March 17, 1953 R. TUCK 2,631,873

OVERLOADING STABILIZER

Original Filed Aug. 12, 1947

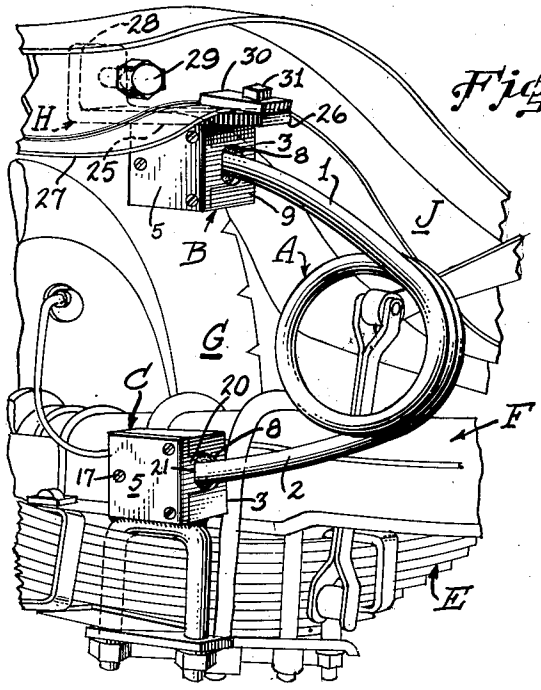


Fig. 1.

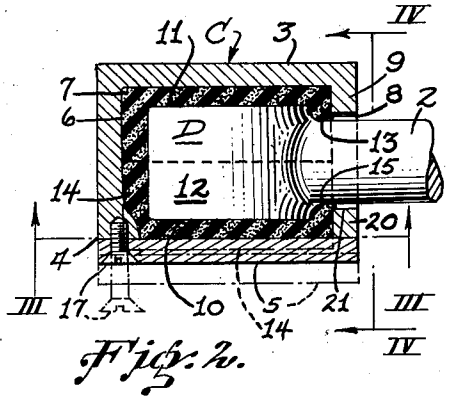
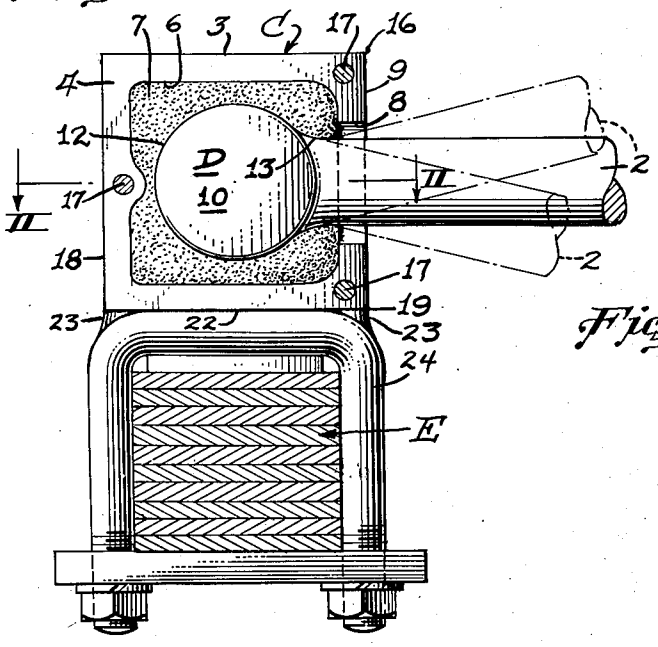


Fig. 2.

Fig. 3.



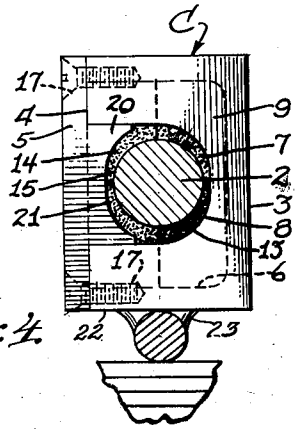


Fig. 4.

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Patented Mar. 17, 1953

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UNITED STATES PATENT OFFICE

2,631,873

OVERLOADING STABILIZER

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Continuation of abandoned application Serial No. 768,092, August 12, 1947. This application January 24, 1950, Serial No. 140,169

1 Claim. (Cl. 287—85)

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The present invention relates to improvements in an overloading stabilizer, and is a continuation of my copending application, Serial No. 768,092, filed August 12, 1947, now abandoned. It consists of the combinations, constructions and arrangement of parts hereinafter described and claimed.

An object of my invention is to provide an overloading stabilizer that is connectible between the vehicle body and the ground engaging wheel and moves freely with any action of the car so as not to interfere therewith. At the same time the device will provide additional strength and carrying capacity to the springs of the car.

A further object of my invention is to provide a device of the type described that does not reduce the road clearance because it is positioned above the wheel axles. The device functions as soon as the car springs are flexed and does not pick up the load after the springs have been flexed to a predetermined extent.

The device comprises a heavy coil spring with two integral arms that are connected to the vehicle body and the wheel assembly and move in a vertical plane. The free end of each arm is mounted in a rubber lined socket to cause the device to operate without any noise.

