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W. P. DORL

CHECKSTRAP FOR DOORS

Filed Oct. 6, 1920

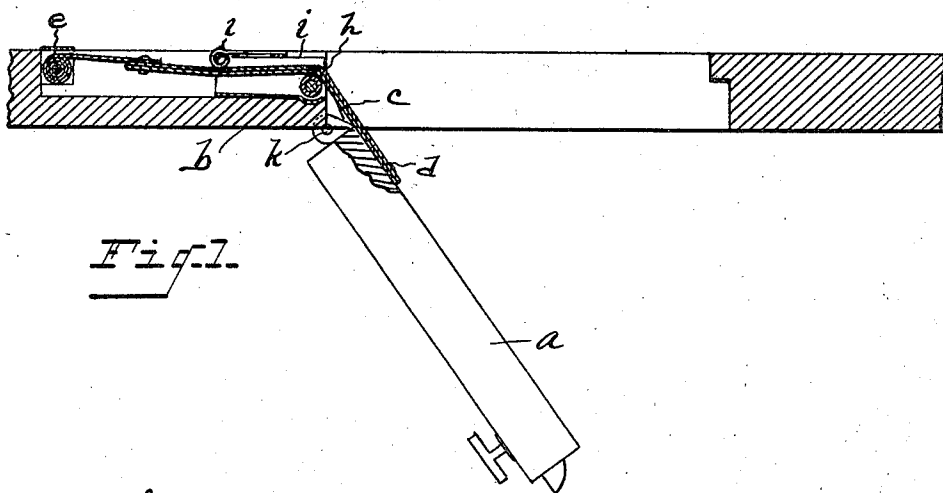


Fig. 1.

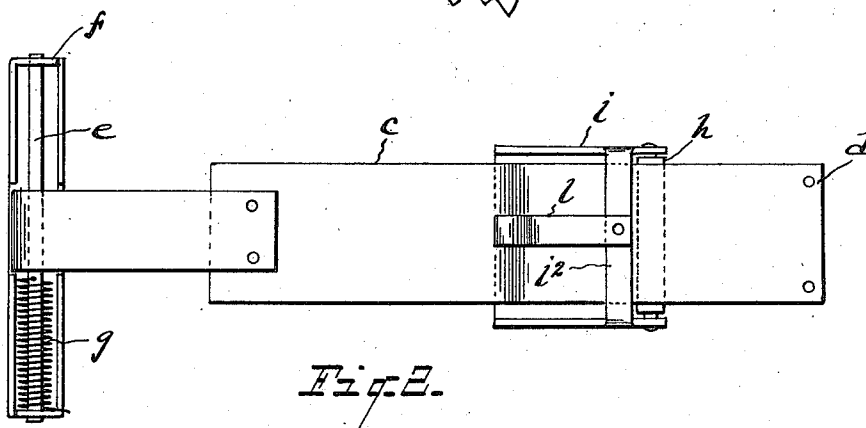


Fig. 2.

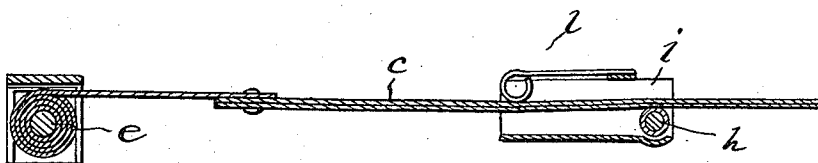


Fig. 3.

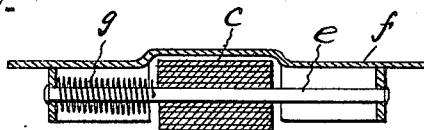


Fig. 4.

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WALTER P. DORL, OF DETROIT, MICHIGAN, ASSIGNOR TO DOOR CONTROL COMPANY,
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CHECKSTRAP FOR DOORS.

Application filed October 6, 1920. Serial No. 415,135.

To all whom it may concern:

Be it known that I, WALTER P. DORL, citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Checkstraps for Doors, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to improvements in swinging doors and particularly to doors for automobile closed bodies, or other similar vehicles. More particularly, the object is to provide a door check adapted to limit the outward swinging movement of the door. This check comprises a strap, one end of which is attached to the door, the other end secured to the jamb to which the door is hinged. This strap limits the outward swinging movement of the door and upon the closing of the door is withdrawn within the jamb so as to be completely hidden from view.

Means are provided whereby the strap will be retracted within the jamb upon the closing of the door at any position to which it may have been opened for admitting or disembarking of passengers from the vehicle.

In the drawings,—

Figure 1 is a plan view of a door hinged to a section of a jamb, showing my device in position, the body of the vehicle from which the door is swung being in section.

Fig. 2 is an elevation of my device.

Fig. 3 is a side view.

Fig. 4 is a vertical sectional view showing the strap, spindle and actuating spring in elevation and that portion of the strap down about the spindle in cross section.

Let *a* indicate a swinging door pivoted to the side wall or jamb *b* of the body of a vehicle, such as an automobile. This jamb is cut away, as shown in Fig. 1, to receive my device therein. The lining of the body is adapted to cover this recess so that the device will not be exposed to view.

