

Jan. 12, 1937.

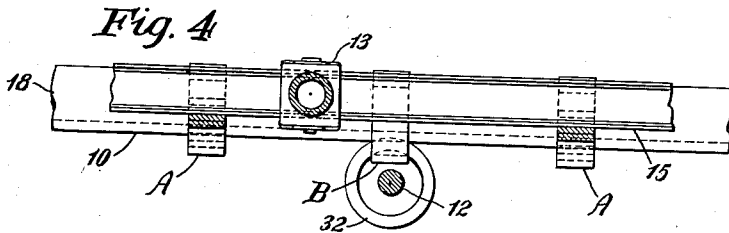
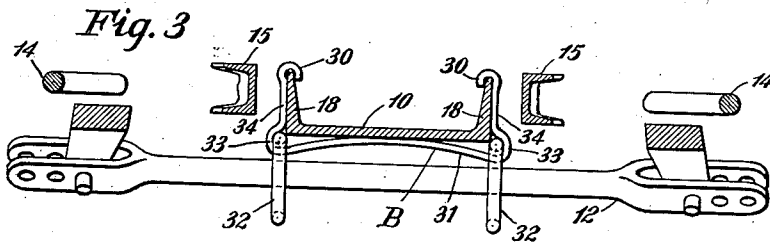
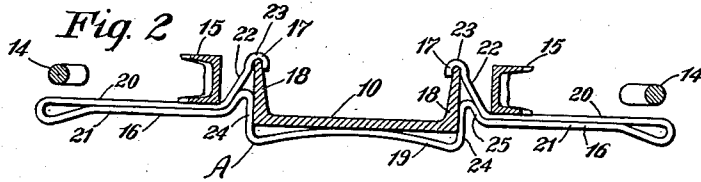
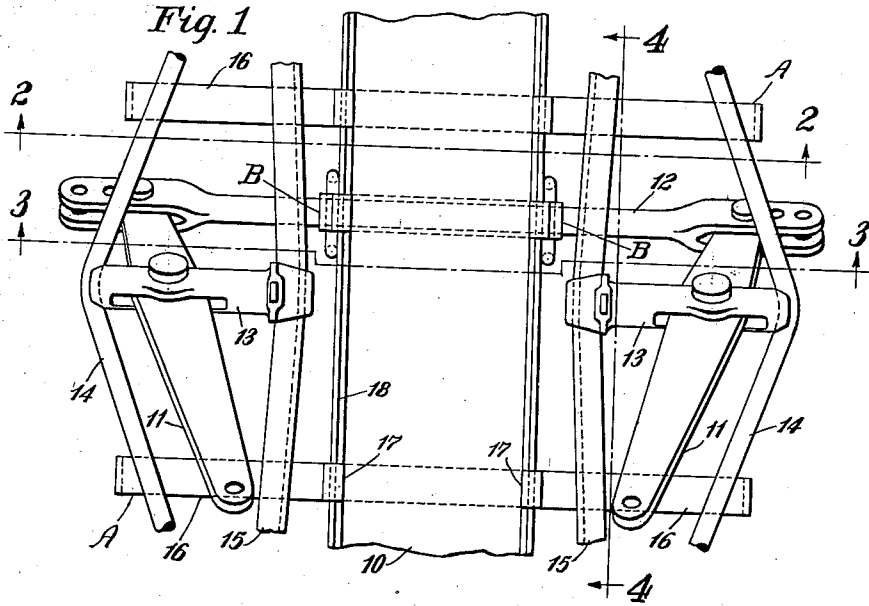
C. A. ZWEIBEL

