

(No Model.)

B. S. HENNING.
RAILWAY.

No. 504,351.

Patented Sept. 5, 1893.

Fig. 1.

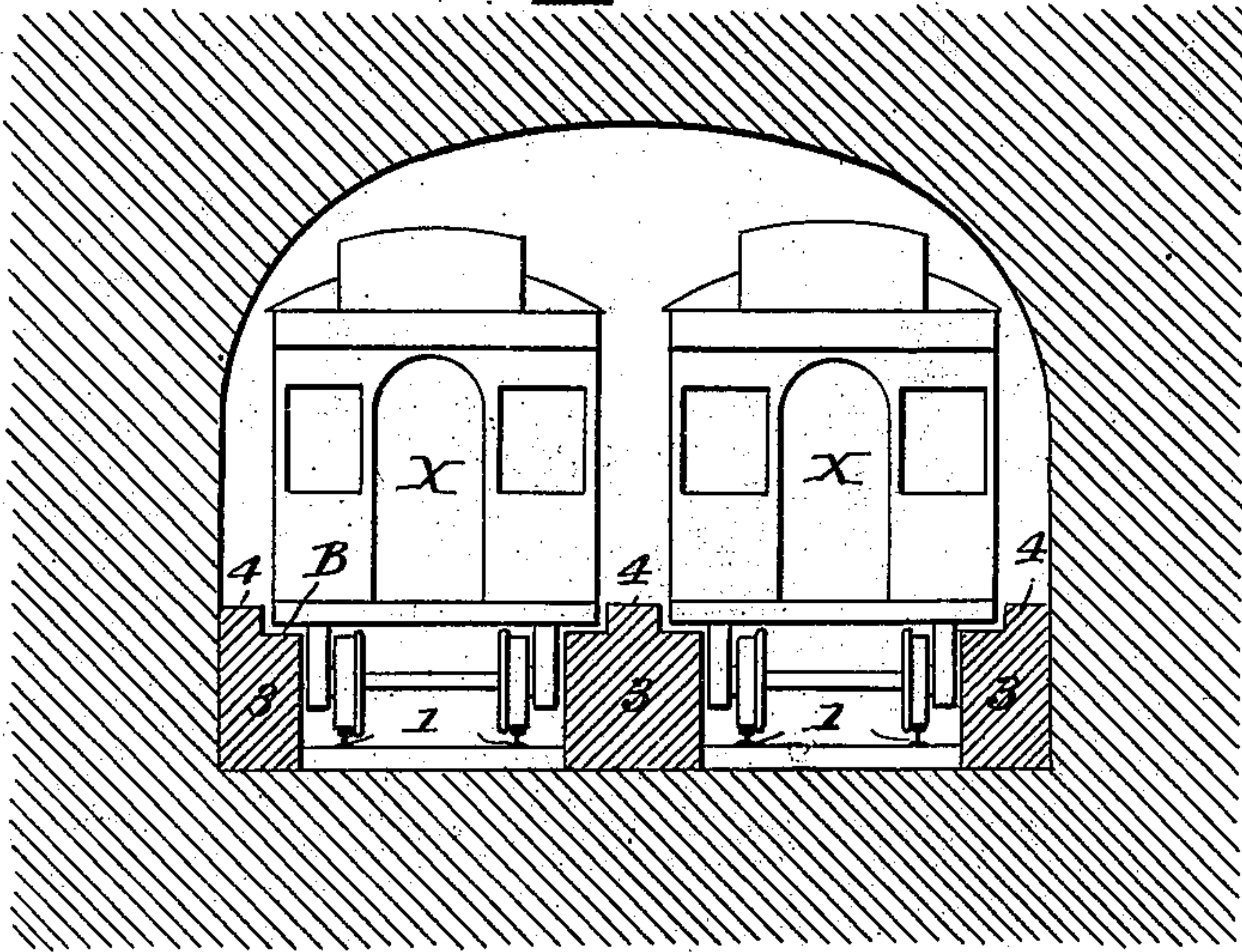


Fig. 2.

