Nov. 12, 1968 R. P. THORPE 3,410,600

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2 Sheets-Sheet 1

FIG. 1

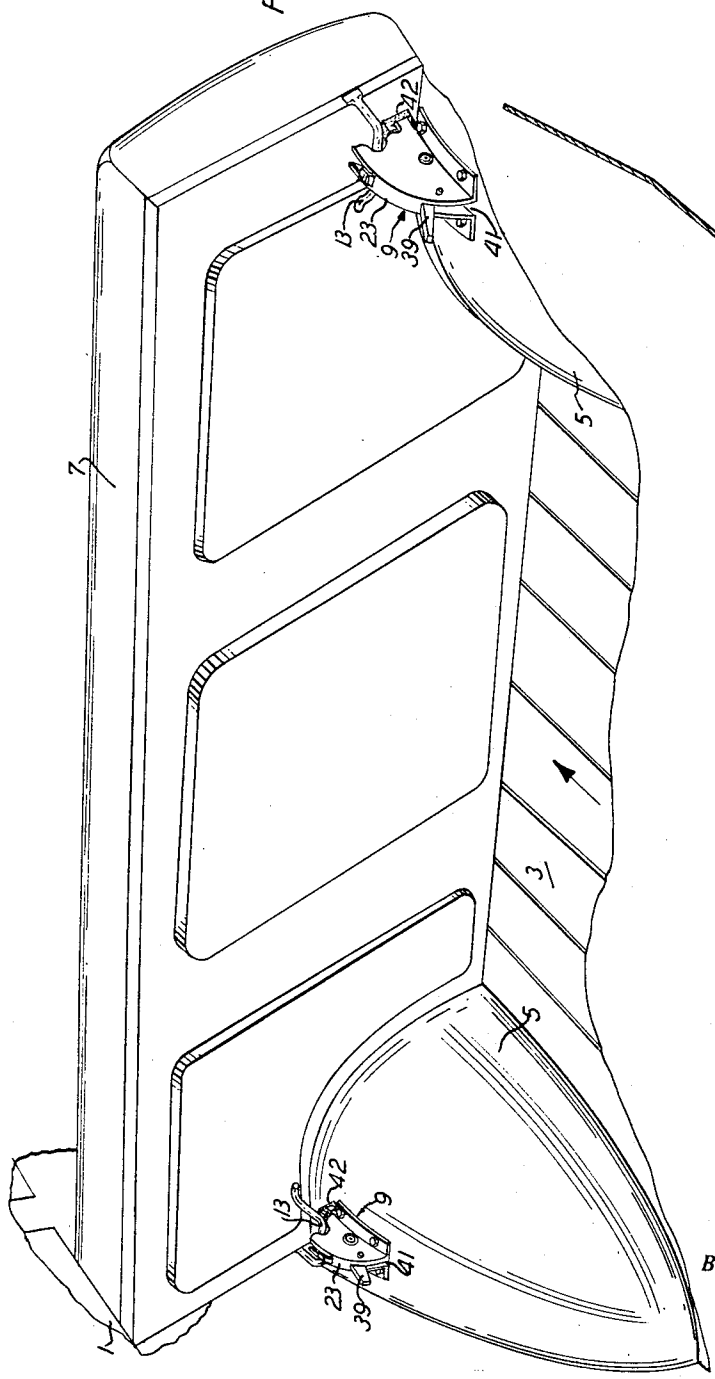


FIG. 7

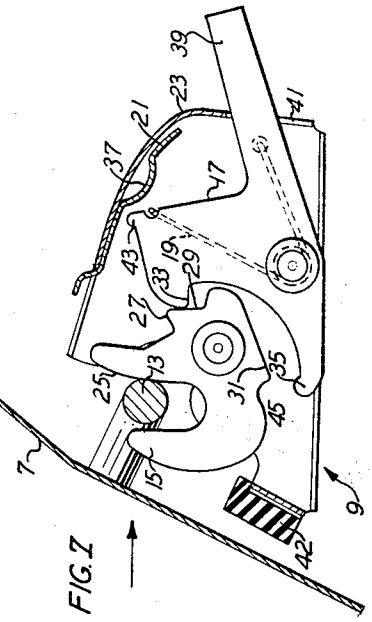