2,067,587

SAFETY SUPPORTING MEANS

Filed May 29, 1933

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5

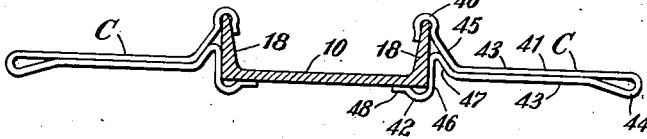


Fig. 6

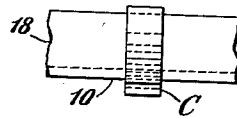


Fig. 7

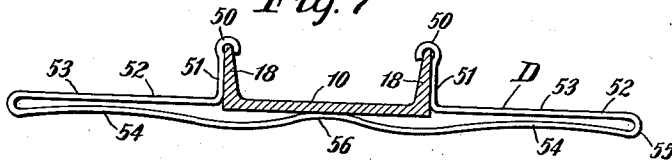


Fig. 8

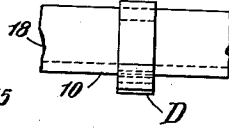


Fig. 9

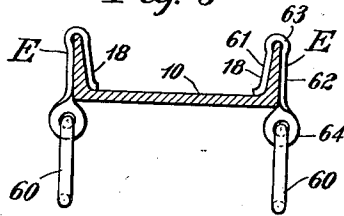


Fig. 10

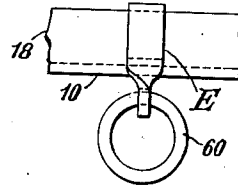


Fig. 11

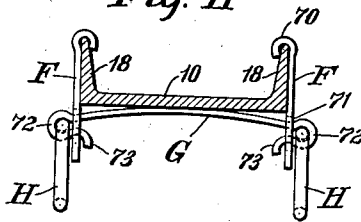
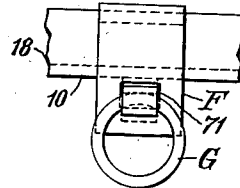


Fig. 12



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UNITED STATES PATENT OFFICE

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SAFETY SUPPORTING MEANS

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Application May 29, 1933, Serial No. 673,372

6 Claims. (Cl. 188—210)

This invention relates to improvements in safety supports especially adapted for use in connection with beams and connecting rods for brakes of railway cars.

5 One object of the invention is to provide a safety supporting means of simple construction, which may be economically manufactured, so designed that it may be easily applied to the usual spring plank of a railway car truck and is effectively held in place by a resilient section of the support, which is under compression and presses on the bottom surface of the spring plank when the supporting means is attached to the car truck.

15 Another object of the invention is to provide a safety supporting means of the character indicated, formed of a single length of spring steel, bent and folded to its finished shape and so designed that it is held against displacement by a section thereof yieldingly pressing against the bottom of the spring plank.

Other objects of the invention will more clearly appear from the description and claims hereinafter following.

25 In the drawings, forming a part of this specification, Figure 1 is a top plan view, partly broken away, of a spring plank of a railway car truck and a portion of the brake mechanism of the car, illustrating my improvements in connection therewith. Figures 2 and 3 are vertical sectional views longitudinally of the car, corresponding respectively to the lines 2—2 and 3—3 of Figure 1. Figure 4 is a vertical sectional view transversely of the car, corresponding substantially to the line 4—4 of Figure 1. Figure 5 is a view similar to Figure 2, illustrating another embodiment of the invention, the brake mechanism being omitted in this view. Figure 6 is an elevational view, partly broken away, looking toward the left in Figure 5. Figure 7 is a view similar to Figure 5, illustrating still another embodiment of the invention. Figure 8 is an end elevational view, partly broken away, looking toward the left in Figure 7. Figure 9 is a view similar to Figure 3, illustrating another embodiment of the invention, the brake mechanism being omitted. Figure 10 is an elevational view, partly broken away, looking toward the left in Figure 9. Figure 11 is a view similar to Figure 9, illustrating still another embodiment of the invention. And Figure 12 is an elevational view, partly broken away, looking toward the left in Figure 11.

Referring first to the embodiment of the invention illustrated in Figures 1 to 4 inclusive,

10 indicates the usual spring plank of a railway car truck, 11—11 the brake levers, 12 the connecting rod for the levers 11—11, 13—13 the lever supporting brackets or struts, and 14 and 15 the tension and compression members respectively of the brake beams.

