

The my improvement is to be applied by connecting the cars, in such a manner as to ease the first Shock of motion or rest, it is fixed between each couple, by being secured to the middle piece running through the frame of the carriage, or what is commonly termed the Spindle in Coaches. The manner of constructing these Springs and their opposite portions, I conduct in the following manner. At about two and a half feet from the end of the middle piece and on the top thereof I secure a cap piece in the direction of the width of the frame two Connected Semi circular Springs as are known as Elliptical ones by means of two pieces of plank of about nine inches high be bolted firmly on the middle piece one on each side. The Springs are let into these pieces as low down as to be about flush with the top and there secured by means of a strap bolted across, and the opening is to be sufficiently long to admit the full play of the Springs.

They are each semicircle to consist of as many leaves as may be requisite for the strength, and through the centre of each an opening is to be made, to admit a rod of about six inches in length, through the whole thickness of leaves & which is to be riveted or otherwise secured on the inside so that the rod projects entirely from the outside of each Elliptical half and thereby forms a long flat bar or plate beneath these Springs & rod and this bar bears

and screwed upon the middle piece and directly beneath them upon the top of the Springs is also laid along another flat piece of sufficient length to embrace the whole dilation or expansion of them and also to allow its ends to be bent down the width of them, and there to be screwed to the bar below thus forming a square loop enclosing the centre of them. A hole is to be made through each bent end of this loop directly opposite to the rod, and which is intended to play easily endwards or forwards on this rod which is passed through it for that purpose.

The other end of the flat bar projects beyond the carriage frame as far as may be necessary & has a pin or hook or other contrivance by which the connection with the other can be effected. In the operation of these springs the shock which for example we will suppose to be that of starting causes the end of the bar furnished with the hook or pin for connection to be drawn out in the foremost case this of course brings back the square loop with it causing it to press against the outside of the front semicircle and thereby bring it back also, at the same time the back or hinder spring pressing against the opening in the plank cannot recede, but the loop passes on along the rod by means of the opening left for that purpose and which rods must be equal in length to the play of the springs say about six inches so that the hole in the loop cannot pass over the ends of either rod. The reverse mode of operation will extend the other shock or that of stopping. A shape or square loop is also to pass over the connecting end of the bar so as to retain it in sliding in its proper position on the middle piece. These springs may be used in every case or only alternately.

The same effect may be produced by using spiral instead of the elliptical springs, and in this case the opening in the side pieces is made much longer, so as to admit a long spiral spring by preference to have a flat bar running a sufficient way in the coil to receive a rod as long as the opening which keeps the coil straight. As many of these spring coils may be used as thought necessary but in general three will answer well one at each side and one in the middle. The long flat bar is the same to take the square loop but which must be as long as the opening or length of the springs. Through the hole in the middle is screwed a rod by inserting as therein for the central spiral & central coil as of the same length as the others. A short flat bar also passes across the end of the square loop one at each end & from one side of the openings in the planks & the other

Shoe bars have each as many holes, as rods or springs are used, & have
play by means of these holes up & down the rods. The remaining fixtures are
the same in both cases. In the operation of this plan, the shock produced by ham-
ming will draw back the flat bar and spring loop, and sink it also the former
short flat bar, which at each end slides down the rod and controls the spiral
which is resisted at the other end but the middle rod being fast in the loop
is drawn back and passes through the hole through the short bar at the opposite
end thereby contracting its spring also.

What I claim as my invention in the above described
machine and not before used is the application of the one spring acting both ways
as in other words the combination and construction made use of to provide against
either shock in starting or stopping, by the action of the springs either from front
or from behind. In testimony that the above is a full and exact description of
the construction and operation of my machine as invented or improved by me
I have hereunto set my hand this thirty first day of July Eighteen hun-
dred and thirty five.

Witnesses
C. H. H. Wharton
Henry Stone

Charles Davenport

1326 words (Drawing)

(Patented Sept. 9. 1835)