May 15, 1962 S. D. COCKBURN ET AL 3,034,818

DOOR LATCH SAFETY INTERLOCK

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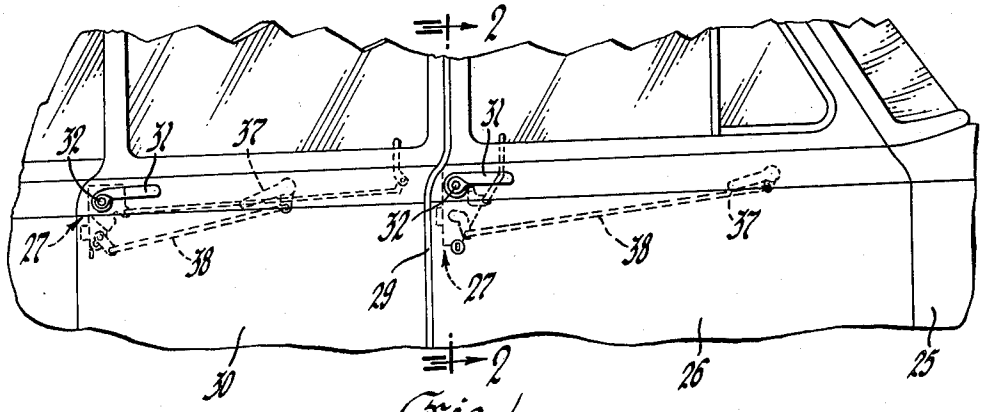


Fig. 1.

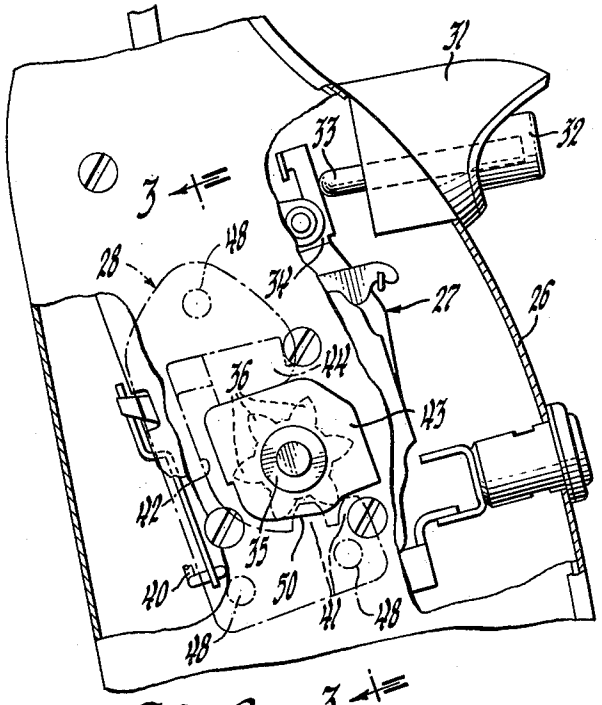


Fig. 2.

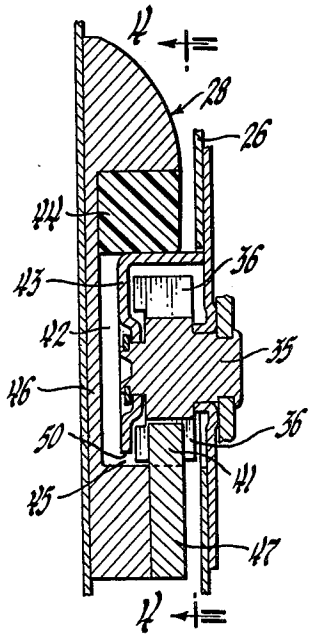


Fig. 3.

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DOOR LATCH SAFETY INTERLOCK

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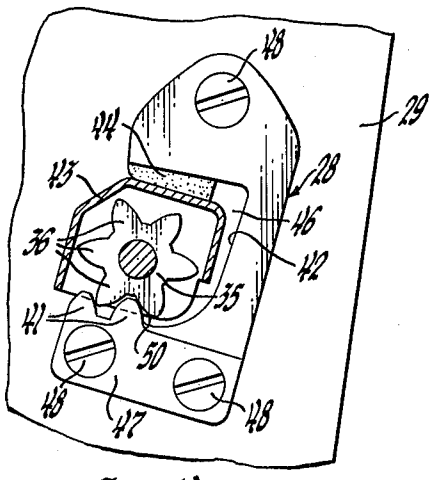


Fig. 4.

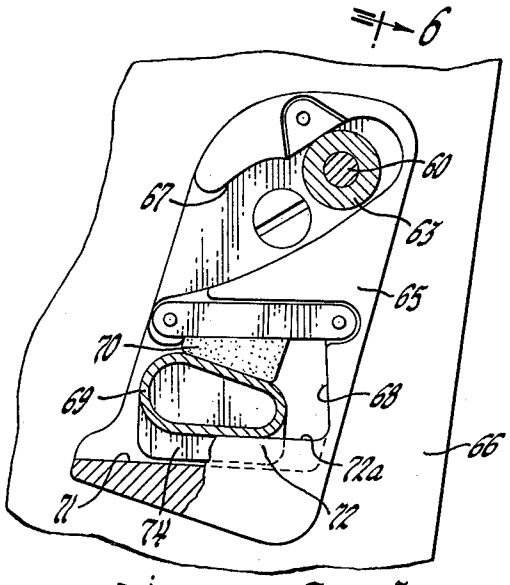


Fig. 5.