My improved safety supporting means, as shown in Figures 1 to 4 inclusive, comprises broadly a pair of supports A—A for the brake beams and a support B for the brake connecting rod.

The support A, as most clearly shown in Figures 1, 2, and 4, comprises a pair of laterally extending arms 16—16 projecting from opposite sides of the spring plank 10 and beneath the tension and compression members 14 and 15 of the brake beams, a pair of hook members 17—17 engaging over the usual vertical flanges 18—18 of the spring plank 10, and a bowed barlike section 19 engaging beneath the spring plank 10. The arms 16—16, the hooks 17—17, and the barlike section 19 are all formed integral from a single bar of spring steel. As most clearly shown in Figure 2, each arm 16 is formed by doubling the bar, thereby providing top and bottom members 20 and 21 connected by a rounded, looplike outer end section. The top member 20 has an inclined section 22 at the inner end thereof, which extends away from the arm 16 and toward the upper edge of the corresponding flange 18 of the spring plank 10. The section 22 has a hook portion proper 23 formed at the free end thereof engaging over the upper edge of the corresponding flange 18 of the spring plank 10. The bowed, barlike section 19, which engages the bottom of the spring plank 10, is connected at opposite ends to the arms 16—16, each connection comprising a bent section having an upwardly directed portion 24 bearing on the outer side of the corresponding flange 18 of the spring plank 10 and an inclined section 25 at the inner end of the bottom member 21 of the arm 16 bearing on the inner side of the inclined section 22 of the upper member 20.

The support A is attached to the spring plank by bowing the same to a sufficient extent to permit the hooks 23—23 to be sprung over the upper edges of the vertical flanges 18—18 of the spring plank 10 and interlock with the flanges. As will be evident, the improved support A, when in position on the spring plank, is securely held against removal by the resilient action of the bowed, barlike section 19 pressing on the bottom of the spring plank.

The support B, shown most clearly in Figures 1, 3, and 4, comprises a pair of hooklike members 30—30 engaged with the flanges 18—18 of the spring plank 10, a horizontally bowed barlike section 31 formed integral with the hook members 30—30 and pressing on the bottom of the spring plank 10, and a pair of supporting loops in the form of rings 32—32 carried by the barlike section 31 at opposite sides of the spring plank. The connecting rod of the brake mechanism extends freely through the rings 32—32 and these rings serve as supporting means for the rod 12 when the same becomes accidentally detached from the levers 11—11 or drops due to some other failure of the connections of the brake rigging. A single steel bar is preferably employed to form the hooklike members 30—30 and the bowed bar section 31. As most clearly shown in Figure 3, the upwardly bowed section 31 bears against the bottom side of the main body portion of the spring plank 10 and has looplike sections 33—33 at opposite ends thereof connecting the barlike section 31 with the shanks 34—34 of the hooklike members 30—30. The looplike sections 33—33 serve to accommodate the upper portions of the rings 32—32.

The support B is applied to the spring plank 10 in a manner similar to that described in connection with the support A, the hook portions proper of the hook members 30—30 being sprung over the upper edges of the flanges 18—18 of the spring plank 10 and engaged with and locked over said flanges 18—18.

Referring next to the embodiment of the invention illustrated in Figures 5 and 6, my improved safety supporting means comprises a pair of like supporting members C—C, which are attached to the flanges 18—18 at opposite sides of the spring plank 10. Each supporting member C is formed from a single bar of spring steel and comprises a hook member 40 engaged over the upper edge of the corresponding flange 18 of the spring plank 10, a laterally outwardly extending arm 41 adapted to form the safety supporting means proper for the tension and compression members 14 and 15 of the corresponding brake beam, and a resilient finger 42 engaging the bottom of the spring plank 10. The arm 41 of each member C comprises a folded portion of the bar, thereby providing top and bottom members 43—43. The members 43—43 are connected at the outer end of the arm 41 by a loop section 44. At the inner end, the top member 43 is provided with an inclined section 45, which extends upwardly and away from the arm 41. The extremity of the inclined section 45 is bent to form the hook proper which engages over the flange 18 of the spring plank. The bottom member 43 of the arm 41 is connected to the finger 42 by an angular section comprising a vertical portion 46 and an inclined portion 47 connecting the portion 46 to the bottom member 43, said inclined portion 47 bearing on the inclined section 45 of the top member 43. The finger 42 has a flat outer end portion 48 directly engaging the bottom face of the spring plank 10 and a curved portion connecting said flat portion 48 to the vertical portion 46.

