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(71) Applicant(s)

Terence Heath
16 Guillemard Court, Chichester Grove,
BIRMINGHAM, B37 5SL, United Kingdom

Adrian Terence Heath
21 Manor Park Road, Castle Bromwich,
BIRMINGHAM, B36 0DG, United Kingdom

(72) Inventor(s)

Terence Heath
Adrian Terence Heath

(74) Agent and/or Address for Service

Laurence Shaw and Associates
5th Floor, Metropolitan House, 1 Hagley Road,
Edgbaston, BIRMINGHAM, B16 8TG, United Kingdom

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A44B 11/25

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(56) Documents Cited
US 5307544 A US 5182836 A US 4675954 A
US 4674303 A US 4497094 A

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INT CL⁶ **A44B 11/25**

(54) **Seat belt child safty arrangement**

(57) An enclosure (1) of resilient plastics material is fitted around the clip arrangement (3) of a vehicle seat belt (8) so as to allow normal insertion of the tongue (7) pendant from the seat belt but to discourage depression of the release button (4) by the seat occupant e.g. by a child in the seat. An aperture (9) may be formed in the enclosure to allow release by insertion of e.g. the vehicle ignition key. In another embodiment an electromagnetically operable locking member is used instead of the enclosure to prevent release of the seat belt, and is controlled by a dashboard-mounted switch.

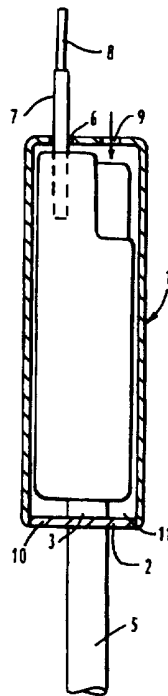


FIG. 2

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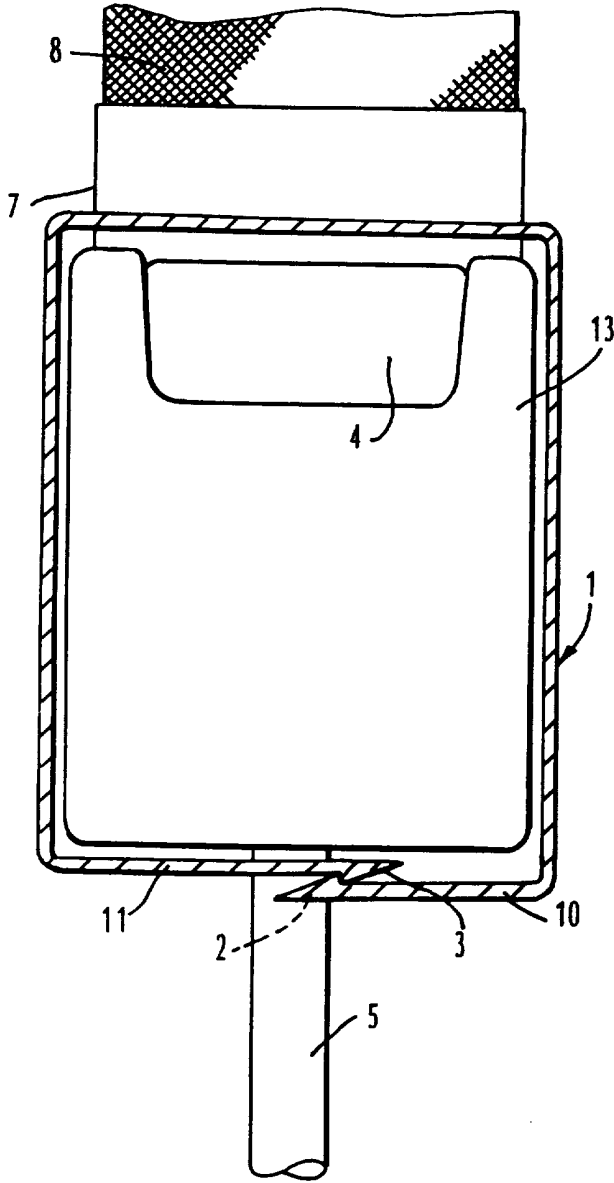


