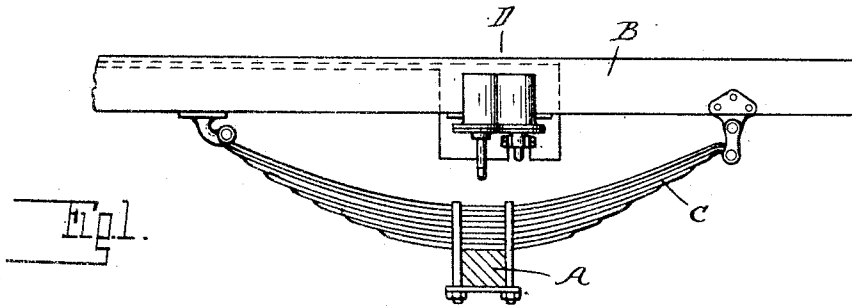
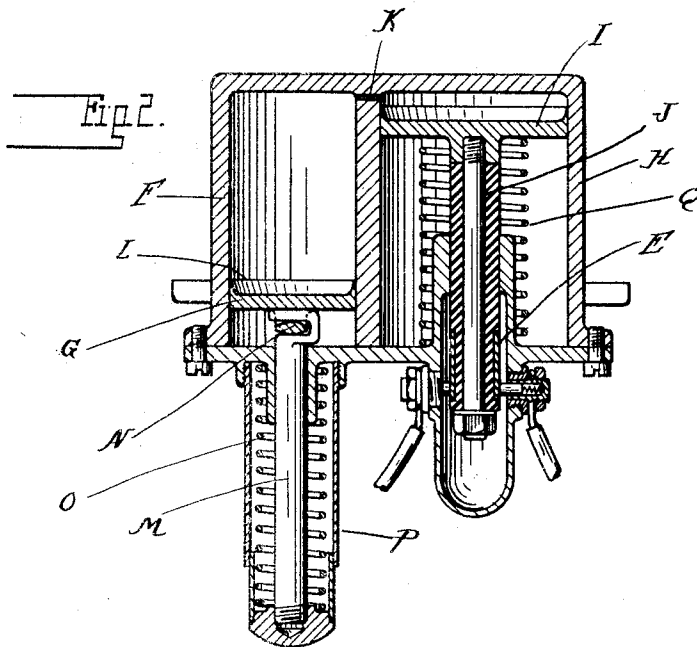


N. B. WALES.
 DEVICE FOR PREVENTING OVERLOADING OF TRUCKS.
 APPLICATION FILED JUNE 15, 1914.

1,206,953.

Patented Dec. 5, 1916.



Witnesses

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UNITED STATES PATENT OFFICE.

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DEVICE FOR PREVENTING OVERLOADING OF TRUCKS.

1,206,953.

Specification of Letters Patent.

Patented Dec. 5, 1916.

Application filed June 15, 1914. Serial No. 845,221.

To all whom it may concern:

Be it known that I, NATHANIEL B. WALES, a citizen of the United States of America, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Devices for Preventing Overloading of Trucks, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to automatic control devices for motor vehicles, and it is the particular object of the invention to prevent the overloading of the vehicle by rendering the motor inoperative when there is an overload.

To this end the invention comprises the novel construction of means for opening the ignition circuit or for rendering inoperative some other vital part of the motor when the load is abnormal.

In the drawings: Figure 1 is a side elevation of a portion of a motor truck to which my improved control device is applied; Fig. 2 is a longitudinal section through the controlling means.

A is the axle of a motor truck, B the frame and C one of the springs for resiliently supporting the frame upon the axle. D is the control device which, as shown, is located centrally above the spring C and is adapted to be operated by the depression of the frame under load. This control device comprises a circuit breaking switch E, which in normal position closes the ignition circuit, but when actuated by the depression of the frame is moved to open position where the circuit is broken. Inasmuch as there is always present more or less vertical oscillation or vibration of the springs in a traveling vehicle, it is necessary to avoid breaking the circuit through such oscillation where the vehicle is not overloaded. This I have accomplished by interposing between the member actuated by the depression of the frame and the electric switch means for eliminating the oscillations, so that only a permanent depression produced by overload will effect the opening of the switch.

