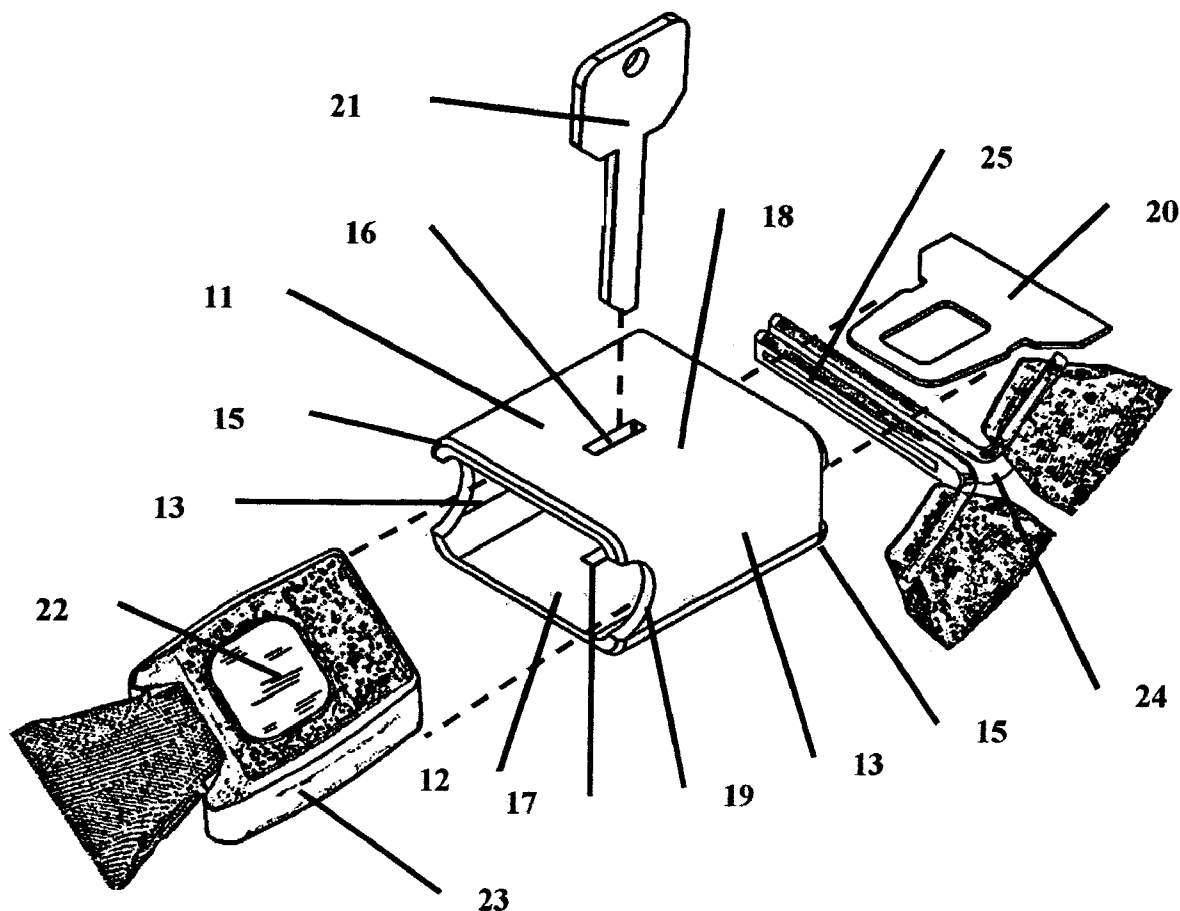




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(19) **United States**(12) **Patent Application Publication**
Guerra et al.(10) **Pub. No.: US 2009/0126170 A1**(43) **Pub. Date: May 21, 2009**(54) **GUARD FOR HEALTHCARE SAFETY STRAP
BUCKLES****Publication Classification**(51) **Int. Cl.**
A44B 11/25 (2006.01)(52) **U.S. Cl.** **24/573.11; 24/572.1**(57) **ABSTRACT**(76) **Inventors:** **Wayne Guerra**, Bow Mar, CO
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5355 Bison Trail
Bow Mar, CO 80123 (US)(21) **Appl. No.: 12/313,315**(22) **Filed: Nov. 19, 2008****Related U.S. Application Data**(60) **Provisional application No. 61/004,140, filed on Nov.**
21, 2007.

