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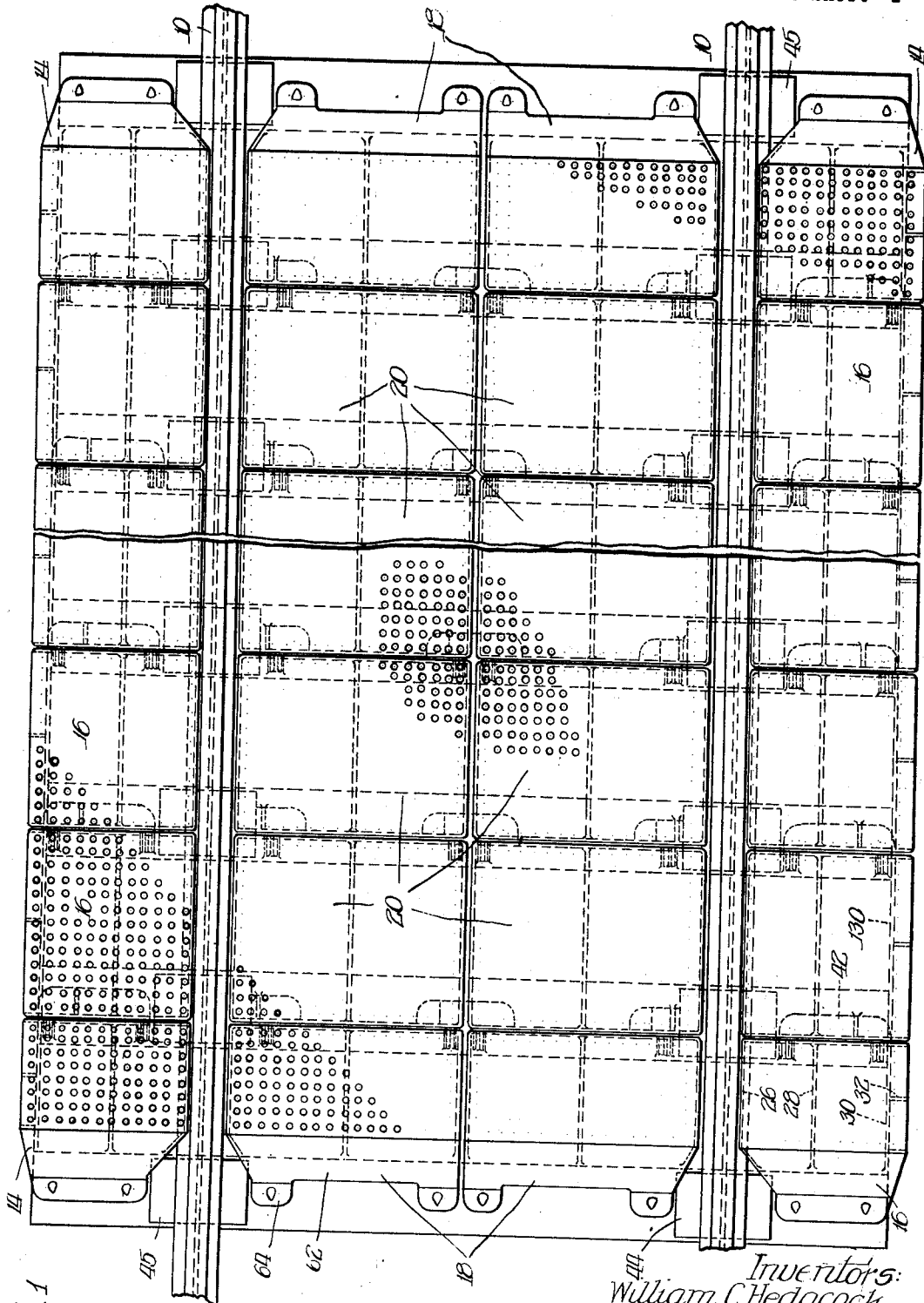
W. C. HEDGCOCK ET AL

