March 1, 1960 J. D. LESLIE ET AL 2,926,943

CLOSURE LATCH

Filed Oct. 4, 1957 3 Sheets-Sheet 1

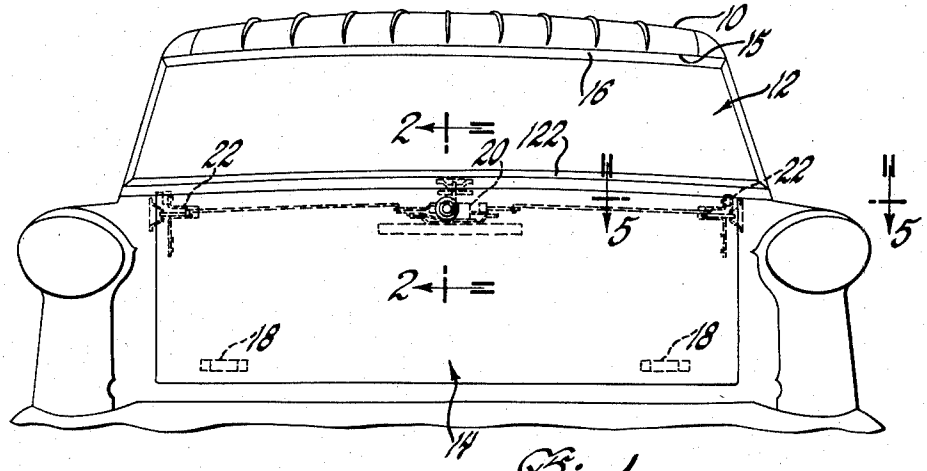


Fig. 1

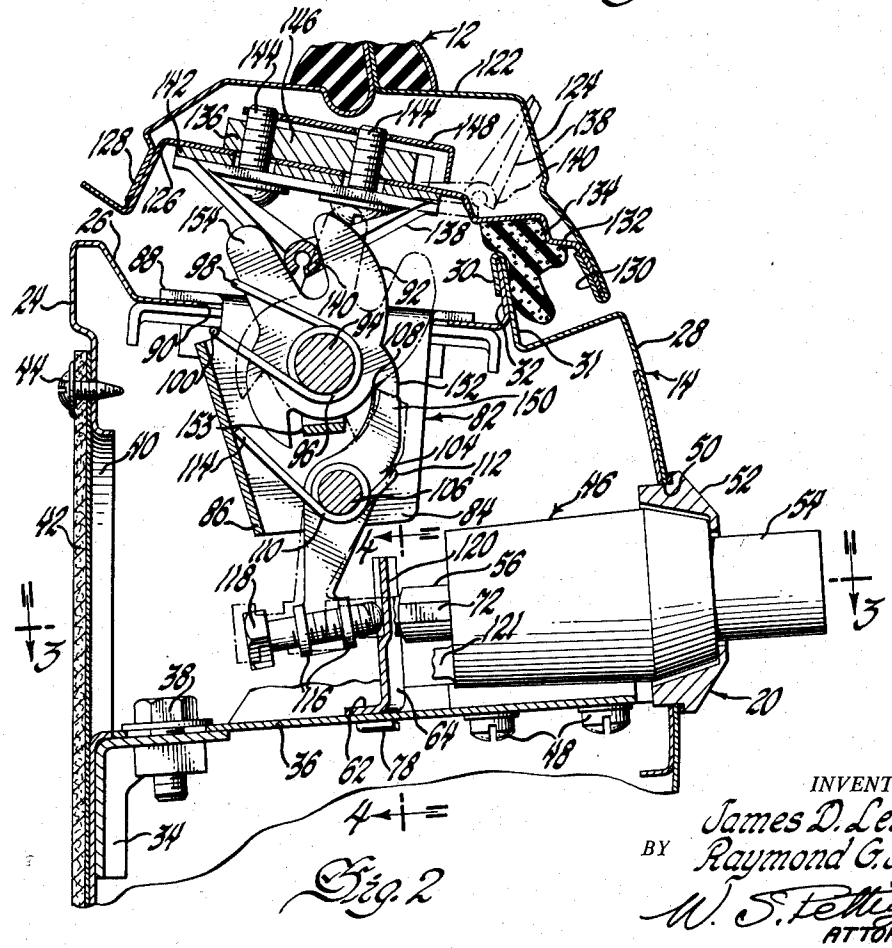


Fig. 2

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Filed Oct. 4, 1957 3 Sheets-Sheet 2

