

should, in all four of the pieces, come in the same place when put together, it would be an improbable, not to say an impossible, circumstance. If, therefore, a defect be in one piece, there will be in combination with it, to sustain it at its weak point, three other sound pieces; also, in this combination, there is much less liability to breakage by frost than if the rail were one solid piece.

If a tread-cap becomes battered or otherwise injured, so as to need replacing, all that is needful is to loosen the screw-bolts and lift the tread-cap and two side sections from the core of the rail, leaving the core of the rail spiked to the cross-ties undisturbed, put on the new tread-cap, and restore the parts to their places.

The side sections are rabbeted on the upper edges, so as just to pass in and out of the opening to the dovetail groove in the tread-cap when the wedge of the rail is removed, and hence, when the tread-cap is raised high enough from the core to reach the point where the two converging lines on the respective planes of the wedge intersect each other, the side sections will drop out of the groove in the tread-cap by their own weight.

By this plan of constructing the rail and laying the track there is no possibility of the joints becoming displaced, either laterally or vertically, and the part of the rail which is subject to wear or injury being so small a fraction of the whole that a track laid down in this way can be more readily, easily, and cheaply repaired than by any method before known. And by the interposition of gutta-percha, or equivalent substance, between the tread-cap and the lower sections of the rail, the concussion from blows to which rails are exposed by the action of the wheels is very materially lessened. The wheels are not so liable to batter and get out of round. The trucks and cars are protected from sudden and constant con-

cussions, and will be more safe and durable. The great reduction in the knocking, clattering, and rattling will be so material as to be far less annoying to travelers.

There is another method of laying down this rail—viz., by chopping or cutting up the core of the rail into sections of from three to five inches in length, and placing one of these short sections upon each of the cross-ties, spiking them down as usual. At the intersection of the joints this section of the core of the rail must be from three to five feet in length, and rest upon three cross-ties instead of one, as at present. This will secure the lateral working of the joint as effectually as hereinbefore described, while the joint will be supported vertically by three cross-ties instead of one. This method may be adopted on light-draft roads and for side cuts with a very great saving of iron; and, indeed, it may be adopted on the heaviest roads by increasing the strength of the two side sections.

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

1. A compound rail for railroads, consisting of the base with a central wedge-shaped core, substantially such as described, in combination with the rabbeted side sections, constructed substantially as and for the purpose described.

2. In combination with the base having a wedge-shaped core and the rabbeted side sections, substantially as described, the tread-cap having a dovetail groove, as described, and for the purpose set forth.

3. Connecting the sections of the cap-rail with the core-rail by means of the cross check-pieces, substantially as and for the purpose set forth.

P. FRANKLIN JONES.

Witnesses:

P. W. BARTHOLOMEW,
E. R. MANN.