Oct. 18, 1949. G. E. DATH 2,484,983

SNUBBING MEANS

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Fig. 1

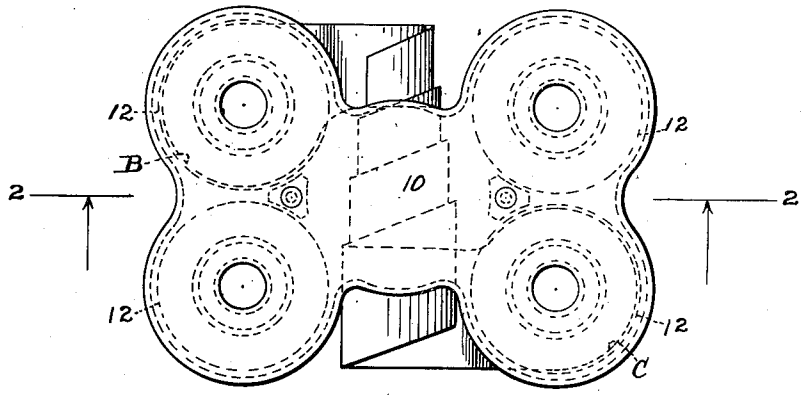
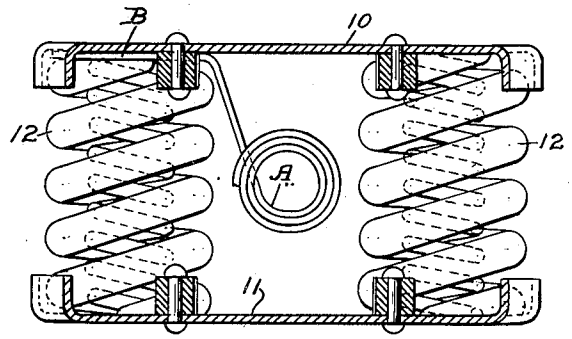


Fig. 2



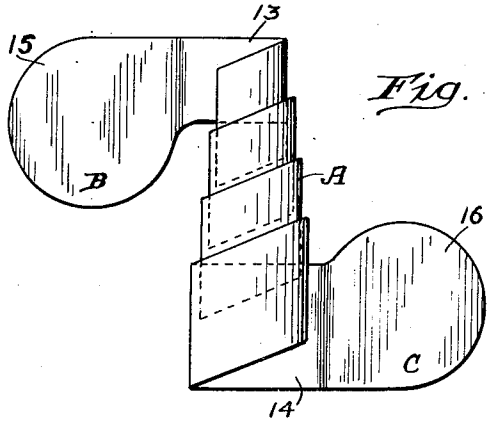


Fig. 3

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SNUBBING MEANS

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3 Claims. (Cl. 267—9)

1

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 a simple and efficient snubbing means actuated through relative vertical movement of the truck bolster and truck side frame of railway cars for snubbing the action of the truck springs, comprising a coil spring element which is subjected to winding action during compression of the truck spring to afford the proper resistance to produce the snubbing action.

A further object of the invention is to provide a snubbing means of the character indicated comprising a volute spring, the coils of which have frictional engagement with each other during the winding action to increase the efficiency of the snubbing action.

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 top plan view of a spring unit of a railway car truck, illustrating my improvements in connection therewith. Figure 2 is a transverse vertical sectional view, corresponding substantially to the line 2—2 of Figure 1. Figure 3 is a top plan view of the improved snubbing spring element shown in Figures 1 and 2.

In said drawing, 10 and 11, respectively, indicate the usual top and bottom spring plates of a truck spring cluster and 12—12, the springs of said cluster. As is well known to those skilled in this art, the unit comprising the spring plates 10 and 11 and the springs 12 is interposed between the truck bolster and the spring plank of the railway car truck to yieldingly support the car body and sustain the load.

In the present disclosure, my improvements are illustrated in connection with a well-known type of truck spring cluster, composed of four spring units 12—12—12—12.

In carrying out my invention I provide broadly a volute spring member A having arms B and C extending from opposite ends of the same, the arm B being interposed between the upper end of one of the coil springs 12 of the truck spring cluster and the upper spring plate, and the arm C being interposed between the lower end of another coil spring 12 of the cluster and the bottom spring plate. The spring member A is formed from a flat strip of metal, preferably steel, which is coiled to provide a volute spring having a main body portion with the coils overlapping and in face to face contact with each other, as most

2

clearly shown in Figure 3. The body portion of the spring is of conical shape with the coils thereof overlapping. At the smaller end of the body portion of the spring, which end is indicated by 13, the same carries the arm B, which is integral with, and forms a continuation of, the end coil. At the larger end thereof, which is indicated at 14, the body portion has an outstanding arm C, which is integral with, and forms a continuation of, the corresponding end coil. The arm B extends upwardly from the main body portion at an inclination and has an enlarged platelike section 15 at the outer end thereof which extends at an angle to the inclined portion of the arm and is disposed substantially horizontally. The arm C extends downwardly from the main body portion at an inclination and has an enlarged platelike section 16 at the outer end thereof, which extends at an angle to the inclined portion of said arm. The main body portion of the volute spring A is disposed lengthwise between opposed pairs of coils of the four unit spring cluster, as shown in Figures 1 and 2, in horizontal position, and the platelike sections 15 and 16 of the upstanding and depending arms B and C of the spring are interposed respectively between the upper end of the rear, left hand coil of the cluster and the upper spring plate 10, and the lower end of the front, right hand coil of the cluster and the lower spring plate 11, as seen in Figure 1.

The operation of my improved snubbing means is as follows: Upon relative approach of the spring plates 10 and 11 and compression of the springs 12—12—12—12, the arms B and C of the volute spring member A, which bear on the top and bottom spring plates, respectively, will be moved one toward the other, thereby twisting or winding the coils of the volute spring. This winding action is opposed by the inherent resistance of the spring, and further, frictional resistance is produced between the coils thereof which slide on each other during the winding operation, thereby producing the desired snubbing action. Upon recoil of the springs 12—12—12—12 of the truck spring cluster, the volute spring A returns to its normal condition, as shown in Figure 1.

I claim:

1. A snubber for a railway car truck spring cluster provided with top and bottom spring plates, comprising a horizontally disposed coil spring interposed between said spring plates having lever arms at opposite ends thereof integral with the end coils, one of said arms having its outer end clamped between the top spring plate and the top of one of said springs of the

cluster and the other of said arms having its outer end clamped between the bottom spring plate and another of said springs of the cluster.

2. In a shock absorber, the combination with a cluster of vertically disposed coil springs; of top and bottom spring plates on which the springs bear, and a horizontally disposed volute spring interposed between said spring plates having lever arms integral with the end coils thereof and bearing on said spring follower plates respectively.

3. A snubber for a railway car truck spring cluster provided with top and bottom spring plates, comprising a horizontally disposed volute spring interposed between said spring plates having lever arms at opposite ends thereof integral with the end coils, one of said arms having its outer end clamped between the top spring plate and the top of one of said springs of the cluster and the other of said arms having its outer end clamped between the bottom spring plate and another of said springs of the cluster.

cluster and the other of said arms having its outer end clamped between the bottom spring plate and another of said springs of the cluster.

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