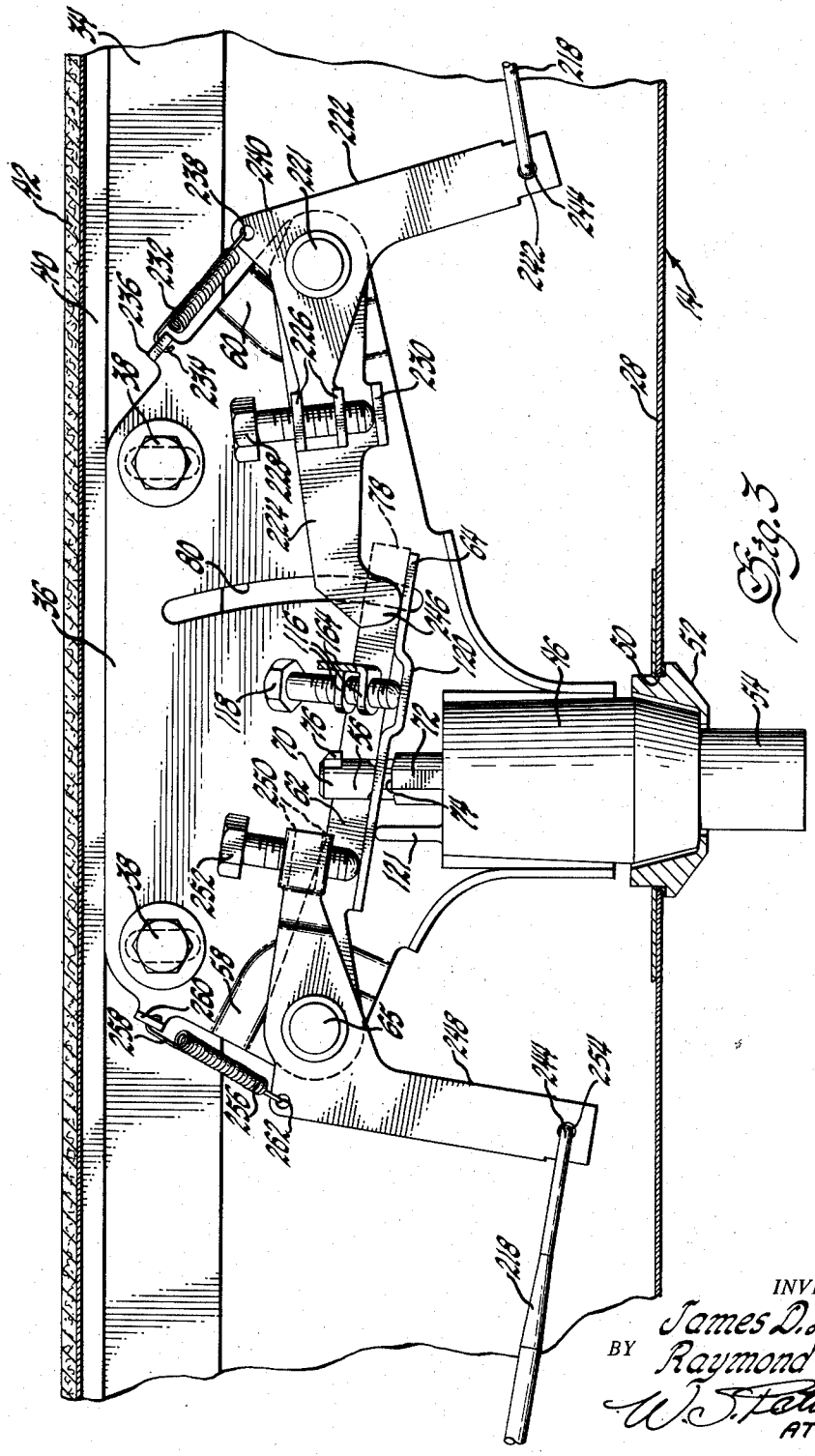


Fig. 3

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Filed Oct. 4, 1957 3 Sheets-Sheet 3

