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M. GOLDMAN
SEAT BELT BUCKLE

3,147,530

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Fig. 1

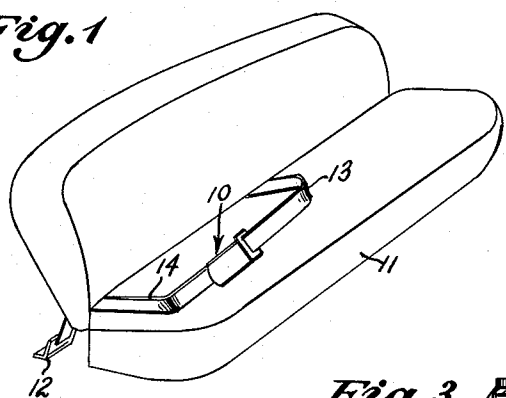


Fig. 2

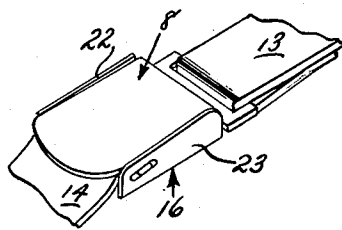


Fig. 3

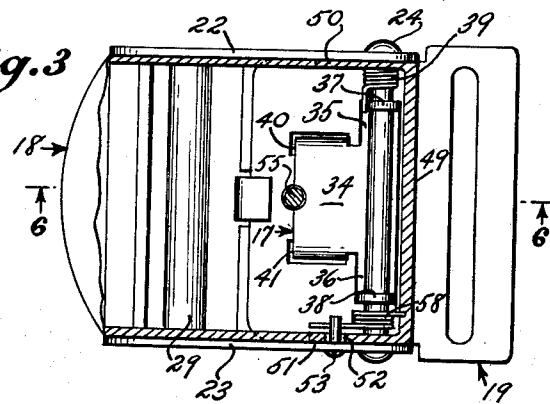


Fig. 4

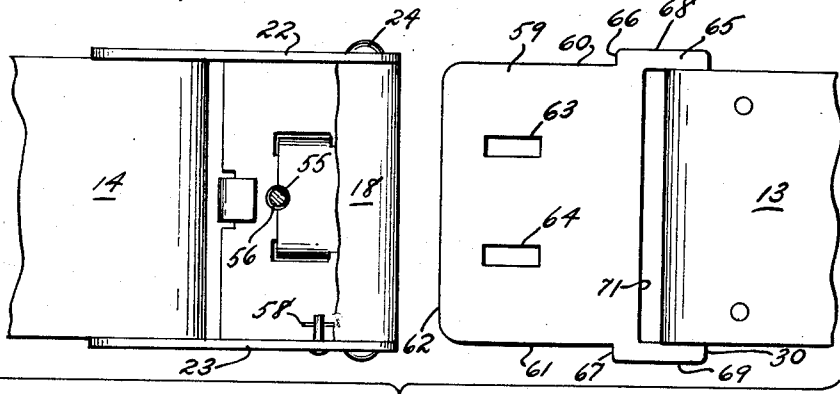
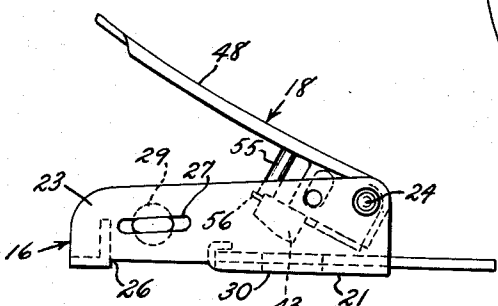
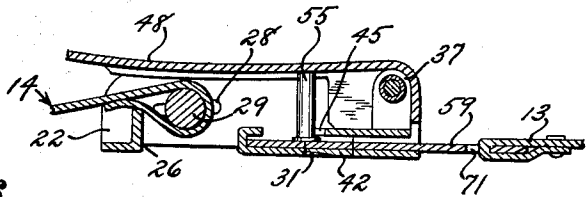


Fig. 5

Fig. 6



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3,147,530

SEAT BELT BUCKLE

Martin Goldman, Old Westbury, N.Y., assignor to Ratsay Safety Belts, Inc., City Island, Bronx, N.Y., a corporation of New York

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1 Claim. (Cl. 24—230)

This invention relates generally to the field of automotive seat belt buckles, and more particularly to an improved form of such buckle in which the latching and latch-release elements are pivotally mounted with respect to a base element to simplify both engagement of the component parts of the buckle and the disengagement thereof.

It is among the principal objects of the present invention to provide an improved form of seat belt buckle in which the latch element and latch-opening element thereof are relatively movably interconnected, in such manner that the latch element may be moved independently of the latch-opening element during the period in which the component parts of the buckle are being engaged, and in which the latch-opening element and latch element move as a unit to unlock the buckle so that the component parts may be disengaged.

Another object of the invention lies in the provision of an improved belt buckle of the class described which will not readily accidentally open, but which may be readily disengaged intentionally.

Another object of the invention lies in the provision of an improved seat belt buckle of the class described in which the cost of fabrication may be of a reasonably low order, thereby permitting consequent wide sale, distribution and use.

A further object of the invention lies in the provision of an improved seat belt buckle in which the major component parts may be formed as metallic stampings, thereby simplifying the manufacturing procedures therefor.

A feature of the invention lies in the unusually attractive appearance of the disclosed embodiment.

These objects and features, as well as other incidental ends and advantages, will more fully appear in the progress of the following disclosure, and be pointed out in the appended claims.

In the drawing, to which reference will be made in the specification, similar reference characters have been employed to designate corresponding parts throughout the several views.