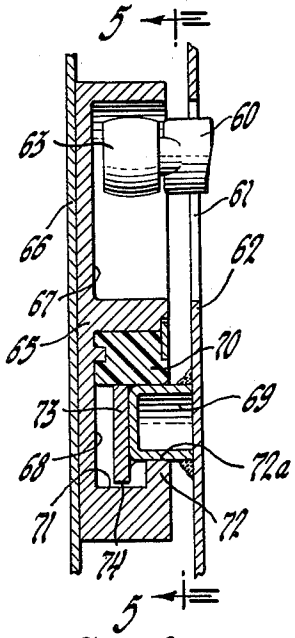


Fig. 6.

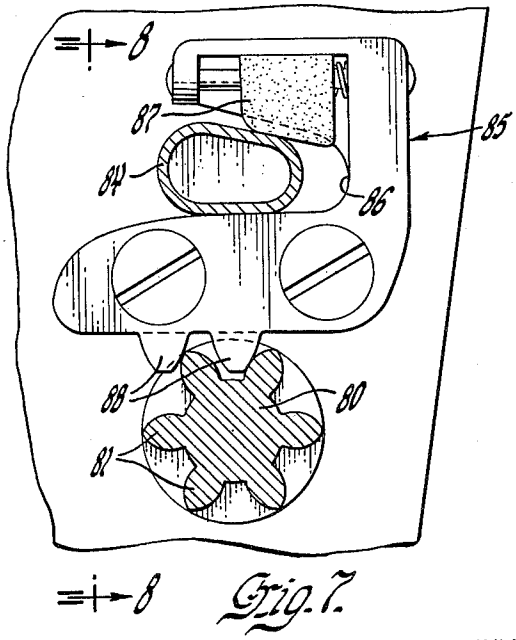


Fig. 7.

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DOOR LATCH SAFETY INTERLOCK

Filed Dec. 30, 1954 5 Sheets-Sheet 3

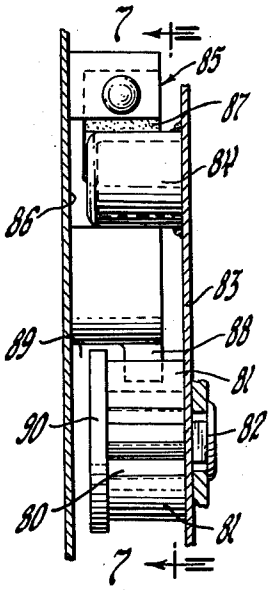


Fig. 8.

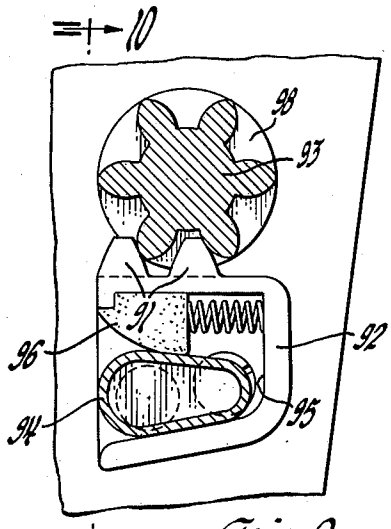


Fig. 9.

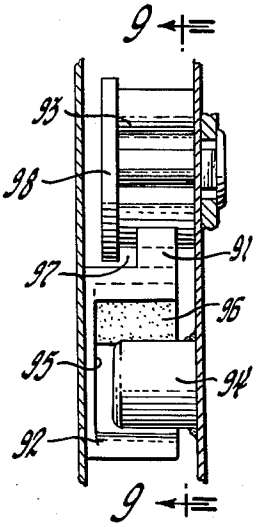


Fig. 10.

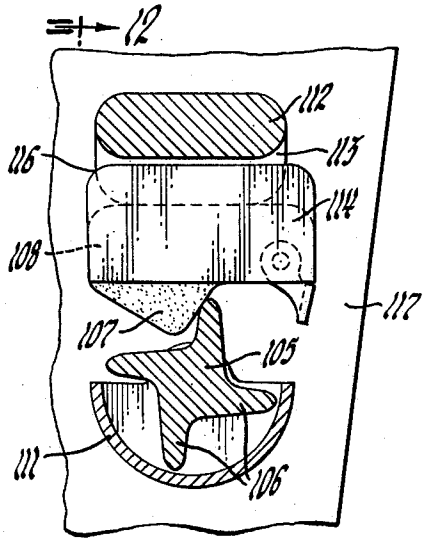


Fig. 11.

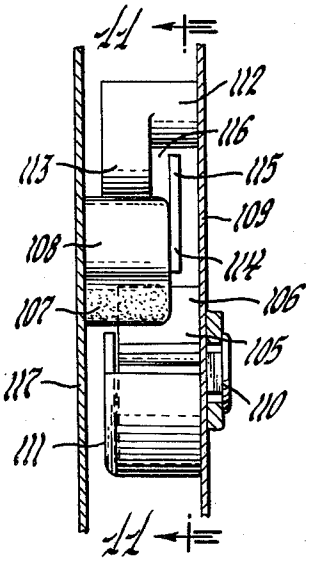


Fig. 12.

