

Aug. 9, 1938.

R. S. JONES

2,126,642

RIDE STABILIZER

Filed July 20, 1936

3 Sheets-Sheet 1

FIG-1.

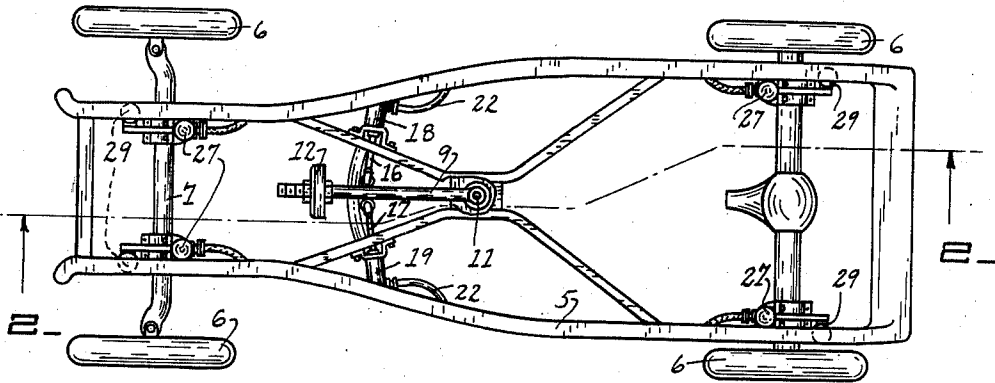
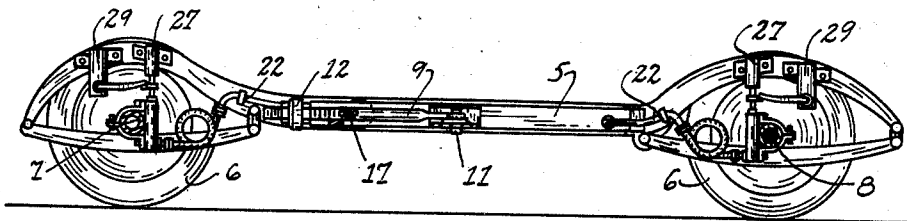


FIG-2.



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FIG-3.

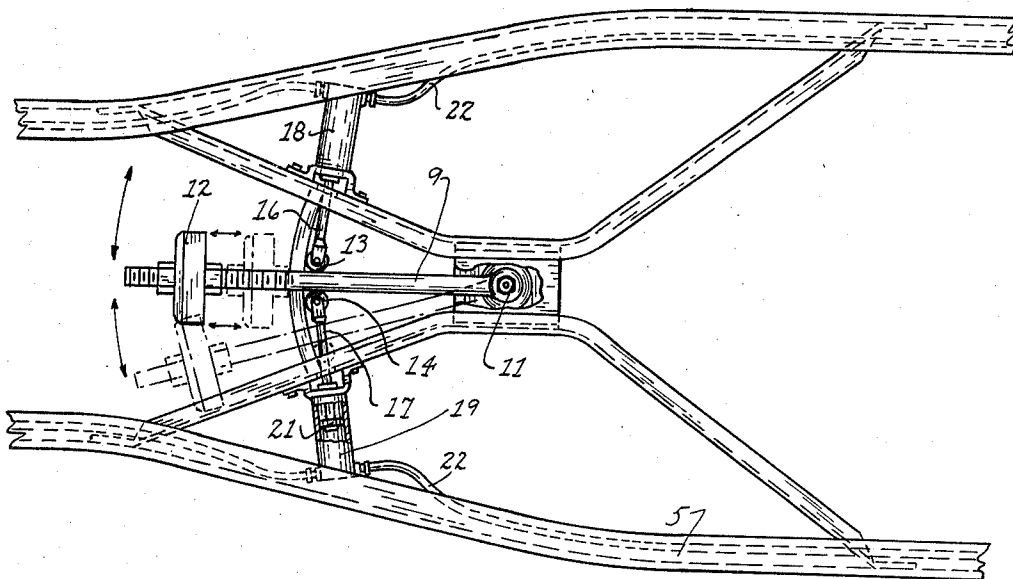
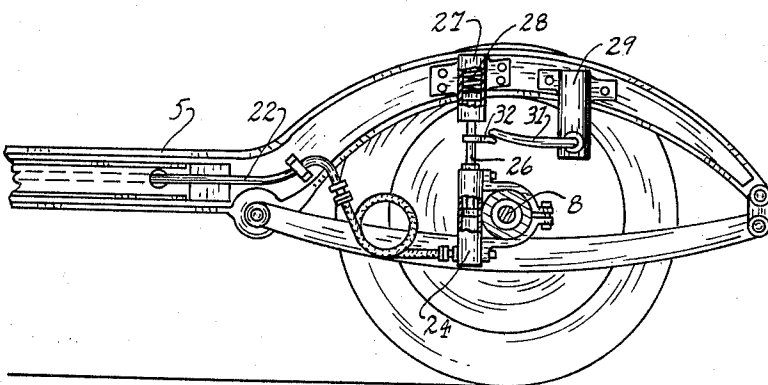