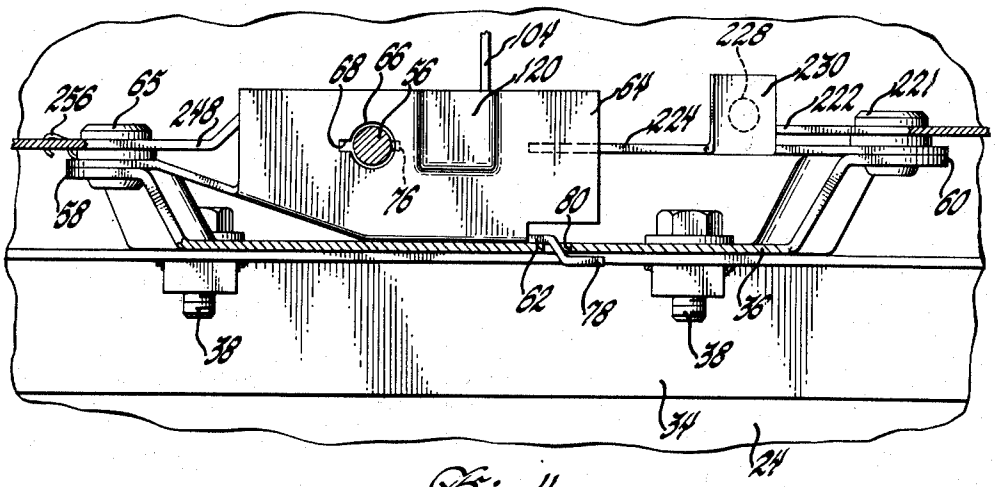


Fig. 4

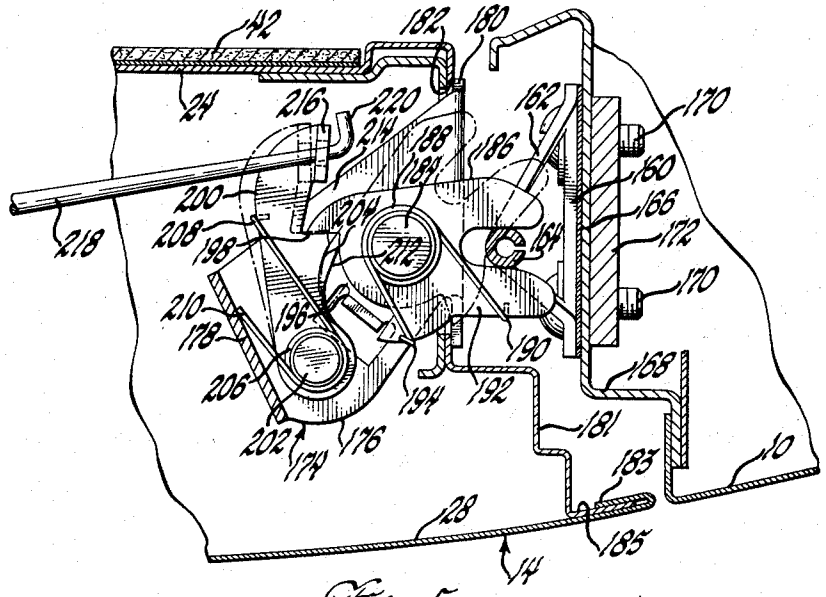


Fig. 5

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CLOSURE LATCH

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Application October 4, 1957, Serial No. 688,192

9 Claims. (Cl. 292—53)

This invention relates to vehicle closure latches and more particularly to vehicle closure latches for pairs of swinging vehicle closures.

The vehicle closure latch of this invention is intended particularly for use with the lift gates and tail gates of station wagon bodies. In general, the station wagon lift gate is swingably supported on the vehicle body for upward swinging movement to open position while the tail gate is swingably supported on the vehicle body for downward swinging movement to open position. In certain instances, such as for ventilation, the operator may desire to open the lift gate without opening the tail gate.

In the past it has been common to provide a closure latch only for the tail gate to latch the tail gate to the body, with the tail gate being arranged to overlap the lift gate when both are in closed position so that the tail gate holds the lift gate in this position. Thus, if the operator desired to open the lift gate only, he was required to first unlock the closure latch and then partially open the tail gate, then move the lift gate to open position, and finally close the tail gate and lock the closure latch. Thus, some effort was required of the operator in order to merely open the lift gate and this is a disadvantage of past constructions.

The vehicle closure latch of this invention overcomes this disadvantage of past constructions by permitting the lift gate to overlap the tail gate so as to allow the lift gate to be moved to an open position without first moving the tail gate to an open or partially open position. In its preferred embodiment the closure latch generally includes a center latch mounted on the tail gate and operative to latch the lift gate to the tail gate, and a pair of side latches mounted on the tail gate and operative to latch the tail gate to each side of the body. A common operating means is provided each of the latches, with the operating means being so arranged as to permit selective operation of the center latch independently of operation of the side latches or selective sequential operation of the center latch and side latches. Thus, if the operator desires to move only the lift gate to open position, he need only release the center latch so as to release the lift gate from the tail gate without having to release the side latches to release the tail gate from the body. Thus, an improved closure latch is provided for a pair of swinging vehicle closures.

The primary object of this invention is to provide a new and improved vehicle closure latch for pairs of swinging vehicle closures. Another object of this invention is to provide a new and improved vehicle closure latch for station wagon lift gates and tail gates. A further object of this invention is to provide a new and improved vehicle closure latch for pairs of swinging vehicle closures which latches one of the closures to the other of the closures and latches the other of the closures to the body and includes an operating means permitting selective release of the one closure from the other closure independently of release of the other closure from the body. Yet another object of this invention is to provide a new and improved

vehicle closure latch for station wagon lift gates and tail gates which latches the lift gate to the tail gate and latches the tail gate to the body and includes an operating means permitting selective release of the lift gate from the tail gate independently of release of the tail gate from the body. Yet a further object of this invention is to provide a new and improved vehicle closure latch for station wagon lift gates and tail gates which includes center latch means to latch the lift gate to the tail gate and a pair of side latch means to latch the tail gate to the body, and a common operating means for selective sequential operation of the center latch and the side latches so as to permit operation of the center latch independently of operation of the side latches to effect movement of the lift gate to an open position independently of movement of the tail gate to an open position.

