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SAFETY DEVICE

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2 Sheets-Sheet 2

Fig. 2.

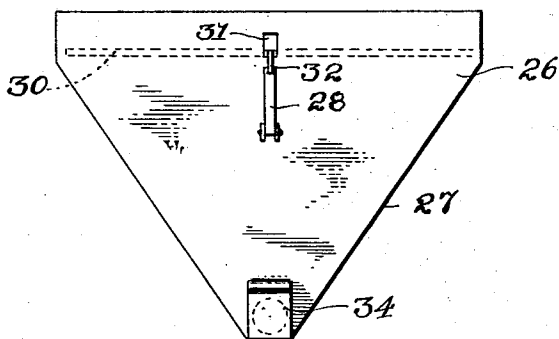


Fig. 3.

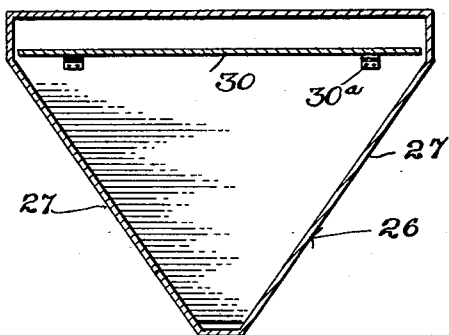
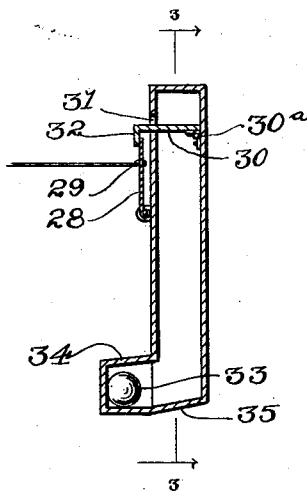


Fig. 4.



WITNESSES

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SAFETY DEVICE

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The present invention relates to valve control devices for use in connection with vehicles having a fuel feeding system.

Objects of the invention are to provide a device of the above character which will act automatically to prevent fire when the vehicle tilts laterally from the normal, and will prevent the flames from spreading should any occur in proximity to the vehicle or to the fuel system thereof.

A further object is to provide mechanism which will act automatically to cut off the supply of fuel under the above circumstances.

The invention consists in controlling the fuel system by valves normally closed under yieldable pressure means, and holding the same open by means under tension, the tension of which is released under the influence of fire and the abnormal lateral tilting of the vehicle.

Means may be provided for releasing the tension when the vehicle tilts abnormally and inflammable, fusible or heat affected means may be provided for effecting this when a fire occurs. This mechanical means may take the form of gravity operated mechanism as a latch released by the movement of a weighted member.

The accompanying drawings illustrate one embodiment of the invention in which drawings,

Figure 1 is a fragmentary representation of an automobile disclosing a fuel feed system therefor and an embodiment of the invention applied thereto,

Figure 2 is a detail of mechanism for releasing the restraining tension on the valve closing means,

Figure 3 is a vertical section through the device shown in Figure 2 on the line 3—3 of Figure 4, and

Figure 4 is a vertical section on the line 4—4 of Figure 3 at right angles to this section shown by Figure 3.

The mechanism to which the invention is applied may be in the nature of internal combustion engine cylinders arranged in a block, as shown at 10, to which fuel is supplied through a conduit 11 leading from a

supply tank 12 shown in the present drawings as in an upright position.

A still further conduit 13 may be provided leading from the main gasoline tank, not shown. These conduits are controlled by valves 14 and 15, respectively, which are normally closed under the influence of yieldable members, as the springs 16 and 17.

The valves may be opened by pull on the lever arms 18 and 19 against the influence of these springs. These valves, in the present invention, are held open by means of suitable holding means, as by the cords or cables 20 and 21 which may be connected at a point 22 to a common cord 23 attached to a suitable stationary member, as to the tank 12.

