March 14, 1950 R. T. LEISK 2,500,192

BRAKE BEAM

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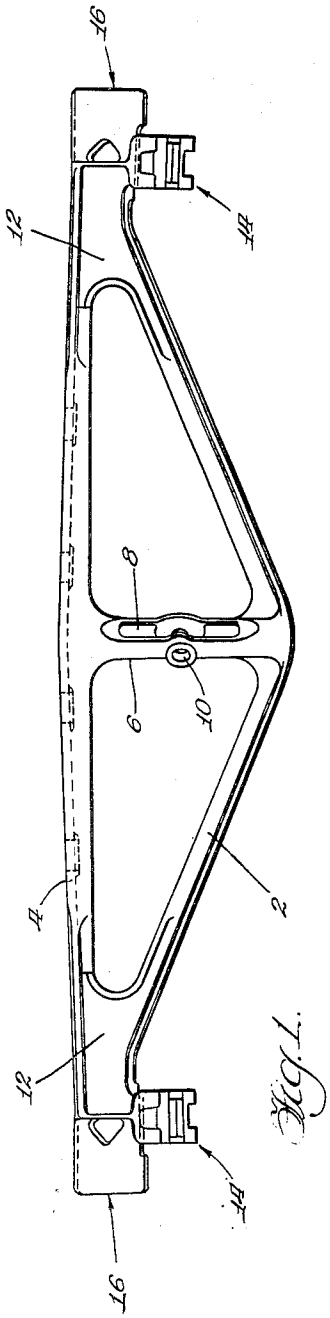


Fig. 1.

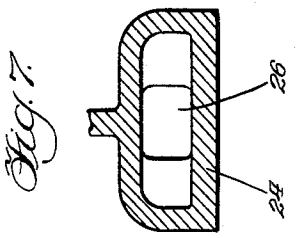


Fig. 7.

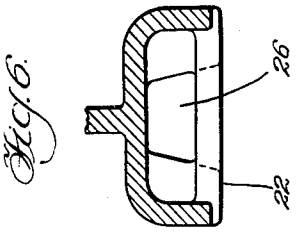


Fig. 6.

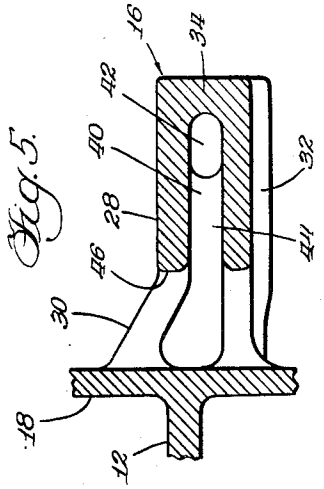


Fig. 5.

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BRAKE BEAM

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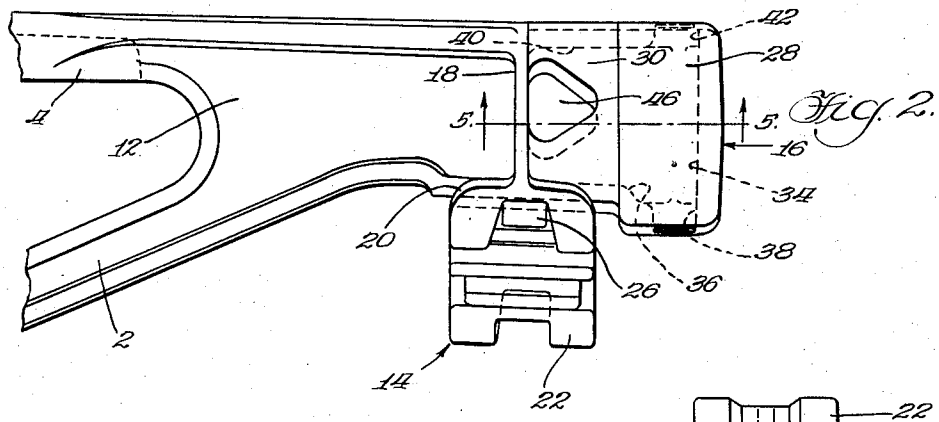


Fig. 2.