These and other objects of this invention will be readily apparent from the following specification and drawings, wherein:

Figure 1 is a partial rear elevational view of a station wagon body having a lift gate and a tail gate to close the rear opening thereof, with the tail gate being provided with a center latch according to this invention to latch the lift gate to the tail gate and also being provided with a pair of side latches according to this invention to latch the tail gate to the body;

Figure 2 is an enlarged secional view taken on the plane indicated by line 2—2 Figure 1 showing the center latch;

Figure 3 is an enlarged sectional view taken on the plane indicated by line 3—3 of Figure 2;

Figure 4 is a sectional view taken on the plane indicated by line 4—4 of Figure 2; and

Figure 5 is an enlarged sectional view taken on the plane indicated by line 5—5 of Figure 1 and showing one of the side latches.

Referring now particularly to Figure 1 of the drawings, a station wagon body 10 includes a lift gate 12 and a tail gate 14 which close the rear opening 15 of the body when in closed position. Although not shown in the drawings, it will be understood, of course, that the lift gate 12 is swingably mounted on the body by suitable hinges which interconnect the upper frame member 16 of the lift gate and the body for upward swinging movement of the lift gate between closed position, as shown, and an open position, not shown. Suitable hinges, indicated schematically at 18, interconnect the lower edge portion of the tail gate 14 and the body for downward swinging movement of the tail gate between a closed position, as shown, and an open position, not shown. Thus, the lift gate and tail gate swing oppositely with respect to each other.

The vehicle closure latch of this invention generally includes a center latch 20 mounted on the tail gate 14 and operative to latch the lift gate 12 to the tail gate, and a pair of spaced like side latches 22 which are also mounted on the tail gate 14 and latch the tail gate to the body to either side thereof. The closure latch is so arranged, as will be hereinafter described, that the center latch 20 may be released independently of the side latches 22 so as to allow the lift gate 12 to be moved to open position without movement of the tail gate 14 to open position.

Referring now particularly to Figures 2, 3 and 4 of the drawings, the center latch 20 will be described. The tail gate 14 generally comprises an inner panel 24, an upper panel 26 integral with panel 24 and an outer panel 28 joined to panel 26 by bending an edge portion 30 of flange 31 of the outer panel over a flange 32 of panel 26. An angular mounting bracket 34 is secured in a suitable manner to the inner surface of panel 24 and a mounting plate 36 is bolted at 38 to bracket 34 so as to support the mounting plate within the tail gate 14. As can be seen particularly in Figure 2 of the drawings, the inner panel is provided with an opening 40 providing

access to the center latch, with this opening and the inner panel being covered by a trim panel **42** which is secured to the inner panel by bolts **44**. As may be seen generally in Figures 2 and 3 of the drawings, the mounting plate **36** extends generally between the inner and outer panels **24** and **28** of the tail gate.

A lock cylinder assembly **46** is secured in a suitable manner such as by bolts **48** to plate **36** and extends outwardly of panel **28** through an opening **50** therein, with an escutcheon **52** being provided to close the opening and to support the lock cylinder assembly within the opening. The escutcheon is secured to the panel **28** adjacent the opening **50** therein in a suitable manner. The details of the lock cylinder assembly are not shown since the assembly is substantially the same as that shown in Psik 2,724,958 assigned to the assignee of this invention. Generally, the lock cylinder assembly includes a push button **54** which is slidably mounted within the lock cylinder assembly and is spring biased outwardly, with the push button being secured to a push rod **56** so as to move the push rod inwardly of the tail gate when the bush button is operated.

Referring now particularly to Figures 3 and 4 of the drawings, the mounting plate **36** includes a pair of spaced upwardly offset apertured ears **58** and **60**. An actuating lever **62** having a generally upright flange **64** is pivotally secured at one end thereof to ear **58** by a shouldered stud **65** which is secured to the ear and rotatably supports the one end of the lever. As may be seen in Figure 4 of the drawings, the flange **64** of the lever is provided with a circular opening **66** having a keyway **68**. The circular opening **66** slidably receives the circular end **70** of push rod **56**, with this end being joined to a generally polygonally shaped portion **72** of the push rod which is larger in size so as to provide a shoulder **74** therebetween. The end **70** of the push rod is provided with a lug or key **76** and the keyway **68** of opening **66** allows insertion of the end **70** through the flange **64** of lever **62**. The other end of the lever **62** includes an offset ear **78**, Figure 4, which extends through and slides withiin an arcuate slot **80** in plate **36** so as to guide swinging movement of the lever **62** about its pivot **60**.