1,961,488

RAILWAY CROSSING

Filed Sept. 20, 1930

3 Sheets-Sheet 1



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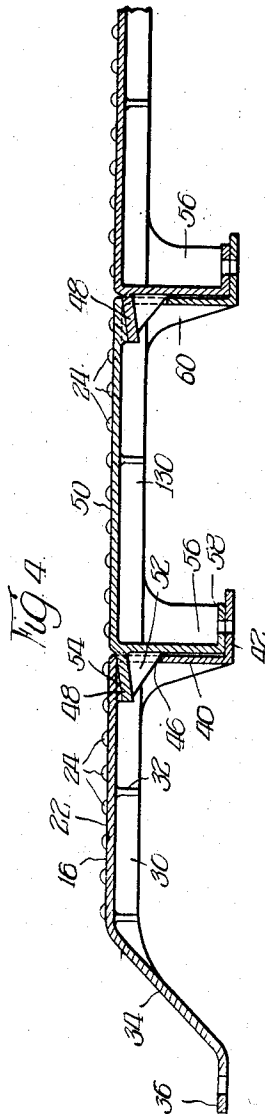
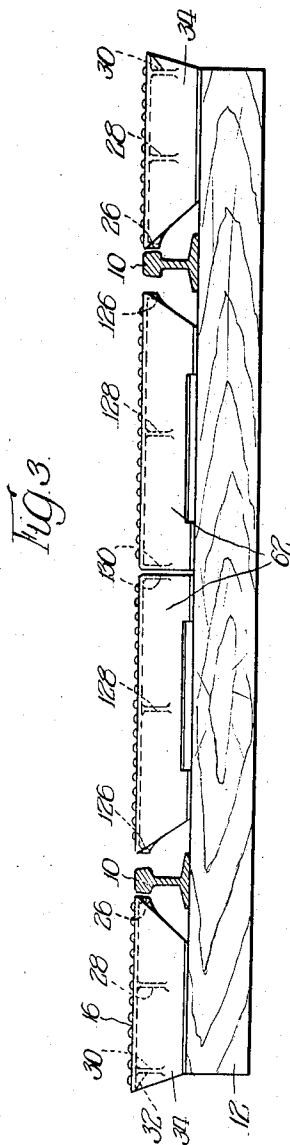
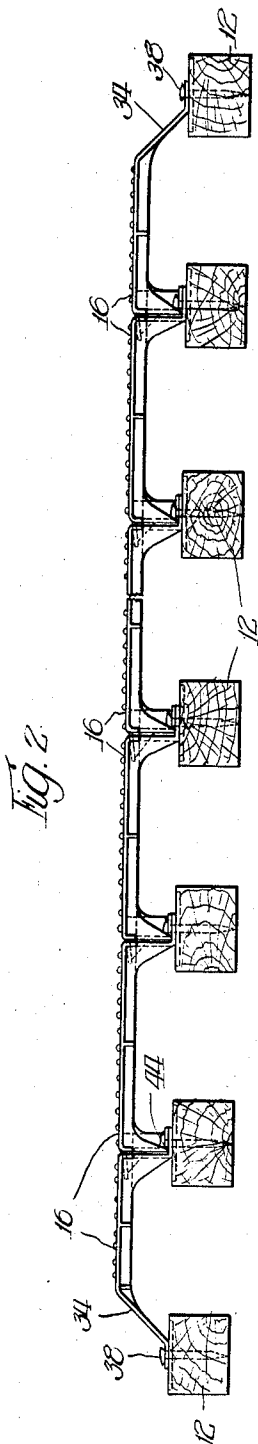
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RAILWAY CROSSING

