

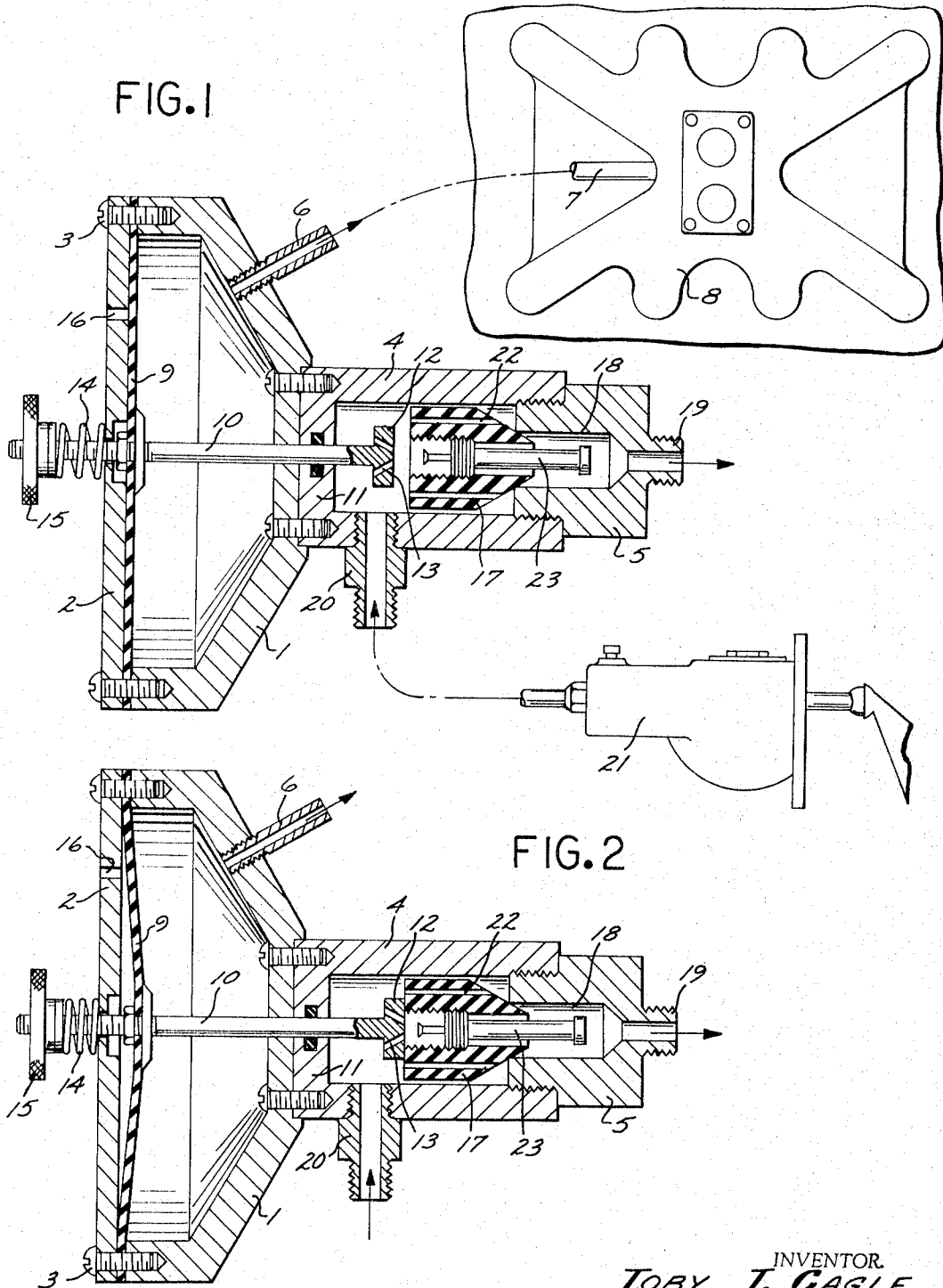
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T. T. CAGLE

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ANTICREEP DEVICE FOR A VEHICLE

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INVENTOR.
TOBY T. CAGLE
BY 
ATTORNEY

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ANTICREEP DEVICE FOR A VEHICLE

Toby T. Cagle, 9418 E. Park, Bellflower, Calif. 90706

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7 Claims. (Cl. 303-18)

This invention relates to an anticreep device or a brake holder for a vehicle and is an improvement on my Patent No. 3,174,808.

An object of my invention is to provide a novel anticreep device which is actuated by the amount of vacuum in the intake manifold of the vehicle. This invention further relates to an anticreep device where the vehicle is provided with an automatic transmission and will prevent the vehicle from moving forward at a slow speed when the engine is idling or revolving at relatively slow speeds, and when the vacuum in the intake manifold is at its maximum.

Another object of my invention is to provide an attachment mounted between the master brake cylinder and the vehicle brakes to retain a fixed amount of pressure in the brake lines, so that the brakes are held in contact with the brake drums with a predetermined pressure, thus preventing creeping or slow movement of the vehicle.

Another object of my invention is to provide an anticreep device of the character stated which will automatically release to permit free movement of the vehicle without a brake drag as soon as the engine is accelerated.

Another object of my invention resides in the simplicity in construction of the anticreep device, and also a novel means to release all pressure back to the master brake cylinder as soon as the engine is accelerated and the vacuum in the intake manifold is reduced.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

In the drawing:

FIGURE 1 is a vertical sectional view of my anticreep device with the parts shown in one position.

FIGURE 2 is a vertical sectional view of my anticreep device showing the parts in another operative position.