Referring now particularly to Figure 2 of the drawings, a generally U-shaped latch housing **82** is provided with a pair of generally parallel upright walls **84**, only the right hand of which is shown joined by a rear wall **86**. Each of the walls **82** is provided with a lateral flange **88** which is adapted to be secured to the upper panel **26** of the tail gate to either side of an opening **90** therein which receives the housing **82**. A forked latch bolt **92** is swingably mounted on housing **82** by a stud **94** which extends between the walls **84** and is secured therein. A coil spring **96** is mounted on stud **94** and has one end thereof **98** engaging the bolt **92** and the other end thereof **100** unhooked over the right hand wall **84** to bias bolt **92** in a clockwise direction toward unlatched position. A detent **104** is swingably mounted on a stud **106** which extends between the opposite walls **84** of the housing. The detent is adapted to engage a shoulder **108** of bolt **92** to hold the bolt in unlatched position, as shown in full lines, against the action of spring **96**. A coil spring **110** mounted on stud **106** has one end thereof **112** engaging the detent and the other end **114** thereof hooked over the right hand wall **84** of the housing to bias the detent in a counterclockwise direction, as viewed in Figure 2. The detent includes a pair of laterally extending threaded ears **116** which adjustably mount a bolt **118**. The shank of the bolt engages an offset depression **120** provided in the flange **64** of lever **62** to bias the lever in a clockwise direction, Figure 3, into engagement with a limit stop **121** of the assembly **46**.

Referring now again to Figure 2 of the drawings, the lower frame member **122** of the lift gate **12** includes a frame member **124** and a frame member **126** which are welded together at their inner flanged edge portions **128**. The outer edge portions of the members are secured together by bending the edge portion **130** of member **124** over an offset flange **132** of member **126**. Flange **132** mounts a weather strip **134** which engages the flange **31** of the outer panel **28** to seal the space between the tail gate and the lift gate when both are in closed position.

From this description it will be apparent that the lift gate **12** overlaps the tail gate **14** since the flange **132** and edge portion **130** of the lower frame member **122** of the tail gate are located outboard or rearwardly of the flange **31** of the outer panel **28** of the tail gate. This permits the lift gate to be swung upwardly to an open position, as will be hereinafter described, without any interference between the lift gate and the tail gate. A striker plate **136** includes opposite pairs of V-shaped arms **138**, only the right hand arm being shown, which support a striker bar **140**, with arms **138** and bar **140** being formed integral with the plate **136**. A shim **142** is positioned between the striker plate and the frame member **126** of the lift gate, and a number of bolts **144** extend through openings in the striker plate, the shim and frame member **126**, and are threaded into a threaded block **146** which is adjustably mounted on frame member **126** by means of a suitable cage **148** secured to member **126** and permitting movement of the block **146** within predetermined limits. When the latch bolt **92** is in latched position, as shown in full lines in Figure 2 of the drawings, the fork of the bolt receives the striker bar **140** so as to latch the lift gate to the tail gate.

Before proceeding further with a description of the side latches and the operation thereof, it is believed best that the operation of the center latch be first described. If it is desired to move the lift gate **12** to an open position, the operator manually presses the push button **54** forwardly of the body or inwardly of the assembly **46** to move the push rod **56** inwardly of the tail gate. After the push rod moves slightly inwardly, the shoulder **74** of the push rod will engage the flange **64** of lever **62** around the opening **66** therein to swing the lever **62** inwardly of the tail gate or counterclockwise, as viewed in Figure 3, about its pivot **65**. As the lever swings in this direction, the engagement of the shank of bolt **118** with flange **64** swings the detent **104** clockwise, as viewed in Figure 2, against the action of spring **110** to release the detent from engagement with the shoulder **108** of bolt **92**. The bolt **92** will then be swung clockwise, as viewed in Figure 2, by spring **96** to an unlatched position to release the striker bar **140** from engagement within the fork of the bolt to unlatch the lift gate from the tail gate. The unlatched position of the detent and the bolt are shown in dotted lines in Figure 2 of the drawings, and it will be noted that an arcuate edge **150** of the detent slidably engages a similarly shaped arcuate edge **152** of the bolt, with the detent being held in engagement with the bolt by the spring **110** which biases the detent in a counterclockwise direction, as previously described.

The left hand wall **84** of housing **82** includes a laterally extending lug **153** which is engageable by the shoulder **108** of bolt **92** when the bolt is in unlatched position to locate the bolt in this position.

When the lift gate **12** is moved downwardly to closed position, the striker bar **140** will engage the leg **154** of the bolt to swing the bolt in a counterclockwise direction as the striker bar moves inwardly within the fork of the bolt. As the bolt swings in this direction, the arcuate edge portions **150** and **152** of the detent and bolt, respectively, slide relative to each other until the detent again engages against the shoulder **108** of the bolt to hold the bolt in latched position.

