June 21, 1949. G. E. DATH 2,473,678

SNUBBING MEANS

Filed July 24, 1944

Fig. 1

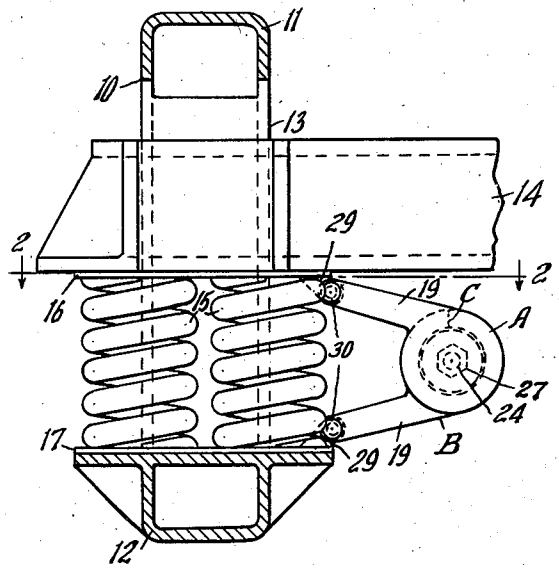


Fig. 4

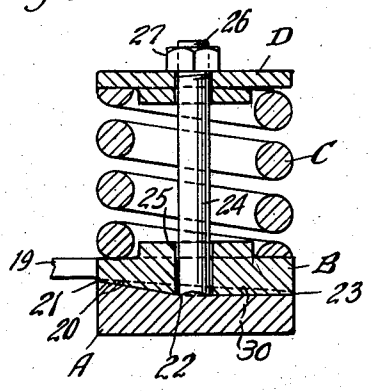


Fig. 5.

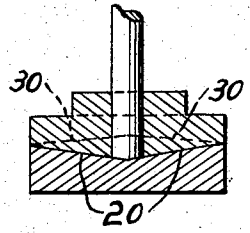


Fig. 2

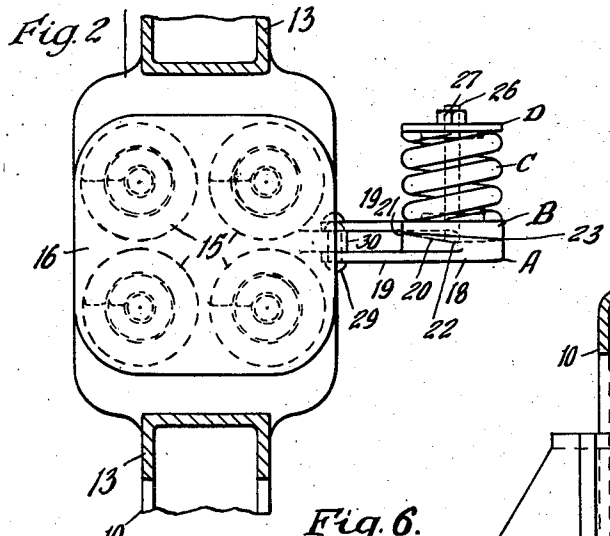


Fig. 3.

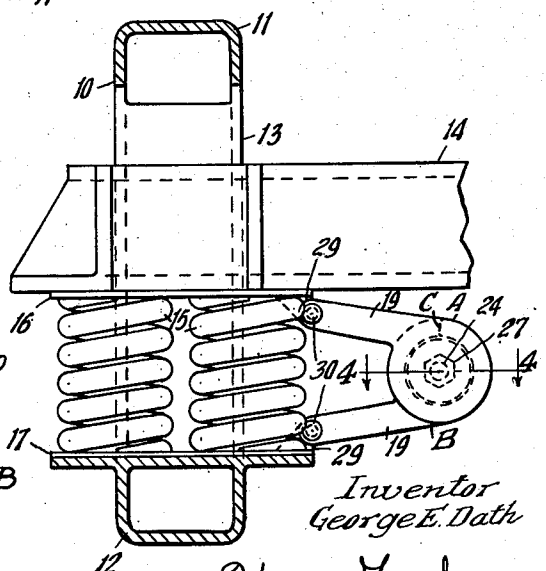
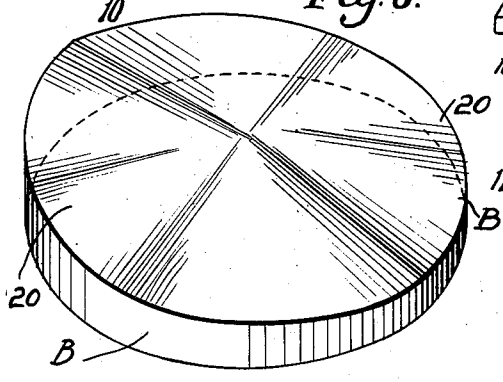


Fig. 6.



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2,473,678

SNUBBING MEANS

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2 Claims. (Cl. 267—9)

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This invention relates to improvements in snubbing means for springs, and more particularly for truck springs of railway cars.

The main object of this invention is to provide simple and efficient snubbing means actuated through relative vertical movement of the bolster and the side frame for snubbing the action of truck springs of railway cars, wherein the snubbing means comprises rotary friction means actuated through relative movement of the bolster and side frame by lever arms connected respectively to a member fixed with respect to the truck side frame and a second member movable in unison with the truck bolster.