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DOOR LATCH SAFETY INTERLOCK

Filed Dec. 30, 1954 5 Sheets-Sheet 4

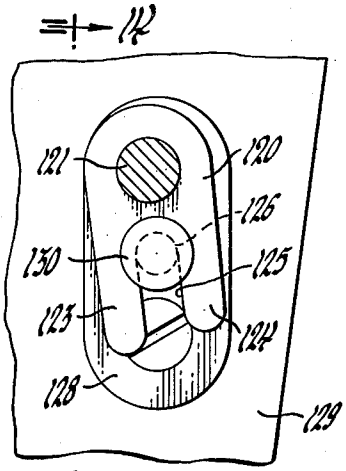


Fig. 13.

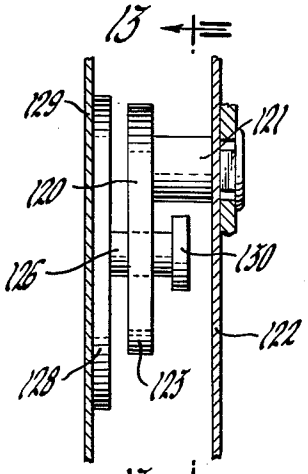


Fig. 14.

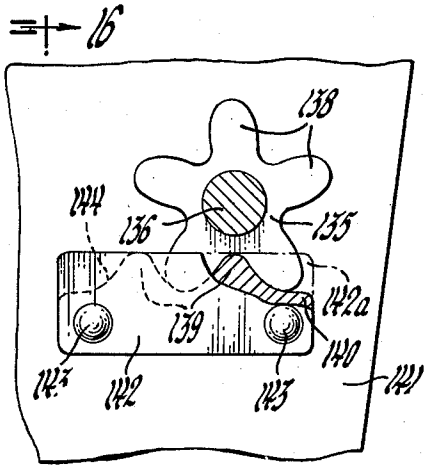


Fig. 15.

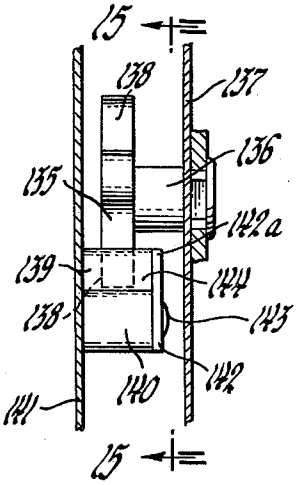


Fig. 16.

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DOOR LATCH SAFETY INTERLOCK

Filed Dec. 30, 1954 5 Sheets-Sheet 5

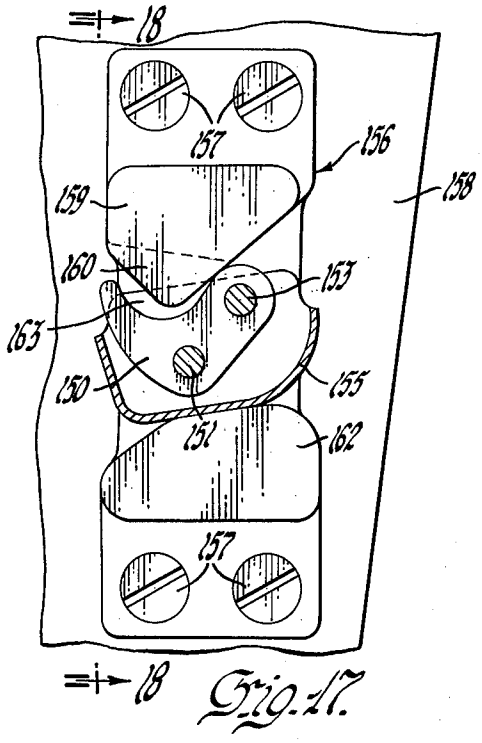


Fig. 17.

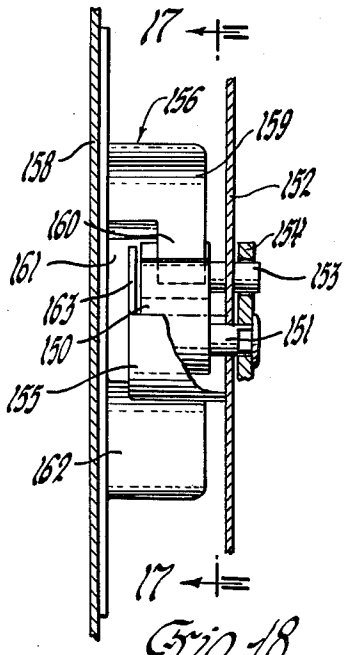


Fig. 18

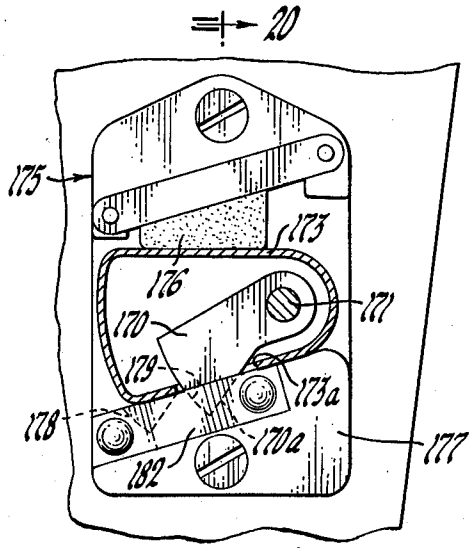


Fig. 19.