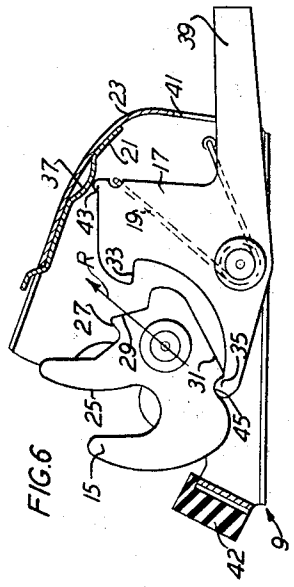


FIG. 6



REGINALD P. THORPE
INVENTOR.

BY

John K. Faulkner
John J. Raethel
ATTORNEYS

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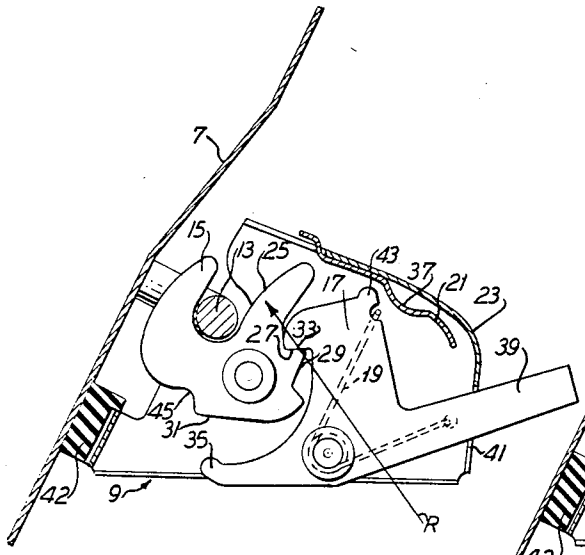