FIG- 4 -



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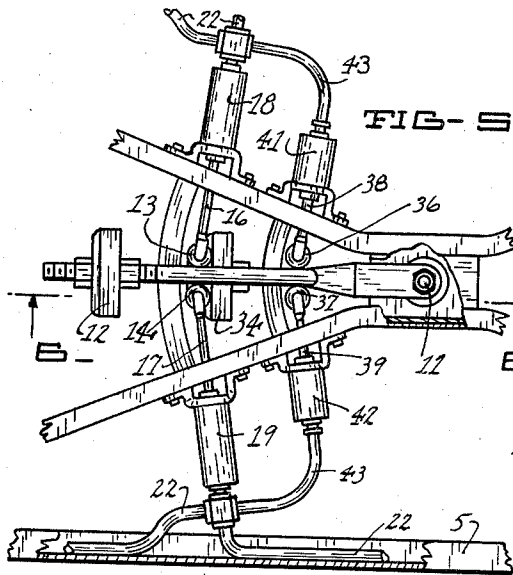


FIG. 5.

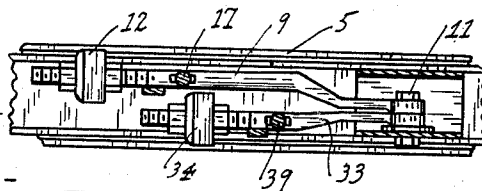


FIG. 6.

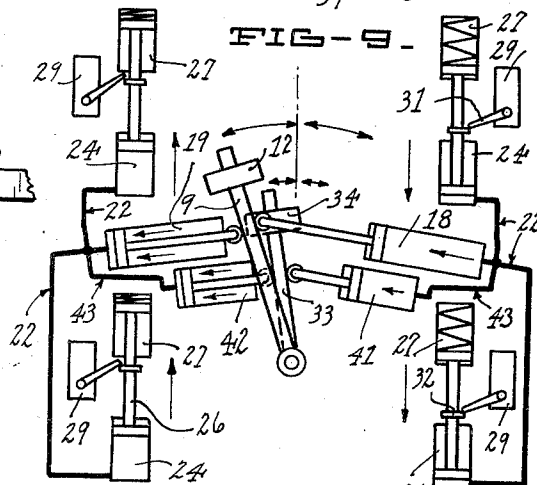


FIG. 8.