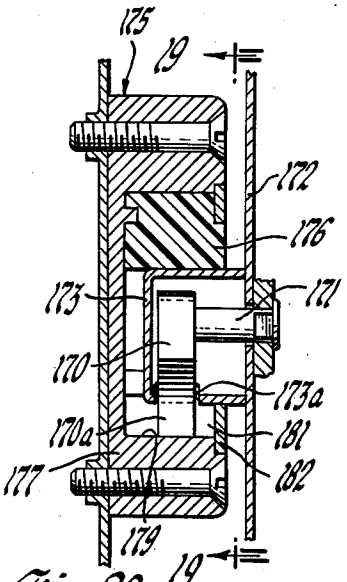


Fig. 20.

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United States Patent Office 3,034,818 Patented May 15, 1962

3,034,818

DOOR LATCH SAFETY INTERLOCK

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Filed Dec. 30, 1954, Ser. No. 478,766
14 Claims. (Cl. 292—280)

This invention relates to a door latch safety interlock, and more particularly to a safety interlock for an automobile door.

Most automobiles use door latches having pivoted bolts projecting from the free or swinging edge of the door and adapted to engage striker members on the body to hold the door latched. The bolt holds the door latched against outward swinging movement, and the bolt in combination with a dovetail or wedging device holds the door against vertical movement with reference to the striker. However, there is no interlock between the bolt and striker to prevent the bolt from moving away from the striker in directions longitudinal of the automobile body. Movement of this nature may occur in the event of a collision where the body or frame might be twisted, and if the door moves in this manner relative to the body a distance of the order of three-eights of an inch, the engagement or overlap between the bolt and striker may be lost, in which event the door will fly open.

This invention provides improved safety interlock means for preventing the bolt from being forced away from the striker in directions longitudinal of the automobile body and thus for preventing the door from flying open in the event of a collision. In various illustrated embodiments of the invention, the interlock is shown as being between the striker teeth and the bolt housing, the dovetail slot and the dovetail wedge, or the striker teeth and the bolt.

While it is old to provide a device in an automobile door for preventing the bolt from being pulled away from the striker in directions longitudinal of the body, in all devices of this type known to us the interlocking means have cooperating portions on the door and on the body which normally are wedged or jammed together when the door is closed. In consequence of this wedging or jamming construction, it has been impossible as a practical matter to use such devices in mass production of automobiles because permissible production tolerances include such variations that it would be impossible in many cases to close the door were these close fitting, wedging devices used. According to our invention, the cooperating interlocking portions on the door and body are normally spaced apart when the door is closed but are adapted to abut to prevent the bolt from being forced away from the striker upon relative movement between the door and body in directions longitudinal of the door and body. This results in a practical device for use in mass produced automobile bodies where differences in the location of the parts within the range of normal production tolerances will not cause the parts to jam or prevent the door from closing. Furthermore, since the interlocking parts are normally spaced apart, no rattle problem is presented.

Additional features and advantages of the invention will be apparent from the following description and from the drawings, in which:

FIG. 1 is a fragmentary side elevation of an automobile body having the improved door latch safety interlock;

FIG. 2 is an enlarged fragmentary view along a portion of the free edge of one of the doors of the automobile, being taken along the line 2—2 of FIG. 1;

FIG. 3 is a transverse vertical section through the latch when the door is closed, being taken along the line 3—3 of FIG. 2;

FIG. 4 is a section taken along the line 4—4 of FIG. 3;

FIG. 5 is a view showing a modified or second form of the invention, wherein a safety interlock is applied to a lift bolt latch;

FIG. 6 is a section taken along the line 6—6 of FIG. 5;

FIG. 7 is a view showing a third form of the invention, wherein a safety interlock is applied to a so-called gear-under-wedge rotary bolt type latch;

FIG. 8 is a section taken along the line 8—8 of FIG. 7;

FIG. 9 is a view showing a fourth form of the invention, wherein a safety interlock is applied to a so-called gear-over-wedge rotary bolt type latch;

FIG. 10 is a section taken along the line 10—10 of FIG. 9;

FIG. 11 is a view showing a fifth form of the invention, wherein a safety interlock is applied to another form of rotary bolt type latch;

FIG. 12 is a section taken along the line 12—12 of FIG. 11;

FIG. 13 is a view showing a sixth form of the invention, showing the safety interlock applied to a pivoted fork or yoke type bolt;

FIG. 14 is a section taken along the line 14—14 of FIG. 13;

FIG. 15 is a view showing the safety interlock applied to another form of rotary gear type latch;

FIG. 16 is a section taken along the line 16—16 of FIG. 15;

FIG. 17 is a view showing an eighth form of the invention, showing a safety interlock applied to a cam bolt type latch;

FIG. 18 is a section taken along the line 18—18 of FIG. 17;

FIG. 19 is a view showing a ninth form of the invention wherein a safety interlock is applied to a pivoted latch bolt; and

FIG. 20 is a section taken along the line 20—20 of FIG. 19.

Referring now more particularly to the drawings, FIGS. 1–4 show a safety interlock applied to a rotary bolt type door latch which is well known in commerce and which is of the type disclosed in patent application Serial No. 392,266, filed November 16, 1953, now Patent No. 2,871,049 issued on January 27, 1959. As shown in FIG. 1, an automobile body 25 has a front door 26 which is hingedly mounted at its front edge on the body and which, on its free edge, carries a latch indicated generally at 27. This latch cooperates with a striker 28 mounted on a body pillar 29. A rear door 30 is hinged to the pillar 29 and has a similar latch 27 adapted to engage a keeper on the body of the automobile.