FIG.2

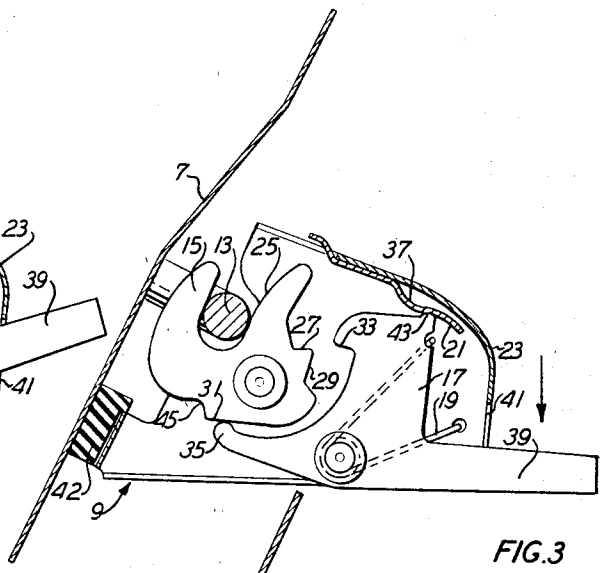


FIG.3

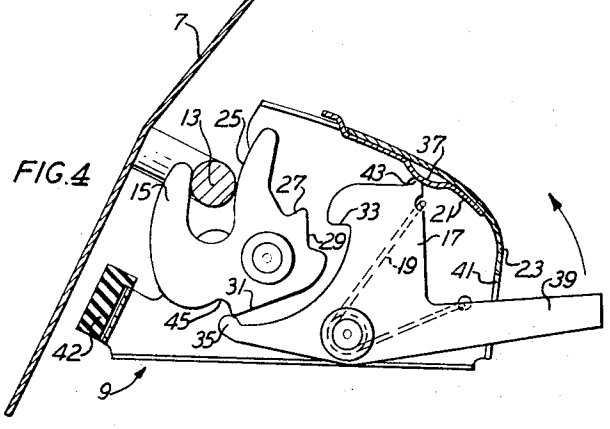


FIG.4

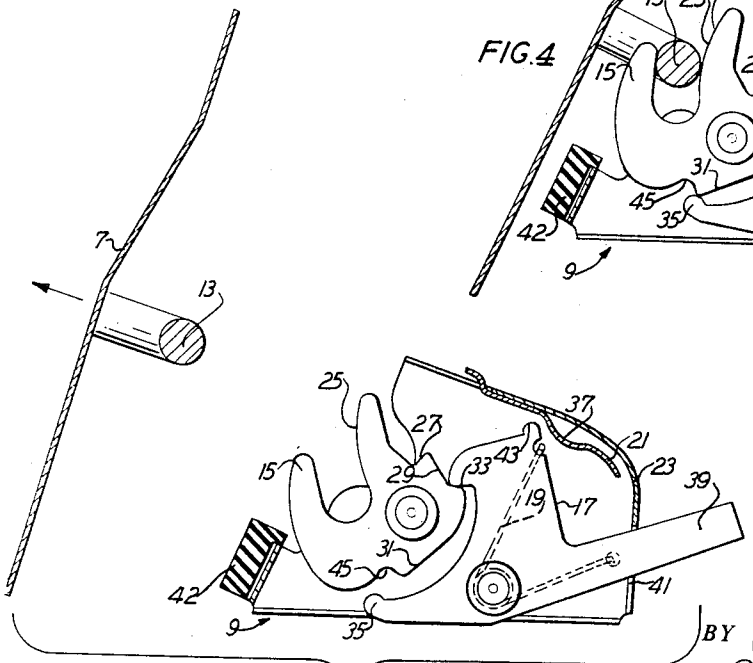


FIG.5

REGINALD P. THORPE
INVENTOR.

BY John R. Faulkner
John J. Boethel
ATTORNEYS

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Reginald P. Thorpe, Rainham, Essex, England, assignor to Ford Motor Company, Dearborn, Mich., a corporation of Delaware

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Claims priority, application Great Britain, Feb. 1, 1966, 4,351/66
3 Claims. (Cl. 296—66)

ABSTRACT OF THE DISCLOSURE

A latch mechanism for the backrest of a station wagon utility seat comprising a latch device and a manually movable detent member for holding the latch device in latched position. The detent member upon being moved to a disengaged position is held by a resilient catch until such time as the latch device is disengaged from a striker holding the backrest in locked upright position. Upon disengagement of the latch device from the striker, the latch mechanism resets itself to again become functional to hold the latch device in latched position relative to the striker.

This invention relates to latch mechanisms which have particular utility in station wagons and to station wagons in which such latch mechanisms are fitted.

In station wagons the backrest of the utility seat is movable from an upright normal position to a lowered position to increase the load carrying area in the car. For safety reasons the backrest should be locked in the upright normal position so that it is not flung forward in the event of a crash. If a usual latch mechanism is fitted at each side of the vehicle, then an occupant of a car may fail to see that the latches are engaged. If a conventional spring controlled latch mechanism is used, for example, like a door latch mechanism at each side of the car then both latch mechanisms have to be held in the release position as the backrest is lowered. This owing to the width of the car is difficult.

The latch mechanism according to this invention is described generally in subparagraph (a) to (d) as follows:

(a) The latch mechanism is adapted to be mounted on one of two relatively movable parts and to cooperate with a striker on the other of the two parts.

(b) The latch mechanism includes:

(1) a latch device movable by the striker between a latched position and a released position;

(2) a detent member spring biased towards an engagement position and movable manually against the bias into a disengagement position; and

(3) an automatic catch operative to retain the detent member in its disengagement position against the spring bias.

(c) The detent member when in its engagement position and when the latch device is in its latching position engages the latch device to prevent it being moved into its released position.