Referring now particularly to Figure 5 of the drawings, the right hand side latch which latches one side of the

tail gate to the body will be described, and it will be understood that the left hand side latch is of the same construction, although of different hand. A striker plate 160 includes opposite pairs of generally V-shaped arms 162 which support a striker bar 164 extending between the arms, with the plate, the arms and the bar being formed integral with each other. A shim 166 is provided between the striker plate and the right hand wall 168 of the body which defines the right hand side of the rear opening 15 thereof. Bolts 170 extend through suitable openings in the striker plate, the shim and wall 168 and are threaded into a mounting block 172 which is secured in a suitable manner to the inner surface of wall 168. A generally U-shaped latch housing 174 includes a pair of upper and lower walls 176 joined by a generally vertical wall 178 with only the lower wall 176 being shown. Each of the walls 176 is provided with a laterally extending flange 180 which is secured in a suitable manner to the outer surface of the right hand side panel 181 of the tail gate on opposite sides of an opening 182 therein which receives the housing 174. Panel 181 is integral with panel 24 and is joined to panel 28 by bending an edge portion 183 of panel 28 over flange 185 of panel 181. A shouldered stud 184 is secured at one end thereof to the lower wall 176 and extends through a suitable opening in the upper wall 176, not shown. The stud rotatably supports a forked bolt 186 and a coil spring 188 which has one leg 190 thereof hooked over a leg 192 of the bolt and the other leg 194 thereof hooked over the upper wall 176 of housing 174, not shown, so as to bias bolt 186 counterclockwise toward unlatched position. The lower wall 176 of housing 174 is provided with an upright lug 196 which is adapted to engage against a shoulder 198 of the bolt to locate the bolt in unlatched position, as shown in dotted lines, against the action of spring 188.

A detent 200 is swingably mounted between the upper and lower legs 176 of housing 174 by means of a stud 202 which is secured to the lower wall and extends through an opening in the upper wall, not shown. The detent includes a shoulder 204 which is adapted to engage shoulder 198 of bolt 186 when the bolt is in latched position, as shown, to retain the bolt in this position against the action of spring 188. A coil spring 206 mounted on stud 202 has one leg 208 thereof hooked over the detent and the other leg 210 thereof slidably engaging wall 178 to bias the detent clockwise to maintain shoulder 204 of the detent in engagement with shoulder 198 of the bolt to maintain the bolt in latched position. When the bolt is in unlatched position, an arcuate edge 212 of the detent engages an arcuate edge 214 of the bolt under the action of spring 206. The detent further includes an upwardly extending apertured ear 216 which receives one end of a rod 218 having a bent end 220 which is spaced from ear 216 when the bolt is in latched position for a purpose to be hereinafter described.

Referring now particularly to Figures 2 through 4 of the drawings, the interconnection between the right hand rod 218 and the lock cylinder assembly 46 will be described. As best shown in Figures 3 and 4 of the drawings, a stud 221 is fixed to the offset ear 60 of the mounting plate 36 and rotatably supports a bell crank lever 222 and a hooked shaped lever 224. One leg of the bell crank lever is provided with a pair of upright threaded ears 226 which adjustably receive a bolt 228, with the shank of the bolt engaging an upright ear 230 of lever 224. A tension spring 232 has one end 234 thereof hooked into an apertured upright ear 236 of plate 36 and the other end 238 thereof hooked into an apertured ear 240 of lever 222 to bias the lever in a counterclockwise direction and maintain the shank of bolt 228 in engagement with ear 230 and the hook shaped end 246 of lever 222 in engagement with flange 64 of lever 62. The other leg of the bell crank lever 222 is provided with an aperture 242 which receives the other bent end 244 of rod 218, with this end being offset beneath the lever 222, not shown, so as to prevent disassembly of the rod from the lever.

Although the left hand side latch assembly is the same as the right hand side latch assembly, although of different hand, as previously mentioned, the interconnection between the rod 218 of the left hand side latch assembly and the lock cylinder assembly is different and will now be described with reference particularly to Figures 3 and 4. A bell crank 248 is rotatably mounted on the stud 65 which also rotatably mounts lever 62, as previously described. One leg of the bell crank is provided with a pair of downwardly extending threaded ears 250 which adjustably receive a bolt 252, with the shank of the bolt engaging the upright flange 64 of lever 62. The other leg of bell crank 248 includes an aperture 254 which receives the other bent end 244 of the left hand rod 218, with this end being offset beneath the lever, not shown, in the same manner as the right hand rod to interconnect the rod and the lever. A spring 256 has one end 258 thereof hooked into an upright ear 260 of plate 36 and the other end thereof hooked into an aperture 262 in lever 248 to bias the lever clockwise as viewed in Figure 3 and maintain the shank of bolt 252 in engagement with flange 64 of lever 62.

The operation of the center latch assembly has been previously described, and therefore it is believed that no further particular description need be given. Referring now particularly to Figure 3 of the drawings, the operation of the side latch assemblies will be described. As previously mentioned, after the push rod 56 is moved slightly inwardly, the shoulder 74 of the rod will engage the flange 64 of lever 62 to swing this lever counterclockwise, as viewed in Figure 3, to move the detent 104 out of engagement with the center latch bolt 92 to allow the bolt to be moved to unlatched position by spring 96. As lever 64 swings counterclockwise, the engagement of the flange 64 of the lever with the hooked end 246 of lever 224 will swing this lever in a clockwise direction, as viewed in Figure 3, about the pivot 221. In turn, the engagement of the shank of bolt 228 with the ear 230 of lever 224 will swing the bell crank lever 222 in the same direction so as to shift the right hand rod 218 inwardly with respect to the center line of the body. Similarly, the engagement of the shank of bolt 252 with flange 64 of lever 62 will swing the left hand bell crank lever 248 counterclockwise, as viewed in Figure 3, to also shift the left hand rod 218 inwardly with respect to the center line of the body.