While any known type of actuating means for each door latch may be utilized, FIGS. 1 and 2 show a stationary outer door handle 31 carrying a push button 32 with a push rod 33 abutting an operating lever 34 which is pivoted on the latch frame. In order to open the door from the outside, the push button is pressed, pivoting the lever 34 and causing the bolt 35, which is in the form of a gear having teeth 36, to be released for free rotation so that the door can be opened by means of the outside handle 31. An inside turn handle 37 is connected to the latch through a rod 38, and the door may be unlatched by operating this handle from inside the car.

When the door is latched, the bolt is held against rotation by a detent member in a manner well understood in the art, and the door is held closed by engagement of the bolt teeth 36 with teeth 41 on the striker 28. The outer one of the striker teeth provides a safety catch and the inner one of these teeth provides a final locking catch. As shown in FIGS. 2 and 4, the striker 28 is generally C-shaped having a recess 42 for the reception of the bolt

38 and its housing 43, which housing substantially encases the bolt but is open at its lower side to allow the bolt teeth to project out of the housing.

At the top of the recess 42 there is a sliding shoe or wedge block 44 which is of conventional construction and operation, being backed by a spring (not shown) which urges it outwardly. When the door is closed, the wedge block 44 jams against the flat top surface of the housing 43 to form a dovetail device, the door being wedged against the striker between the block 44 and the striker teeth 41.

The teeth 41 are not as wide as the striker body so that there is a channel 45 (see FIG. 3) between the rear face of the teeth and a web 46 which extends across the back of the striker. As shown in FIGS. 3 and 4, the striker teeth 41 may be (and preferably are) formed on a separate steel insert 47 rather than being formed integrally on the striker body. The insert 47, which is secured by bolts 48 to the striker body, provides advantages in that it permits an easy means of forming a striker with a channel 45 behind the teeth; but the principal advantage of using a separate insert is that the teeth 41 may be made of hard but less brittle material than the body of the striker, which generally is die cast. Also, if the teeth wear away or break during use, the insert 47 can easily be replaced without the expense of replacing the entire striker.

In this embodiment of the invention, the interlock is between the striker teeth and the bolt housing. The lower portion of the outer wall of the bolt housing 43 is formed as a flange 50 which extends down below the top surface of the striker teeth 41, thus, in combination with said teeth, forming interlocking means which are adapted to but to prevent the bolt 35 from being forced away from the striker upon relative movement between the door and the automobile body in directions longitudinal of the body. It should be noted that the flange 50 of the bolt housing is spaced inwardly away from the teeth 41 when the door is closed, as shown in FIG. 3, so that this flange will not strike the teeth 41 when the door is closed, even though there is considerable misalignment in the hanging of the door due to normal mass production manufacturing tolerances and variations. Furthermore, since the flange 50 is spaced from the teeth 41, it presents no problem of rattling when the car is driven over bumpy roads. However, if the car should become involved in a collision, and particularly a collision in which the car is struck at one of its corners so that a twisting force on the body or frame tends to pull the teeth of the bolt away from the striker teeth 41 in directions longitudinal of the car body, the flange 50 will move into abutting engagement with the teeth 41 and hold the door latched. The rear door latch may be provided with a similar interlock device.

FIGS. 5 and 6 shows a modified form of the invention in which an interlock is applied to a so-called lift bolt type latch of the type shown and described in Leslie et al. Patent 2,641,495, which issued on June 9, 1953. In this embodiment of the invention, the interlock is between the dovetail slot and the dovetail wedge. In this latch there is a pivoted bolt 60 which projects through a slot 61 in the end wall 62 of the door. The bolt is pivoted about a horizontal axis for vertical swinging movement between latched and unlatched positions, and at its free end the bolt carries a roller 63 which is engaged by the striker as the door is shut to cam the bolt to its latched position.

The striker 65 is secured to a portion 66 of the automobile body, and in its upper area the striker has an obliquely arranged slot 67 for receiving the bolt 60 when the door is shut and for camming the bolt in an upward direction from unlatched to latched position. In the lower portion of the striker there is a generally horizontal slot 68 for receiving a dovetail wedge member 69 which projects from the edge wall 62 of the door a couple of inches below the bolt. In the upper side of the dovetail slot 68 there is mounted a conventional spring-pressed sliding shoe 70 which bears against the top surface of the wedge block 69 so that the wedge block is jammed in the slot 68 to provide a dovetail support for the door.

Along the bottom of the dovetail slot 68 there is formed a channel 71, the keeper having an upstanding flange 72 forming the outside wall of said channel. The top surface 72*a* of this flange engages the bottom surface of the dovetail wedge 69 when the door is closed. An interlock member 73 is welded to the outer surface of the wedge 69, the member 73 having a flange 74 which depends below the lower surface of the wedge block 69 and which is received in the channel 71 when the door is closed. As shown in FIG. 6, the flange 74 is spaced from the flange 72 and from all other parts of the striker so that it will not cause the door to jam in the event of misalignment or mislocation of the door, the latch or the striker, and will not result in any rattle. If the body is subjected to a twisting force tending to pull the bolt longitudinally away from the striker, flange 74 will abut flange 72 and prevent the bolt from being pulled away from the striker to provide a safety interlock.

