Sept. 16, 1969 R. A. FERRARA 3,467,425

CLOSURE LATCH

Filed Jan. 15, 1968 2 Sheets-Sheet 1

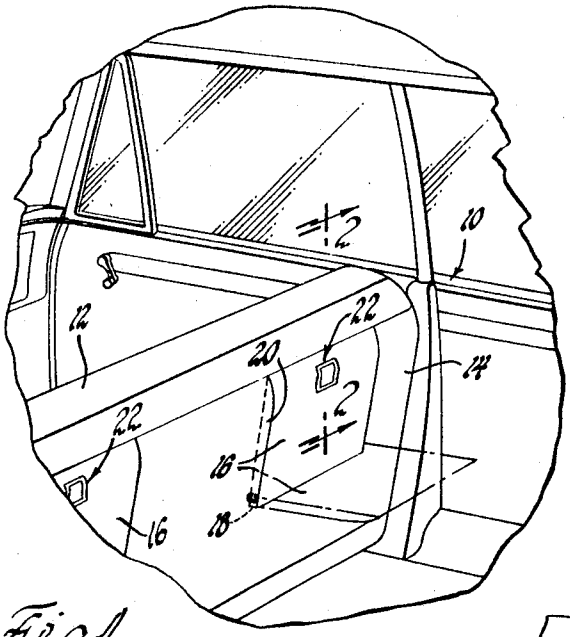

Fig. 1

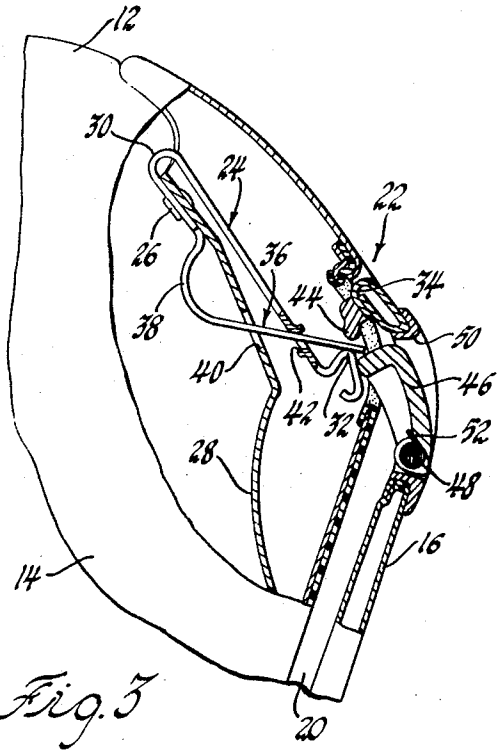

Fig. 3

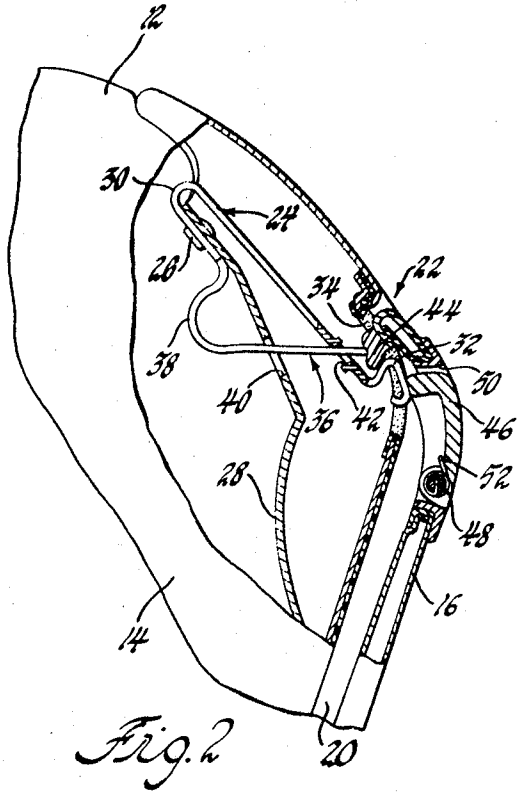

Fig. 2

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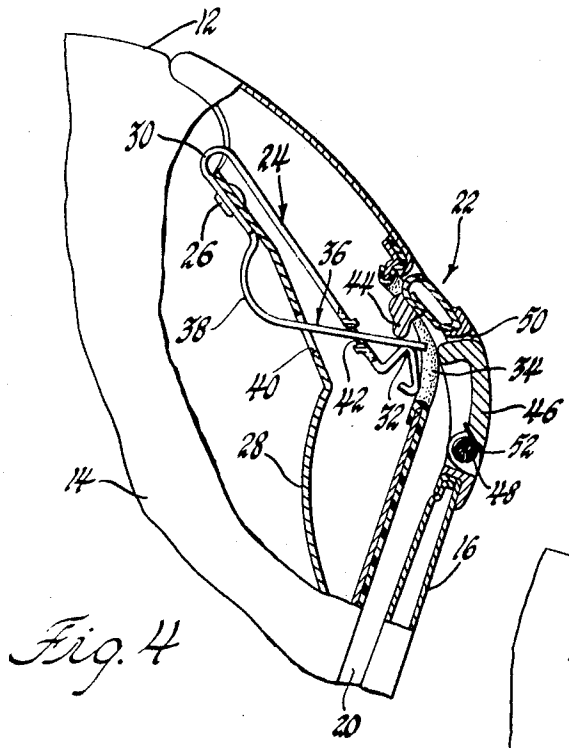

Fig. 4

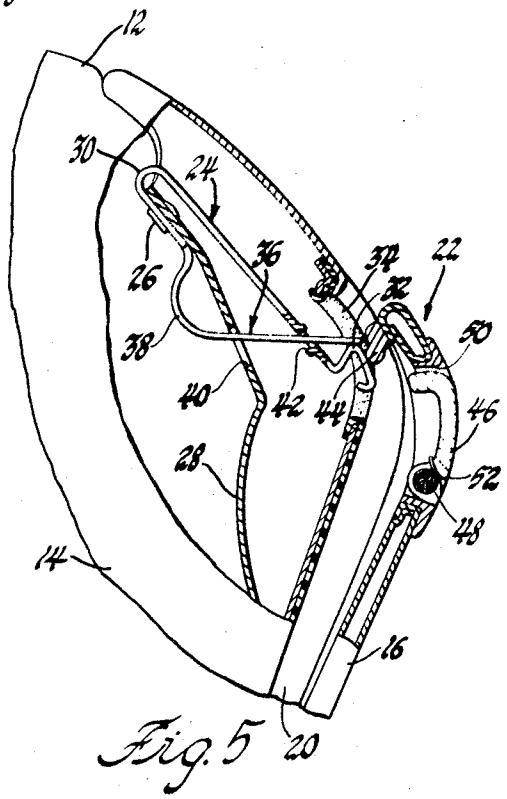

Fig. 5

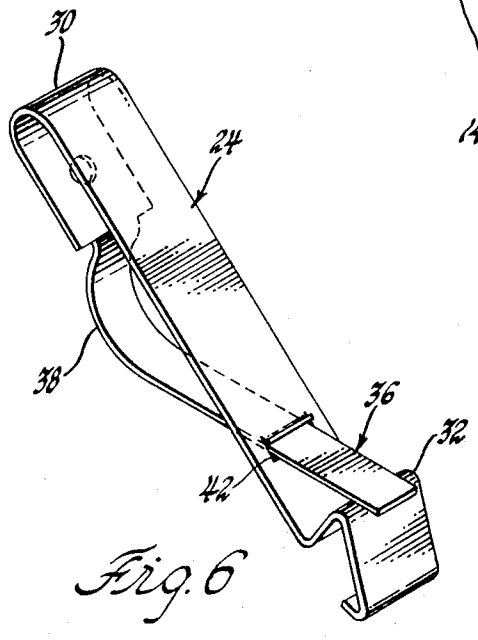

Fig. 6

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CLOSURE LATCH

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Int. Cl. E05c 19/06, 17/00, 19/00
U.S. Cl. 292—81 4 Claims

ABSTRACT OF THE DISCLOSURE

A seat back mounted writing tray is provided with a latch for securing the tray to the seat back. Upon disengagement of the latch, a blocking member blocks reengagement of the latch while the tray is still in closed position. Opening and closing of the tray disables the blocking member so that the tray may be latched again.

