

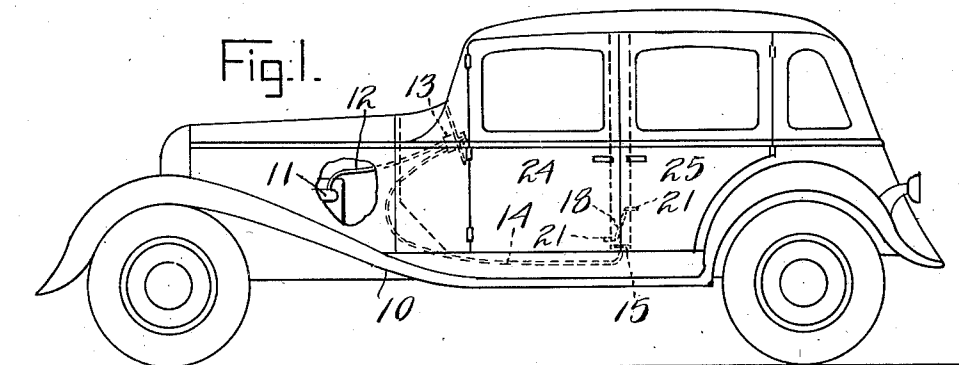
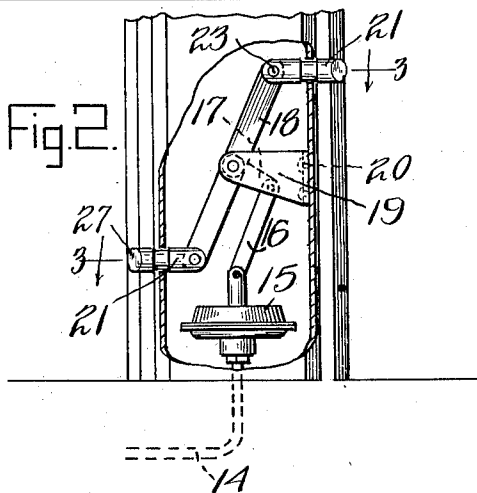
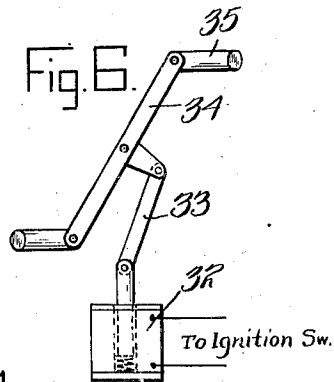
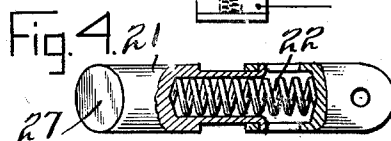
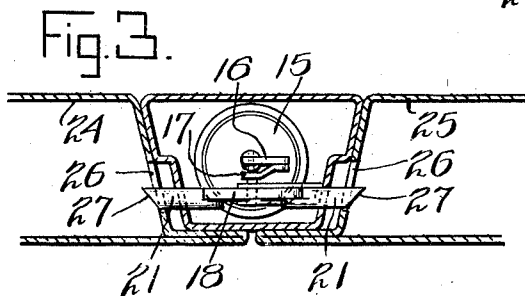
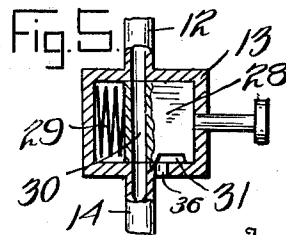
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2,115,643

SAFETY DEVICE FOR VEHICLE DOORS

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SAFETY DEVICE FOR VEHICLE DOORS

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2 Claims. (Cl. 180—82)

The purpose of the present invention is to provide safety devices for preventing the opening of vehicle doors while the vehicle is in motion. One of the most frequent causes of accidents to cars and injury to persons alighting from cars is the opening of the vehicle doors before the vehicle is stopped. These accidents are not infrequently due to passing motorists or to the open door being brought into engagement with a parked car. Persons are also frequently injured by being thrown as they alight from a moving vehicle. More specifically the present invention provides an automatic lock for the doors which is released only when the car is brought to a stop.

In addition to providing a safety device the invention seeks to provide a safety feature which is extremely simple, inexpensive and reliable in that there are few parts which can get out of order and fail to function when called upon.