A security guard is provided for healthcare safety strap buckles used in medical transport, and medical examinations. The guard is a hollow rectangular enclosure having a top wall, a bottom wall, two side walls, a partially-opened end, and a fully open end to fit over a variety of healthcare safety strap buckles. The guard surrounds the push button buckle preventing unsupervised or accidental release of the safety strap. The partially open end can accommodate the healthcare safety strap and shoulder straps used in medical transport and observation. A slot is included in the top and the bottom of the cover that a key or similar device can be used to depress the push button and release the buckle. In a second embodiment a slot is formed in the closed end and is dimensioned to receive only the safety buckle tongue of the healthcare safety strap, and is designed to be used in the absence of shoulder straps.



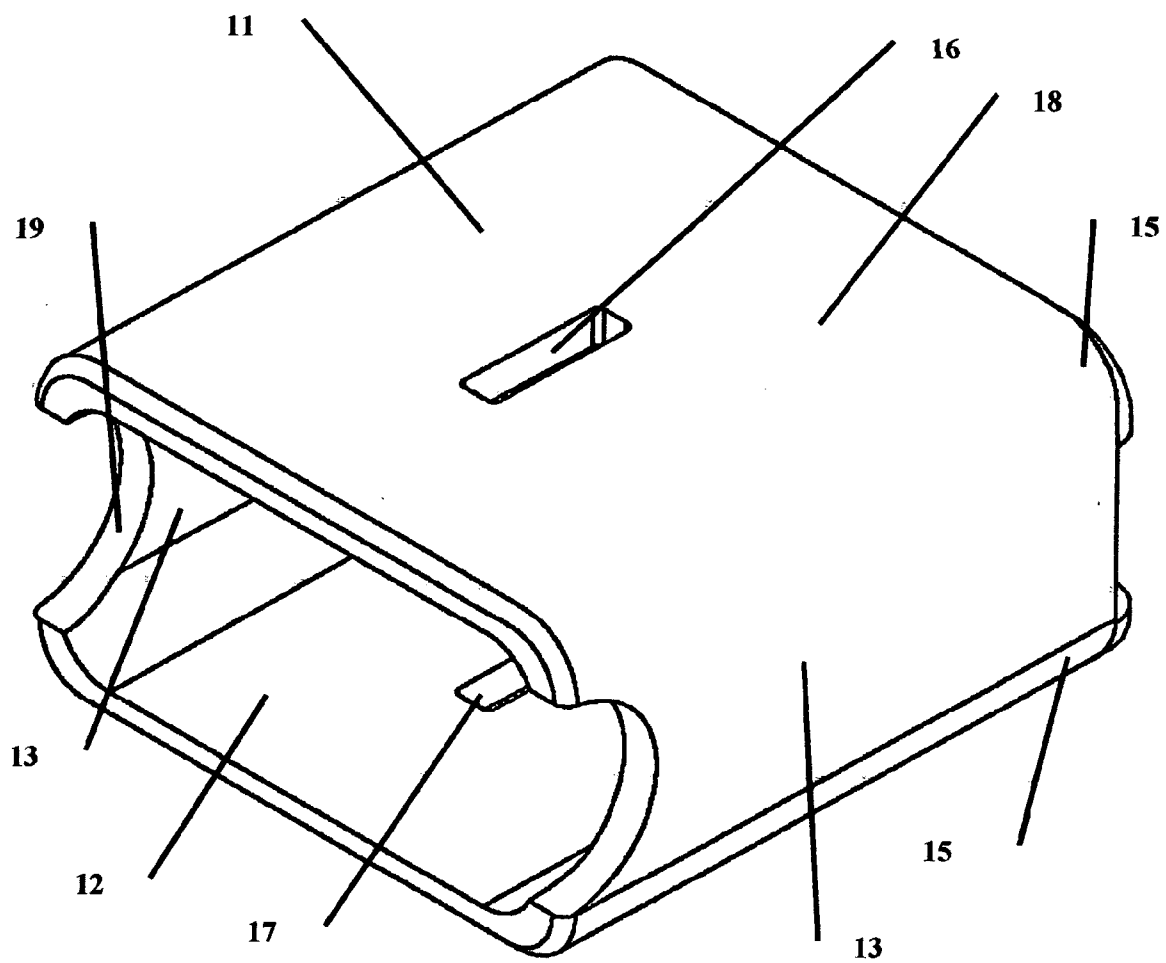


FIG. 1

