INSULATED END POSTS

FIG. 1

FIG. 2

FIG. 3
This invention relates to insulated rail joints and more particularly to an improved end post.

The practice of using continuous rail, whether formed of standard rail lengths welded together or connected by frozen rail joints, in sections of block signal systems, involves practical as well as maintenance problems on insulated joints which include an end post between the abutting ends of the rails. That is to say, where continuous rails of a quarter mile, half mile or any predetermined length are connected by insulated joints, the rise in temperature of the rails above at which they were laid causes tremendous pressure to build up and tends to crush or mash out the insulating material of which the end post is made. A further reason for crushing the top of the end post is that the rail and the insulated joint do not deflect on the same curve as the unbroken rail. Therefore, the end post is more severely crushed at the head than elsewhere. Customarily end posts have been made of uniform thickness throughout and since the head of the end posts more especially is exposed to two deteriorating or destructive forces, namely, moisture, or abrasion resulting from rail batter, it is forced out at the sides and top of the rail head thereby leading to more rapid destruction of the insulating value of the entire end post.

Accordingly, the present invention has primarily in view an end post of special vertical cross-section in the respect that it tapers upwardly from approximately its mid-portion toward the top to provide clearances which relieve the head from pressure and compensate for the compression of the body while at the same time maintaining the integrity of the head portion.

Another object of the invention is to provide an end post whose vertically tapering cross-section provides cavities for receiving a waterproof mastic or coating material which aids in protecting the body of the end post against the entry of water and the like.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction and arrangement hereinafter more fully described and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawing in which:

Fig. 1 is a detail side elevation of a pair of meeting rail ends having the present end post therebetween.

Fig. 2 is an elevation of the improved end post shown in Fig. 1.

Fig. 3 is a side elevation of the end post shown in Figs. 1 and 2, on a larger scale than shown in Fig. 1.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Referring first to Fig. 1 it will be seen that the rail ends R and R' have the end post designated generally as A therebetween.

The end post illustrated is for a standard T-rail, and it will, of course, be understood that it may be modified in profile to fit armored insulated joints of the type shown in the Payne Patents, No. 2,441,329 and No. 2,628,784, without departing from the features or spirit of the invention.

The end post includes a base portion 1 having a central web 2 and a head portion 3. The base portion 1 and web 2 are of uniform thickness substantially to the midpoint 4 where the web approaches the head 3, and at this location, the head begins to taper upwardly so that the crest or top 5 of the head is the narrowest portion of the vertical width of the end post as indicated at X.

As will be apparent from Figs. 1 and 4, the body of the end post including the base 1 and web 2 is in closely abutting relation with the inner faces of the rail ends R and R'. However, the tapering portion of the head provides in effect cavities or spaces Y which will compensate for the compression of the body and which may also receive a suitable mastic or waterproof compound thereby to seal the upper end of the gap between the rail ends and also protect the body of the insulation from moisture deterioration.

The tapering of the end post as described has the advantage that it prevents the insulation from expanding or mashing out at the sides of the head and also on the tread thereof, and thereby materially increases the longevity of the end posts in service.

The deflection of the rail ends due to wave motion set up by passing wheel loads is the cause of rapid destruction of the end posts. The tapering of the end posts is a calculated contour or profile whereby the rail ends under deflection will have a rolling motion on the resilient surface coating of the end posts, thereby increasing the compressive stresses on the upper portion in a smoothly progressive manner. Thus, compressive stress loading of the end post will avoid shocks and localized high pressure points which will promote the longevity of the insulated end post.

1. An insulated end post for use between the rail ends in insulated rail joints for continuous rail track, comprising, a body having foot, web and head portions, said body being of uniform maximum thickness in the zone of the foot and web portions and tapering from its mid-section toward the top of the head to provide easements to compensate for the downward deflection of the rail ends under passing wheel loads.

2. An insulated end post for use between rail ends in insulated rail joints, comprising, a body including a head portion whose opposite faces are formed on arcs convex to the transverse plane through the midpoint of thickness of the end post to provide a tapered web and head portion whose minimum thickness is at the top thereby providing curved walls forming an easement to compensate for the downward deflection of the rail ends under passing wheel loads so that the said rail ends will have a rolling motion relative to said arcuate wall to relieve the end posts of deforming and destructive pressures.

References Cited in the file of this patent

UNITED STATES PATENTS

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1,776,643 Schermerhorn et al. -------- May 3, 1921
2,808,995 Degman ---------------- Oct. 8, 1957