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3 Sheets-Sheet 2



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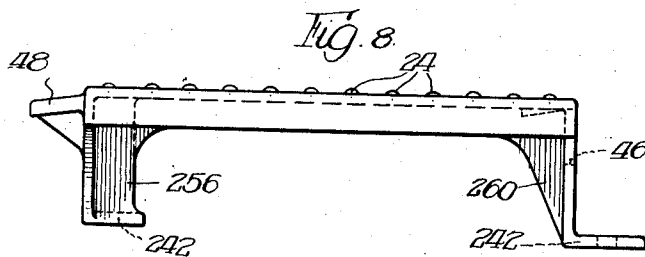
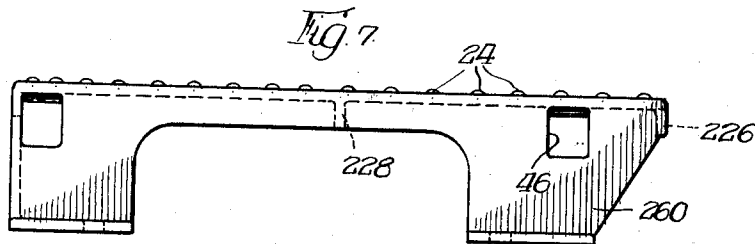
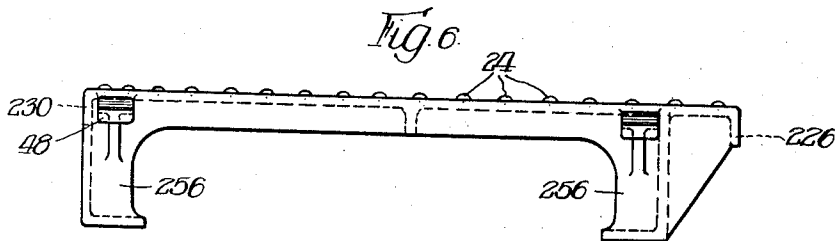
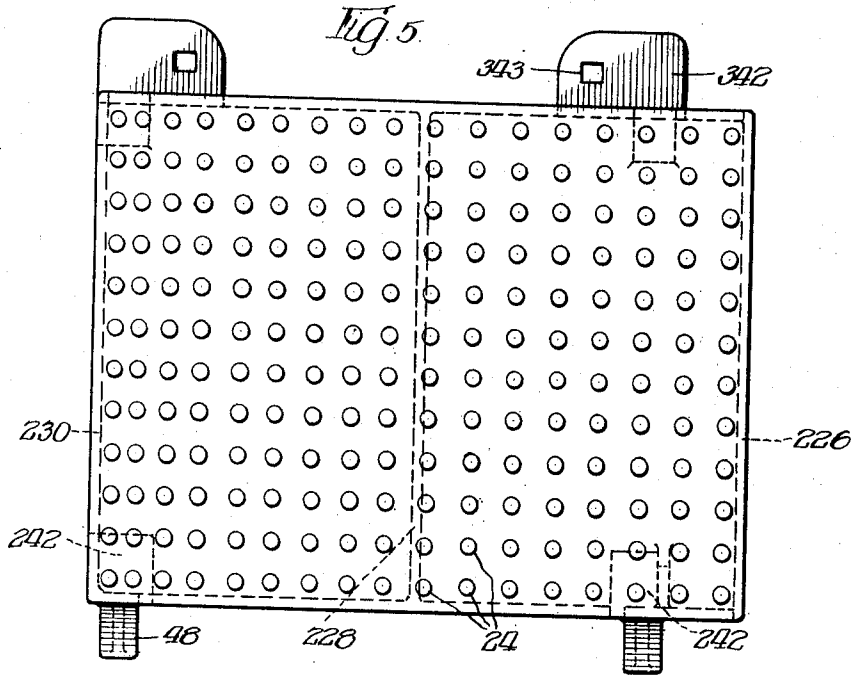
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RAILWAY CROSSING

Filed Sept. 20, 1930

3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE

1,961,488

## RAILWAY CROSSING

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Application September 20, 1930, Serial No. 483,178

32 Claims. (Cl. 238—8)

This invention pertains to railway crossings, and more particularly to crossing including metallic plate members adapted to be interlocked suitably between and adjacent track rails at a crossing.