The tensioning of these cords may be improved by the provision of yieldable members, as springs 24, at some point in the length thereof, as between the lever arms 18 and 19, and the cords themselves. The cord may be extended in such a manner as to lie in all regions about the engine or other mechanism of the vehicle where fire is likely to occur.

The cord in the present instance is shown as extending forwardly from the valves past the manifolds of the engine where it is extended through the eye 25 of an eye bolt attached to the radiator of the engine. The cord is then extended rearwardly and connected to the tank 12 in a suitable manner.

The ramifications of this cord in the present showing are believed to be sufficient to illustrate the principles of the invention although it is to be understood that it may be criss-crossed or otherwise extended to bring a portion thereof in all localities where fire risk is great enough to make this desirable.

The member herein referred to variously as a cord or the like, is a line which falls within the usual acceptance of that term but also includes any other type of line which might be inflammable, fusible or heat ruptured of such a nature as to become ruptured upon the rise of temperature above a certain degree, allowing the valves 14 and 15 to close under the influence of the springs 16 and 17.

It not infrequently occurs that when a car is overturned that fires result and due to breaking of the conduits or other injury thereto, the gasoline flowing freely therefrom subjects persons imprisoned by the over-turned car to great risk of injury and danger of being burned to death before they can be extricated from the wrecked vehicle.

As a precaution in conditions of this character, I have constructed my safety device so as to automatically cut off the flow of fuel from the supply tanks when the vehicle has tilted beyond a certain angle of safety. As shown in the present illustration, I have selected this angle as that of 45° from the vertical, although it is to be understood that it is within the purview of this invention to select any other angle that experience may dictate.

The mechanism by which the cord 23 and consequently the cords 20 and 21 are permitted to slack, allowing the valves to close under the influence of the springs 16 and 17 is in the nature of a gravity operated latch mechanism to which the cord is attached and which will release the same when the vehicle has tilted beyond this predetermined angle.

This latch or release mechanism comprises a casing 26 having the sidewalls 27 thereof arranged at angles of 45° to the vertical. Pivoted to the front of this member is a hook 28 about which the cord may be looped, as at 29, and properly secured by a knot or otherwise. Within the casing is a holding member 30 which may be pivotally secured to the wall of the casing, as shown at 30^a, and projects through an aperture 31 in the front of the casing and is provided with a finger 32 adapted to hold the member 28 in an upright position when so set and so long as the vehicle does not tilt beyond a dangerous angle as predetermined.

Within the casing is provided a weighted member, as a ball 33, adapted to roll along the walls 27 and impinge against the member 30, causing it to release the member 28 permitting a disengagement of the cord 23 therefrom and permitting a slackening thereof with a consequent closing of the valves.

In order that the weighted member, which as stated above is in the present embodiment in the nature of a ball 33, may be prevented from being thrown accidentally against the member 30 due to violent vibrations of the vehicle, a forwardly projecting pocket 34 is provided at the bottom of the casing 26 in which the ball is automatically seated by the sloping bottom wall 35 when the vehicle is in an upright position. Under these circumstances any vibration of the machine will throw the ball against the walls of this pocket and not against the member 30, thereby maintaining the valves open under conditions of this character.

From the foregoing description it will ap-

pear that I have provided a device which will operate to prevent fire and to limit the same, when occurring, to small areas and to short duration by ingenious employment of cords and latch mechanisms connected with valves which automatically close when the tension on the said cords is diminished.

It is believed that the operation of the mechanism is apparent from the above description and further enlargement in this matter will, therefore, be dispensed with.

In conclusion, it is to be understood that various changes and adaptations of the mechanism as herein described may be made within the scope of the invention as hereinbefore set forth and hereinafter claimed.

Having described my invention, what I claim is:

1. A fire control device for vehicles having storage tanks for inflammable fluid fuel, valves controlling the flow of said fuel from said tanks, said control comprising means for normally holding said valves closed, and inflammable means for holding said valves open.

