To all whom it may concern:

Be it known that I, Harry C. Odenkirk, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Metallic Railway Crossties, of which the following is a specification.

This invention relates to the construction of metallic railway crossties and means for firmly securing the track rails in proper position on the ties of steam and electric railways, whereby the use of the ordinary fastening spikes now commonly employed are entirely dispensed with.

The prime object of the invention is to provide a simple, durable, economical and efficient metal railway tie and rail fastening means including sufficient strength to successfully withstand all the trains to which the tie and rail fastening means are ordinarily subjected when in service and which are so constructed as to materially increase the longitude thereof.

Another object of this invention is to construct my novel tie and rail fastening means so that the number of parts employed is reduced to a minimum while the maximum amount of strength is maintained.

Further objects of the invention are to construct my improved railway tie that the number of ties required per mile of road bed is materially reduced; that the track rail seat and rail securing members are rigidly and securely fastened to the tie member at each side thereof with the lower surface of each of said members resting in contact with the road bed or ballast, thereby furnishing the required resiliency; that the waste of material in construction is eliminated by placing the load carrying capacity under and near the rail, which materially lessens the expense; that the rail seat members are provided with track rail securing means, such as hereinafter described, so that use of the spike or bolt securing means ordinarily employed is successfully avoided, and that the outer ends and sides of the tie member and rail seat members, as well as the inner edges of the rail seat members between said members are so buried in the road bed and ballast as to prevent any tendency of the side or endwise skidding of the ties when subjected to the excessive strains to which they may appear from the ensuing description, are accomplished by the means hereinafter more fully described, and by the construction, arrangement, location and combination of the parts such as illustrated in the accompanying drawings and particularly set forth in the claims appended hereto, it being understood that slight changes in the proportions and minor details of the construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Reference now being had to the accompanying drawings which form a part of this specification it will be seen that:

Figure 1 is a perspective view of the novel railway crosstie embodying my invention.

Figure 2 is a side elevation of the crosstie showing the track rails in cross-section.

Figure 3 is a longitudinal section taken through one of the rail seat and rail securing members showing the tie member broken away and the track rail in cross-section.

Figure 4 is a plan view showing the track rail in side elevation.

Figure 5 is a plan view of a portion of one of the rail seat and rail securing members.

Similar numerals of reference are employed to designate like parts throughout the several figures of the drawings.

In the embodiment of my invention as illustrated I provide a tie member 1 preferably formed from a single straight upright bar of rolled steel of suitable or desirable dimensions throughout its length and breadth, and at each end portion of said member and at each side thereof, is firmly and securely fastened by a plurality of riveted bolts 2 a rolled steel right angle bar or plate 3, adapted to contact with and clamp against the outer faces of the tie member from its top to the bottom, each bar or plate 3 extending to the outer end of the tie member and a suitable distance laterally therefrom, as well as inwardly between the track rails 4, said bars or plates 3 forming a widened bearing surface or seat for the base of each track rail. From the upper portion of each bar or plate 3 is stamped or punched upwardly and outwardly a plurality of rail securing projections 5 leaving openings therethrough, said openings being covered by the base of the track rails when resting thereon, said projections 5 being adapted to be forced, pressed or bent over the edges of the track rail into contact with the upper
surface of its base, at each side thereof, by
a sledge or other suitable tool, thereby lock-
ing and securing the track rails to the cross-
tie.
5 When it is desired to remove the tie for
any purpose it can be readily performed by
bending or forcing the securing projections
5 upwardly and away from contact with the
rail base by the use of the well known pinch
10 bar, as will be readily understood.
It will be perceived that each angle bar
or plate 3 projects laterally a considerable
distance from each side of the tie member
1 thereby forming a widened tie and rail
seat, thus the number of ties usually em-
ployed per mile of road bed may be materi-
ally reduced and the expense considerably
lessened.
20 It will be evident that since the railway
crosstie is embedded within the road bed
and ballast with the laterally projecting
lower surface of each angle bar or plate
resting thereon, the desired resiliency will be
furnished during the passage of the rolling
stock over the track rails, and at the same
time the edges, and sides of the tie member
and angle bars or plates between the rails,
and the outer edges of the tie being buried
within the road bed and ballast serve to
resist any tendency of the ties to shift side-
wise or endwise when subjected to the ex-
cessive strain of the rolling stock.
While I have shown the angle bars or
plates 3 riveted to the tie member, it will
be understood that said bars or plates may
be readily secured to said member by the
use of bolts and securing nuts, so that a new
bar or plate may be substituted if desired,
or required at little expense, and without re-
quiring an entirely new crosstie.
Having thus described my invention what
I claim and desire to secure by Letters
Patent is:
1. A railway tie comprising an upright
central tie member, a right angle bar or
plate rigidly secured at each end portion of
the tie member and extending from the top
to the bottom of said member and to each
outer end thereof, and a plurality of rail
securing projections struck up from each
of said bars or plates.
2. A railway tie comprising an upright
central steel tie member, a plurality of right
angle bars or plates secured at each end
portion of said member, said bars or plates
extending from the top to the bottom of the
member and to each outer end thereof, and
a plurality of rail securing projections
struck up from each of the bars or plates.
3. A railway tie comprising an upright
central member, a right angle bar or plate
secured to each side of said member, and at
each end thereof, each of said bars or plates
extending laterally from the member, and
a plurality of rail securing projections
struck up from each of the bars or plates and
bent over the upper surface of the rail base.
4. A railway tie comprising and upright
central steel member, a right angle steel
bar or plate secured to each side of the mem-
ber near its ends and overlapping each side
from the top to the bottom of said member
and extending to its outer ends, each angle
bar extended laterally beneath the rail, and
a plurality of rail securing projections
struck up from each bar and adapted to be
forced over into contact with the upper sur-
face of the rail base.
5. A railway tie of the character described
comprising a central upright member, a plural-
ity of angle bars or plates rigidly se-
cured at each end portion of said member,
each angle bar extending from the top to the
bottom of the member and projecting a suit-
able distance laterally from the member be-
neath the rail base, and a plurality of up-
wardly extended projections struck up from
each angle bar adapted to be bent over the
edges of the track rail into contact with its
upper surface.
6. A railway tie of the character described
comprising a central upright steel member,
a plurality of angle bars or plates firmly
secured to the side of said member at each
end portion thereof and extending to its
ends, each angle bar extending laterally a
suitable distance from the member and from
its top to its bottom edges and beneath the
rail base, a plurality of rail locking pro-
jections struck up from each angle bar leav-
ing openings therethrough adapted to be
covered by the rail base, said projections
being forced over the edges of the rail base
and into contact with the upper surface of
said base.

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