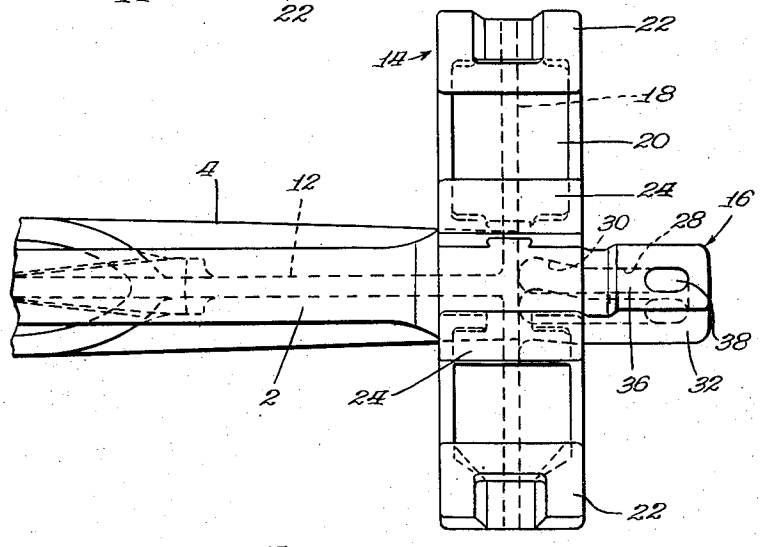


Fig. 3.

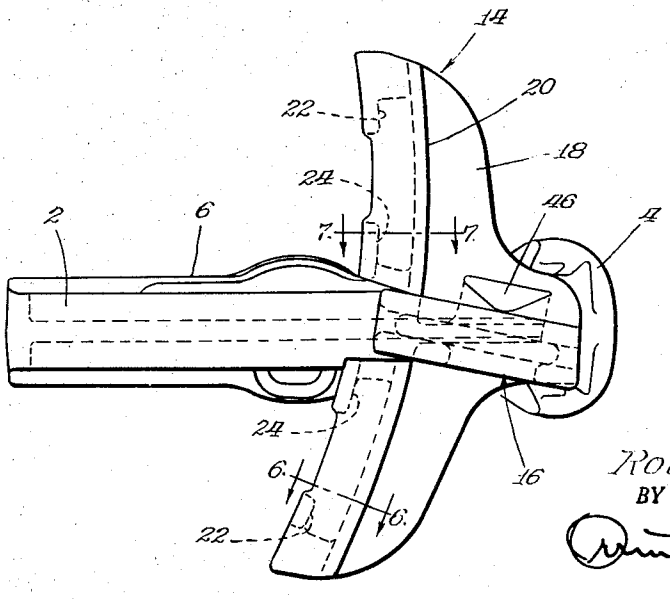


Fig. 4.

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BRAKE BEAM

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16 Claims. (Cl. 188—233.3)

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This invention relates to railway brake beams and more particularly to a truss type brake beam casting.

A general object of the invention is to devise a novel truss type brake beam casting wherein the tension and compression members as well as the strut and the brake heads are formed as a single casting having end extensions adapted for slidable support on associated truck frame ledges in a well-known brake arrangement.

Another object of the invention is to provide a brake beam, such as above described, with support lugs or extensions cored away in a novel manner to provide an unusually light and sturdy construction and to afford passage means for foreign matter, such as coal dust and dirt, which may become lodged in the truck frame support brackets.

A more specific object of the invention is to devise a brake beam casting including a brake head with a hollow outboard guide extension having a vertical passage therethrough adjacent its inboard extremity.

A further object of the invention is to devise a brake beam casting wherein the front wall of each brake head which supports associated brake shoe means is arcuately formed at its rear edges which merge with the tension member and guide lug of the beam in a relatively light, economical, and sturdy construction.

The foregoing and other objects and advantages of the invention will become apparent from a consideration of the following specification and the accompanying drawings, wherein:

Figure 1 is a top plan view of a brake beam casting embodying the invention;

Figure 2 is an enlarged fragmentary top plan view showing the detailed construction of one end of the beam;

Figure 3 is a front elevational view of the structure shown in Figure 2;

Figure 4 is an end view of the beam taken from the right of Figure 2;

Figure 5 is a sectional view on the line 5—5 of Figure 2;

Figure 6 is a sectional view on the line 6—6 of Figure 4; and

Figure 7 is a sectional view on the line 7—7 of Figure 4.

Describing the invention in detail and referring first to Figure 1, the brake beam casting comprises a truss structure including a tension member 2 and a compression member 4 interconnected at the center of the beam by a strut 6 having a brake lever slot 8 and a pin opening 10.

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At each end of the beam the tension and compression members merge to form a gusset 12 connected to a brake head, generally designated 14, and to an outboard guide lug or extension 16 adapted to support the brake beam on an associated truck frame support ledge (not shown). As best seen in Figure 4, the lug 16 is preferably disposed diagonal to the plane of the truss.