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

In the drawing forming a part of this specification, Figure 1 is a vertical sectional view through one of the side frames of a railway car truck, illustrating my improvements in connection therewith, said view being on a vertical plane transversely of the car, and showing a portion of the truck bolster in side elevation. Figure 2 is a horizontal sectional view, corresponding substantially to the line 2—2 of Figure 1. Figure 3 is a view, similar to Figure 1, but showing the truck springs approximately fifty per cent compressed. Figure 4 is a horizontal sectional view, on an enlarged scale, corresponding substantially to the line 4—4 of Figure 3. Figure 5 is a vertical sectional view in a vertical plane at right angles to the section line 4—4 of Figure 3. Figure 6 is a detail perspective view, on an enlarged scale, of one of the friction members of my improved device.

In said drawing, 10 indicates one of the side frame members of a railway car truck. The side frame 10, as shown, is in the form of a casting and has top and bottom members 11 and 12 connected by spaced vertical sections 13—13 forming guides for the truck bolster. As will be understood by those skilled in this art, the truck includes two side frame members 10—10 and a truck bolster 14. The truck bolster 14 has its opposite ends guided between the vertical sections 13—13 of the truck side frames 10—10 and is supported by the springs 15—15. The truck illustrated in the drawing is of the spring plankless type and the truck springs are supported directly on the bottom members 12—12 of the side frames 10—10, the usual top and bottom spring follower plates 16 and 17 being interposed between each truck spring cluster and the body bolster and the corresponding bottom member, respectively.

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My improved snubber comprises broadly a rotary friction member A, a second rotary friction member B, a spring C, and a spring follower disc D.

The rotary friction members A and B are of similar design, except as hereinafter pointed out. Each friction member comprises a disclike portion 18 having an outwardly projecting arm 19, which is substantially tangent thereto, the arm 19 projecting from the upper portion of the disc 18 of the member A, as seen in Figure 1, and that of the disc 18 of the member B projecting from the lower portion thereof. Each disc 18 is provided with a pair of helical friction surfaces 20—20. As shown most clearly in Figures 4, 5, and 6, the friction surfaces 20—20 of the member B are inclined in opposite directions from one side of the member B to the opposite side thereof, the line 21—22 in Figure 4 being the low end of each surface 20 and the line 22—23 being the high end of each surface. The friction surfaces 20—20 of the member A are complementary to the surfaces 20—20 of the member B and fit truly on said surfaces when the parts are in the normal position shown in Figure 3. The member A is provided with a central stem or shaft 24 projecting axially therefrom and through the bearing opening 25 in the member B. The stem or shaft 24 is screw threaded at its outer end, as indicated at 26, and a retaining nut 27 secured on said threaded end. The spring C, which is in the form of a helical coil surrounds the stem 24 and has its opposite ends bearing on the inner side of the member B and the inner side of the follower disc D, through which the stem 24 extends, and retained by the nut 27. The spring C is preferably under initial compression and reacts between the member B and the spring follower disc D to pull the member A against the member B through the medium of the stem 24 of the member A and the nut 27 thereof against which the disc D shoulders.

The outer ends of the arms 19—19 of the members A and B are pivotally connected to the upper and lower spring follower plates 16 and 17, respectively, of the spring cluster. Each spring follower plate is provided with a lug 29 to which the outer end of the corresponding arm 19 is secured by a pivot pin 30 which extends through said arm and lug. As shown most clearly in Figure 1, the lug 29 of the upper plate 16 depends therefrom and that of the plate 17 upstands therefrom. Inasmuch as the spring follower 16 moves toward and away from the spring follower 17 in unison with the bolster 14 as the latter

moves downwardly and upwardly with respect to the lower member 12 of the truck side frame, and the outer end of the arm 19 of the member A partakes of the motion of the bolster, due to its being connected to the upper spring follower plate, the arm 19 of the member A is swung toward and away from the arm 19 of the member B, thus effecting relative rotation of said members. As the bolster moves downwardly from the position shown in Figure 3 to compress the springs 15 and is forced upwardly back to said position by recoil of said springs, the lower set of cooperating friction surfaces ride upon each other thereby snubbing the action of the truck springs. Due to the helical formation of these surfaces of the members A and B, the latter are cammed apart, resisted by the spring C. When the recoil action of the springs throws the bolster upwardly beyond the position shown in Figure 3, the upper set of cooperating friction surfaces 20—20 of the members A and B become active to resist relative vertical movement of the bolster and side frames, thus further snubbing the action of the truck springs.

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 friction snubber, the combination with a friction member, said member having a friction surface composed of a pair of helical friction faces arranged side by side along diametrical edges, said faces merging at said diametrical edges, each of said faces being inclined from end to end; of a rotary friction member frictionally engaging said first named member, said second named member having a friction surface complementary to said surface of said first named member and in engagement therewith; and means for rotating said second named friction member with respect to the first named friction member.

2. In a friction snubber, the combination with a friction member having a friction surface composed of a pair of helical faces merging along diametrical edges, each of said faces being inclined from end to end; of a rotary friction member having a friction surface comprising friction faces complementary to and engaging with said friction faces of said first named member; spring means yieldingly opposing separation of said friction members; and means for rotating said second named friction member with respect to said first named friction member.

GEORGE E. DATH.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,000,264	Hartford	Aug. 8, 1911
1,228,944	Miller	June 5, 1917
1,280,377	Bjorneby	Oct. 1, 1918
1,349,781	Moore	Aug. 17, 1920
2,084,638	Goodwin	June 23, 1937

FOREIGN PATENTS

Number	Country	Date
548,834	France	Nov. 3, 1922