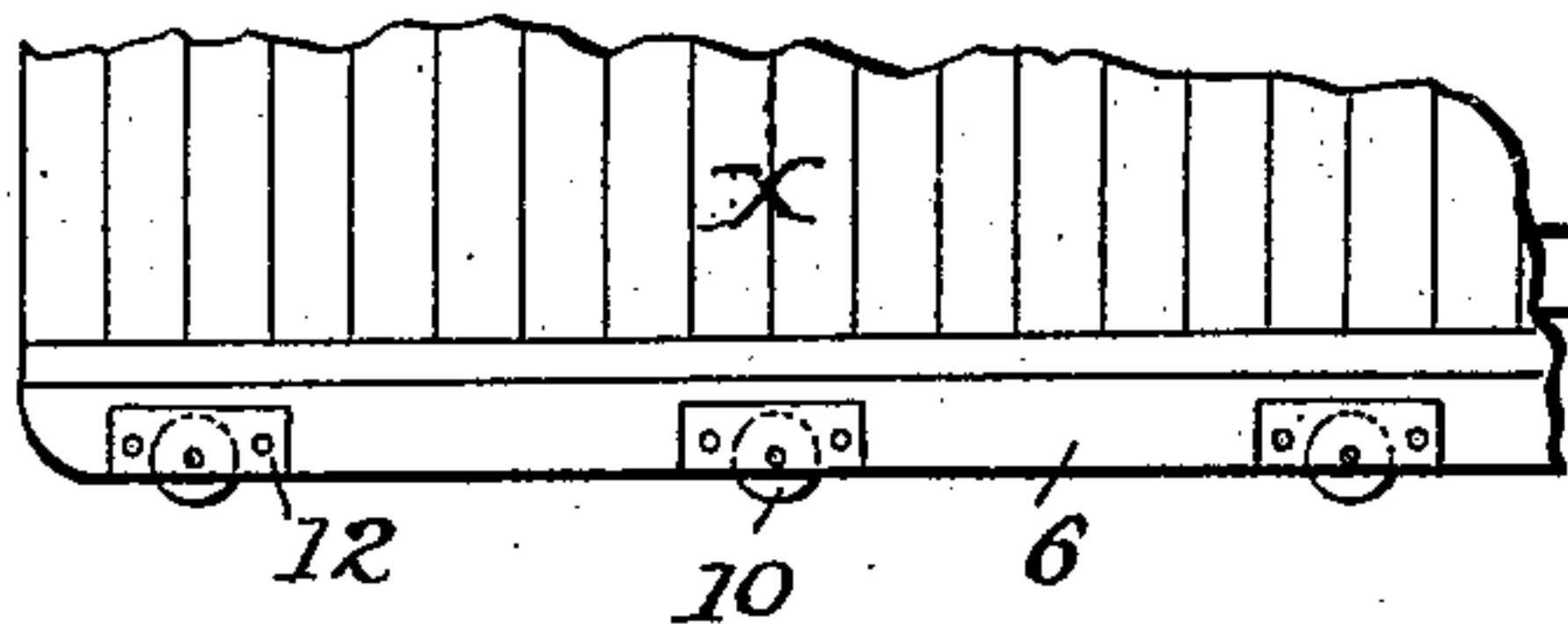
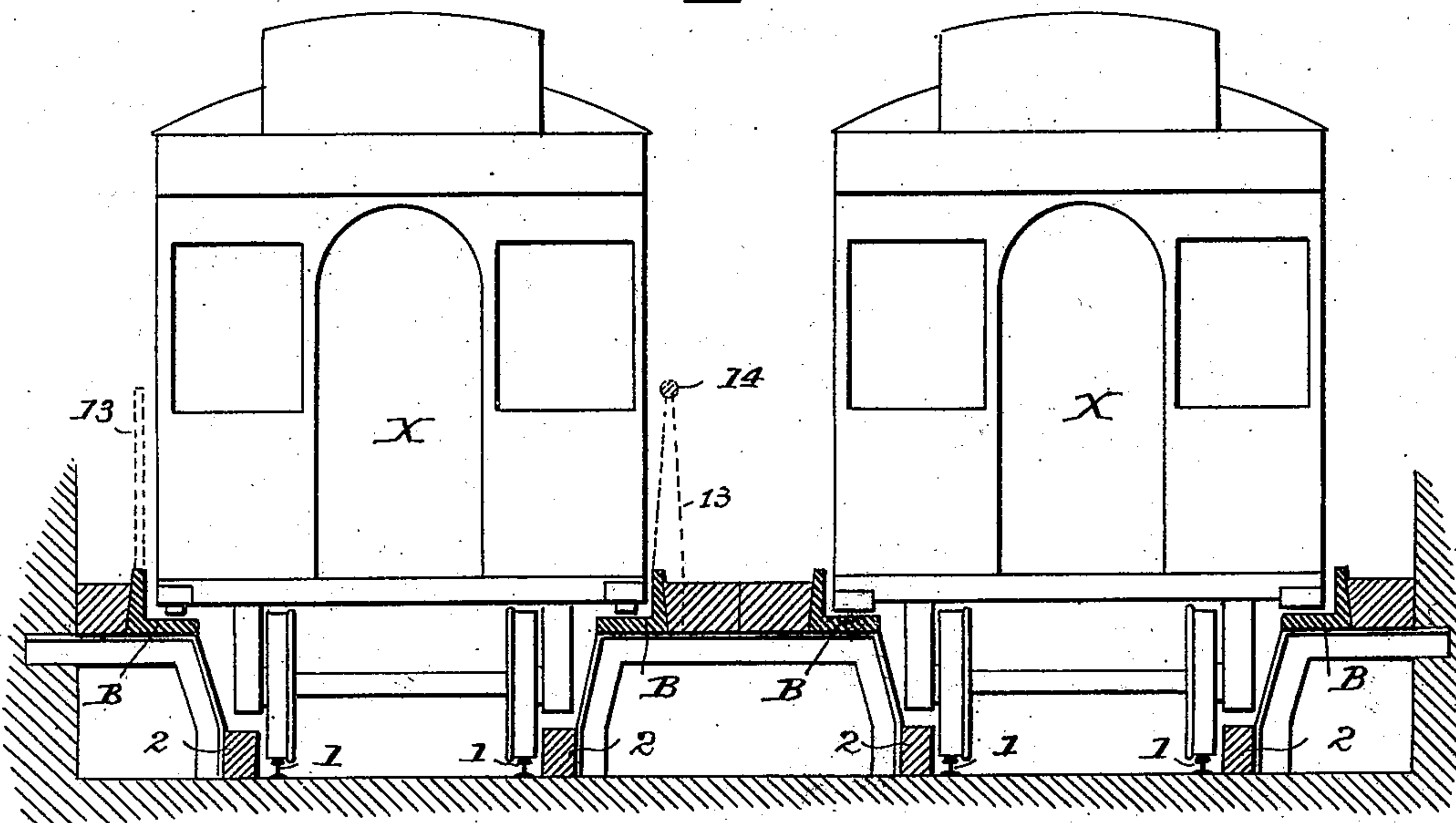
