CROTCH STRAP SECUREMENT

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ABSTRACT OF THE DISCLOSURE

An improved crotch strap securement for a baby carriage employs a generally U-shaped wire bracket, a portion of whose legs are offset at right angles from the web. The crotch strap is looped around the web and, by tilting the bracket, its legs are inserted through spaced-apart openings in the seat plate. The offset leg portions on the bracket define shoulders which engage under the seat plate and prevent the bracket from being pulled away from the plate by tension on the strap.

BACKGROUND OF THE INVENTION

This invention relates to baby strollers and carriages. It relates more particularly to an improved securement for the crotch straps on such strollers.

FIELD OF THE INVENTION

Baby strollers of the type with which we are concerned here generally have a horizontal seating platform supported by a wheeled running gear. A seat pad covers the seating platform and a crotch strap extends up from near the front edge of the seat to a generally U-shaped body bow spaced above the seat. The infant sits in the stroller with his legs straddling the crotch strap which then serves to prevent him from sliding out through the open front of the stroller.

In some strollers, the crotch strap can be disengaged from the body bow so that the vehicle can be converted from an upright stroller position to a fully-enclosed carriage position wherein the backrest, seat and footrest all form an elongated, generally horizontal platform. An example of such a convertible carriage is shown in U.S. Patent No. 2,872,203.

DESCRIPTION OF THE PRIOR ART

Usually, the crotch strap is anchored at its lower end by permanently stitching it to the underside of the seat pad. In practice, this mode of securing has not proved satisfactory because the crotch strap is subjected to considerable stress due to the movements of the infant in the carriage. As a result, it frequently tears away from the seat pad. When this occurs, the entire seat pad must be replaced. Needless to say, this can be annoying and expensive to the purchasers of such carriages.

To obviate this problem, attempts have been made to removable attach the lower end of the crotch strap to the underside of the seat pad by means of snap fasteners or the like. This attempted solution has not worked in all cases, however, because the stresses are such that the snap fastener element on the seat pad is still sometimes tears away from the pad.

In a further effort to solve this problem, some manufacturers have anchored the lower end of the crotch strap around a metal strap fastened to the front edge of the metal seat plate. With this mode of securing, there is no longer any problem of the strap tearing away from the seat pad. However, it presents other problems.

More particularly, the connection between the crotch strap and the forward edge of the seat plate is fully exposed and rather unsightly. Also, it is difficult to replace a crotch strap once it has torn or pulled away from the seat plate. That is, the new strap must be engaged around the metal strap and stitched to anchor it in place. This is a time-consuming operation. Attempts to use removable fasteners to secure the strap to the metal strap on the plate have not proved entirely successful because the considerable stresses developed at the lower end of the crotch strap tend to open up the fasteners, permitting the infant to slide out through the front of the carriage. This type of anchor is further disadvantaged because it is unsatisfactory for use on carriages of the aforesaid convertible type.

SUMMARY OF THE INVENTION

Accordingly, this invention aims to provide an improved crotch securement for a baby carriage which can safely withstand the stresses developed by an infant in the carriage.

Another object of the invention is to provide an improved crotch strap securement which facilitates replacement of a damaged strap.

A still further object of the invention is to provide an improved carriage crotch strap anchor which is completely hidden from view.

Another object of the invention is to provide a bracket for anchoring a crotch strap to a carriage which is relatively easy and inexpensive to manufacture.

A further object of the invention is to provide an improved bracket for anchoring a crotch strap which can be easily installed on the carriage by the customer himself.

Another object of the invention is to provide an improved crotch strap securement particularly suitable for use with carriages convertible between stroller and fully-enclosed carriage positions.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

Briefly, the improved securement comprises a generally U-shaped wire bracket. Portions of the bracket legs are offset at right angles from the bracket web forming a pair of shoulders midway along the legs. The bracket is engaged through a permanent loop formed in the lower end of the crotch strap. Then the legs of the bracket are inserted through spaced openings in the top of the seat plate. These openings are set back from the forward edge of the seat plate and are in register with the bracket legs. The offsets on the bracket are such that the bracket has to be tilted through a considerable angle relative to the plate to enable the aforesaid shoulders to pass through the openings. Once this is done, however, the shoulders engage the underside of the plate and prevent the bracket from pulling out of the holes therein.

When in place, the bracket forms a very secure anchor for the lower end of the crotch strap which can withstand the considerable stresses imposed upon it by the occupant. Moreover, the securement of the crotch strap to the seat plate is completely hidden from view by the seat pad and does not interfere with the conversion of a convertible-type carriage between its different operational positions.

When the crotch strap becomes damaged through use, it can be quickly replaced with a new one simply by tilting the bracket relative to the plate and withdrawing it from the openings in the plate. A new crotch strap can then be slid onto the bracket and the bracket reinserted into the seat plate as described above.
For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

FIG. 1 is a perspective view partially in dotted lines and with portions cut away of a baby carriage embodying an improved crotch strap securement made in accordance with this invention;

FIG. 2 is an enlarged fragmentary perspective view of a portion of FIG. 1 and

FIG. 3 is a side view with parts in section on a still larger scale showing in greater detail the elements of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1 of the drawing, a carriage made in accordance with this invention has a conventional running gear indicated generally at 10. The gear 10 includes a pair of upstanding scissor frame members 12, 12 and 14, 14 at each side thereof which support a generally horizontal rigid seat plate 16. A rigid backrest 18 is hinged near the rear edge of seat plate 16 and a footrest 22 is hinged near the forward edge of the seat plate. The backrest 18 and footrest 16 are adjustable from their illustrated stroller positions to a carriage position wherein they lie substantially horizontally and coplanar with seat plate 16.