Referring now to Figure 2 wherein one end of the beam is shown in detail, it will be seen that the brake head 14 comprises a substantially vertical rear web 18 connected on the inboard side thereof to the gusset 12 and to the tension and compression members 2 and 4, and the brake head also comprises an arcuate front wall 20 connected to the forward extremity of the wall 18 and to the outboard extremity of the tension member 2. The wall 20 comprises end lugs 22 and intermediate lugs 24 adapted to seat associated brake shoe means (not shown) secured to the brake head 14 by a key (not shown) extending through a keyway 26 (Figures 2, 6 and 7). It may be noted that the inboard and outboard edges of the front wall 20 curve arcuately forward to merge with the tension member 2 and with the lug 16 in a structure having the characteristics of great strength combined with relatively light and economical construction.

The guide lug or extension 16, as best seen in Figures 2, 3 and 5, is a generally hollow member having a top wall 28 with a diagonal inboard segment 30 extending upwardly to merge with the wall 18. The lug 16 also comprises a bottom wall 32 connected to the wall 18 and an outboard wall 34 connected between the top and bottom walls 28 and 32. The lug 16 also comprises a forward or front wall or web 36 having an opening 38 and a rear wall or web 40 having an opening 42.

Thus the walls 28, 32, 34, 36 and 40 of the lug 16 define a hollow member having an internal cavity 44 and an opening 46 extending through the top and bottom walls 28 and 32 at their inboard segments or extremities which are attached to the vertical brake head wall 18. By means of this novel construction, the brake beam casting is provided with a guide lug or extension 16 of unusually light construction and great strength. Also the openings 38 and 42 prevent the entrapment of foreign matter, such as coal dust and dirt, within the associated truck frame bracket (not shown) forwardly and rearwardly of the lug 16 and the opening 46 not

only accommodates escape of such foreign matter from the cavity 44 of the lug but also eliminates accumulation of such foreign matter on the top of extension 16 from which such matter might tend to work into the truck frame bracket.

Thus it will be seen that I have devised a novel casting of the above-described type wherein the brake head and guide lug are integrally connected to the brake beam truss structure in a novel and economical construction and wherein the guide lug is provided with passage means serving to lighten the lug and to prevent the accumulation of foreign matter on the top of the lug or within the associated truck frame bracket forwardly and rearwardly of the lug.

In the illustrated embodiment, the beam is formed as a single casting; however, the novel passage means through the support lug may be used in other arrangements, such as, for example, a beam wherein the head and lug are an integral casting secured as by welding or riveting to the truss structure; or a beam wherein the support lug is formed on or connected to the truss structure or its members 2 and 4 and the brake head is connected to the structure as by riveting or welding at a point inboard the lug; or a beam wherein the lug is secured, as by welding or riveting, to the brake head or to one of the truss members 2 and 4.

I claim:

1. A brake beam casting comprising tension and compression members merging at each end of the casting in a gusset, a brake head having a substantially vertical rear wall connected to said gusset, and having a front wall connected to the rear wall, said front wall being adapted to support associated brake shoe means, and a support lug connected to the outboard side of said rear wall and extending outboardly beyond the outboard margin of the front wall to afford support and guide means for the casting, said lug having a vertical opening therethrough adjacent its connection to said rear wall, and having an internal cavity extending from said opening to at least one of the front and rear edges of said lug at a point disposed outboardly of the outboard brake head margin.

2. A brake beam casting comprising tension and compression members merging at each end thereof in a gusset, a brake head having a substantially vertical rear wall connected to said gusset, said head having a front wall connected to the rear wall, and a support lug connected to the outboard side of said rear wall, the inboard and outboard edges of said front wall curving arcuately forwardly to merge with said tension member and said lug respectively, said lug having a vertical opening extending therethrough from top to bottom thereof and disposed rearwardly of said front wall to afford a passage for foreign material collecting on the top surface of said lug.

3. A railway brake beam having a truss and a brake head connected thereto, said head having a front wall adapted to carry associated brake shoe means on its forward surface, and a guide member on said beam extending outboardly of said wall, said member being disposed diagonally to the plane of said truss, and having an outboard portion with top and bottom substantially parallel guide faces and an inboard portion with top and bottom surfaces converging toward the outboard portion and merging with respective faces, said outboard portion having a cavity therewithin extending from at least one of the front and rear edges thereof intermediate said faces.