FIG. 1

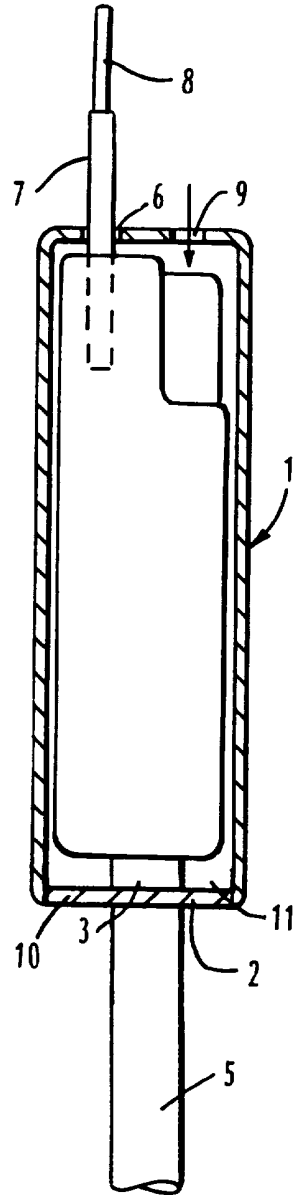


FIG. 2

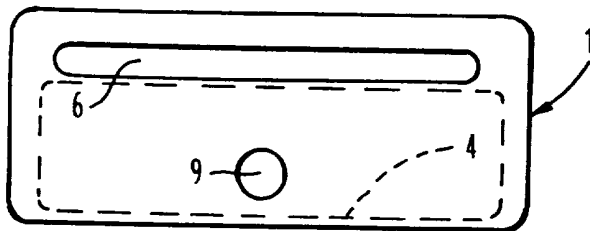


FIG. 3

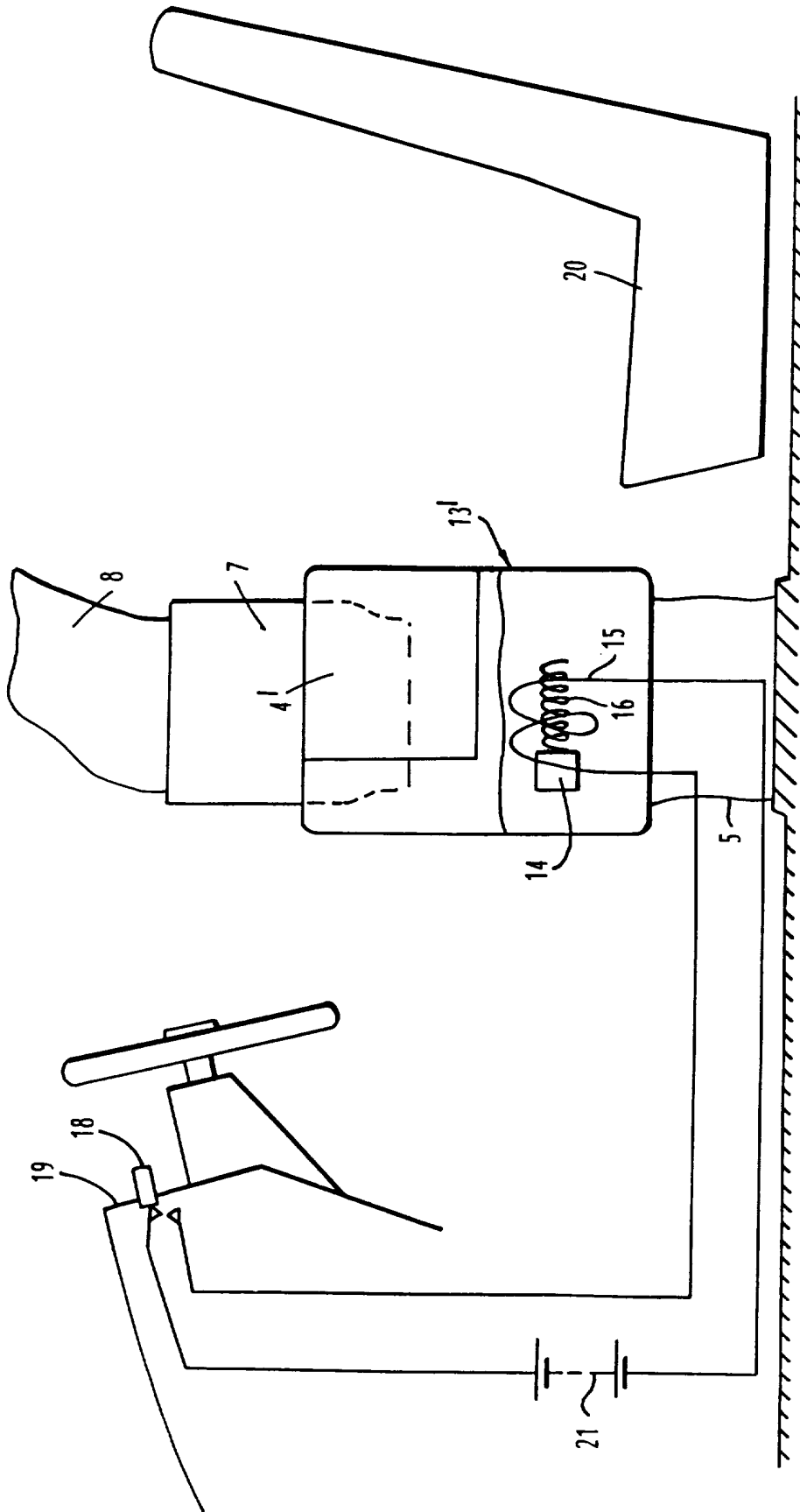


FIG. 4

SEAT BELT SAFETY ARRANGEMENT AND DEVICE

The present invention relates to a seat belt arrangement which is arranged to prevent unwanted release of the seat belt by a child, and to a device in the form of an enclosure for preventing such unwanted release. As is well known, young children frequently undo their car seat belts during car journeys and hence can become unprotected in the event of a crash and can also distract the driver.

An object of the present invention is to improve the safety of children restrained by vehicle seat belts.

In one aspect the invention provides a seat belt arrangement for a vehicle comprising preventing means for preventing operation of the seat belt release member and means inoperable by a child in the seat for negating said preventing means to allow release of the seat belt.

Preferably said preventing means comprises an enclosure which at least partially covers said release member.

Preferably an aperture is formed in said enclosure which is located and dimensioned to allow depression of the release member by an implement inserted through said aperture but to prevent release by a child's finger.

For example a vehicle ignition key can conveniently be used for this purpose.

In another aspect the invention provides an enclosure capable of being fitted around a seat belt release mechanism to prevent normal operation of the seat belt release member.

Preferred embodiments of the invention are described below by way of example only with reference to Figures 1 to 4 of the accompanying drawings, wherein

Figure 1 is a front elevation, partly in section of an arrangement in accordance with the invention;

Figure 2 is a side elevation of the arrangement shown in Figure 1;

Figure 3 is a plan view of the above arrangement, and

Figure 4 is a diagrammatic side elevation of a further arrangement in accordance with the invention.

Referring to Figure 1, a standard seat belt clip 13 is arranged to receive the tongue 7 of a seat belt 8 and includes a release button 4 which operates a standard release mechanism (not shown) to release the seat belt when the button is normally depressed. The clip is anchored to the vehicle floor (not shown) by a strap 5.

In order to prevent unwanted release, e.g. by a child in the seat (not shown) an enclosure 1 of resilient plastics material e.g. polypropylene or a suitable thermosetting plastic surrounds the clip 13. As best shown in Figures 2 and 3 an aperture 6 allows normal insertion of tongue 7. However, the enclosure covers the release button.