Other objects and advantages will appear in the following specification, and the novel features of the device will be particularly pointed out in the appended claim.

My invention is illustrated in the accompanying drawing forming a part of this application, in which:

Figure 1 is a perspective view of the device showing it operatively applied to the chassis and wheel assembly of a vehicle;

Figure 2 is an enlarged horizontal section through the lower spring arm and its mounting taken along the line II—II of Figure 3;

Figure 3 is a front elevation of Figure 2 with the cover plate removed and the lower spring arm in elevation, and is taken along the line III—III of Figure 2; and

Figure 4 is a transverse section taken along the line IV—IV of Figure 2.

While I have shown only the preferred form of my invention, it should be understood that various changes or modifications may be made within the scope of the appended claim without departing from the spirit and scope of the invention.

In carrying out my invention, I provide a stabilizing spring that has a large coil indicated at A, and integral upper and lower spring arms 1 and 2. Each arm is mounted in a spring hanger and these are shown at B and C in Figure 1. The lower spring hanger is shown in detail in Figures 2, 3 and 4, and it will now be described in detail.

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In Figure 2, the hanger C is shown in the shape of a box 3 with an open side 4 closed by a cover 5. Within the cavity 6 formed by the hanger box I mount a rubber socket 7 that extends half way across the width of the box. The half rubber socket lines the inner half of the box cavity 6. The hanger box has a slot 8 in its side wall 9 through which the end of the lower spring arm 2 extends. The arm has an integral cylindrical head D whose axis extends transversely to the longitudinal axis of the arm. The head has flat front and rear faces 10 and 11 respectively, and a cylindrical wall 12.

The inner half rubber socket 7 has a slot 13 that receives the adjacent part of the lower spring arm 2. After the lower arm is moved into place in the rubber half socket, an outer half socket of rubber 14 is mounted on the head D and is forced within the cavity 6. This outer half socket of rubber is also provided with a slot 15 that receives the adjacent portion of the lower arm 2, see Figure 2. In this way, the head D is entirely enclosed in a rubber mounting.

Before the cover 5 closes the open side 4 of the hanger box C, it will be noted that the two rubber socket halves 7 and 14 cause the outer socket half 14 to project beyond the open side a slight distance. This extension is indicated by the dot dash lines in Figure 2. The hanger box is preferably provided with three threaded bores for receiving cover-retaining screws 17. Figure 3 shows two of the bores placed at the corners 16 and 19 of the box and the third bore placed at the center of the box wall 18. I do not wish to be confined to this particular arrangement of the cover fastening means.

The cover 5 is shown in Figure 4 provided with a tongue 20 or extension that fits into the slot 8 in the side wall 9. The tongue 20 has a concave edge 21 that is spaced the same distance away from the lower spring arm 2 as is the inner end of the slot 8. I have found that when the slot 8 and concave edge 21 form an ellipse whose major axis extends in the direction of movement taken by the lower arm when it is flexed then the best support is provided by the two rubber half sockets to the head D. When the cover 5 is secured to the hanger box by the screws 17, the rubber half sockets will be compressed to tightly grip the head D and tend to keep it from rocking in the hanger.

The lower hanger C is secured to the mechanism connected to the vehicle wheel that is to be stabilized. The hanger may be connected to the rear axle housing of the vehicle or connected to the leaf spring supporting the housing. Reference to Figure 3 shows the housing with its under wall **22** welded at **23** to a U-bolt **24** that in turn is connected to the rear leaf spring E of the vehicle. The rear axle housing F (see Figure 1) is connected to the rear wheel G in the usual manner.

The upper hanger B is secured to the upper arm I in the same manner as explained for the lower hanger and lower arm. Like parts are given similar reference numerals. In the upper hanger, the upper wall **25** is welded to an angle member H. The member has a horizontal portion **26** underlying the lower flange **27** of the vehicle chassis frame J while the vertical portion **28** abuts the outer surface of the web of the channel J. A bolt **29** rigidly connects the angle member to the vehicle chassis.

Figure 1 further shows the horizontal portion **26** of the angle member H connected to a strap **30** by a bolt **31**, the strap overlying the lower flange of the channel J. The strap anchors the free end of the horizontal portion **26** to the flange **27**.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. Although I have described the device as being attached to the vehicle frame and to the rear wheel of the vehicle, it may be attached to the forward end of the chassis. Two devices may be provided for the rear wheels and another two for the front wheels if desired.

The device aids the vehicle springs in supporting the vehicle load and it does not have a contact point. The device does not interfere with the normal function of the vehicle springs, and

moves freely with any action of the car. The device acts as a stabilizer as well as a spring. Side sway is prevented and the device will act as a snubber.

I claim:

In a device of the type described, a hanger casing having an open side and a slot in one wall communicating with the interior of the casing, an arm extending through the slot and having a cylindrical head disposed within the casing, a rubber half-socket in the casing for supporting the head and having a slot for receiving a portion of the arm, a second rubber half-socket in the casing and cooperating with the first half-socket to enclose the head, the second half-socket having a slot for receiving a portion of the arm, and a cover for the open side of the casing and being securable to the casing for compressing the rubber half-sockets about the head, the cover having a tongue designed to enter a portion of the casing slot to aid in confining a portion of the second half-socket that extends across the slot.

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