Referring now to Figure 5, it will be remembered that the bent ends 220 of the rods 218 are spaced from the upright ears 216 of detents 200 when the side latches are in latched position. Thus, rods 218 may be shifted inwardly toward the center line of the body a certain distance before there is any engagement of the ends 220 of the rods with the ears 216 of detents 200. Thus, the push rod 56 may be moved inwardly of the body a certain distance to swing lever 62 counterclockwise through a particular arc prior to any movement of the detents 200 of the side latches. The engagement of the detent 104 with lever 62 by means of bolt 118 is so arranged that swinging movement of the lever 62 through this particular arc is effective to swing the detent clockwise, as viewed in Figure 2, also through a particular arc, to move the detent out of engagement with the shoulder 108 of bolt 92 to allow the bolt to be moved to unlatched position by means of spring 96 at about the same time that the bent ends 220 of rods 218 engage ears 216 but prior to any movement of either of the detents 200 out of engagement with either of the bolts 186. Thus, the lift gate can be unlatched from the tail gate without unlatching the tail gate from the body. In effect, the arrangement of the bent ends 220 and ears 216 provide a lost motion connection between the rods 218 and the detents 200 of the right and left hand side latch assemblies. By suitable adjustment of bolt 118 and bolts 228 and 252,

the above release of the bolt **92** of the center latch assembly can easily be effected without release of either of the bolts **186** of the side latch assemblies.

However, it will be understood that if the push rod **56** is moved further inwardly of the tail gate, then the engagement of the bent ends **220** of rods **218** with detents **200** will swing these detents inwardly of the body, with the right hand detent swinging counterclockwise and the left hand detent swinging clockwise, to move the shoulders **204** of the detents out of engagement with the shoulders **198** of the bolts to allow the bolts to also swing inwardly of the body to unlatched position, with the right hand bolt swinging counterclockwise and the left hand bolt swinging clockwise. When the push button is released so that the push rod is again moved outwardly of the tail gate by the lock cylinder assembly **46**, the springs **206** swing the detents **200** outwardly of the body until the arcuate edge **212** of each of the detents slidably engages the arcuate edge **214** of the bolts. Thus, the tail gate may be moved to an open position. When the tail gate is moved to closed position, the engagement of the legs **192** of the bolts **186** with the striker bars **164** swings the bolts outwardly of the body against the action of springs **188**, with the right hand bolt swinging clockwise and the left hand bolt swinging counterclockwise. This causes the arcuate edges **212** and **214** of the detents **200** and bolts **186**, respectively, to slide relative to each other until the shoulders **204** of the detents again engage shoulders **198** of the bolts to hold the bolts in latched position.

Thus, this invention provides a new and improved vehicle closure latch for pairs of swinging vehicle closures, particularly station wagon lift gates and tail gates. The latch of this invention permits the lift gate to overlap the tail gate so as to be moved to an open position independently of any movement of the tail gate. By latching the lift gate to the tail gate and latching the tail gate to the body and by providing a common operating means for selective sequential release of the lift gate from the tail gate and the tail gate from the body, the latch provides an improved arrangement for operation of pairs of vehicle closures.

We claim:

1. In a vehicle body having a pair of closures swingably mounted thereon for movement between open and closed positions, a latch mechanism comprising, first latch means on one of said closures operative to latch the other of said closures thereto, second latch means on said one of said closures operative to latch said one of said closures to said body, and a common operating means operatively interconnecting said first and second latch means and permitting release of said first latch means independently of release of said second latch means to allow said other of said closures to be moved to open position without movement of said one of said closures to open position.

2. In a station wagon type of vehicle body having an opening therein and a tail gate and lift gate mounted on said body for swinging movement oppositely to each other to open and close said opening, with said lift gate overlapping said tail gate in the closed position thereof, a latch mechanism comprising, first latch means on said tail gate operative to latch said lift gate thereto, second latch means on said tail gate operative to latch said tail gate to said body, and a common operating means operatively interconnecting said first and second latch means and permitting release of said first latch means independently of release of said second latch means to allow said lift gate to be moved to an open position without movement of said tail gate to an open position.

3. In a vehicle body having a pair of closures swingably mounted thereon for movement between open and closed positions, a closure latch comprising, first latch means on one of said closures operative to latch the other of said closures thereto, second and third latch means on said one of said closures operative to latch said one of said closures to said body, each of said latch means including a latch bolt movable to latched and unlatched position and a detent operative to retain said bolt in latched position, actuating means operative to release said detent of said first bolt to allow movement thereof to unlatched position and allow movement of said other of said closures to open position, and means operatively interconnecting said actuating means and said detents of said second and third latch means and including lost motion means to permit operation of said actuating means without release of said detents of said second and third latch means.