4. A brake beam formed as a single casting comprising a compression member, a tension member merging with a portion thereof, a brake head comprising a forward wall with a brake shoe engaging surface on the forward face thereof, a substantially vertical rear wall merging with said forward wall and with at least one of said members, and a guide lug merging with the outboard face of said vertical wall and with at least one of said members, said lug being tapered outboardly of said rear wall at the inboard extremity of said lug, and said lug having vertical opening through the inboard extremity thereof.

5. A brake beam formed as a single casting comprising a compression member, a tension member merging with a portion thereof, a brake head comprising a forward wall with a brake shoe engaging surface on the forward face thereof, a substantially vertical rear wall merging with said front wall and with at least one of said members, and a guide lug merging with the outboard face of said vertical wall and with at least one of said members, said lug being tapered outboardly of said rear wall at the inboard extremity of said lug, said lug having an internal cavity therewithin extending from at least one of the front and rear edges thereof.

6. A railway brake beam having a truss and a brake head connected thereto, said head having a front wall adapted to carry associated brake shoe means on its forward surface, said beam comprising a guide member extending outboardly of said wall, said member having an outboard portion with top and bottom substantially parallel guide faces and an inboard portion with top and bottom surfaces converging toward the outboard portion and merging with respective faces, said lug having an internal cavity within the outboard portion extending into said outboard portion from at least one of the front and rear edges thereof.

7. A railway brake beam having a truss and a brake head connected thereto, said head having a front wall adapted to carry associated brake shoe means on its forward surface, said beam comprising a guide member extending outboardly of said wall and having an outboard portion with top and bottom substantially parallel guide faces and an inboard portion with top and bottom surfaces converging toward said outboard portion and merging with respective faces, said lug having a vertical opening through said inboard portion extending through said surfaces.

8. A brake beam casting comprising tension and compression members merging at each end of the casting in a gusset, a brake head having a substantially vertical rear wall connected to said gusset, and having a front wall connected to the rear wall, said front wall being adapted to support associated brake shoe means, and a guide lug connected to the outboard surface of said rear wall, said lug having an internal passage intermediate the top and bottom surfaces thereof and extending from the forward to the rear edges of said lug.

9. A brake head casting comprising a brake head structure including a front wall adapted to support associated brake shoe means, and a front wall connected to the rear wall, and a guide lug connected to both walls and extending outboardly thereof, said lug having an internal passage extending from the inboard extremity of the top surface thereof to the forward surface thereof at

a point outboard said head and intermediate the top and bottom surfaces of said lug.

10. A brake head casting comprising a brake head with a front wall adapted to support associated brake shoe means, and a substantially vertical rear wall extending rearwardly from the front wall, and a hollow guide lug connected to the brake head walls and having top and bottom walls with aligned vertical openings at their juncture with said rear wall, the top wall comprising a diagonal segment extending upwardly toward its connection to the rear wall.

11. A brake head casting comprising a brake head structure including a front wall adapted to support associated brake shoe means, and a front wall connected to the rear wall, and a guide lug connected to both walls and extending outboardly therefrom, said lug having a passage extending from the front to the rear edges thereof intermediate the top and bottom surfaces thereof.

12. A brake beam structure including tension and compression members, a brake head, and a guide lug extending outboard said head and formed with an internal passage extending from the top surface thereof at a point inboardly of the outboard margin of said head to the forward edge of said lug outboardly of the outboard margin of said head at a point intermediate the top and bottom surfaces of said lug.

13. A brake beam structure including tension and compression members, a brake head, and a guide lug extending outboard said head and comprising an internal passage extending from the top surface of the lug at a point inboardly of the outboard margin of said head to the rear edge of said lug at a point intermediate the top and bottom surfaces thereof.

14. A brake beam structure including tension and compression members, a brake head, and a guide lug extending outboard said head, said lug having a vertical opening therethrough from top to bottom thereof and disposed behind said head, said lug having a cavity therewithin intermediate its top and bottom surfaces and extending from said opening to the rear edge of said lug.

15. A brake beam structure including tension and compression members, a brake head, and a guide lug extending outboard said head and having a passage extending from the forward to the rear edges of the lug intermediate its top and bottom surfaces and disposed outboardly of the outboard margin of said head.

16. A brake beam structure including tension and compression members, a brake head, and a guide lug extending outboard said head, said lug having a vertical opening therethrough from top to bottom thereof at a point behind said head, said lug being formed with an internal cavity connected to said opening and extending to the forward edge of said lug outboard said head.

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