2. A fire control device for vehicles having storage tanks for inflammable fluid fuel, valves controlling the flow of said fuel from said tanks, said control comprising means for normally holding said valves closed, and an inflammable cord for holding said valves open.

3. In combination with the fuel feed system of an automobile having control valves, means normally closing said valves, and inflammable means for holding said valves open.

4. In combination with the fuel feed system of an automobile having valves for controlling the flow of fuel therethrough, means for yieldingly holding said valves closed, a heat rupturable cord attached at one end to said valves, a pivoted hook, said cord being releasably held by said hook, a latch for maintaining the hook in holding position, and means operable under the influence of canting the vehicle beyond a certain angle to the vertical for causing the latch to release the hook.

5. In combination with the fuel feed system of an automobile having valves for controlling the flow of fuel therethrough, means for yieldingly holding said valves closed, a heat rupturable cord attached at one end to said valves, a pivoted hook, said cord being releasably held by said hook, a latch for maintaining the hook in holding position, and gravity means operable under the influence of canting the vehicle beyond a certain angle to the vertical for causing the latch to release the hook.

6. A fire preventing device for vehicles having a fuel system controlled by a valve, said device including yieldable means for closing the valve, a heat rupturable cord

attached to the valve and means for tensioning the cord to hold the valve open, and means for releasing the tension on the cord to permit the valve to close, said last means being operable under influence of the canting of the vehicle.

7. A fire preventing device for valve controlled fuel systems of vehicles including means for holding the valves open, and means for automatically closing the valves when the holding means is released, said holding means including a heat rupturable cord attached at one end to the valves and latch mechanism attached to the other end for holding the cord under tension and gravity operated means for causing the release of the cord from the latch mechanism.

8. A fire control device for vehicles having storage tanks for inflammable fluid fuel, valves controlling the flow of said fuel from said tanks, said control comprising means for normally holding said valves closed, and heat rupturable means for holding said valves open.

9. A fire control device for vehicles having storage tanks for inflammable fluid fuel, valves controlling the flow of said fuel from said tanks, said control comprising means for normally holding said valves closed, and a heat rupturable line tensioned for holding said valves open.

10. The combination with a fuel feed system of an automobile having control valves, means normally closing said valves, and heat rupturable means tensioned for holding said valves open.

11. The combination of a vehicle, a fluid fuel conduit thereon, a valve in said conduit normally yieldingly closed, a latch, heat rupturable, tension means from the latch to the valve holding said valve open, and means initiated by an abnormal tilt of the vehicle to release the latch.

12. The combination of a vehicle, a fluid fuel conduit thereon, a valve in said conduit normally yieldingly closed, a latch, heat rupturable tension means from the latch to the valve holding said valve open, and means initiated by an abnormal lateral tilt of the vehicle to release the latch.

13. The combination of a vehicle, a fluid fuel conduit thereon, a valve in said conduit normally yieldingly closed, a latch, heat rupturable tension means from the latch to the valve holding said valve open, and a member actuated by gravity initiated by an abnormal lateral tilt of the vehicle to release the latch.

14. The combination with a vehicle, a fluid fuel conduit thereon, a valve in said conduit normally yieldingly closed, a latch, heat rupturable, tension means from the latch to the valve holding said valve open, a housing means within the housing for actuating the latch, and a member movable within the

housing for engaging against said member initiated by an abnormal lateral tilting of the vehicle.

15. The combination with a vehicle, a fluid fuel conduit thereon, a valve in said conduit normally yieldingly closed, a latch, tension means from the latch to the valve holding said valve open, a housing having inclined sides and a terminal pocket, a sphere mounted within the housing normally seated within the pocket, a member extending across the housing and connected with the latch, said member being in the path of movement of said sphere along said inclined sides when the vehicle is abnormally tilted laterally.

In testimony whereof I have signed my name to this specification.

CARL MUEHLEISEN.