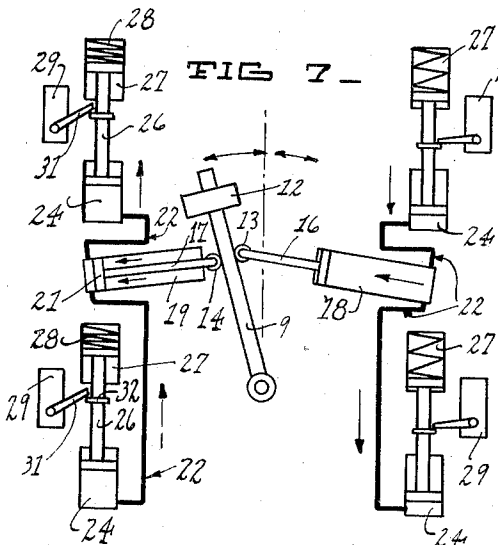


FIG. 7.

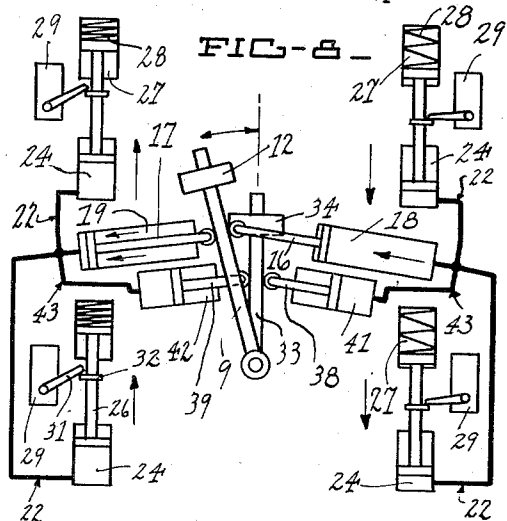


FIG. 9.

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2,126,642

RIDE STABILIZER

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Application July 20, 1936, Serial No. 91,609

2 Claims. (Cl. 280—112)

This invention relates to improvements in ride stabilizers and has particular reference to a device to prevent vehicles from leaning in rounding a curve.

6 A further object is to produce a device of this character which may be readily applied to any motor vehicle now on the market without materially altering its construction.

10 A further object is to produce a device which is automatic in its operation.

A further object is to produce a device which is simple in construction, employs well known principles, and is, therefore, free from trouble.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

20 Fig. 1 is a top plan view of a vehicle chassis having my invention applied thereto;

Fig. 2 is a cross sectional view taken on the line 2—2 of Fig. 1;

25 Fig. 3 is an enlarged detailed view of the controlling weight;

Fig. 4 is an enlarged detailed view of the shock absorber and fluid ram;

Fig. 5 is an enlarged detailed view with a modified form of the weight controlling mechanism;

30 Fig. 6 is a cross sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a schematic illustration of the operation of my device;

35 Fig. 8 is a schematic illustration of the modified form shown in Fig. 7 with only one of the weights in operation; and

Fig. 9 is a view similar to Fig. 8, showing both of the weights in operation.

40 A vehicle in rounding a curve tends to roll over and to skid, for the reason that the inertia tends to keep the vehicle in a straight path; and, therefore, in order to overcome this inertia, there is a drag away from the direction of travel due to the traction of the wheels; and as the upper portion of the vehicle has no traction, it tends to roll or lean to the outside of the curve.

45 I have, therefore, devised means whereby I can overcome this leaning tendency by elevating the side of the vehicle toward the outside of the curve, and at the same time depress the side of the vehicle toward the inside of the curve, thus exerting a load toward the wheels, which would otherwise be relieved of their tractive effort by the lifting effect of the body in rolling away from the 55 curve.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 5 designates the frame of a vehicle having the customary wheels 6 and a front axle 7, and a rear axle 8. These portions form no part of my invention.