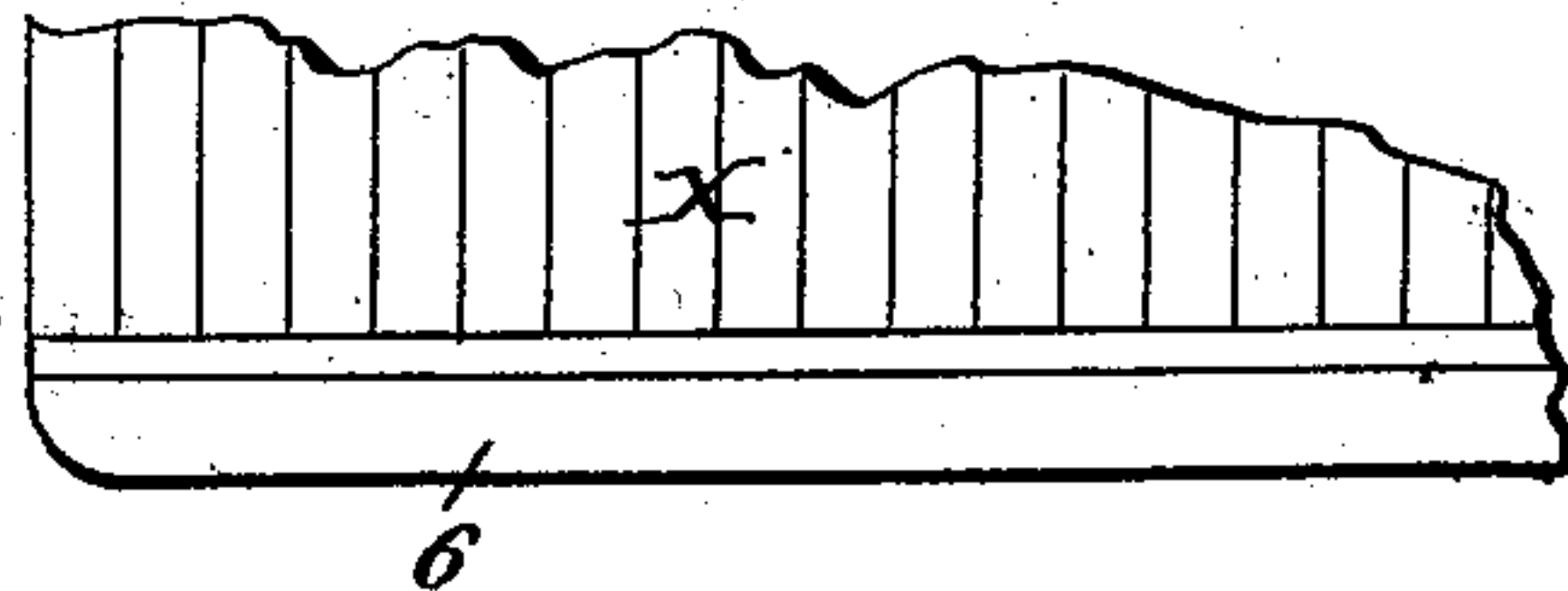