FIGURE 1 is a view in perspective showing an embodiment of the invention in installed condition.

FIGURE 2 is a fragmentary enlarged view in perspective of the embodiment.

FIGURE 3 is a fragmentary transverse sectional view of the embodiment.

FIGURE 4 is a side elevational view thereof showing the device in opened condition.

FIGURE 5 is an exploded view in elevation, partly broken away to show detail.

FIGURE 6 is a longitudinal sectional view as seen from the plane 6—6 in FIGURE 3.

In accordance with the invention, the device, generally indicated by reference character 10, is illustrated in FIGURE 1 in the drawing in installed condition upon a conventional automotive seat 11, the ends of the device being secured in conventional floor anchors 12. As is usual in constructions of this type, the device 10 is interconnected with first and second seat belt elements 13 and 14 in well-known manner. The device 10 comprises broadly: a base element 16, a pivotally mounted latch element 17, a pivotally mounted latch-opening element 18, and a latch-engaging element 19.

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The base element 16 is preferably formed from a metallic steel stamping, and includes a base wall member 21, a pair of parallel side wall members 22 and 23, and a transversely disposed shaft member 24, the ends of which are anchored within the side wall members 22 and 23. A generally rectangular opening 26 extends between the wall members 22 and 23 to provide for the entry of the second belt element 14. Slotted openings 27 and 28 are disposed directly above the opening 26, and are engaged by a belt element-engaging shaft 29 about which the belt element 14 is looped.

The pivotally mounted latch element 17 is best seen from a consideration of FIGURE 3 in the drawing, and is also formed as a steel stamping. It includes a planar member 34, having a pair of lateral extensions 35 and 36 supporting angularly disposed brackets 37 and 38. The brackets 37 and 38 are provided with aligned orifices (not shown), and engage the shaft 24 for limited rotation with respect thereto. A coil spring 39 engages the bracket 37 at one end thereof, the other end (not shown) bearing against the inner surface of the latch-opening element 18 to normally urge the latch element 17 in a downward direction as seen in FIGURE 6. Third and fourth lateral extensions 40 and 41, respectively, are provided with locking lugs 42 and 43, which in a latching position project into the rectangular openings 30 and 31 in the base element 16, as best seen in FIGURE 6. A longitudinally disposed slotted opening 45 (see FIGURE 6) provides means for engaging the latch-opening element 18, as will more fully appear.

The latch-opening element 18 is also formed as a large steel stamping, and is pivotally mounted upon the shaft 24 for coaxial rotation with respect to the latch element 17. It includes an upper planar member 48, an integral end member 49, and side flange members 50 and 51 having openings therein engaging the above-mentioned shaft 24. The flange member 51 includes a slotted opening 52 engaging a pin 53 on the base element 16, which limits the degree of angular rotation from that shown in FIGURE 6 to that seen in FIGURE 4. A coil spring 58 engages the pin 53 on one end thereof, the other end contacting the the lower surface of the end member 49 (see FIGURE 3). Extending downwardly from the inner surface of the upper planar member 48 is a transversely disposed pin 55 having an enlargement 56 thereon, the pin 55 being slidably engaged within the opening 45 in the latch element 17. Thus, when the latch element is raised independently of the latch opening element, as when the same is contacted by the edge 62, the pin 55 slides within the opening 45, and when the latch opening element is raised, the motion is transmitted through the pin 55 and enlargements 56 to the latch element.

The latch-engaging element 19 is of planar configuration, and includes a first portion 59 bounded by side edges 60 and 61 and an end edge 62. Rectangular openings 63 and 64 correspond in position to that of the locking lugs 42 and 43. A second portion 65 is bounded by edges 66 and 67, side edges 68 and 69, and an end edge 70. A transverse elongated slot 71 provides means for engaging the first belt element 13 which is folded back upon itself and riveted or sewn as desired.

During engagement of the element 19 with the latch element 17, the former is moved leftwardly as seen in FIGURE 5 until the end edge 62 strikes the lugs 42 and 43 and pivots the element 17 a distance sufficient to allow the element 19 to pass therebeneath. When the first portion 59 of the element 19 is completely seated, the lugs 42 and 43 will drop into the openings 63 and 64 therein, and in the openings 30 and 31 in the base element 16 to securely lock the element 19 against withdrawal. During this motion, the latch-opening element

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18 will remain stationary, as it provides sufficient clearance for movement of the latch element 17 therebeneath, the pin 55 merely riding in the slotted opening 45. To disengage the element 19 from the element 17, the planar member 48 is pivoted about the shaft 24 a distance sufficient to again clear the lugs 42 and 43 from the openings 63 and 64, respectively. Excessive pivoting action is prevented by the engagement of the pin 53 with the end of the slotted opening 52, as seen in FIGURE 4. While maintaining the latch-opening element 18 in this condition, the latch-engaging element 19 may be withdrawn without hinderance.

I wish it to be understood that I do not consider the invention limited to the precise details of structure shown and set forth in this specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

I claim:

In a seat belt buckle of the class described, a base element including a base wall and a pair of adjoining side walls, a transversely disposed shaft interconnecting said side walls, a latch element pivotally mounted upon said

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shaft and having first spring means resiliently urging said latch element to a closed condition, a latch-opening element pivotally mounted upon said shaft and having second spring means resiliently urging said latch-opening element toward said base element, said latch-opening element covering said latch element and forming an enclosed space within which said latch element may be independently moved against the action of said first spring between open and closed positions, said latch-opening element having an elongated projection having an enlargement on a free end thereof, said latch element having a corresponding opening therein of width smaller than that of said enlargement, and slidably engaging said projection.

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