(d) The detent member when retained by the automatic catch permits the latch device to move into its released position.

Preferably the latch device, as it is moved from the latching position to the released position, engages the detent member to release it from the automatic catch.

Further features of the invention are described in the appended claims.

The invention is hereinafter particularly described with reference to the accompanying drawings in which:

FIG. 1 is a fragmentary perspective view of the interior of a station wagon; and

FIGS. 2 to 7 are sections through a latch mechanism and showing the latch mechanism in five different positions.

The station wagon (FIG. 1) has sides **1**, a floor **3**, rear wheel arches or housings **5**, and a rear seat. The backrest **7** only of the rear seat is shown, and it is movable from the upright position into a horizontal position to extend the load carrying area in the rear of the vehicle.

The backrest **7** is retained in its upright position by a pair of latch mechanisms, generally designated **9**, which are fixed one to each wheel arch **5** and which cooperates with strikers **13** fixed to the backrest **7**.

The two latch mechanisms **9** are identical. Each latch mechanism **9** includes: a latch device **15** movable by the striker **13** between the latching position shown in FIG. 1 and a release position (FIG. 5); a detent member **17** biased by a spring **19** towards an engagement position shown in FIG. 1 and movable manually against the bias into a disengagement position shown in FIG. 3; and an automatic catch **21** operative to retain the latch member **17** in its disengagement position against the spring bias. The detent member **17** when it is in its engagement position (FIG. 2) and the latch device **15** is in its locking position (FIG. 2) engages the latch device **15** to prevent it being moved into its release position. The detent member **17** when retained by the automatic catch **21** (FIG. 3) permits the striker **13** to move the latch device **15** into its release position (FIG. 5).

The latch device **15** and detent member **17** of each latch mechanism **9** are pivotally mounted about parallel horizontal axes between the walls of a housing **23**. The housing **23** is of inverted U-shape, and the free ends of the side walls are turned outwardly to form flanges which are secured by screws to the wheel arches **5**. Each latch device **15** has a U-shaped jaw **25**, a first abutment surface **27**, a second abutment surface **29**, and a third abutment surface **31**. Each detent member **17** has a latch device abutment surface **33** and a projection **35**. The spring **19** is a mousetrap type spring wound around the axis of the detent member **17** and having one end secured to the housing **23** and the other end engaging the detent member. The automatic catch **21** is a leaf spring fixed to the upper wall of the housing **23** and having a projection **37**. The detent member **17** has a handle which projects rearwardly through an aperture **41** in the housing **23**. A rubber pad **42** is fixed to the front of the housing and is engaged by the backrest **7** when it is in its upright position.

FIG. 2 shows the position of the latch mechanisms when they are holding the backrest **7** in an upright position. The striker **13** is located within the jaws **25** of the latch device **15**, and the latter is prevented from rocking anti-clockwise by the abutment surface **33** on the detent member engaging the first abutment surface **27** on the latch device **15**. The detent member **17** is biased into the position shown by the spring **19**.

When it is desired to move the backrest **7** from its upright position, the handles **39** of each latch are forced downwardly in the direction of the arrow as shown in FIG. 3. This rocks each detent member **17** clockwise, and a lug **43** on the detent member moves from one side to the opposite side of the projection **37** on the automatic catch leaf spring **21**. The catch then holds the detent members **17** in the position shown in FIG. 3 in which each abutment surface **33** is clear of the first abutment surface **27**; and the third latch device abutment surface **31** on the latch device **15** engages the projection **35** on the detent member.

When the backrest **7** is moved forwardly as shown in FIG. 4, the striker **13** rocks the latch device **15** anti-clockwise. This movement of the latch device results in

two things: (1) the striker **13** is able to move out of the jaws **25** of the latch device; and (2) the latch device **15**, by virtue of the engagement between the surface **31** and projection **35**, rocks the detent member **17** anti-clockwise until the lug **43** clears the projection **37** on the automatic catch. Thus movement of the catch automatically resets each latch device. In this position the detent members **17** engage the second abutment surfaces **29** on the latch devices **15**, and, by virtue of the springs **19**, tend to hold the latch devices **15** in partially released or reset positions.