Referring more particularly to the drawing, the numeral 1 indicates an outer housing which is closed on one side by the wall 2, which is bolted to the housing 1 by the bolts or cap screws 3. A cylinder 4 is bolted or otherwise attached to the housing 1 on the side opposite the wall 2. The cylinder 4 has a nipple 5 attached to the outer end thereof, the purpose of which will be subsequently described.

A fitting 6 extends into the housing 1 by threading into the housing, or by other suitable attaching means. A tube or hose 7 extends from the intake manifold 8 of the engine to the fitting 6, and thus will draw a constant vacuum in the housing 1 depending upon the r.p.m. of the engine; that is, at low r.p.m., the vacuum in the housing 1 will be at its maximum. A diaphragm 9 is mounted inside of the housing 1 and bears against the inner surface of the wall 2 during the minimum pressures within the housing 1. A rod 10 is mounted on the diaphragm 9 and extends into the cylinder 4 through the inner wall 11 of that cylinder. A head 12 on the inner end of the rod 10 is provided with small ports 13 extending therethrough to permit passage of brake fluid from the master cylinder, as will be subsequently described. A coil spring 14 surrounds the rod 10 on the outside of the wall 2, subsequently as shown, and the tension of this spring can be adjusted by the adjusting nut 15 which is threaded onto the rod 10 and bears against the spring. The spring 14 will thus not only return the

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diaphragm 9 to the position shown in FIGURE 1, but it will also move the head 12 to a releasing position, as will be subsequently described. An air relief port 16 is provided in the wall 2 to release any air which might be entrapped back of the diaphragm 9.

A piston 17 is mounted within the cylinder 4 and moves in two directions in the cylinder, depending upon the action of the rod 10. The piston 17 in one position will seat against the bore 18 in the nipple 5, as shown in FIGURE 2, and is pressed into this seating position by the rod 10 as the diaphragm 9 is deflected by the vacuum in the intake manifold 8. This position is shown in FIGURE 2. The bore 18 in the nipple 5 is connected to the brake lines of the usual and well known type, and the brake lines are attached to the threaded tip 19 when the parts are all assembled. A brake hydraulic fluid fitting 20 extends into the cylinder 4 at one end thereof and brake fluid under pressure can be forced into the cylinder 4 when the master brake cylinder 21 is actuated by the driver. When the brakes are activated by the driver the engine will normally be moving at a relatively high r.p.m., which means that the vacuum is at its minimum. Consequently, the parts will be in the position shown in FIGURE 1; that is, the head 12 will be moved away from the piston 17 and, consequently, brake fluid under pressure will by-pass the piston 17 and move into the bore 18, and thence into the brake lines to actuate the brakes. To assist in moving the piston 17 off of its seat, ports 22 are provided through the piston 17 which will cause a pressure build up on one side of the piston to cause it to move away from its seat and thus permit the free flow of fluid into the brake lines. Also fluid flow is permitted through the spring valve 23, also termed a "Schrader" valve. This valve permits fluid flow from left to right, as shown in each of the drawings, but will check flow from right to left.

When vacuum pressure is at its maximum in the manifold 8 the diaphragm 9 will flex, as shown in FIGURE 2, thus pressing the head 12 against the piston 17 and seating that piston against the nipple 5. Hydraulic fluid under pressure can then flow through the ports 13 and thence through the valve 23 and into the brake lines. If pressure in the master cylinder 21 is reduced, then pressure in the brake lines will be maintained to keep the brakes engaged, since the fluid in these lines is trapped by the check valve 23 and, consequently, the vehicle will not creep. As soon as the vacuum in the manifold 8 is reduced, the diaphragm 9 returns to the position shown in FIGURE 1, whereupon the head 12 disengages the piston 17 and the piston then can move away from its seat and thus releasing pressure in the brake lines so that there is no drag of the brakes.

Having described my invention, I claim:

1. An anticreep device for a vehicle having a brake master cylinder, an intake manifold and brakes thereon, comprising, a housing, a flexible diaphragm in said housing, said housing having an intake port connected to the intake manifold, a cylinder mounted on the housing, a port in the cylinder connected to the master cylinder, said cylinder having a port at one end thereof connected to the brakes, a free floating piston in said cylinder, a seat in the cylinder engaged by the piston in one position of the parts, a check valve means in said piston permitting flow through the piston in one direction, and means on the diaphragm engageable with the piston to seat said piston on deflection of the diaphragm.

2. An anticreep device for a vehicle as recited in claim 1, and spring means connected to the diaphragm opposing the pull of vacuum in the intake manifold on said diaphragm.

3. An anticreep device for a vehicle as recited in claim 1, said means on the diaphragm comprising a rod projecting from the diaphragm, said rod engaging the piston to seat the same on flexure of the diaphragm.

4. An anticreep device for a vehicle as recited in claim 1, and spring means connected to the diaphragm opposing the pull of vacuum in the intake manifold on said diaphragm, said means on the diaphragm comprising a rod projecting from the diaphragm, said rod engaging the piston to seat the same on flexure of the diaphragm.

5. An anticreep device for a vehicle as recited in claim 1, said piston being positioned between the two ports in said cylinder.

6. An anticreep device for a vehicle as recited in claim

1, said piston having ports extending longitudinally therethrough.

7. An anticreep device for a vehicle as recited in claim 1, said piston being positioned between the two ports in said cylinder, said piston having ports extending longitudinally therethrough.

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MILTON BUCHLER, *Primary Examiner.*

J. J. McLAUGHLIN, *Assistant Examiner.*