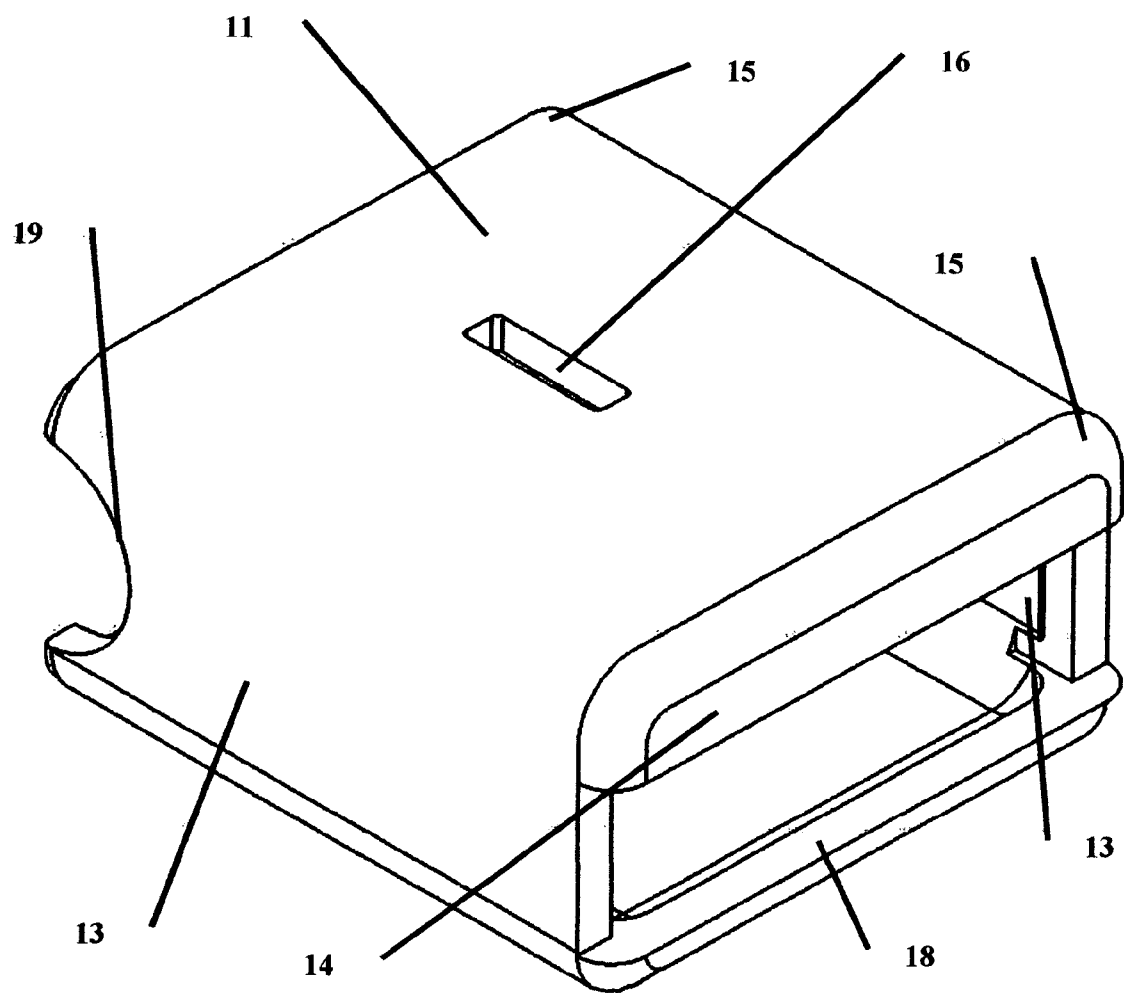


FIG. 2

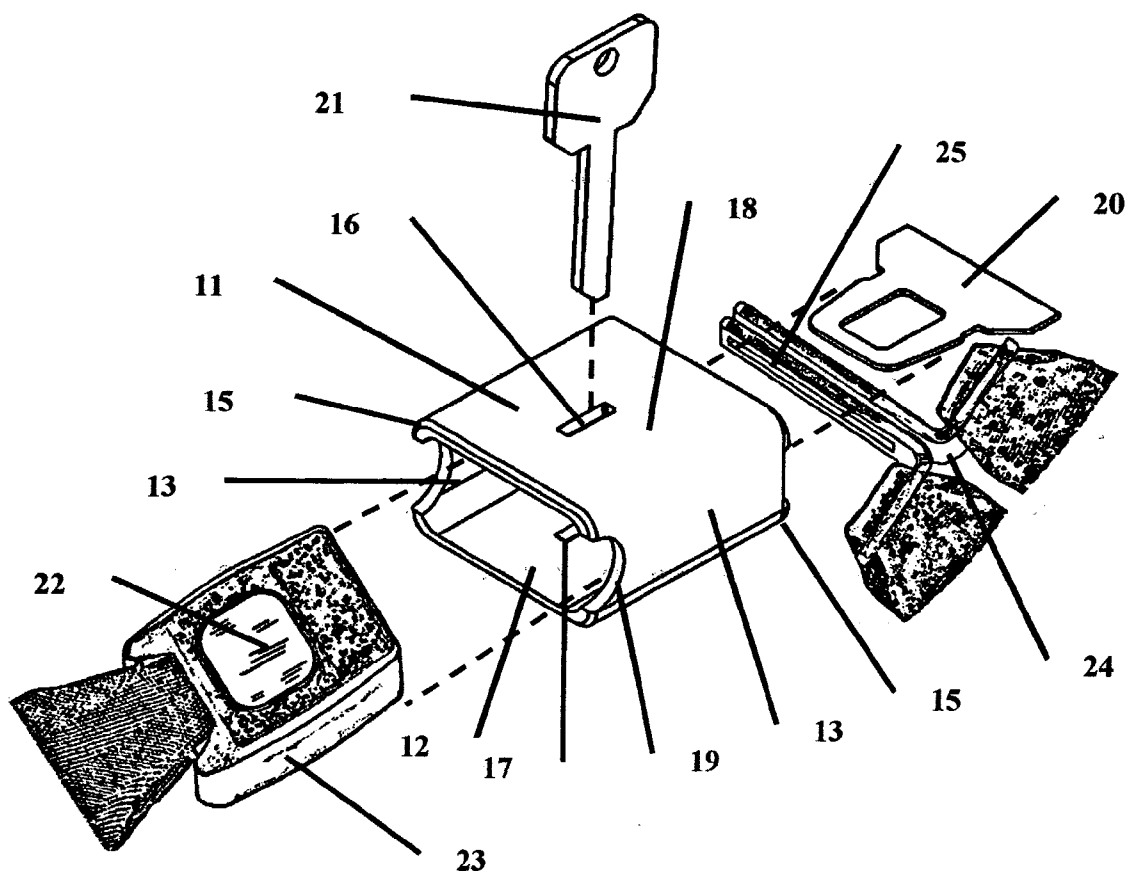


FIG. 3

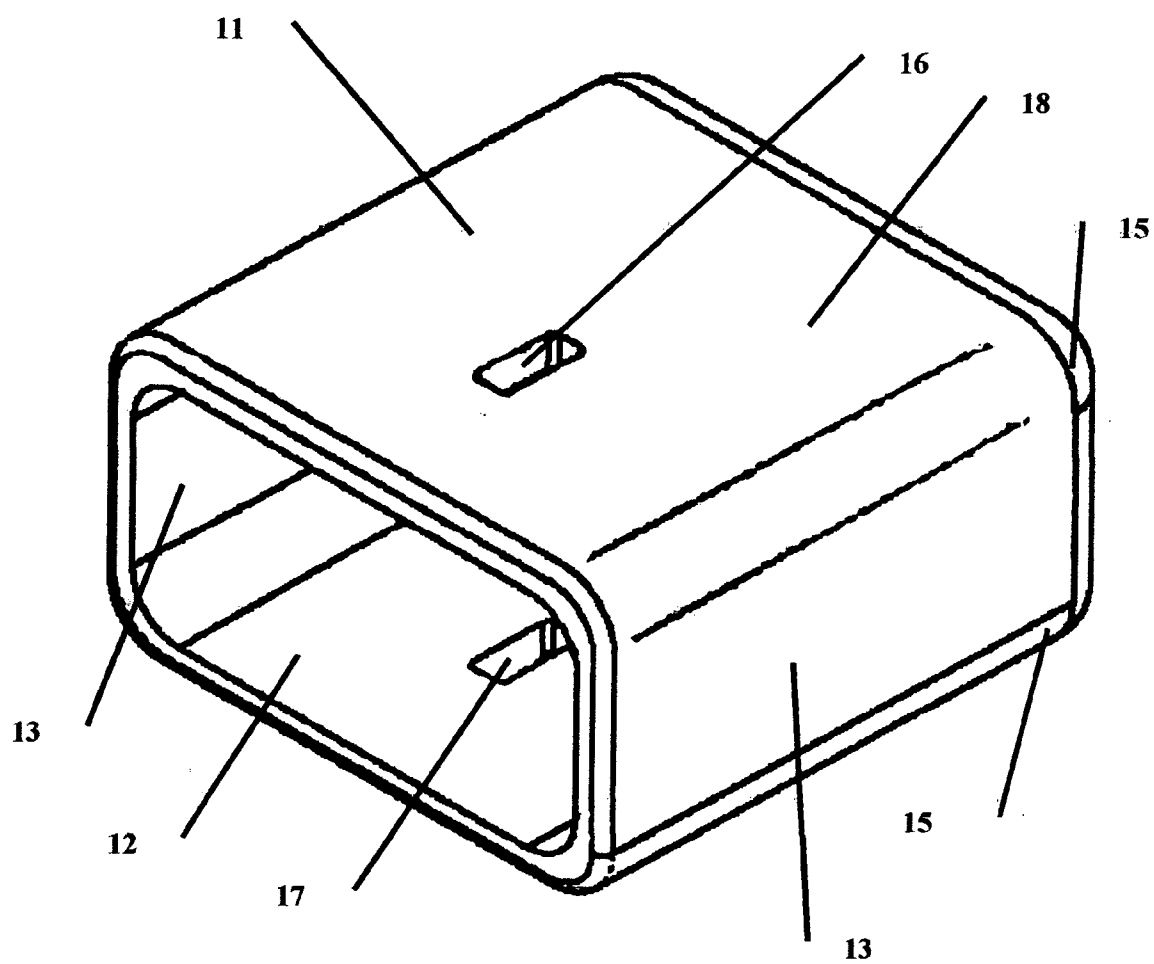


FIG. 4

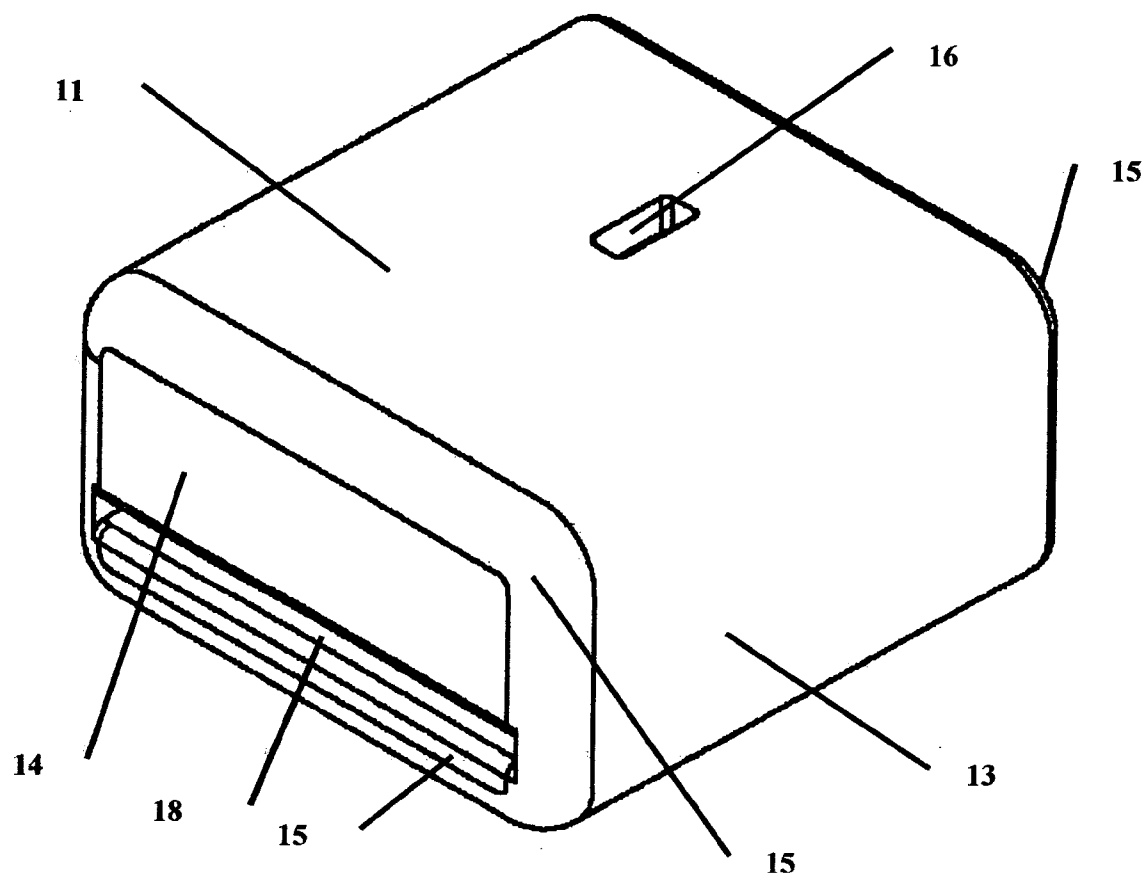


FIG. 5

GUARD FOR HEALTHCARE SAFETY STRAP BUCKLES

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of PPA Ser. No. 61/004,140 filed 2007 Nov. 21 by the present inventors, which is incorporated by reference.

FEDERALLY SPONSORED RESEARCH

[0002] Not Applicable

SEQUENCE LISTING

[0003] Not Applicable

BACKGROUND

[0004] 1. Field of Invention

[0005] This invention relates to healthcare patient safety equipment and in particular to a guard for healthcare safety strap buckles.

[0006] 2. Prior Art

[0007] Medical apparatus such as stretchers, gurneys, chairs, wheelchairs, beds, and tables generally include patient safety straps. The safety straps provide restraint during patient movement, patient observation, or support the patient for various other medical procedures.