FIGS. 7 and 8 show another modification wherein the invention is applied to a so-called gear-under-wedge type of rotary bolt latch. Latches of this type are well known in the art. In this embodiment, the interlock is between the striker teeth and the bolt.

In this form of the invention, the bolt 80 is in the form of a gear having a plurality of peripheral teeth 81. The bolt is mounted on a pin 82 projecting from the edge wall 83 of an automobile door. A couple of inches above the bolt a dovetail wedge 84 projects from the edge wall 83 of the door.

The striker 85 is generally C-shaped, having a center slot 86 for wedgingly receiving the dovetail member 84 which is clamped between the lower surface of the slot and a sliding shoe 87 in the upper portion of the slot. The striker teeth 88 which engage the bolt teeth 81 to hold the door latched project downwardly from the lower surface of the striker. Thus, the door is held against vertical movement by the dovetail wedge 84 and the cooperating bolt and striker teeth 81, 88.

As shown in FIG. 8, there is a channel 89 in back of the striker teeth 88. On the outer face of the gear bolt 80 there is a disk 90 having substantially the same diameter as the greatest diameter of the gear, that is, the diameter of the gear measured across opposite teeth thereof. While it is not necessary that the disk 90 be fully as large in diameter as the gear, it is necessary that it be of such diameter that it overlaps the striker teeth 88 when the door is closed. With the door closed, a portion of the periphery of the disk 90 is located in the channel 89 back of the striker teeth 88. While normally the disk is spaced from the teeth 88 and from the rest of the striker to permit proper closing of the door in the event of production variations, the disk is so located that together with the inner surface of the striker teeth, it provides interlocking means for preventing the bolt 80 from being forced away from the striker in directions longitudinal of the body of the automobile.

FIGS. 9 and 10 show another modification of the device in which the interlock is applied to a commonly known so-called gear-over-wedge rotary bolt type latch. This device is generally similar to the form shown in FIGS. 7 and 8, except that in FIGS. 7 and 8 the striker teeth 88 project downwardly from the lower surface of the striker body 85, whereas in FIGS. 9 and 10 the striker teeth 91 project upwardly from the upper surface of the striker body 92. In this form of the invention, the rotary bolt 93 is located a couple of inches above the dovetail wedge block 94 so that when the bolt 93 rides over the striker teeth 91, the wedge block 94 enters a dovetail slot 95 in the striker, being jammed therein between a spring-pressed sliding shoe 96 and the bottom surface of the keeper slot.

The interlock is between the striker teeth and the bolt. The striker teeth **91** are shallower than the body of the keeper so that a channel **97** is formed back of the teeth **91** for the reception of the peripheral edge of a disk **98** secured to the outer face of the slot **93**. The operation is similar to the operation of FIGS. 7 and 8. When the door is closed, a portion of the edge of the disk **98** enters the recess **97** behind the striker teeth **91**. The disk is normally spaced from the teeth and from the rest of the striker to permit proper operation despite production variations, but upon relative movement between the striker and the bolt in directions longitudinal of the automobile, the disk will move into abutting engagement with the inner surface of the striker teeth **91** to prevent the bolt from being pulled away from the striker.

FIGS. 11 and 12 show an interlock arrangement which is somewhat similar to that shown in FIGS. 5 and 6 in that the interlocking means are formed with cooperating portions on a dovetail wedge carried by the door and a striker member carried by the body. In FIGS. 11 and 12, the rotary bolt **105** has a plurality of teeth **106** adapted to engage an abutment tooth **107** on a striker block **108** to hold the door closed.

The bolt projects outwardly from the edge face member **109** of an automobile door, the bolt being mounted on a pin **110** and being partially encased in a housing **111**. A dovetail wedge **112** projects from the edge face member **109** a couple of inches above the bolt, the member **112** having a downwardly extending flange **113** adapted to ride on the top surface of the keeper block **108**. In order to provide a safety interlock a plate **114** is welded to the outer surface of the striker block **108**, the plate having an upstanding flange **115** adapted to enter a channel **116** behind the dovetail flange **113** when the door is closed. The dovetail flange **113** cooperates with the flange **115** to provide interlocking means having cooperating portions on the door and body which normally are spaced apart to permit proper operation of the door despite production variations in size and location and which are adapted to abut to prevent the bolt **105** from being forced away from the striker portion **107** upon relative movement between the door **109** and the body **117** in directions longitudinal of the body.

FIGS. 13 and 14 show how the invention can be applied to a fork or yoke type pivoted bolt, which is well known in the art. In this form of the invention, the interlock is between the striker stud and the bolt. The bolt **120** is mounted upon a pivotal stud **121** projecting from the edge face member **122** of an automobile door. The bolt **120** is bifurcated, having arms **123** and **124** spaced by a slot **125**. When the door is closed, the arms **123** and **124** straddle a striker in the form of a stud **126** which is received in the slot **125**. The striker projects from a plate **128** secured on the automobile body **129**. In order to provide interlocking means adapted to abut to prevent the bolt from being pulled away from the striker in directions longitudinal of the body, a disk or washer **130** is welded or otherwise secured to the end face of the keeper stud **126**. This washer preferably but not necessarily has a round face, and the washer is so formed that its width or diameter is greater than the width of the slot **125** so that the washer will not pass through this slot but will abut the bolt arms to prevent the bolt from being forced away from the striker. As shown in FIG. 14, the washer **130** is spaced from the bolt and its associated structure in order to permit proper operation despite possible manufacturing tolerances.