A generally U-shaped body bow 24 is supported generally horizontally above seat plate 16 by frame members 12 and 14. Preferably, body bow 24 is the telescoping variety which can be slid out in trombone fashion when the vehicle is in its aforsaid carriage position as described more particularly in U.S. Patent No. 2,872,023.

A crotch strap indicated at 26 is anchored at its lower end to seat plate 16 in a manner to be described in detail presently. The upper end of strap 26 is removably engaged around the web of body bow 16 using a conventional snap fastener or the like.

The carriage also includes a fabric body 32 preferably like the one disclosed fully in the aforsaid patent and with a seat pad 34 and leg pad 36 for the occupant's comfort.

Referring now to FIG. 2, the lower end of crotch strap 26 extends through a slit between the seat and leg pads and is anchored to seat plate 16 by means of a generally U-shaped wire bracket 40 which hooks through a loop 26a formed at the lower end of crotch strap 26. The mid-portion or web 44 of bracket 40 is encircled by loop 26a and the legs 46 and 48 of bracket 40 project down on opposite sides of the loop.

Referring now to FIGS. 2 and 3, the lower portions 46a and 48a of the bracket legs are offset forwardly of web 44. This forms a pair of shoulders 52 and 54 on the two legs. The shoulders are somewhat shorter than the offset leg portions 46a and 48a. However, they are somewhat longer than the leg portions 46 and 48 adjacent web 44. The criticality of these dimensions will be discussed later.

Still referring to FIGS. 2 and 3, in use bracket 40 is anchored to plate 16 at a point spaced appreciably back from the front edge 16a thereof. More particularly, the bracket legs 46 and 48 engage through spaced-apart openings 60 and 62 in plate 16 which are aligned generally parallel to plate edge 16a midway along its length. The openings 60 and 62 are in register with leg portions 46a and 48a and their diameters are only slightly greater than the diameter of the wire forming the bracket 40.

To anchor the strap 26, the bracket 40 is hooked through loop 26a so that the loop engages around bracket web 44. Then the offset leg portions 46a and 48a are inserted into openings 60 and 62, respectively. Bracket 40 is then tilted forwardly through a considerable angle relative to plate 16 so that shoulders 52 and 54 of the bracket can be manipulated through the openings. Then, bracket 40 is straightened up again so that the leg portions 46 and 48 extend into openings 60 and 62, respectively, with shoulders 52 and 54 projecting under plate 16.

Normally, with no tension applied to crotch strap 26, bracket 40 lies loosely in openings 60 and 62. In fact, web 44 (or loop 26a) may actually touch the top of plate 16. However, when tension is applied to strap 26 due to the movements of the infant in the carriage, the bracket is pulled up relative to the plate until shoulders 52 and 54 engage the underside of plate 16. Then, no further upward movement is possible. The sizes of legs 46 and 48 and their corresponding openings 60 and 62, coupled with the lengths of shoulders 50 and 52, are such that normal forces on strap 26 cannot tilt bracket 40 through the angle necessary to release it from plate 16. Even if the infant pulls strap 26 rearwardly, bracket 40 cannot pull away from plate 16.

Thus, when bracket 40 is properly installed, it anchors strap 26 firmly to plate 16. Yet, the bracket and strap are free to flex and swivel about axes parallel to the forward seat plate edge 16a to provide a flexible yielding securement to plate 16 and to facilitate conversion of a convertible carriage between its operative positions.

If strap 26 wears out or becomes damaged through use, it is easily removed and replaced simply by tilting bracket 40 to its extreme forward position, allowing shoulders 52 and 54 to be withdrawn through openings 60 and 62 of plate 16. Then the bracket is tilted back until the offset leg portions 46a and 48a can be drawn out through these openings. The old strap is then slid off bracket 40 and a new one installed as described above.

Of course, the legs on bracket 40 can also be offset in the opposite direction from the one illustrated with the same advantageous results.

Thus, the illustrated securement provides an inexpensive means for anchoring the lower end of a crotch strap. The fixture described herein can easily be installed by relatively unskilled personnel and, when in place, is completely hidden by the seat pad 34. The securement permits ready replacement of worn or damaged crotch straps, to the customer himself and requires no special tools or equipment. Yet, the illustrated securement is flexible enough so that it can even be used with carriages of the convertible variety which convert from an upright stroller position to a fully-enclosed carriage position.

It will thus be seen that the objects set forth above, among those made apparent from the above description, are efficiently attained and, since certain changes may be made in the above construction without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. In a child's stroller or walker, the improvement comprising

(A) a carriage seat plate having

(1) a front edge, and

(B) a pair of spaced-apart vertical openings aligned generally parallel to said front edge,

(C) a generally U-shaped body bow spaced above said seat;

2. A removable generally U-shaped strap anchor having

(A) a web portion, and

(B) a pair of relatively long legs extending generally perpendicularly to said web, said legs

(a) having end segments offset in a direction generally perpendicular to the longitudinal axis of said web and also perpendicular to
the general direction of said legs so as to form relatively long shoulders on said legs, the ends of said legs being in register with said openings, the length of said shoulders and the size of said openings relative to the cross sections of said legs being selected so that when said legs are inserted into said openings and said bracket is tilted relative to said plate, said shoulders engage under said plate and oppose upward forces applied to said strap tending to pull said bracket away from said plate, and

(D) a crotch strap having one end thereof looped around said web and having its other end attached to said body bow.

References Cited

UNITED STATES PATENTS

1,943,081 1/1934 Leibo 297—390 X
2,690,787 10/1954 Soltis 297—390 X
2,868,386 1/1959 Seyforth 211—95
3,018,079 1/1962 Stough et al. 248—361 X
3,275,272 9/1966 Kirk 248—225

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