[0008] Some patients, because of confusion, intoxication or suicidal ideations, do not want to remain on their gurneys, wheelchairs, beds, or other medical apparatuses. Patients have removed their safety straps by actuating the release button, causing injury to themselves and healthcare personnel. For example, suicidal patients have purposely released the two-piece push button buckle of the healthcare safety strap. Once released, these patients have opened the ambulance doors and jumped out of the moving vehicle resulting in significant injury and deaths. Other times, patients in medical facilities have released their buckles and accidentally fallen out of their gurneys and other medical apparatuses resulting in injury to patients and healthcare personnel. It would be desirable to provide healthcare personnel with a cover that surrounds the safety buckles used in healthcare to deter the patient from pushing the button and releasing the buckle.

[0009] However, heretofore there has not been available a safety strap guard with the advantages and features of the current invention.

[0010] Willard et al, in U.S. Pat. No. 6,988,297 (2006) describes a security cover for the buckle of a belt-type passive restraint system. These belts are used in law enforcement, and are not the types of straps and buckles used in medical transport.

[0011] Quarberg et al, in U.S. Pat. No. 5,307,544 (1994) describes a box enclosure that surrounds the push button buckle of seat belts. Once the seat belt buckle guard is in place over the locked buckle assembly, a special tool, such as a key, a coin, a credit card or some other thin flat instrument, must be used to actuate the release button to allow the belt halves to be separated. Morris in U.S. Pat. No. 4,497,094 (1985) describes a similar although more simple design. Both inventions are used for seat belts in automobiles, and are not designed to be used with healthcare safety straps. Both renditions have a box-like structure with sharp edges. These sharp edges could be used by patients to cause self-inflicted injuries. There is not a slot for releasing the buckle on the bottom of the seat belt

guard. Inadvertent placement of the buckle in the wrong orientation could result in significant delay in releasing the buckle, possibly causing harm to a patient.

[0012] Still other patents describing seat belt buckle guards exist but none are designed to be used with healthcare safety straps. These patents are Hoffman U.S. Pat. No. 7,243,403, Arai U.S. Pat. No. 5,987,716, Gustin U.S. Pat. No. 5,617,617, Nihei U.S. Pat. No. 5,165,149, Portuese U.S. Pat. No. 5,052,087, Haffey U.S. Pat. No. 4,987,662, Smith U.S. Pat. No. 4,961,251 Portuese U.S. Pat. No. 4,878,277, Boriskie U.S. Pat. No. 4,731,912, Gullickson U.S. Pat. No. 4,675,954, Gloomis U.S. Pat. No. 4,638,533, Morris et al U.S. Pat. No. 4,502,194, and Lamb U.S. Pat. No. 3,484,908.