Each supporting member C is attached to the spring plank in the following manner: The finger 42 and hook member 40 are sprung apart while forcing the member C in position on the spring plank and, as the inherent resiliency of the member C causes it to assume its normal condition, the finger 42 engaging beneath the

spring plank will hold the hook 40 interlocked with the upper edge portion of the flange 18 at the corresponding side of the spring plank 10.

Referring next to the embodiment of the invention illustrated in Figures 7 and 8, my improved safety supporting means comprises a supporting member D for the brake beam. The supporting member D is formed from a single bar of spring steel, which is bent to the shape shown in Figure 7. The supporting member D 10 includes a pair of hooks 50—50 having vertical shanks 51—51 extending upwardly from arms 52—52 formed by doubled sections of the bar and presenting top and bottom members 53—54 and 53—54. The members 53 and 54 of each arm 15 are connected by a curved outer end section 55. As clearly shown in Figure 7, the members 53 and 54 of the arms are slightly spaced apart. At their inner ends, the lower members 54—54 of the two arms 52—52 are connected by an up- 20 wardly curved or bowed section 56, which bears on the bottom of the spring plank.

The supporting member D is attached to the spring plank 10 by springing the hook members 50—50 over the vertical side flanges 18—18 of 25 the plank.

Referring next to the embodiment of the invention illustrated in Figures 9 and 10, my improved supporting means comprises a pair of supporting members E—E, which are attached to the vertical flanges 18—18 of the spring plank 10 and include loop members 60—60 in the form of rings, through which the connecting rod of the brake rigging extends. Each supporting member E comprises a resilient, V-shaped section 35 having diverging arms 61—62 connected at their upper ends by a curved portion 63. The arms 61—62 together with the curved section 63 form the hook member proper, which is engaged over the corresponding vertical flange 18 of the spring plank 10. The arm 62 of the member E 40 projects below the plane of the bottom surface of the spring plank 10 and has its lower end portion twisted to provide an enlargement 64 in a plane at right angles to the arm 62. The enlargement 64 is perforated to provide an eye member adapted to receive the upper section of the corresponding ring 60. As clearly shown in Figure 9, the arms 61—62 of the supporting member E are at least as great in length as the 50 height of the corresponding flange 18 of the spring plank 10. The enlargement 64 is so spaced from the upper end of the member E that the same engages underneath the corresponding lower corner of the spring plank 10 and 55 clamps the supporting member in place.

Referring next to the embodiment of the invention illustrated in Figures 11 and 12, my improved supporting means comprises a pair of supporting hooks F—F, a curved resilient bar G 60 suspended by the hooks F—F, and a pair of rings H—H through which the connecting rod of the brake rigging extends.

Each hook F is in the form of a plate having a bent upper end section 70 forming the hook 65 proper, which engages over the corresponding vertical flange 18 of the spring plank 10. The plate portion of the hook member F extends beneath the lower surface of the spring plank 10 and said extending portion is provided with an opening 71 adapted to accommodate the corresponding end of the bar G.