In order to enable the seat belt to be released at the end of the journey by the driver, an aperture 9 is formed in the enclosure 1¹ above the upper surface of the release button 4 and the shank of the vehicle ignition key (not shown) can be inserted through this aperture to operate the release button.

As best shown in Figure 1, the enclosure 1 has two flap portions 10 and 11 which form its bottom wall and terminate in mutually engaging barbed portions 2 and 3 respectively, which form a snap fitting. This snap fitting is sufficiently secure to make its release by a child in the seat difficult or impossible. However, it can be released by an adult to enable the flaps 10 and 11 to be bent back to a near-vertical position to enable the enclosure 1 to be lifted off the clip 13 (after release of the seat belt) if necessary. The enclosure 1 is fitted over clip 13 by the reverse procedure.

Figure 4 shows a further embodiment in which the clip 13¹ of a rear seat belt 8 is provided with a solenoid 15 which, when actuated by a push-button switch 18 in series with the vehicle battery 21 overcomes the action of a spring 16 and attracts a slidable armature 14 of magnetically soft material into a position in which it blocks the release button 4¹. Armature

14 is normally held in the non-blocking position shown by compression spring 16.

Switch 18 is provided with a latching mechanism (not shown) which ensures that the solenoid remains energised until the switch is again actuated by the driver, e.g. at the end of the journey. The switch is mounted on the dashboard 19 out of reach of a child in the rear seat 20. The wiring between solenoid 15 and switch 18 conveniently includes the wiring conventionally included in a seat belt to detect that the passenger has fastened the seat belt. To this end, a resistor (not shown) may be provided between the open contacts of switch 18 which passes insufficient current to actuate the solenoid 15 but sufficient current to operate a warning light or other indicator in the event that the seat belt is not fastened. The circuitry required to operate the warning light is well known and need not be described here.

CLAIMS

1. A seat belt arrangement for a vehicle comprising preventing means for preventing operation of the seat belt release member and means inoperable by a child in the seat for negating said preventing means to allow release of the seat belt.
2. A seat belt arrangement according to Claim 1, wherein said preventing means comprises an enclosure which at least partially covers said release member.
3. A seat belt arrangement as claimed in Claim 2, wherein an aperture is formed in said enclosure which is located and dimensioned to allow depression of the release member by an implement inserted through said aperture but to prevent release by a child's finger.
4. A seat belt arrangement as claimed in Claim 3, wherein said aperture is shaped and dimensioned to fit around the shank of a vehicle ignition key.
5. A seat belt arrangement as claimed in any of Claims 2 to 4, wherein said enclosure has a snap fitting which is releasable by an adult to enable the enclosure to be removed.

6. A seat belt arrangement as claimed in Claim 1, wherein said preventing means comprises an electromagnetically actuatable locking member which is controlled by a switch which is inaccessible from the seat.
7. An enclosure capable of being fitted around a seat belt release mechanism to prevent normal operation of the seat belt release member.
8. An enclosure as claimed in Claim 8, which has an aperture which allows depression of a release button by an implement.
9. An enclosure as claimed in Claim 7 or Claim 8, which is as defined in Claim 4 or Claim 5.
10. An enclosure capable of preventing normal operation of a seat belt release button, substantially as described hereinabove with reference to Figures 1 to 3 of the accompanying drawings.
11. A seat belt arrangement substantially as described hereinabove with reference to Figures 1 to 3 or Figure 4 of the accompanying drawings.



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Claims searched: All

Examiner: A Angele
Date of search: 1 February 1996

**Patents Act 1977
Search Report under Section 17**

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK CI (Ed.O): E2A(ACPX, APB, ABJ, ABM)
Int CI (Ed.6): (A44B-011/25)
Other:

Documents considered to be relevant:

| Category | Identity of document and relevant passage | Relevant to claims |
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| X | US 5182836 A BURKAT | 1,2,6,7 |
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| | See whole document in each case | |

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