As shown, F is a cylinder containing a piston G, the stem of which projects outward and extends in proximity to the spring C. H is a second cylinder containing a piston I on the stem J of which the movable

member of the electric switch E is mounted. Between the cylinders F and H is a restricted air connection passage K, which will permit air compressed by the piston G to slowly pass into the cylinder H, so as to equalize the pressures in the two cylinders. This will cause the displacement of the piston I by any permanent displacement of the piston G, but the oscillation of the piston G will not be communicated to the piston I, for the reason that the passage K restricts the flow of the air so that a longer time interval is required than the ordinary period of vibration of the supporting spring C. Thus it is only the permanent displacement of the piston G caused by an overload which will operate the piston I sufficiently to open the circuit closing switch E and therefore the control is only operated by an overload.

To prevent leakage of air the pistons G and I are preferably formed with knife edge flanges L which form sealing means operated by the pressure of the compressed air. The piston G is connected to its operating stem M by a rockable connection N so as to avoid transmitting any lateral stress to the piston and permitting the latter to be self alining. A spring O housed in a telescopic casing P surrounds the stem M and forms a means of returning the piston, while a spring Q in the cylinder H is the means of returning the piston I.

In operation, the truck may be loaded to the desired limit without affecting the control mechanism, although the vibrations of the spring may impart a vibratory movement to the piston G. A slight overload will displace the piston G to a point where the compressed air, after passing through the restricted connection K, will displace the piston I and open the electric switch.

What I claim as my invention is:—

1. In a motor vehicle, the combination with the axle and the frame resiliently, yieldably supported thereby, of means non-responsive to oscillations of the frame and operated by the relative movement of said frame and said axle under overload, for rendering the motor inoperative.

2. In a motor vehicle, the combination with the axle and the frame and a resiliently yieldable support for said frame upon said axle, of air compression means operated by an abnormal depression of said frame un-

der overload, a pneumatically operated motor control, and a connection between said air compression means and pneumatic operating means restricted to prevent operation by oscillations of the frame.

3. In a motor vehicle, the combination with the axle and frame, and a yieldably resilient support for the frame upon said axle, of an air compression cylinder, a piston in said cylinder operated by the abnormal depression of said frame through overload, a second cylinder and piston constituting a pneumatic motor for operating a motor control, and a connection between said cylinders for the passage of air from one to the other, said connection being restricted to prevent operation of the piston in the second cylinder by oscillations of the piston in the first cylinder.

4. A device for preventing overloading of vehicles, comprising a pair of cylinders, pistons therein, a rod for operating the piston in one cylinder actuated by the relative movement of the motor frame and axle, an electric switch operated by the piston in the second cylinder, and a restricted air passage connecting said cylinders.

5. A device for preventing overloading of vehicles, comprising a pair of cylinders having a restricted air passage connecting the same, pistons in said cylinders, a rod for actuating the piston in one of said cylinders operated by a relative movement of the vehicle frame and its supporting axle, and an electric switch for controlling the vehicle motor, operated by the movement of the piston in the second cylinder.

6. A device for preventing overloading of vehicles, comprising a pair of cylinders having a restricted air connection therebetween,

pistons in said cylinders, having knife edge flanges forming sealing rings, a rod for operating one of said pistons, an electric motor-controlling switch operated by the other of said pistons, and springs for returning said pistons to normal position.

7. In a motor vehicle, the combination with a frame, an axle and a spring for supporting said frame on said axle, of a casing secured to said frame comprising two cylinders having a connecting restricted passage, pistons in said cylinders, a rod connected to one of said pistons projecting downward into the path of said spring, a rod connected to the other of said pistons, and an electric circuit-controlling switch mounted on said latter rod, for the purpose described.

8. In a motor vehicle, the combination with the axle and the frame, yieldably supported thereon, of a cylinder, a piston therein operated by the depression of said frame, a second cylinder, a piston within said second cylinder adapted to control the operation of the motor, and a restricted connection between said cylinders.

9. In a motor vehicle, the combination with the axle and the frame, yieldably supported thereon, of means operated by the depression of said frame of comparatively long duration for rendering the motor inoperative, the operativeness of the motor being unaffected by the depression of the frame of comparatively short duration.

In testimony whereof I affix my signature in presence of two witnesses.

NATHANIEL B. WALES.

Witnesses:

JAMES P. BARRY,

HENRI E. BOWMAN.