[0013] In conclusion, insofar as we are aware, no guard for a two-piece buckle exists for safety straps used on medical apparatus such as stretchers, gurneys, chairs, wheelchairs, beds, and tables. This guard prevents the patient from releasing the buckle, but is easily released by the healthcare personnel attending the patient. In addition, the device has blunted edges to prevent patients from causing self-inflicted injury. There has been no other guard available with the features and advantages of this invention.

SUMMARY

[0014] The invention is an improved guard that surrounds the buckle of the straps used in medical transport, exam tables, medical imaging tables, wheelchairs and other medical apparatuses. These straps are conventional, and the female and male portions of the straps are interchangeable amongst different manufacturers.

[0015] The buckle guard comprises a hollow, rectangular box-like enclosure having a top wall, a bottom wall, two side walls and only one end wall. The guard surrounds the two-piece push button buckle used in healthcare safety straps preventing the patient from actuating the push button and releasing the buckle. A slot exists on the top of the buckle guard that fits a standard automobile key or other similar device enabling the medical personnel to depress the button and release the strap. The slot was specifically designed to accommodate the open end of trauma scissors carried by many paramedic personnel. Patients would not have access to such keys or similar devices. In case of inadvertently applying the guard upside down, a slot is placed on the bottom of the guard to prevent delay in medical personnel releasing the buckle.

[0016] Another feature of the invention is it can be used with a variety of healthcare safety straps. A preferred embodiment of the invention has an opening in the end wall, perpendicular to the two side walls, dimensioned to accommodate many of the healthcare shoulder strap mechanisms currently in use. The shoulder strap mechanism is used primarily in the transport of patients in ambulances.

[0017] In a second embodiment, a slot is formed through the thickness dimension of the single end wall of a guard and it extends perpendicular to the two side walls. The slot is dimensioned to receive only the safety buckle tongue of a buckle strap assembly so that it can be inserted into the buckle receiver and latched in place. It is designed to be used in the absence of shoulder straps.

DRAWINGS

[0018] FIG. 1 is a perspective view of the preferred embodiment of a buckle guard viewed from the open end of the guard.

[0019] FIG. 2 is a perspective view of the preferred embodiment of a buckle guard viewed from the closed end.

[0020] FIG. 3 is a perspective exploded view illustrating the principles of the preferred embodiment of the present invention.

[0021] FIG. 4 is a perspective view of another embodiment of a buckle guard viewed from the open end of the guard.

[0022] FIG. 5 is a perspective view of another embodiment of a buckle guard viewed from the closed end.

DETAILED DESCRIPTION

[0023] Detailed embodiments of the present invention are disclosed herein; however, the disclosed embodiments are merely exemplary of the invention, which may be embodied in many forms. The structural and functional details disclosed below are not meant to be limiting, but serve merely as a representative basis to teach one skilled in the art to employ and construct the invention.

[0024] FIG. 1 is a perspective view of a guard viewed from the open end of a guard constructed in accordance with the preferred embodiment of the invention. The top wall 11 and bottom wall 12 connect with the two side walls 13 joined by blunted edges 15. Each of the side walls 13 has a finger cutout 19 on the end surface to accommodate the fingers as the invention is assembled. A slot in the top wall 16 is half-way between the side walls 13 and lines up with the push button plate of the female portion of the buckle. A similar dimensioned slot 17 is also found in the bottom wall 12. The walls are made of plastic, metal, or wood. The walls can be injection molded as one piece or joined by a physical joint, glue, thermal bonding, or solder. Through the closed end is a slot 18 that fits a safety buckle tongue threaded through a shoulder strap tongue.

[0025] FIG. 2 is a perspective drawing viewed from the closed end of a guard and illustrates the closed end of the guard 14 and the slot for the safety buckle tongue 18. The closed end 14 connects to the top wall 11 and side walls 13 with blunted edges 15. A blunted edge 15 is also found on the bottom portion of the slot 18. The top wall 11 connects to the side wall 13 with blunted edges 15. Each of the side walls 13 has a finger cutout 19 on the end surface to accommodate the fingers as the invention is assembled. A slot 16 in the top wall 11 is shown.