FIGS. 15 and 16 illustrate another modification which is somewhat similar to FIGS. 13 and 14 in that the interlocking means comprises a member on the outer face of the keeper adapted to abut the adjacent face of the bolt. In this construction the bolt **135** is rotatable on a pin **136** projecting from the edge face member **137** of an automobile door. The bolt has a plurality of peripheral gear type teeth **138** adapted to cooperate with teeth **139** on a striker **140** projecting from a body portion **141** of the automobile. A plate **142** is held by rivets **143** on the outer surface of the striker **140**. This plate, with the striker, forms a channel **144** in which the teeth **138** are received when the door is closed. The inner surface of the bolt teeth **138** and the upwardly projecting flange portion **142***a* of the plate **142** form interlocking means for preventing the bolt from being pulled away from the striker in directions longitudinal of the body. As seen in FIG. 16, the bolt teeth **138** are normally spaced from the flange **142***a* so that there is no interference between these interlocking parts when the door is closed.

FIGS. 17 and 18 show the invention applied to a cam bolt type latch of well known and commercially used construction. In this latch the interlock is between the striker tooth and the bolt housing. The bolt **150** is generally V-shaped, being pivoted adjacent its apex on a stud **151** which projects through the end wall **152** of an automobile door. The bolt is cam operated through another stud **153** connecting the bolt with an operating cam member **154** inside the door.

The bolt is partially encased in a housing **155** which forms part of the dovetail support. The striker **156**, which is secured by screws **157** to a portion **158** of the automobile body, includes a lug **159** with a downwardly projecting tooth **160** for engagement with the bolt. As shown in FIG. 18, the tooth **160** is shallower than the lug **159** and with said lug forms a channel **161**. The bottom wall of the bolt housing **155** rides on a dovetail portion **162** of the striker when the door is closed and the upper portion of the outer wall of the housing **155** is extended upwardly to form a flange **163** which is received in the channel **161** back of the striker tooth **160**. In the event of a collision creating a force tending to pull the door away from the body in directions longitudinal of the body, the flange **163** will abut the surface of the striker tooth **160** to form a safety interlock. During normal use, the flange **163** is spaced from the striker tooth **160** and from all other parts of the striker.

In FIGS. 19 and 20, the invention is applied to a latch having a pivoted bolt, the interlock being between the striker and the bolt. In this embodiment of the invention, the bolt **170** is pivoted adjacent one of its ends on a pin **171** which projects through the end wall **172** of an automobile door into a bolt housing **173** which substantially entirely encases the bolt except for a downwardly projecting tooth **170***a*. When the bolt is in latching position, the tooth **170***a* projects through an opening **173***a* in the bolt housing.

As shown in FIG. 19, the bolt housing is wedge-shaped, tapering down from a maximum height at its trailing edge to a minimum height at its leading edge. When the door is closed, the housing **173** is wedged in the striker **175**, a spring-pressed sliding shoe **176** engaging the top surface of the bolt housing and the lower surface of the housing riding on the inclined surface of a striker block **177**. A safety latching notch **178** and a primary latching notch **179** are formed in the inclined upper surface of the block **177**, and the bolt tooth **170***a* engages these notches successively as the door is closed. FIG. 19 shows the bolt tooth **170***a* in engagement with the primary notch **179** to hold the door closed.

A channel **181** is formed in the striker by a plate **182** which is riveted onto the striker block **177**, the plate blocking one end of the latching notches **178** and **179**. This plate, with the bolt tooth **170***a*, forms an interlock which will prevent the bolt from being pulled away from the striker in directions longitudinal of the automobile body. As shown in FIG. 20, the bolt tooth **170***a* normally is spaced from the plate **172** to permit proper operation with normal production tolerances in variations and location.

While we have shown and described certain embodiments of our invention, it is capable of many modifications. Changes, therefore, in the construction and ar-

rangement may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

We claim:

1. In a device for latching an automobile door member to a body member, a safety interlock of the character described, comprising: a latch carried by one of said members and including a pivoted bolt projecting therefrom, said bolt having a plurality of toothlike projections thereon; a striker mounted on the other member and having bolt engaging teeth for mating with the bolt teeth to hold the door latched; and interlocking means having cooperating portions on said latch and on said striker teeth, said cooperating portions normally being spaced apart when the door is closed and being adapted to abut to prevent the bolt from being forced away from the striker teeth upon relative movement between the door and body in directions longitudinal of the body.

2. Apparatus of the character claimed in claim 1, wherein said interlocking means comprises a flange on the striker adjacent the bolt engaging teeth thereof, and adapted to overlap the tooth-like projections of the bolt when the door is closed.

3. Apparatus of the character claimed in claim 2, wherein said flange comprises a plate secured to the outer face of said striker in abutting relation to the surface of said bolt engaging teeth and having a longitudinal and vertical extent at least as great as the extent of said bolt engaging teeth.

4. In a device for latching an automobile door member to a body member, a safety interlock of the character described, comprising: a latch carried by one of said members and including a pivoted bolt projecting therefrom and a housing for said bolt; a striker mounted on the other member and having bolt engaging portions for holding the door latched; and interlocking means having cooperating portions on said striker and bolt housing, said cooperating portions normally being spaced apart when the door is closed and being adapted to abut to prevent the bolt from being forced away from the striker teeth upon relative movement between the door and body in directions longitudinal of the body.