Fig. 3.

Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

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RAILWAY.

SPECIFICATION forming part of Letters Patent No. 504,351, dated September 5, 1893.

Application filed February 4, 1893. Serial No. 461,020. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. HENNING, a citizen of the United States, residing in New York, county and State of New York, have invented certain new and useful Improvements in Railways, of which the following is a specification.

In those methods of transportation in which it is desirable to move the cars at extremely high rates of speed, and especially where the cars are moved by gravity down inclines of greater or less angles and in sub-ways or tunnels, more than ordinary provision must be made for preventing accidents resulting from derailments, from the breakage of axles, or from any causes tending to throw the cars from the track.

Heretofore attempts have been made to reduce the danger from such causes by providing guard rails at the outer sides of the track rails and extending upward above the latter but these only partially remedy the difficulties and have no effect in that class of accidents resulting from broken axles, broken wheels or the disconnecting of the trucks from the bodies of the cars.

The object of my invention is to avoid the difficulties above referred to, and to this end I arrange adjacent to the track upon opposite sides thereof suitable bearings which may receive the bodies of the cars in case from any accident the trucks fail to properly support the same.

My improvements may be embodied in different constructions and arrangements some of which may be illustrated in the accompanying drawings in which—

Figure 1 is a transverse section of a sub-way provided with two tracks embodying my improvements. Fig. 2 is a sectional elevation showing another form in which my improvements may be embodied in connection with two or more parallel tracks. Figs. 3 and 4 are views illustrating modifications.

My invention may be used in connection with any number of tracks, and with or without the usual guard beams 2, 2, at the outer or inner sides of the track rails 1, 1, and on level or inclined tracks.

At suitable points outside of the rails and in such position as not to interfere with any of the running gear of the car, I arrange ele-

vated bearings B, B, which occupy positions above the level of the car axles and below the under sides of the bodies X of the cars, so that under normal conditions the said bodies will not make contact with the said bearings. The latter, however, are so near the normal positions of the sills or bases of the bodies that should an axle or a wheel break or should the truck be disconnected from the body, or any other accident occur that would remove the normal supports of the body, the latter without any extended downward movement would come upon the bearings, B, B. The bearings B may be formed by building a wall 3, of masonry along the outside of each block, preferably with a metallic cap plate, and also preferably with a guard 4, formed by extending up a portion of each wall to occupy a position outside of the side of the car and so placed as not to permit contact with the car under normal positions, but to prevent the car from moving from a normal position beyond the very limited extent.

By the combination of the bearings B, B, with the track as described the giving away of any of the supports of the car would have no other effect than to throw the body of the car upon stationary bearings of such a construction as will permit the car body to slide thereon until the friction overcomes the momentum the damage to the car body being but slight in comparison with that which would result from throwing the body to the ground.

If desired the car body may be provided with small antifriction rolls Fig. 3 or with a shoe 6, Fig. 4 at each edge preferably of metal so as to reduce the effects of the friction when the body comes upon the bearings B, said shoe being arranged as shown in Fig. 4, or as shown in Fig. 3, the shoe may have sockets to receive rollers 10, confined in the sockets by side pieces 12, which rollers also reduce friction.

It is of course desirable to make the bearings B, whether or not they are provided with guards 4, as substantial and uniform as possible for which purpose I prefer to form them of angle iron as shown in Fig. 2, which permits them to be bolted to suitable supports of masonry or other material.

To prevent a car body under any circum-

stances from being thrown or tilted to such an extent as to be in the line of cars moving in the opposite track I prefer to extend the guards 4 upward to such a height as to limit
5 this tilting of the car bodies. The guides 4 may thus be extended in different forms, and may consist of standards 13, supporting continuous rails 14 or may be in the form of vertical sheets of boiler iron, &c. Such guards
10 13, 14, will be discontinued at stations or points where the cars can move only slowly.

Without limiting myself to the precise construction and arrangement of parts shown and described, I claim—

15 1. The combination with the rails of a railway track, of fixed bearings extending the length of the track section where safety appliances are required, and arranged to occupy positions above the level of the car axles
20 and below the bottom sides of the car bodies, substantially as and for the purpose set forth.

2. In a railway, elevated bearings arranged alongside the track rails to occupy positions below the bottoms of car bodies, and guards
25 arranged to occupy positions above the bot-

toms and beyond the sides of the car bodies, substantially as described.

3. In a railway, elevated bearings arranged alongside the track rails to occupy positions below the bottoms of car bodies, said bearings being extended upward on their outer
30 sides to constitute guards which occupy positions beyond the sides of the car bodies, substantially as described.

4. In a railway, elevated bearings arranged
35 alongside the track rails at positions below the bottoms of car bodies, and guards extending upwardly to occupy positions at the sides of and beyond the car bodies, said bearings and guards being above the plane of the axles
40 and constructed of angle-iron, and bolted or otherwise secured to a base, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of
45 two subscribing witnesses.

BENJAMIN S. HENNING.

Witnesses:

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