My invention consists of pivotally mounting to the frame a bar 9, pivoted as at 11 and having an adjustable weight 12, mounted upon its free end. Abutting the opposite side of the bar 9 are rollers 13 and 14, each of which is connected to a piston rod, as shown at 16 and 17 respectively. These piston rods enter cylinders 18 and 19 respectively and carry pistons, such as shown at 21. Each of these cylinders 18 and 19 is connected through pipes 22 to cylinders 24, connected to both the front and rear axles. Each of the cylinders 24 has a piston slidable therein. Each piston is connected to a rod 26, which extends upwardly and enters a casing 27, within which is mounted a stiff spring 28. An ordinary shock absorber 29, mounted on the frame 5, has an arm 31 engaging a lug 32, mounted upon the rod 26. The tendency of the arm 31 is to press downwardly against the lug 32.

25 By viewing Fig. 1, it will be noted that the front cylinders 24 and the casing 27 are closer together than those at the rear of the vehicle. Therefore, the rear cylinders must exert more effort and should, therefore, be made slightly larger than those in the front to compensate for the difference in distance from the center line.

30 In the modified form shown in Fig. 5, I have added an auxiliary arm 33, which is pivoted as at 11, but shorter than the arm 9 and carrying a counter-weight 34. This arm 33 contacts rollers 36 and 37, which are in turn connected to piston rods 38 and 39 respectively, which piston rods enter cylinders 41 and 42 respectively, which cylinders correspond to the cylinders 18 and 19. Pipes 43 connect the cylinders 41 and 42 to the pipes 22.

45 The result of this construction is that when a device of this character is applied to a motor vehicle, as illustrated in Fig. 1, and the vehicle commences to round a curve toward the right, the weight 12 will swing toward the left, as shown in Fig. 7. This will force the piston 21 outward in the cylinder 19 and force liquid through the pipes 22 beneath the pistons in the cylinders 24, thus pressing upwardly against the spring 28 and against the tension of the shock absorber arms 31, thus raising the left side of the vehicle or the side toward the outside of the curve. At the same time, the downward pressure of the 55

shock absorber arms 31 on the right side of the vehicle will have caused the pistons in the cylinders 24 on the right side of the vehicle to descend, forcing the liquid therein through the pipes 22 on the right side and into the cylinder 18.

5 In the modified form shown in Fig. 5, the operation will be the same as illustrated in Fig. 8, and assuming that we are rounding a curve at a moderate speed. However, should a sharp
10 curve be encountered or a quick swerve occur, then both the weights 12 and 34 will function to exert additional forces to overcome the sudden swerving or curving action. In other words, in the modified form, the shorter lever 33 does not
15 function to any appreciable extent in rounding an ordinary curve, while the longer lever 9 does function as before described.

Thus it will be seen that I have produced a device which will perform all the objects above
20 set forth.

A modification of this invention may be made to prevent dipping in stopping or starting.

It is to be understood that the form of my
25 invention herewith shown and described is to be taken as a preferred example of the same and that various changes relative to the material, size, shape and arrangement of parts may be resorted to without departing from the spirit of

the invention or the scope of the subjoined claims.

Having thus described my invention, I claim:—

1. In a device of the character described, in combination with a vehicle chassis, of a lever 5 pivoted horizontally thereon, a weight carried by the free end of said lever, hydraulic cylinders positioned adjacent said lever, pistons mounted in said cylinders and actuated by the pivotal action of said lever, and remotely positioned cylinders connected to said first mentioned cylinders, said remotely positioned cylinders having
10 pistons therein, said pistons being resiliently connected to the body of said vehicle.

2. In a device of the character described, the
15 combination with a vehicle chassis, a pair of horizontal levers pivoted to said chassis at a point adjacent the medial line thereof, cylinders mounted on said vehicle and in alignment with said levers, pistons mounted in said cylinders, 20 piston rods connected to said pistons, rollers carried by said piston rods, said rollers engaging the opposite sides of said levers, and hydraulic means connecting said cylinders, with hydraulic rams remotely positioned thereto, said rams being
25 carried by the axles of said vehicle, the pistons of said ram being resiliently connected to the body of said vehicle.

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