In the present day crossings it is desirable to build up space between and adjacent rails to provide as smooth a crossing as possible, yet at the same time it is desirable to build up the crossing with a plurality of metallic plates which are readily applied or removed. It is also desirable that the crossing be independent of the rails so that it will in no wise interfere with any track circuits, nor will it be necessary to arrange insulating means between the crossing members and the rails. It has been found that a metallic crossing eliminates expensive upkeep of the present wooden plate crossing, and it is desirable that the plates rest upon the cross ties whereby contact between the plates and the road bed between the ties is eliminated so that as the ties settle there will be no forces pressing against the crossing between the ties to tend to loosen the plates.

It is therefore an object of this invention to provide a crossing including a plurality of plates interlocked to form a smooth crossing and one which is readily applied and removed.

Another object of the invention is to provide an improved railway crossing wherein there is no interference with any track circuits and wherein the parts are arranged so that there is no tendency of the same to loosen upon any settling action of the road bed.

A further object of the invention is to provide an improved railway crossing inexpensive to make and maintain, and one which fulfills all requirements of manufacture and service.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawings and claims appended hereto.

In the drawings, which illustrate an embodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a fragmentary top plan view of a railway crossing embodying the invention;

Figure 2 is a sectional elevation through a road bed taken at the side of the embodiment of the invention shown in Figure 1;

Figure 3 is a transverse sectional elevation through the road bed illustrated in Figure 1 taken at one end thereof;

Figure 4 is an enlarged fragmentary sectional

elevation through a crossing, the same corresponding substantially to Figure 2, showing the interlock of adjacent plate members;

Figure 5 is a top plan view of one of the center plates used in the crossing;

Figure 6 is an end elevation of the center plate illustrated in Figure 5, the same showing the interfitting tongues;

Figure 7 is an end elevation of the center plate illustrated in Figure 5 taken at the opposite end from that shown in Figure 6; and

Figure 8 is a side elevation of the center plate shown in Figure 5.

In the embodiment of the invention illustrated, spaced rails 10 are mounted on successive and adjacent ties 12 extending transversely of said rails, the road bed being completed by suitable ballast, not shown. The crossing extends toward the rails and transversely thereof, and is approached by means of approach and end plates 14 between which are disposed approach plates 16 of any suitable number, depending upon the width of the crossing. The crossing is completed between the rails by means of end plates 18 shown in alignment with the approach and end plates; and a suitable number of intermediate center plates 20.

Each approach and end plate, as shown, is provided with a main plate portion 22 provided with suitable anti-skid means such as the buttons 24, the sides of said plates adjacent the rails 10 being provided with a depending flange 26. The plates are also provided with central reinforcing ribs 28 and outer reinforcing flanges 30 spaced from the outer edge of the plates and reinforced by means of brackets 32; the reinforcing flanges preferably merging into an approach portion 34, as shown, disposed at an angle of approximately 45° and merging into a flange or foot 36 adapted to receive the spikes 38 securing said flange to the cross ties.

The reinforcing members also merge into a depending flange 40 re-flanged at 42 to provide means for receiving spike 44 for securing the other support of the plate to the adjacent cross ties. The flange 42 preferably does not extend the entire width of the plate, but terminates short of the inner and outer edges to provide clearance for the rail mountings 45, the member 34 and the flange 36 being also of a size to fit on the tie and to clear the rail mountings. The vertically extending flange 40 is apertured at 46 to receive the interlocking tongue 48 provided on the adjacent approach plate 50. As shown, the tongue 48 is a downwardly sloping member reinforced by the

bracket 52 and the plate 16 is correspondingly thickened at 54 to provide a proper fit for the tongue.