The bar G is preferably spring steel and yieldingly bears on the bottom surface of the spring plank 10. The opposite ends of the bar G are 75

formed with loop sections 72—72, which terminate in downwardly turned extensions 73—73. The opposite ends of the bar G extend through the openings 71—71 of the hook members F—F, the loop sections 72—72 being disposed outwardly of the platelike shank portions of said hook members F—F while the sections 73—73 are engaged within said openings 71—71 and project inwardly beyond the members F—F. The bar G being of spring steel, the bowed sections 72—72 have a certain amount of resiliency and the portions 73—73 yieldingly bear on the lower walls of the openings 71—71 of the hook members F—F, thereby pressing the bowed section of said bar G tightly against the lower surface of the spring plank 10 and holding the hook members interlocked with the flanges 18—18 of the spring plank 10.

The ringlike members H—H, which form the safety supporting means proper for the connecting rod of the brake rigging, have their upper sections engaged through the loop sections 72—72 of the bar G. The rings H—H are thus attached to the supporting hooks F—F and are confined on the bar G, as clearly shown in Figure 11.

In applying the safety supporting means shown in Figure 11 to the spring plank, the hook members F—F are sprung over the upper edges of the flanges 18—18 of the spring plank 10, the bowed bar G yielding sufficiently to permit this.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a safety support adapted to be attached to the usual channel-shaped spring plank of a railway car truck, the combination with an upwardly bowed, resilient, barlike section for engaging the bottom of said spring plank; of vertically extending sections at opposite ends of said bar section for engaging the outer surfaces of the flanges of the spring plank; horizontally outwardly projecting arms extending from the upper ends of said vertical sections, said arms projecting in opposite directions; hook members for engaging over the top edges of the flanges of the spring plank; and inclined sections connecting said hook members to the arms.

2. In a safety support adapted to be attached to the usual channel-shaped spring plank of a railway car truck, the combination with an upwardly bowed, resilient, barlike section for engaging beneath the bottom of said spring plank; of vertically extending sections at opposite ends of said bar section for engaging the outer surfaces of the flanges of the spring plank; horizontally outwardly projecting arms extending from the upper ends of said vertical sections, said arms comprising doubled barlike portions and project-

ing in opposite directions; hook members engaging over the top edges of the flanges of the spring plank; and inclined sections connecting said hook members to the arms.

3. A support comprising a bar of spring steel including a doubled section comprising upper and lower members together forming a laterally extending, horizontal arm, the connecting portion of said doubled section being at the outer end of said arm, the inner end portion of the upper member being inclined upwardly away from said arm and having a hook at the extremity thereof adapted to engage over one of the flanges of the spring plank of a railway car truck, the inner end portion of the lower member having a section thereof upwardly inclined away from said arm for engaging said inclined section of the upper member, a vertical section forming a continuation of said inclined section of the lower member, said vertical section extending downwardly from said last named inclined section, and a laterally projecting finger at the lower end of said vertical section for yieldingly engaging the bottom of the spring plank.

4. In a safety support device adapted to be attached to the usual channel-shaped spring plank of a railway car truck, an upwardly bowed resilient bar-like section for engaging the bottom of the spring plank, upwardly offset portions at the opposite ends of said section for engaging the outer faces of the spring plank flanges, arms extending from said offsets outwardly from the sides of said spring plank, hook members for engaging over the top edges of the spring plank flanges, and portions connecting said hook members to said arms independently of said offset portions.

5. In a safety support device adapted to be attached to the usual channel-shaped spring plank of a railway car truck, a bar-like member doubled on itself to form a loop for underlying a brake gear, one leg of said loop terminating in a hook for engaging the top edge of said spring plank flange, and the other leg of said loop having a vertical portion arranged to abut against the outer face of the channel spring plank and then to extend beneath and yieldingly engage the bottom of the spring plank to hold the device in position on the spring plank.

6. In a safety support device adapted to be attached to the usual channel-shaped spring plank of a railway car truck, a bar-like member having a central section arranged to extend beneath and engage the bottom of the spring plank and to extend in opposite directions therefrom to underlie spaced brake gears, said section being offset to engage the outer faces of the flanges of the spring plank to prevent shifting of the device transversely of the spring plank the bar being doubled over outwardly of the spring plank and terminating in hooks for engaging the top edges of the spring plank flanges to support the device.

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