[0026] FIG. 3 depicts an actual reduction to practice demonstrating the invention functioning as designed in the preferred embodiment. The figure demonstrates a safety buckle tongue 20 ready to be inserted through the shoulder strap slots 25 in the shoulder strap tongues 24 and into the safety buckle tongue slot 18 formed in the closed end of the guard. The safety buckle tongue 20 mates with the female end of a safety buckle receiver 23. A key 21 illustrates the proper orientation to the slot 16 in the top wall 11, through which it may be used to depress the safety buckle release button 22 when the invention is fully assembled. The blunted edges 15 are attaching the side wall 13 with the top wall 11 and the bottom wall 12. Each of the side walls 13 has a finger cutout 19 on the end surface to accommodate the fingers as the invention is assembled. A slot 17 that mirrors the top slot 16 is shown in the bottom wall 12.

[0027] FIG. 4 is a perspective view of another embodiment of a buckle guard viewed from the open end of the guard. The top wall 11 and bottom wall 12 connect with the two side walls 13 joined by blunted edges 15. A keyhole slot in the top wall 16 is half-way between the side walls 13 and lines up with the push button plate of the female portion of the buckle.

A similar dimensioned keyhole slot 17 is also found in the bottom wall 12. Through the closed end is a slot 18 that fits a safety buckle tongue.

[0028] FIG. 5 is a perspective drawing of another embodiment viewed from the closed end of the guard and illustrates the closed end of the guard 14 and the slot 18 which is large enough to accommodate a safety buckle tongue that has not been threaded through shoulder strap tongues. The closed end 14 connects to the top wall 11 with blunted edges 15. A blunted edge 15 is also found on the bottom portion of the slot 18. The top wall 11 connects to the side wall 13 with blunted edges 15. A keyhole slot 16 in the top wall 11 is shown.

REFERENCE NUMERALS

[0029]	11 top wall
[0030]	12 bottom wall
[0031]	13 side walls
[0032]	14 back wall
[0033]	15 blunted edges and corners
[0034]	16 top slot
[0035]	17 bottom slot
[0036]	18 slot for safety buckle tongue
[0037]	19 finger cutout
[0038]	20 safety buckle tongue
[0039]	21 key
[0040]	22 safety buckle release button
[0041]	23 safety buckle receiver
[0042]	24 shoulder strap tongues
[0043]	25 shoulder strap slot

What is claimed is:

1. A buckle guard for use with healthcare safety straps comprising a hollow rectangular box-like enclosure having a top wall, a bottom wall, two side walls, a partially-opened end, and a fully open end to fit over a variety of said healthcare safety strap buckles, the receiver of said buckle fits through the fully open end and the buckle tongue may be inserted through the partially open end for fastening wherein said rectangular box covers said healthcare safety strap buckle and its releasing mechanism preventing unsupervised or accidental depress of release of said healthcare safety strap buckle.

2. A buckle guard for use with healthcare safety straps as in claim 1 has a slot located in said top wall halfway between said side walls and allows access to the release button of said buckle, wherein to release said safety buckle by inserting a key or pointed object into the slot and push against the release button, any object with the slotted size which is readily available at the time can be used, such as a screwdriver or open end of scissors.

3. A buckle guard for use with healthcare safety straps as in claim 1 to 2 has a slot located in said bottom wall halfway between said side walls and allows access to the release button of said buckle, wherein said safety buckle can be released if inadvertently placed on said safety strap in the wrong orientation.

4. A buckle guard for use with healthcare safety straps as in claim 1 wherein the edges and corners of said side walls, said top walls, said bottom walls, said open end, and said partially open end are blunted in a manner such as that afforded by rounding exterior surfaces to prevent a patient from harm, either accidentally or from self-inflicted behavior.

5. A buckle guard for use with healthcare safety straps as in claim 1 wherein material is removed from said open end of said side wall to facilitate the insertion of the receiver end of the said buckle into said rectangular box-like enclosure.

6. A buckle guard for use with healthcare safety straps with said partially open end thereby enabling the securing of a pair of shoulder straps in addition to the said healthcare safety straps.

7. A buckle guard for use with healthcare safety straps comprising a hollow rectangular box-like enclosure having a top wall, a bottom wall, two side walls, an end wall, and a fully open end to fit over a variety of said healthcare safety strap buckles, a slot is formed through the thickness of said end

wall and extends perpendicular to said side walls, the receiver of said buckle fits through the fully open end and the buckle tongue may be inserted through said formed slot of the end wall wherein said rectangular box covers said healthcare safety strap buckle and its releasing mechanism preventing unsupervised or accidental depress of release of said healthcare safety strap buckle.

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