

straight or curved. Between the parallel arcs are **Buller Springs E** and **Spring Plates K**. Through the front of **Buller Head**, on one side, is an oval aperture **F**, receiving the circular shank of swiveled screw **G** (the aperture is made oval to allow of perpendicular vibration) and on the opposite side is a box **H** with expanding sides, to receive (in coupling) the opposite screw. When two cars are run together, the projection and groove in one **Buller Head** fit the corresponding projection and groove in opposite **Buller**. The screws pass through their respective boxes. The shoulders of screws are made to stand at right angles behind the boxes by inertia or weight of lever **I**, and a double coupling is thus effected. The two screws act in unison and one cannot couple without the other.

Cars are uncoupled by means of the position—as the top or side of **Car**, or on the platform motion and may be placed in any convenient position when the cars are at rest, in motion, or under strain.

The **Bullers A**, held firmly together by the Screws **G**, are immovable as to each other, and a line drawn from centre to centre of concentric circles **D** on opposite **Cars** passes through centre of **Buller Heads**. The movable **Spring Plates K**, between parallel arcs **B**, are attached by braces **L** to **Buller Heads**. The movable **Spring Plates K**, between parallel arcs **B**, are attached by braces **L** to **Buller Heads**. The **Trucks**, hence the **Bullers**, when the **Cars** are in motion, control the motion of the **Trucks**, and in coupling, the **Trucks** control the motion of the **Bullers**, always keeping them in the centre of the track. The whole **Train** is as one long car which accommodates itself to the degrees of curvature in track. The **Bullers** govern lateral motion, and to some extent overcome irregularity of vertical motion. In turning curves, the projections of the car bodies over the bolsters, are carried out of line in proportion to the degree of curvature in the track; and, as the centres of concentric circles are forward of the king-bolt, they are carried from the centre of the track towards the long rail, and as the car body or bodies are moving in or out of line, the **Buller** or **Bullers** turn in the draw frame (or car body or bodies as the case may require, keeping in the straight line of the centre of track, and the **Trucks** being guided and controlled by the **Bullers**, maintain an angle equal to the curve in the track without being turned by the lateral pressure of the wheels against the long rail. Hence the manner of relieving trucks and track from lateral strain, and removing the danger of being run off the rails, are obtained by controlling the swivel of the trucks in the manner shown and described.

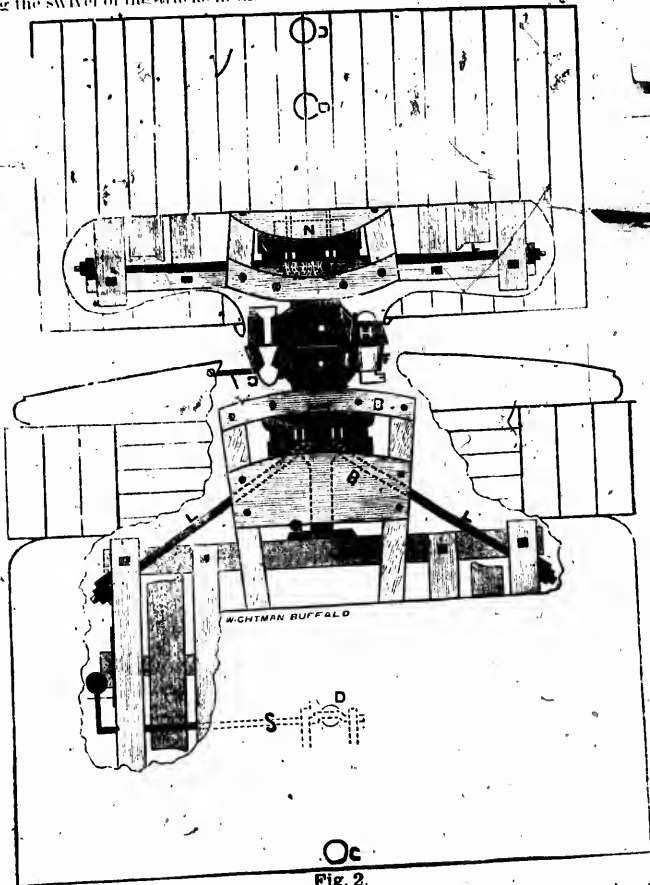


Fig. 2.

I might refer to many advantages over the present system of uniting cars; but from the engravings and description herein given, men engaged in this branch of enterprise will be able to discern such advantages; and being confident that *Safety, Speed, Comfort and Durability* will be much increased by this appliance, let me ask your earnest attention to this invention, which I believe is destined to supply a desideratum in Railroad enterprise.

Respectfully Yours,

THOMAS RAY,
Welland, Ontario.