If, however, the detent members **17** should be moved by mistake into their disengagement positions as shown in FIG. 6, then the projections **35** on the detent members enter shallow notches **45** on the latch devices **15** and thereby prevent the latch devices from being moved from their release positions.

When the backrest **7** is moved back into its upright position the strikers **13** enter the jaws **25** of the latch devices **15** and rock them clockwise. As the second abutment surfaces **29** engage the detent members **17**, the latter are rocked clockwise until the latch members clear the second abutment surfaces **29** on the lock members. The detent members then rock anti-clockwise under the action of the springs **19** until the abutment surfaces **33** on the detent members engage the first abutment surfaces **27** on the latch devices to hold the latter in the locking position as shown in FIG. 2. If the detent members **17** are in the positions shown in FIG. 6, then clockwise rocking of the latch devices causes anti-clockwise of the detent members **19** as a result of the engagement of the notches **45** by the projections **35** until the lugs **41** clear the projections **37**.

In the locking position of the detent members **17** shown in FIG. 2, movement of the backrest **7** to the left could in theory result in the detent member **17** being rocked anti-clockwise since the reaction between the first abutment surface **27** and the surface **33** passes to the left of the pivotal axis of the detent member **17**. The force required to do this is so large that, for practical purposes, the detent members **17** may be regarded as latching the lock members positively. However a real positive latch may be achieved by arranging for the reaction between the first abutment surface **27** and surface **33** to pass to the right of the pivotal axis of the latch member **17** as shown in FIG. 2 by arrow R.

If the latch devices **15** should move from their release positions when the detent members are by mistake moved towards their disengagement positions as shown in FIG. 6, then the reaction R in FIG. 6 between the projection **35** and the notch **45** is such as to rock the lock member anti-clockwise back into its release position.

The latch members described automatically lock the backrest **7** in its upright position when the backrest **7** is returned to its upright position. In addition when a detent member **17** is moved to its disengagement position it remains there by virtue of the automatic catch **21**, and this means that both detent members **17** do not have to be simultaneously released and hold released whilst the backrest **7** is lowered. Moreover, the detent members are automatically returned to their engagement positions when the backrest **7** is lowered,

It will be understood that the invention is not to be limited to the exact construction shown and described, but that various changes and modifications may be made without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. In a vehicle body,

a seat backrest structure mounted on a vehicle body structure for swinging movement;

a latch mechanism mounted on one of said structures and adapted to cooperate with a strike on the other of said structures;

said latch mechanism comprising a housing,

a plannar latch device pivotally mounted in said housing and movable upon engagement with the striker between a latched position and a released position.

a planar detent member pivotally mounted within said housing for swinging movement in a substantially common plane with said latch device,

spring means biasing said detent member toward said latch device to place a first part of said detent member in latch device holding position;

lever means on said detent member for manually moving the latter against the bias toward a latch device disengaged position,

and resilient catch means mounted on a wall of said housing and engageable by a portion of the detent member to retain the latter in its disengaged position against the spring means bias,

said detent member when in latched device holding position preventing movement of the latch device to released position from latched position;

said detent member when retained in disengaged positioned by said catch means permitting movement of said latch device into its release position.

2. In a vehicle body according to claim **1**, in which:

the latch device, upon movement from latched position toward released position as the one structure is moved relative to the other structure, has a first part thereof engageable with a second part of the detent member to rock the latter over the catch means into a position in which said spring means is effective to bias the detent member toward latch device holding position.

3. In a vehicle body according to claim **2**, in which:

the detent member after having been rocked over the catch means is biased by the spring means to position its first part in engagement with a second part of the latch device to hold the latter in a reset position for re-engagement with the striker.

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BENJAMIN HERSH, *Primary Examiner.*

J. A. PEKAR, *Assistant Examiner.*