Referring to the accompanying drawing which is made a part hereof and on which the same reference characters refer to the same part thruout,

Figure 1 is a side elevation of a motor vehicle of a conventional design having my invention incorporated therein,

Figure 2 is an enlarged detail view of the door fastening and releasing means,

Figure 3 is a section on line 3—3 of Figure 2,

Figure 4 is an enlarged detail view of the locking plunger,

Figure 5 is a detail view of a cut out switch, and

Figure 6 is a detail view similar to Figure 2 of a modified form of lock releasing means.

In the drawing numeral 10 indicates a conventional motor car and 11 the intake manifold to the engine. Pipes 12 and 14 extend from this intake manifold to a bellows 15. A cut out switch 13 is positioned in this suction to provide means for manually breaking the suction on the bellows created by the vacuum produced by the intake suction. A link 16 is pivotally attached to the inner side of the bellows and attached at its other end to an arm 17 on a member 18 which is pivotally mounted on a U shaped bracket 19 which latter is secured by bolts or rivets 20 to the body of the car. In the illustration given the device is designed to lock and release both the front and rear doors 24 and 25 respectively. Obviously it can be used to lock one door only when necessary. To the ends of the member 18 are pivotally attached plungers 21. These plungers are composed of two telescoping elements

which are urged apart by a spring 22. The outer end of the plunger engages in a recess 26 in the edge of the door to prevent opening of the door when the plunger is in locking position. The end of the plunger is beveled at 27 to permit closing of the door, the door forcing the outer end of the plunger in against the tension of the spring 22. The cut out switch 13 which is placed in the suction line 12, 14 permits the operator of the vehicle to break the suction and permit opening of the door without stopping the engine. This cut out switch consists of a plunger 28 which normally is in the position shown in Figure 5, being urged to this position by spring 29. When in this position the bore 30 connects pipes 12 and 14 to subject the bellows to the engine suction. When the plunger is pushed in it cuts off pipe 12 and port 31 opens pipe 14 to atmosphere thru opening 36 so that the bellows is relieved of the suction and the tension of the bellows withdraws the locking plungers for permitting the doors to be opened. The bellows are made of spring metal so that as soon as the suction is relieved it will spring out and rock the member 18 to withdraw the plungers.

The operation of the device should be apparent from the description given. So long as the engine is running there will be suction created in the lines 12 and 14 which is transmitted to the bellows causing the bellows to hold the plungers in locking position. These plungers do not in any way affect the regular door latches. They merely make it impossible to open the doors while the engine is running. As soon as the engine stops the suction is relieved and the doors may be opened in the usual way.

The operator of the vehicle may wish to allow some one in the vehicle to get out without actually stopping the engine. He may do this by operating the plunger 28. Under such circumstances there will be no danger since the vehicle will be under the control of the operator.

In the modified form shown in Figure 6 the plungers are operated by a solenoid 32 which is in circuit with the ignition to the engine. A link 33 is pivotally connected with a rock lever 34 which lever carries plungers 35 pivotally attached to its ends. So long as the engine is running the solenoid will be energized and the plungers held in door locking position. As soon as the circuit is broken the plungers are automatically withdrawn.

It will be obvious to those skilled in the art that many changes may be made in the invention without departing from the spirit thereof. I,

therefore, do not limit myself to the specific showing in the drawing nor the description in the specification but only as set forth in the appended claims.

5 What I claim is:

1. A safety device for motor vehicles comprising means for holding the vehicle doors locked when the engine of the vehicle is running and for releasing the locking means when the engine is
10 stopped, said means comprising a locking plunger movable to engage in a recess in the edge of the door to be locked and having resilient means for withdrawing it from locking position, said resilient means including a bellows having its interior
15 subject to the engine suction to move the locking plunger to locking position and hold it there as long as the engine is running.

2. The combination with the body of a vehicle having doors thereon, of a safety lock for the

doors comprising a bracket mounted on the said body, a lever pivotally mounted on the bracket, a plunger slidable in the body and engageable with the doors to lock the doors, a chamber having an element movable under change of pressure in the chamber, a connection between said
5 element and the said lever, a connection from the interior of the said chamber for subjecting it to the suction of the motor of the vehicle, means for biasing said element in a direction to unlock
10 the said plunger when the suction in the chamber is broken and for yielding under the suction to permit locking of the plunger when a partial vacuum is created in the said chamber, whereby the
15 said doors will be locked whenever the motor is running and will have the said locking means released automatically when the motor stops.

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