This invention relates generally to closure latches and in particular to a closure latch having a relatch preventing feature.

Many closure latches are utilized in vehicle bodies, such as for glove box doors, console storage compartment lids and seat back mounted writing trays. To unlatch the latch a latch operator is usually actuated by pushing it in a direction tending to hold the closure in closed position. If the latch operator is deactuated while the closure is still in closed position, the latch will relatch and the closure will not open. This can be prevented by holding the latch operator in actuated position until the closure has been moved to open position, but this procedure is inconvenient.

The primary feature of this invention is that it provides a simple and inexpensive closure latch having a blocking member that is operable to prevent relatching upon actuation and deactuation of the latch operator while the closure is in closed position, but in which opening and closing of the tray disables the blocking member to permit relatching of the latch.

This and other features of this invention will become readily apparent upon reference to the following detailed description of the annexed drawings in which:

FIGURE 1 is a partial view of a vehicle body interior, showing a seat back mounted writing tray having a closure latch according to this invention;

FIGURE 2 is an enlarged sectional view taken generally on line 2—2 of FIGURE 1, showing the latch in latched position;

FIGURE 3 is a view similar to FIGURE 2, showing the latch in unlatched position;

FIGURE 4 is a view similar to FIGURE 2, showing the latch in relatch-preventing position;

FIGURE 5 is a view similar to FIGURE 2, showing the latch in an initially open or substantially closed position; and

FIGURE 6 is an enlarged perspective view of a portion of the closure latch.

Referring now to FIGURE 1 of the drawings, a vehicle body, generally designated **10**, conventionally mounts a front passenger seat **12** having a back **14**. A writing tray **16** is provided for the use of rear seat passengers. The tray **16** is pivotally mounted at its lower edge **18** to seat back **14** for movement between an open or use position, shown in phantom lines, and a closed or stored position, shown in solid lines, within a recess **20** provided in seat back **14**. In the closed position, tray **16** forms a closure for recess **20** and lies flush with seat back **14**. Tray **16** is held closed by a closure latch **22**, the details of which will now be described with reference to FIGURES 2 and 6.

Latch **22** includes a resilient latch member **24** mounted at **26** to a mounting bracket **28** which is suitably secured

to the seat frame, not shown. The latch member **24** is bent back upon itself to form a spring loop **30** and extends downwardly to a bent terminus forming a latch shoulder **32** located in an opening **34** in the back of seat **20**. Latch **22** includes an integral blocking member **36** having a spring loop **38** which biases the blocking member outwardly through a slot **40** in bracket **28** and a flanged slot **42** in latch member **24**.

Tray **16** includes a striker **44** projecting from its upper edge for overlapping engagement with shoulder **32** of latch member **24**, as shown in FIGURE 2, when the latch is in latched position. In this position, striker **44** also engages the end of blocking member **36** and forces it inwardly of slots **40** and **42** against the biasing force of spring loop **38**. A latch operator **46** is pivoted to tray **16** at **48** within a tray aperture **50** immediately beneath striker **44**. A spring **52** biases latch operator **36** clockwise against a suitable stop to position the operator flush with tray **16**.

To unlatch tray **16**, operator **46** is depressed counterclockwise against the force of spring **52** to move shoulder **32** and latch member **24** downwardly and disengage the shoulder from striker **44**, as shown in FIGURE 3. The upper flanged edge of slot **42** moves blocking member **36** downwardly until the blocking member disengages striker **44**. Spring loop **38** then projects blocking member **36** outwardly through slots **40** and **42** to a position overlying shoulder **32**, as shown in FIGURE 3. The force depressing operator **46** tends to maintain tray **16** closed.