5. Apparatus of the character claimed in claim 4, wherein said bolt is of arcuate configuration and wherein said interlocking means comprise a flange on said striker and a flange on said bolt housing, said flanges normally being spaced apart in overlapping relationship when the door is closed and being adapted to abut to prevent the bolt from being forced away from the bolt engaging portion of the striker upon relative movement between the door and body in directions longitudinal of the body.

6. In a device for latching an automobile door to a body, a safety interlock of the character described, comprising: a latch carried by the door and including a rotatable gear type bolt projecting therefrom and a housing for said bolt; a striker mounted on the body and having bolt engaging teeth for holding the door latched; and interlocking means comprising complementary portions on said striker and bolt housing, said portions being adapted to abut to prevent the bolt from being forced away from the striker teeth upon relative movement between the door and body in directions longitudinal of the body.

7. Apparatus of the character claimed in claim 6, wherein said interlocking portions are normally spaced apart when the door is closed.

8. Apparatus of the character claimed in claim 6, wherein the striker is formed with a channel behind said striker teeth, the interlocking portions of the bolt housing being received in said channel when the door is closed.

9. In a device for latching an automobile door to a body, a safety interlock of the character described, comprising: a latch carried by the door and including a rotatable gear type bolt projecting therefrom and a housing for said bolt; a striker mounted on the body and having bolt engaging teeth for holding the door latched, said striker having a channel formed therein behind and bounded on one side by said teeth; and interlocking means comprising a flange on said bolt housing so located that it is received in said channel when the door is closed, the flange being adapted to abut said bolt engaging teeth to prevent the bolt from being forced away from the striker teeth upon relative movement between the door and body in directions longitudinal of the body.

10. In a device for latching an automobile door to a body, a safety interlock of the character described, comprising: a latch carried by the door and including a rotatable gear type bolt projecting therefrom and a housing for said bolt; a C-shaped striker mounted on the body, said striker being formed with a centrally disposed recess for wedgingly receiving said bolt and housing, and said striker having bolt engaging teeth projecting into said recess for holding the door latched; and interlocking means comprising complementary surface portions on said striker and bolt housing, said surface portions being adapted to abut to prevent the bolt from being forced away from the striker.

11. In a device for latching an automobile door to a body, a safety interlock of the character described, comprising: a latch carried by the door and including a rotatable gear type bolt projecting therefrom and a housing for said bolt, said housing being open at the bottom and said bolt having teeth projecting through said opening; a C-shaped striker mounted on the body, said striker being formed with a centrally disposed recess for wedgingly receiving said bolt and housing, said striker having bolt engaging teeth projecting into said recess for holding the door closed, and said striker being formed with a channel behind and bounded on one side by said bolt engaging teeth; and interlocking means comprising a flange on said bolt housing so located that it is received in said channel when the door is closed, the flange being adapted to abut said bolt engaging teeth to prevent the bolt from being forced away from the striker teeth upon relative movement between the door and body in directions longitudinal of the body.

12. In a door latching mechanism, a keeper device adapted to be mounted on a door pillar, said keeper device having a plurality of generally vertically extending fixed keeper teeth spaced apart transversely of the pillar, a latch device including a support adapted to be mounted on a swinging door, said latch device having a bolt member mounted on the support and rotatable about an axis extending generally horizontally in the plane of the door, said bolt member being provided with radially extending spaced latching teeth adapted to having operative latching engagement with the keeper teeth when the door is closed, and means for resisting separation of said latching and keeper teeth consequent to relative lateral displacement thereof and comprising an abutment member, means mounting said abutment member on said latch device support proximate to one face of said bolt member, said abutment member being adapted to overlap one or more of the keeper teeth and block such relative lateral displacement of the latching and keeper teeth as would cause separation thereof.

13. In a door latching mechanism, a keeper device adapted to be mounted on a door pillar, said keeper device having a plurality of generally vertically extending fixed keeper teeth apart transversely of the pillar, a latch device including a support adapted to be mounted on a swinging door, said latch device having a bolt member mounted on the support and rotatable about an axis extending generally horizontally in the plane of the door, said bolt member being provided with radially extending spaced latching teeth adapted to have operative latching engagement with the keeper teeth when the door is closed, and means for resisting separation of said latching and keeper teeth consequent to relative lateral displacement thereof and comprising casing means fixed to said support

for housing a substantial portion of said bolt member and having a portion adapted to overlap at least one of said keeper teeth and block such relative lateral displacement of the latching and keeper teeth as would cause separation thereof.

14. In combination, a latch device mounted on the free edge wall of a swinging door, said latch device comprising a rotatable portion having tooth-like projections thereon, and a plate portion, said tooth-like projections and said plate portion being generally parallel to said edge wall, with said rotatable portion located between said plate portion and said edge wall, a keeper device rigidly mounted on the jamb face of a door framing member, said keeper device comprising a portion having projections forming tooth-spaces to receive said tooth-like projections and providing a recess to receive said plate portion when said door is in closed position, said plate portion and said keeper portion coacting to resist any force urging said edge wall of the door away from said jamb face, thereby preventing lateral disengagement of said projections when in mesh with each other.

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