4. In a latch mechanism, the combination comprising, a first latch bolt movable betwen latched and unlatched positions, a first detent operative to retain said bolt in latched position, an actuating member, means adjustably interconnecting said detent and said actuating member to effect release of said detent from said bolt to permit said bolt to be moved to unlatched position, a second latch bolt movable to latched and unlatched positions, a second detent operative to retain said second bolt in latched position, adjustable lever means engageable with said actuating member, and means including lost motion means operatively interconnecting said adjustable lever means and said second detent.

5. In a latch mechanism, the combination comprising, a latch bolt movable between latched and unlatched positions, a detent member operative to retain said bolt in latched position and including an opening therethrough, actuating means, means interconnecting said actuating means and said detent member and including a shiftable member having one end portion thereof operatively connected to said actuating means and the other end portion thereof received through said opening in said detent member, said other end portion including an enlarged portion normally located in spaced relationship to the adjacent surface of said detent member, said enlarged portion being movable by said actuating means into engagement with said surface of said detent member to effect release of said detent member from said bolt and permit said bolt to be moved to unlatched position, and means for adjusting the spatial relationship between said enlarged portion of said shiftable member and said adjacent surface of said detent member.

6. In a latch mechanism, the combination comprising, a latch bolt movable betwen latched and unlatched positions, a detent member operative to retain said bolt in latched position and including a laterally extending flange provided with an opening therethrough, an actuating member, means interconnecting said actuating member and said detent member and including a shiftable member having one end thereof operatively connected to said actuating member and the other end portion thereof received through said opening in said flange, said other end portion including a portion of enlarged shape normally located in spaced relationship to the adjacent surface of said flange, said enlarged portion being movable into engagement with said surface of said flange by said actuating member to effect release of said detent from said bolt and permit said bolt to be moved to unlatched position, and means for adjusting the spatial relationship between said enlarged portion of said shiftable member and said adjacent surface of said flange.

7. In a latch mechanism, the combination comprising, a latch bolt movable between latched and unlatched positions, a detent member operative to retain said bolt in latched position and including an opening therethrough, a swingable actuating member, a shiftable member having one end thereof operatively connected to said actuating member and the other end portion thereof received through said opening in said detent member, said other end portion including a portion of enlarged shape normally located in spaced relationship to the adjacent surface of said detent member, said enlarged portion being movable into engagement with said surface of said detent

member upon swinging movement of said actuating member to effect release of said detent from said bolt and permit said bolt to be moved to unlatched position, and means for adjusting the rotative position of said swingable actuating member about the axis of rotation thereof to adjust the spatial relationship between said enlarged portion of said shiftable member and said adjacent surface of said detent member.

8. In a latch mechanism, the combination comprising, a latch bolt movable between latched and unlatched positions, a detent member operative to retain said bolt in latched position and including an opening therethrough, a swingable bell crank lever, an actuating lever coaxial with said bell crank lever, adjustable means interconnecting one leg of said bell crank lever and said actuating lever for conjoint rotation thereof, and a shiftable member having one end thereof operatively connected to the other leg of said bell crank lever and the other end portion thereof received through said opening in said detent member, said other end portion including a portion of enlarged shape normally located in spaced relationship to the adjacent surface of said detent member, said enlarged portion being movable into engagement with said surface of said detent member upon conjoint swinging movement of said levers to effect release of said detent from said bolt and permit said bolt to be moved to unlatched position, said adjustable means being operative to adjust the rotative position of said bell crank lever relative to said actuating lever to adjust the spatial relationship between said enlarged portion of said shiftable member and said adjacent surface of said detent member.

9. In a latch mechanism, the combination comprising, a pair of latch bolts movable between latched and unlated positions, a pair of detent members operative to retain said bolts in latched position, each including an opening therethrough, a pair of swingable bell crank levers, a pair of actuating levers, each being coaxial with one of said bell crank levers, adjustable means interconnecting one leg of each of said bell crank levers and a respective coaxial actuating lever for conjoint rotation thereof, means interconnecting said actuating levers for conjoint rotation thereof, and a pair of shiftable members, each having one end thereof operatively connected to the other leg of one of said bell crank levers and the other end portion thereof received through said openings in said detent members, said other end portions each including a portion of enlarged shape normally located in spaced relationship to the adjacent surface of said detent members, said enlarged portions being movable into engagement with said surface of said detent members upon conjoint swinging movement of said actuating levers and said bell crank levers to thereby effect release of said detents from said bolts and permit said bolts to be moved to unlatched position, each of said adjustable means being selectively operative to thereby adjust the rotative position of each of said bell crank levers relative to a respective coaxial actuating lever to thereby adjust the spatial relationship between said enlarged portions of said shiftable members and said adjacent surfaces of said detent members.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,926,943 March 1, 1960

James D. Leslie et al.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 41, for "withiin" read -- within --; line 56, for "unhooked" read -- hooked --; line 61, for "unlatched" read -- latched --; column 9, lines 34 and 35, for "unlated" read -- unlatched --.

Signed and sealed this 16th day of August 1960.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents