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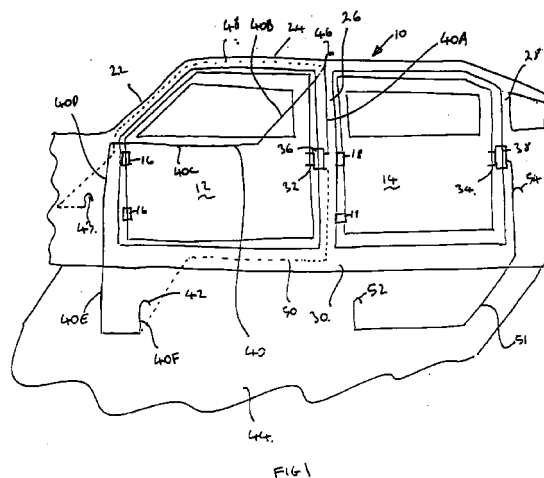
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(54) **A vehicle door latching assembly**

(57) A vehicle (10) having a passenger door (12,14) secured to a body (20) of the vehicle by means of a striker (32,34) located on the passenger door, the striker being engageable with a latch (36,38) located on the vehicle body. The mechanical cable (40) operating the latch is able to extend from the latch to a handle via a door post on the vehicle body rather than the passenger door, the door post being an inherently stronger portion of the vehicle and therefore less susceptible to side impact damage.



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Description

[0001] The present invention relates to a latching device for a vehicle door.

[0002] Vehicle passenger doors are currently provided with a latch situated midway up the rear side of the door. When the door is closed, the latch engages with a striker positioned on the door post such that the door is fixed in a closed position, until the latch is released from the striker when a door handle is operated.

[0003] Cars are specifically designed with front and rear crumple zones to absorb a substantial amount of an impact to the car body. A passenger, which term is to be understood as including a driver, in the car is protected from the accident, however, by a rigid safety cell formed by the passenger compartment. The strength of the safety cell is very much dependant on the doors remaining in their closed position when an impact occurs either to the side, or to either end of the car.

[0004] As, in current vehicles, the latch is located on the rear edge of passenger door, the mechanical connection eg. cable connected to the latch, to provide operation thereof, travels within the passenger door. This portion of the vehicle, i.e. the passenger door, is inherently weaker than main vehicle body and, as a result, a side impact to the passenger door may damage or deform the mechanical cable and thus operate the latch, causing the passenger door to, at least partially, open during the impact.

[0005] The present invention seeks to alleviate aforementioned problems by providing a vehicle door latching assembly wherein a latch is provided on a door post which is engageable with a striker located on the edge of a passenger door. In this event, mechanical cable routing to the latch is able to travel via the door post rather than along the passenger door. The door post being an inherently stronger portion of a vehicle body than the door and therefore, less prone to damage as a result of side impact.

[0006] The mechanical cable routing may travel from the latch inboard of the passenger vehicle, connecting to an interior door handle mounted on a separate area within the vehicle, on, for example, a central console within the vehicle. Alternatively, the mechanical cable routing may travel upwards from the latch, via the vehicle roof. Both of these routes are less prone to side impact damage and, as a result, the passenger door is more likely to remain closed during an impact.

[0007] An exterior handle, operating the latch, may be provided on the door post. A further handle may be provided on the passenger door itself to pull the door to a closed position though not to unlatch the latch.

[0008] Preferably, the striker located on the rear edge of the passenger door is operably mounted relative to a side intrusion beam of the door such that, in the event of a side impact to the vehicle, the striker takes the majority of the impact force.

[0009] An embodiment of the present invention will now be described in detail, with reference to the accompanying drawings wherein:

[0010] Figure 1 is an isometric schematic cutaway view of a passenger vehicle having latching assemblies in accordance with the present invention.

[0011] Referring to the figure there is shown an isometric cutaway view of a passenger vehicle 10 viewed from the inside of the vehicle looking outwards. The passenger vehicle includes a front door 12 and a rear door 14 each hinged by a respective hinges 16 and 18 to vehicle body 20. Vehicle body 20 includes an A post 22, a roof 24, a B post 26 a C post 28 and a sill 30. Mounted on the rear edges of doors 12 and 14 are strikers 32 and 34 respectively. Striker 32 engages with front door latch 36 which is mounted at a mid portion of the B post 26. Striker 34 engages with a rear door latch 38 mounted on C post 28.

[0012] Striker 32 in conjunction with front door latch 36 releasably secures the front door 12 in a closed position and striker 34 in conjunction with rear door latch 38 releasably secures the rear door 14 in a closed position.

[0013] A mechanical connection in the form of a bowden cable 40 connects front door latch 36 to front door handle 42. Front door handle 42 is conveniently located on a central consul (not shown) mounted between the front driver's seat and the front passenger seat. The routing of the bowden cable from the latch is initially upwards (40A) through the B post 26, then laterally (40B) of the vehicle proximal and under the roof to a mid point of the roof, then forwards (40C) to the vehicle front windscreen (not shown), then across the windscreen (40D) and down (40E) to the vehicle floor 44 then up (40F) to the front door handle 42.