The plate 50 is provided with a shortened leg 56 provided with the flange 58 adapted to rest on the flange 42 but to avoid the spike 44 which secures the flange 42 to the tie. The opposite leg 60 of each approach plate corresponds to the leg 40 and is adapted to receive the adjacent leg 56 of the adjacent plate. The leg 60 is likewise apertured to receive the bracket 48 and the plate 50 is thickened for accommodating a proper fit. The plate 50, as well as the other plates, is provided with anti-skid means as the buttons 24. The approach plates are also provided with the side and intermediate flanges 126, 128 and 130 corresponding to the flanges 26, 28 and 30 of the end and approach plates. It is of course to be understood that the flanges of the legs are of corresponding size to the flanges of the legs of the end and approach plates to clear the rail mountings 45 and fit on the ties 12. The end plates 18 disposed between the rails also are provided with a substantially 45° approach portion 62 provided with flanged portions 64 for facilitating the fastening of the end plates to the cross ties, the flanges adjacent the rails being inwardly directed from the side edges of the plates in order to clear the rail mountings. The center plates 20 are provided with legs having flanges for facilitating the fastening to the rail ties.

The end plates and center plates are provided with cooperating interlocking portions corresponding to the interlocking portions 48 and 54 already described for the approach and end plates and approach plates, and similar reinforcing flanges are also formed. The center plates, shown particularly in Figures 5 to 8, inclusive, are similar to plates 50 in that they are provided with a top plate portion having anti-skid buttons 24, and side and intermediate flanges 226, 228 and 230 corresponding to flanges 26, 28 and 30. The depending legs 256 are shorter than the legs 260, said legs being flanged as at 242 and 342, respectively, to provide foot portions. Legs 256 are provided with tongues or brackets 48, and legs 260 are apertured as at 46 to receive adjacent tongues 48 of adjacent plates. The foot portions 342 are apertured at 343 to receive securing spikes and are broadened for receiving the flanges or foot portions 242 of the adjacent plates, the portions 242 being of such size and disposition as to clear the apertures 343, as is clearly indicated in Figure 5.

In the case of the end plates and center plates, as well as the approach and end plates and approach plates, it may be stated that in general successive plates are provided with short adjacent legs adapted to be fitted on the longer leg of the adjacent plate as particularly shown in Figure 4, which construction, with the interlocking portions, forms a strong as well as smooth crossing assembly.

The crossing, then, consists of a series of preferably cast steel sections or plates comprising end plates and approach plates having overlapping and interlocking relation, one to the other. The plates having a sloping surface on the front end to prevent dragging equipment from becoming caught in the crossing, and the end plates clear the rails, therefore offering no interference with the rails or supporting plates whereby the danger of short-circuiting the rails for track signal devices is eliminated.

The method of installation is quite simple, as

there are provided the projecting members adapted to fit into openings in adjacent plates, and at the same time there is a lower supporting flange on adjacent legs for the shorter legs of adjacent plates. By forcing the plates together a tight joint is obtained at the point where the center plates meet the end plates. The other ends of the center plates are then spiked down to the cross tie and the remaining center plates are installed in a similar manner. The crossing is completed by the end and end approach plates which are interlocked with center plates, the end being spiked down to the cross tie, which forms a perfect interlocked crossing arrangement. In order to remove the plates for replacement of cross ties or any other reasons, the reverse operation is required.

It will thus be seen that a very smooth crossing is obtained, one which in no wise interferes with track circuits, and one in which any settling of the road bed will not cause loosening of the crossing plates; and it is to be understood that we do not wish to be limited by the exact embodiment of the device shown, which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

We claim:

1. In a railway crossing, the combination of spaced rails mounted on spaced ties, and crossing members disposed adjacent said rails, adjacent members having engaging foot portions, a foot portion of one of said members being adapted to receive securing means, the engaging foot portion of the adjacent member being disposed to be spaced from said securing means.

2. In a railway crossing, the combination of spaced rails mounted on spaced ties, and metallic crossing members disposed substantially on the same level as said rails and adjacent said rails but spaced therefrom, certain of said crossing members being apertured to receive tongues provided on adjacent members, said tongues having sloping portions engaging correspondingly sloping portions adjacent said apertures whereby said members may be tightly and adjustingly positioned.

