F. BEX.

SHOCK ABSORBER FOR STREET RAILWAYS.

APPLICATION FILED DEC. 30, 1909.

965,794. Patented July 26, 1910.

Fig. 1.

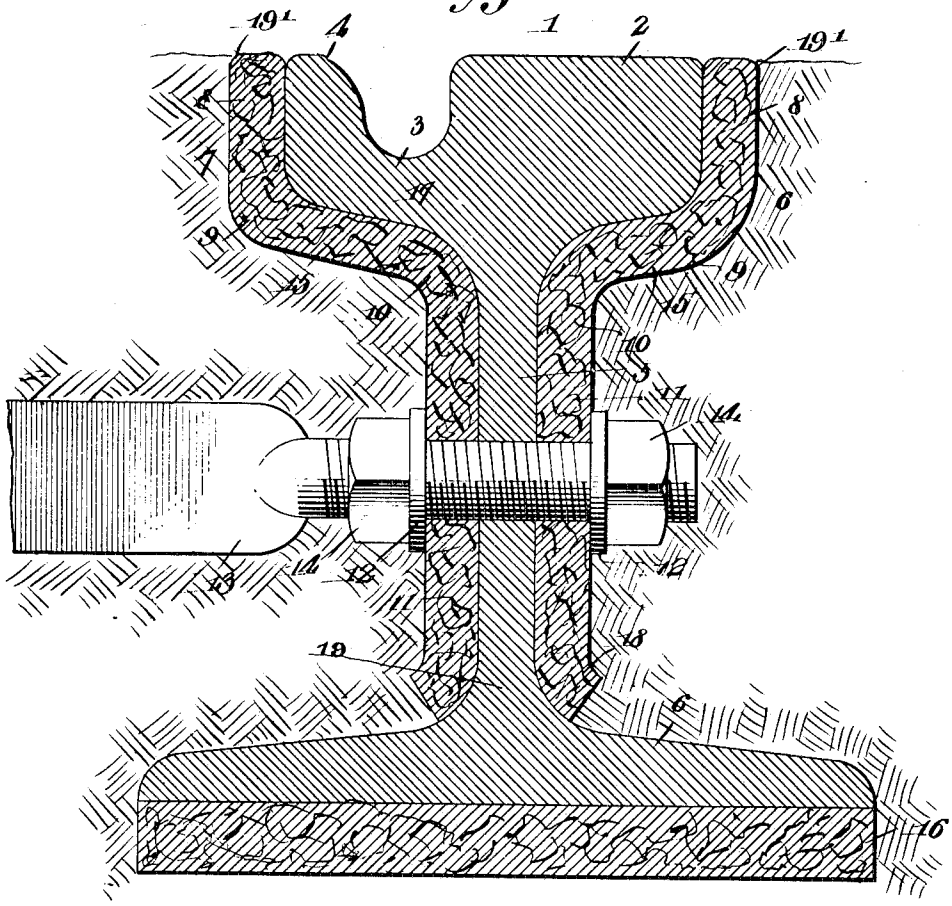
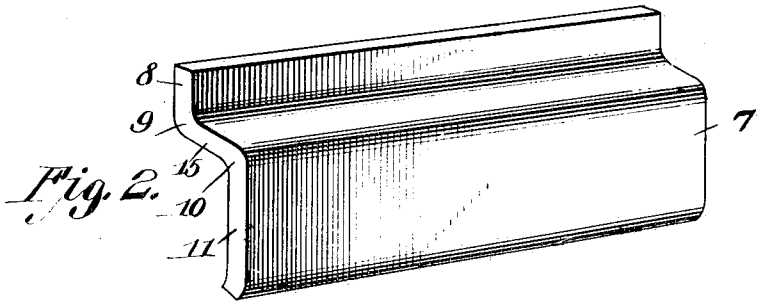


Fig. 2.



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SHOCK-ABSORBER FOR STREET-RAILWAYS.

965,794. Specification of Letters Patent. Patented July 26, 1910.

Application filed December 30, 1909. Serial No. 535,590.

To all whom it may concern:

Be it known that I, FREDERICK BEX, a citizen of the United States of America, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Shock-Absorbers for Street-Railways, of which the following is a specification.

This invention relates to improvements in railway construction, and more particularly to street railways which are laid in asphalt paved streets.