[0014] Where the bowden cable 40 meets the roof 24 there is provided a front door outside handle 46.

[0015] Operation of either the front door inside handle 42 or front door outside handle 46 operates the latch to release the striker and allow the front door 12 to open.

[0016] The chain dotted line 48 shows an alternative route for a mechanical connection between front door latch 36 and alternative front door inside handle 43. In this case the mechanical connection again runs up the B post 26 but then runs along the edge of the roof 24, down the A post 22 across the vehicle instrument consul (on a right hand drive vehicle) to front door inside handle 43.

[0017] The chain dotted line 50 shows a further alternative route for a mechanical connection between the front door latch 36 and the front door inside handle 42. In this case the mechanical runs down the B post to the sill, forwards along the sill and then laterally of the vehicle to the front inside door handle 42.

[0018] The rear door has a similar arrangement of hinges, striker and door latch but in this case a mechanical routing from the rear door latch 38 to the rear door inside handle 52 is down C post 28 to the sill 30 then lat-

erally of the vehicle between the rear seats (not shown) and the vehicle floor 44 to a mid point of the vehicle then forwards to rear door inside handle 52 which is situated midway across the vehicle in front of the rear seat (not shown). In this case a rear door outside handle 54 is provided partway along bowden cable 51 to enable the rear door to be opened from the outside.

[0019] As can be appreciated the invention lies in providing the latch on a solid structure of the vehicle body and providing a striker on the door.

[0020] Advantageously, the means to operate the latch is protected by rigid structure of the vehicle body eg. A post 22, B post 26, C post 28, or sill 30, or is positioned in areas that are less likely to receive damage such as adjacent the roof or inboard of the vehicle.

[0021] With reference to figure 1 the invention has been described having mechanical connections between a door latch and a door unlatching handle though in the event that the door latch is power operable it is equally applicable to provide the power source eg. electrical cables, pneumatic lines etc in similar routes such that they are protected or less susceptible to damage.

[0022] Reference to "passenger door" throughout this specification is to include all vehicle doors that are mounted on the vehicle body adjacent to a seat for a passenger or a driver of the vehicle.

[0023] In this case the latches 36 and 38 are also capable of locking the door, and the latch is connected to unlocking means, such as an interior lock/unlock button mounted on a stationary internal component of the vehicle or an exterior key barrel mounted on a stationary external component of the vehicle via a lock/unlock connection. Parts of the lock/unlock connection can be provided in, for example, an A part, or a B part, or a C part, or a sill, or can be provided proximal a roof of the vehicle.

Claims

1. A vehicle having a vehicle body and a passenger door pivotably movable about a substantially vertical axis relative to the vehicle body and being releasably securable in a closed position relative to the vehicle body by means of a latch located on the vehicle body, the latch being engageable with a striker located on the door and being connected to a latch release means via a release connection, in which the release means is an inside release handle mounted on a stationary internal component of the vehicle and being accessible by an occupant of the vehicle.
2. A vehicle having a vehicle body and a passenger door pivotably movable about a substantial vertical axis relative to the vehicle body and being releasably securable in a closed position relative to the vehicle body by means of a latch located on the vehicle body, the latch being engageable with a striker located on the door and being connected to a latch release means via a release connection in which the release means is an outside release handle mounted on a stationary external component of the vehicle and being accessible from outside of the vehicle by a person wishing to open the door.
3. A vehicle as defined in claim 2 in which the outside release handle is situated on an A post or B post or C post of the vehicle body.
4. A vehicle as defined in claim 2 in which the outside release handle is situated on a roof of the vehicle body.
5. A vehicle as defined in any preceding claim in which the passenger door is pivotable about hinges to move between an open and closed position.
6. A vehicle as defined in any preceding claims in which the substantially vertical axis is located at a front portion of the door.
7. A vehicle as defined in any preceding claim in which the latch is secured on a door post such as an A post or B post or C post of the vehicle.
8. A vehicle as defined in any preceding claim in which the release connection is a mechanical connection.
9. A vehicle as defined in claim 8 in which the mechanical connection is a bowden cable.
10. A vehicle as defined in any one of claims 1 to 7 in which the release connection is an electrical connection.
11. A vehicle as defined in any one of claims 1 to 7 in which the release connection is pneumatic line.
12. A vehicle as defined in any preceding claim in which a part of the release connection is protected by at least one of an A post, a B post, a C post and a sill of the vehicle body.
13. A vehicle as defined in any preceding claim in which a part of the release connection route is proximal a roof of the vehicle body.
14. A vehicle as defined in any preceding claim in which a part of the release connection route is directed towards a central portion of the vehicle.
15. A vehicle as defined in any preceding claim in which the latch is a power operable latch.

16. A vehicle as defined in any preceding claim in which the door includes an external door opening handle.
17. A vehicle as defined in any preceding claim in which the door includes an internal door closing handle.
18. A vehicle as defined in any preceding claim in which the passenger door is adjacent passenger seat capable of facing forwards relative to the vehicle.

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