3. In a railway crossing, the combination of spaced rails mounted on spaced ties, and metallic crossing members disposed substantially on the same level as said rails and adjacent said rails but spaced therefrom, certain of said crossing members being apertured to receive tongues provided on adjacent members, said tongues having sloping portions engaging correspondingly sloping portions adjacent said apertures whereby said members may be tightly and adjustingly positioned, a supporting leg of one of said members being positioned on a supporting leg of the adjacent member.

4. In a railway crossing, the combination of spaced rails mounted on spaced ties, and metallic crossing members disposed substantially on the same level as said rails and adjacent said rails but spaced therefrom, a supporting leg of one of said members being positioned on a supporting leg of the adjacent member.

5. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails but spaced therefrom, said members having cooperative overlapping supporting portions for locking said members in said series, the end

crossing members being provided with sloping approach portions.

6. In a railway crossing, the combination of spaced rails mounted on spaced ties, and metallic crossing members disposed substantially on the same level as said rails and adjacent said rails but spaced therefrom, said crossing members including plate portions and supporting flanged and re-flanged portions, re-flanged portions of adjacent crossing members being supported on re-flanged portions of successive members.

7. A metallic crossing member comprising a substantially horizontal plate portion, a depending flanged and re-flanged portion, and a sloping approach portion having a securing foot thereon.

8. A metallic crossing member comprising a plate portion, a depending flanged and re-flanged portion, and a sloping approach portion having a securing foot thereon, said sloping portion and said flanged portion having a connecting reinforcing flange integral with said plate portion.

9. A metallic crossing member comprising a plate portion, spaced flanged portions integral with said plate portion, one of said flanged portions being of lesser height than the other, and securing means for said flanged portions.

10. A metallic crossing member comprising a plate portion, spaced flanged portions integral with said plate portion, one of said flanged portions being of lesser height than the other, and securing tongues provided on one of said flanged portions.

11. A metallic crossing member comprising a plate portion, spaced flanged portions integral with said plate portion, one of said flanged portions being of lesser height than the other, and sloping securing tongues on one of said flanged portions.

12. A metallic crossing member comprising a plate portion, spaced flanged portions integral with said plate portion, one of said flanged portions being of lesser height than the other, and securing sloping portions adjacent one of said flanged portions.

13. A metallic crossing member comprising a plate portion, spaced flanged portions integral with said plate portion, one of said flanged portions being of lesser height than the other, sloping securing portions provided on the base of said plate portion, one of said flanged portions having apertures adjacent said sloping securing portions, and securing tongues on the other of said flanged portions.

14. In a crossing plate member, the combination of a plate portion having depending legs on opposite ends thereof, the legs on one of said ends being shorter than the legs at the opposite end, said legs having foot portions thereon, the foot portions on the longer legs being broader than the foot portions on the shorter legs, the broader foot portions being apertured to receive securing spikes, said apertures being removed from the edge of the foot portions on the shorter legs whereby when the foot portions of adjacent plate members engage said first named foot portions said apertures and spikes therein will not be obstructed.

15. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of interlocked crossing members adjacent said rails, said members having cooperating overlapping supporting portions for further locking of said members together.

16. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series

of interlocked crossing members adjacent said rails, the end members of said series having a sloping approach portion, said members having cooperating overlapping supporting portions for further locking of said members together.

17. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of interlocked crossing members adjacent said rails, the end members of said series having a sloping approach portion terminating in foot portions adapted to be secured to ties.

18. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of interlocked metallic crossing members disposed substantially on the same level as said rails and adjacent said rails but spaced therefrom, the end crossing members being provided with sloping approach portions terminating in foot portions adapted to be secured to ties.

19. In a railway crossing, the combination of spaced rails, a series of crossing members adjacent said rails, certain of the members of the series having a supporting portion overlapping a supporting portion of an adjacent member and a supporting portion being overlapped by a supporting portion of the next successive adjacent crossing member.

20. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails, certain of the members of the series having a supporting portion overlapping a supporting portion of an adjacent member and a supporting portion being overlapped by a supporting portion of the next successive adjacent crossing member, and means for securing said overlapped portion to a tie.

21. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails, certain of the members of the series having a supporting portion overlapping a supporting portion of an adjacent member and a supporting portion being overlapped by a supporting portion of the next successive adjacent crossing member, means associated with said overlapping portion for engagement with said adjacent member, and means associated with said overlapped portion for receiving an engaging means of the next successive crossing member.

22. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails, certain of the members of the series having a supporting portion overlapping a supporting portion of an adjacent member and a supporting portion being overlapped by a supporting portion of the next successive adjacent crossing member, a projection associated with said overlapping portion for engaging in an opening of said adjacent member, said overlapped portion having an opening associated therewith for receiving a projection of the next successive crossing member.

23. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails, each of said members extending between adjacent ties, the adjacent members of said series having interlocking means at one end and a tie engaging portion at the opposite ends.

24. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails, each of said members extending between adjacent ties, the adjacent members of said series having interlocking means at one end and means

engaging with a tie and cooperating with a securing means at the opposite end for positioning said members.

25. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails, each of said members extending between adjacent ties, the adjacent members of said series having interlocking means at one end and a tie engaging portion at the opposite end, and securing means engaging said portion and tie for positioning said members.

26. A metallic crossing member comprising a substantially horizontal plate portion, a depending flanged and re-flanged portion at one end, and a sloping approach portion terminating in a securing foot at the opposite end.

27. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails and supported on said ties, certain of the members of said series having means at one end interlocking with an adjacent member, a supporting portion at the other end of said members adapted to be overlapped by a supporting portion of the next successive adjacent crossing member, said overlapped supporting portion having a part extending beyond the edge of said overlapping portion of the adjacent supporting portion whereby the same may be secured to a tie.

28. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails and supported on said ties, certain of the members of said series having means at one end interlocking with an adjacent member, a supporting portion at the other end of said members adapted to be overlapped by a supporting portion of the next successive adjacent crossing member, said overlapped supporting portion having a part extending beyond the edge of said overlapping portion of the adjacent supporting portion, and means associated with said part and free of said overlapping portion for securing said overlapped portion to a tie.

29. In a railway crossing the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails and supported on said ties, certain of the members of said series having means at one end interlocking with an adjacent member, a supporting portion at the other end of said members adapted

to be overlapped by a supporting portion of the next successive adjacent crossing member, said overlapped supporting portion having a part extending beyond the edge of said overlapping portion of the adjacent supporting portion and being formed with an aperture, and means receivable in said aperture and free of said overlapping portion for securing said overlapped portion to a tie.

30. In a railway crossing, the combination of spaced rails mounted on spaced ties, a series of crossing members adjacent said rails and supported on said ties, certain of the members of said series having a supporting portion adapted to overlap a supporting portion of an adjacent member, a tongue member adjacent said overlapping portion receivable within an opening of said adjacent member for receiving said tongue, a supporting portion for said members adapted to be overlapped by a supporting portion of the next successive member, an opening in said supporting portion for receiving a tongue of said next successive adjacent member, said supporting portion having a part extending beyond the edge of said overlapping supporting portion of said next successive adjacent member and having an aperture, and means receivable in said aperture and free of said overlapping supporting portion of said next successive adjacent member for securing said overlapped supporting portion of said member to said ties.

31. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails, each of said members extending between adjacent ties, the members of said series being formed with a portion interlocking with an adjacent member and having a tie engaging portion at the opposite end.

32. In a railway crossing, the combination of spaced rails mounted on spaced ties, and a series of crossing members disposed adjacent said rails, each of said members extending between adjacent ties, the members of said series being formed with a portion interlocking with an adjacent member and having a tie engaging portion at the opposite end, and securing means engaging said portion and tie for positioning said members.

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