I provide a flexible member or strap *c* one end of which is secured to the door, as indicated at *d*, and the other end of which is resiliently attached to the jamb within a provided recess in such jamb, in such a manner that when the door is opened the strap is

withdrawn from the jamb until it arrives at a predetermined position where its withdrawal is completely arrested. With the closing of the door the strap is retracted by means of the resilient connection it makes with the jamb. Means are provided, however, to prevent retraction of the strap and closing of the door without the interposition of outside force to close the door.

The object is to permit the door to stand in an open position without being held in such position, while ensuring that the strap will be withdrawn within the jamb when the door is closed. The end of the strap opposite the end attached to the door is secured to a spring-actuated spindle *e* carried by a casing *f*, which casing is adapted to be secured to the jamb by means of screws passed thru its extended ends, or in other convenient manner. The spindle is held under rotary tension by means of an encircling spiral spring *g*, one end of which is secured to the spindle and the other end to the supporting casing in such a manner that the spindle will be rotated to wind the strap around the same, thereby retracting the strap within the jamb. As a matter of convenience, a section of strap of lesser width is shown as being secured to the spindle and fastened on the wider strap which is secured to the door. However, this serves no necessary purpose.

The strap, as it passes over the edge of the jamb, rides over a roller *h* carried by a plate *i* which is secured to the jamb. The roller *h*, as shown, is carried in a bead formed in the casing and merely serves as a friction member for the strap to ride over.

It will be seen that in the operation of this device, when the door is opened the strap *c* will be withdrawn from the jamb until completely unwound from the spindle, providing the door is opened sufficiently to completely unwind the strap and that this will provide a limit to which the door can be opened. This limitation of the opening of the door is essential to protect the hinge *k* by means of which the door is pivoted to the jamb. When the door is closed the strap will be retracted, due to the action of the spring on the spindle pulley *e* and the strap wound around such spindle. It is the intention to provide a spring of such tension around the spindle that it will not retract the strap and close the door. However, to en-

sure against such occurrence, I provide a friction member in the form of a flat spring *l* secured to the casing *i* by being fastened to a cross-piece *z*² on such casing.

5 This friction member is in the form of a flat spring adapted to frictionally engage such strap, bearing resiliently thereupon so as to resist the retraction of the strap. It will be apparent that the friction applied by
10 the spring member *l* is intended merely to resist the retraction of the strap in such a manner as to prevent its retracting and closing the door while permitting the strap to be retracted when the door is closed.

15 What I claim is:

1. In combination with a swinging door and the jamb to which the same is hinged, a flexible strap one end of which is secured to the door, the other end of which is secured
20 to a spindle so as to be wound therearound when the spindle is rotated in one direction, such spindle carried by the jamb and mounted for rotation, spring means encircling such spindle and so connected therewith and
25 with the jamb as to maintain the spindle under rotary tension tending to revolve the same in a direction to retract the strap when the door is closed, the tension of such spring, however, being insufficient to retract the
30 strap and close the door.

2. In combination with a swinging door and the jamb to which the same is hinged, a flexible strap one end of which is secured to the door, the other end of which is resiliently
35 secured to the jamb in such a manner that the strap will yield outwardly with the opening of the door and be retracted within the jamb with the closing of the door, means for yieldingly and frictionally engaging
40 such strap in such a manner as to resist its retraction sufficiently to prevent its retracting and closing the door, but insufficient to prevent its retraction when the door is closed.

45 3. In combination with a swinging door and the jamb to which the same is pivoted, a flexible strap one end of which is secured to the door, the other end of which is received within a provided recess in the jamb, a spindle pulley mounted within said recess in the
50 jamb for rotation, means for exerting rotary tension on such pulley, the end of such strap opposite the end secured to the door secured to such pulley so as to be wound therearound

when the door is closed, the outward swinging movement of the door adapted to be limited by the unwinding of the strap from around the pulley, frictional means for engaging such strap in such manner as to prevent its retracting and closing the door, but
60 adapted to permit the retraction of the strap when the door is closed.

4. In combination with a swinging door and the jamb to which the same is pivoted, a flexible check strap one end of which is secured to the door the other end of which is secured to the jamb, a spindle carried by one of said members and mounted for rotation and to which spindle one end of the strap is secured in such a manner as to be wound
70 therearound as the spindle is rotated, means for maintaining rotary tension on said spindle tending to rotate the same in the direction required to wind the check strap therearound and close the door, a friction bearing member so positioned as to yieldingly
75 bear on said strap so as to resist its travel in the closing of the door, said parts so constructed and arranged that the tension on said strap will be insufficient to retract the
80 strap and close the door from an open position but sufficient to retract the strap when the door is closed by the application of external force.

5. In combination with a swinging door
85 and a jamb to which the same is pivoted, a flexible check strap secured at one end to the door and at the other end to the jamb, resilient connecting means securing at least one end of said strap to the member to which it
90 is fastened in such a manner that the strap will be withdrawn under tension in the opening of the door and which connecting means will exert tension on the strap tending to retract the same and close the door,
95 and means yieldingly and frictionally engaging said strap to overcome the tension exerted thereon by said resilient connecting means sufficiently to prevent retraction of the strap thereby and consequent closing of
100 the door but which frictional engagement is insufficient to prevent retraction of the strap by some resilient connecting means when the door is closed by the application of external force.

In testimony whereof I sign this specification.

WALTER P. DORL.