As shown in FIGURE 4, upon its release, operator **46** is moved to its flush position by spring **52**. Spring loops **30** and **38** cooperate to bias the latch member and blocking member upwardly until the upper surface of the blocking member engages the bottom of striker **44**. Thus, although tray **16** has not been moved to its open position, striker **44** is prevented from reengaging latch shoulder **32** with blocking member **36**.

Tray **16** may now be grasped and pivoted about its lower edge **18** for movement to its open position, as shown in phantom lines in FIGURE 1. As shown in FIGURE 5, during the initial movement of tray **16**, striker **44** disengages blocking member **36** and spring loops **30** and **38** move latch member **24** and the blocking member upwardly to their unbiased positions.

When use of tray **16** is no longer desired, the tray is pivoted about its lower edge **18** toward its closed position, as shown in solid lines in FIGURE 1. When the tray again reaches the FIGURE 5 position, striker **44** engages and depresses shoulder **32** and engages the end of blocking member **36**. Upon further movement, striker **44** rides over shoulder **32** and moves blocking member **36** inwardly through slots **42** and **40** so that the striker can overlappingly engage shoulder **32** to latch tray **16** to seat back **14** as shown in FIGURE 2.

Thus, the blocking member **36** is automatically disabled upon opening and closing movement of the tray. However, inconvenient relatching of the latch prior to opening movement of the tray is prevented by the particular arrangement and function of the latch as described above.

While only one embodiment of this invention has been shown and described, other modifications are contemplated within the scope of this invention.

I claim:

1. In combination with a closure mounted for movement between open and closed positions relative to a support, a latch for the closure comprising,

a striker mounted on the closure,

a latch member mounted on the support for movement between latched and unlatched positions with respect to the striker,

means biasing the latch member to latched position,

a latch blocking member carried by the latch member for movement thereby and for movement relative thereto between a position blocking latching of the latch member with the striker and a position permitting such latching engagement,

means for moving the latch blocking member to latch blocking position,

a latch operator actuatable to move the latch member to unlatched position and permit movement of the latch blocking member to blocking position to prevent relatching of the latch member with the striker while the closure is in closed position, and

disabling means for moving the blocking member out of blocking position upon opening and closing movement of the closure to permit latching engagement of the latch member with the striker.

2. The closure latch of claim **1**, wherein the latch member is provided with a shoulder for engaging the striker and the latch blocking member moving means include means biasing the blocking member to a position overlying the shoulder upon actuation of the latch operator.

3. The combination of claim **2**, wherein the latch disabling means include means biasing the blocking member to a position for engagement by the striker upon closing movement of the closure to move the blocking member out of the position overlying the latch member shoulder to permit latching engagement of the striker with the shoulder.

4. In combination with a closure mounted for pivotal movement between open and closed positions relative to the support, a latch for the closure comprising,

a striker mounted on the closure,

a latch member mounted on the support for movement between latched and unlatched positions relative to the striker and having a shoulder engageable with the striker for latching and closure to the support, the latch member including an integral spring portion biasing the latch member to latched position and permitting movement of the latch member to unlatched position,

a latch blocking member formed integrally with the latch member and movable therewith, the blocking member including an integral spring portion for moving the blocking member relative to the latch member between a position overlying the latch member shoulder and a position uncovering the latch member shoulder, the blocking member being held in the uncovering position by the striker when the striker is engaged with the shoulder, and

a latch operator mounted on the closure and actuatable to move the latch member to unlatched position to disengage the striker from the shoulder and enable movement of the the blocking member to overlying position to prevent latching reengagement of the striker with the shoulder upon deactuation of the latch operator while the closure is in closed position, movement of the closure to open position enabling the biasing means to move the blocking member to a position for engagement by the striker upon movement of the closure to closed position to move the blocking member to uncovering position to permit latching engagement of the striker with the shoulder.

References Cited

UNITED STATES PATENTS

1,146,123	7/1915	Bennett	292—81 X
2,402,812	6/1946	Gay	292—81
2,735,740	2/1956	Soans.	

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49—37, 394; 297—146