It is well known that the vibrations produced in the stratum of the earth adjacent the railway are transmitted through the rails. The rails vibrate so heavily and so frequently, due to the constant impact of the cars that the surrounding stratum is finally broken up, causing dangerous and unsightly ruts and cracks. It is the common practice in large cities to interpose between the asphalt and the rails several rows of bricks. Even these hardened bricks eventually crack and break up, due to the severe shocks of vibrating rails. This is a constant source of worry, labor and necessarily heavy expense to the railway companies, as they are required to keep their road beds in good order.

My invention seeks to obviate these features, and has for its objects to provide a simple device, which can be applied to the present system of street railways very readily and can be manufactured at an extremely low cost. These and other objects, which will develop as the description proceeds may be attained by the construction shown in the accompanying drawing, in which:—

Figure 1 is a cross-section through a section of a street and a rail showing the application of my invention, and Fig. 2 is a perspective view of one of the cushion plates.

Referring more particularly to the drawing, 1 designates a rail of the common girder type used in street railway systems, and having the tread 2, flange 4, the groove 3 for the flange of the car wheels, and the web 5 and base 6. These are all of the usual construction.

In common practice either the asphalt is laid up against the rails or the aforesaid bricks are interposed between the rails and asphalt. By my invention, in lieu of the bricks, I interpose between the asphalt and rails the cushioning plates or slabs 6 and 7. These slabs 6 and 7 are composed of fibrous substances, such for instance, as old ropes, rags, oakum, jute, hemp, or the like. These substances are either shredded or comminuted, mixed with a water proof binding substance, as tar, pitch, waterproof glue or any other suitable binder possessing elastic and moisture-proof qualities. The composition of fibrous substances and the binder are mixed in a plastic state, and molded in sheets or slabs of suitable thickness and length. As seen in the drawing, these slabs 6 and 7 comprise the vertical members 8, 8 and 11, 11, and the portions 15, 15 connected to the upper vertical members 8, 8 by the curved portions 9, 9, and to the lower vertical members 11, 11 by the curved portions 10, 10. The slabs 6 and 7, as seen from the above in connection with the drawing, are of such configuration in cross-section as to snugly fit against the tread and web of the rail, and thoroughly insulate the rails from the adjacent paving material. It will, of course, be understood that I can make the slabs 6 and 7 of such cross-sectional contour as to adapt them for different shapes of rails. As the greatest vibration is between 19′ and 19, where the web 5 joins the base 6, the portions 11 of the slabs will effect the cushioning and obviates the necessity of applying any material of my composition to the upper face of the base 6 of the rail. I may, however, if it is deemed necessary, or to meet certain requirements insert the slabs 16 beneath the base of the rail, and thus take up any vibrations which might move downward.

As seen in Fig. 1, I have shown the spacing bolt 13, which passes through apertures in the slabs 6 and 7, and in the web 5 of the rail. Washers 12 and nuts 14 are applied on opposite sides of the rail and against the slabs 6 and 7. These will serve to hold the slabs in place prior to the laying of the asphalt. Being moisture repelling, the slabs will prevent any water collecting between the rail and paving.

From the foregoing it will be obvious that I have produced a simple, cheap and efficient device, which will readily take up the shocks of vibrating rails, prevent the breaking of the concrete and preserve the life of the paving material.

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Having thus fully described my invention, what is claimed as new is:—

1. A vibration insulator for street railways, comprising molded slabs of fibrous material interposed between the rail and the adjacent paving material and extending from a point adjacent the base of the rail to the level of the paving material.

2. A vibration insulator for street railways, comprising sections of fibrous and waterproof material interposed between the rails and the adjacent paving material and being in cross sectional contour of the same shape as the tread and web of the rails and extending on the sides of the rails from a point adjacent the base of the rails to the plane of the face of the tread of the rail and the adjacent paving material.

3. A vibration insulator for street railways, comprising molded sections of fibrous and waterproof material interposed between the web and tread of the rail and the adjacent paving material, said sections being formed with longer vertical portions disposed parallel with the web of the rail, the inclined portions disposed under the tread of the rail, and the shorter vertical portions disposed along the outer side face of the said tread, and having its upper extremity lying in the plane of the upper face of the said tread and the surface of the paving material.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK BEX.

Witnesses:
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WILLIAM H. GORSUCH.