CHILD SAFETY TETHER

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ABSTRACT

An apparatus and method for operably connecting a first person to a second person. The apparatus comprises a wrist strap having first and second ends sized to closely extend around a wrist of a first person and a coupling formed of a first coupling half located at the first end and a second coupling half located at the second end. The first and second coupling ends are lockably engageable with each other. The coupling has a pair of buttons to opposed sides thereof wherein the pair of buttons cooperate to disengage the second coupling half from the first coupling half and a connector extending from the wrist strap member connectable to a second person. The method comprises lockably and closely securing the wrist strap to a wrist of the first person, and securing a connector extending from the first wrist strap to a second user.
CHILD SAFETY TETHER

BACKGROUND OF THE DISCLOSURE

[0001] 1. Field of disclosure

[0002] The present disclosure relates to child safety in general and in particular to a method and apparatus for connecting a first person to a second person.

[0003] 2. Description of Related Art

[0004] Child safety is a paramount concern of every parent, child care provider and educator. The risk of a child becoming lost or abducted is particularly a significant concern for young or small children. One commonly utilized way of preventing the child from becoming lost is for the parent or care provider to hold their hand or to have some other type of physical contact with them. However some social settings and circumstances require the parent or child care provider to perform other actions or hold other objects in addition to maintaining contact with child. Examples of such outside situations may include grocery stores or other shopping locations, amusement parks, or when traveling in which the parent is required to pay for or hold another object in addition to caring for the child. In such circumstances, it is desirable for the parent or child care provider to maintain contact with the child in a way which does not require the use of one or both on their hands.

[0005] Previous methods for addressing this problem have been attempted with limited success. One such method of maintaining contact with the child has been to provide a harness or belt to be worn by the child having a leash or tether extending therefrom to be held by the parent. However, such systems still require the use of one or both of the parent’s hand and therefore have limited practicality in circumstances requiring more tasks to be performed.

[0006] Other methods have been proposed to provide a tether between the parent and child having selectively closable straps at either end thereof with straps secured to the wrist of the parent and child.

SUMMARY OF THE DISCLOSURE

[0007] According to a first embodiment of the disclosure there is disclosed an apparatus for operably connecting a first person to a second person comprising a wrist strap having first and second ends sized to closely extend around a wrist of a first person and a coupling formed of a first coupling half located at the first end and a second coupling half located at the second end. The first and second coupling ends are lockably engageable with each other. The coupling has a pair of buttons to opposed sides thereof wherein the pair of buttons cooperate to disengage the second coupling half from the first coupling half and a connector extending from the wrist strap member connectable to a second person.

[0008] The connector comprises a loop connectable to a line extending from the second person. The connector comprises a flexible tension member extending from the wrist strap and having a distal end, the distal end being connectable to a second person. The distal end is connectable to a loop connector of a corresponding wrist strap worn by the second person.

[0009] The first coupling half may include at least one latch extending therefrom, each latch being lockably engageable within a corresponding keeper in the second coupling half. The first coupling half may include two latches and the second coupling half may include two keepers. The pair of buttons may cooperate to disengage the two latches from the two keepers. Each of the pair of buttons may disengage one of the two latches from its corresponding keeper. Both of the pair of buttons may be located one of the first or second coupling half. Each of the first and second coupling half may include one of the pair of buttons.

[0010] The apparatus may further comprise a retractor assembly located on the wrist strap, the flexible tension member extending from the retractor assembly. The flexible tension member may be retractable into the retractor assembly. The flexible tension member may be maintained in tension by the retractor assembly. The flexible tension member may comprise a wire. The wire may comprise a braided wire. The wire may be formed of metal.

[0011] The apparatus may further include a locator beacon at least one of the first or second coupling half. The first and second coupling halves may be mateable to each other along a coupling surface substantially orthogonal to an axis of the wrist of a wearer.

[0012] According to a further embodiment there is disclosed a method of operably connecting a first person to a second person. The method comprises lockably and closely securing a wrist strap to a wrist of the first person, the wrist strap extends between first and second ends and has a length sized to closely surround the wrist of the first person. The first and second ends include a coupling formed of first and second coupling halves which are lockably securable to each other and releasable by pressing a pair of buttons on opposed sides of coupling. The method further comprises extending a connector from the first wrist strap and securing the connector to a second user.

[0013] Other aspects and features of the disclosure will become apparent to those ordinarily skilled in the art upon review of the following description of specific embodiments in conjunction with the accompanying figures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] In drawings which illustrate embodiments wherein similar characters of reference denote corresponding parts in each view,

[0015] FIG. 1 is a perspective view of a parent and child each having an apparatus for connecting a first person to a second person applied to their wrists with an extendable tether therebetween.

[0016] FIG. 2 is a top plan view of the apparatus of FIG. 1 according to a first embodiment in a closed position.

[0017] FIG. 3 is a perspective view of the apparatus of FIG. 2 in an open position.

[0018] FIG. 4 is a cross sectional view of the apparatus of FIG. 2 as taken along the line 4-4.

[0019] FIG. 5 is a cross sectional view of the apparatus of FIG. 2 as taken along the line 5-5.

DETAILED DESCRIPTION

[0020] Referring to FIG. 1, an apparatus according to a first embodiment is shown generally at 10 as applied to the wrist of an adult or first person 8 and the wrist of a child or second person 6. The apparatus comprises a wrist strap 12 being selectively coupleable by a coupling 18 to itself to form a continuous loop around the wrist of the wearer having a connector thereon for connecting to another person or a corresponding apparatus applied to their wrist. The strap 12 may be sized to surround either the wrist of an adult 8 or a child 6. As illustrated in FIG. 1, one strap 12 may be applied to the
The connector extending from one of the straps 12 may comprise a line or cable 60 whereas the connector of the other strap 12 may comprise a loop 62 connectable to a distal end of the cable 60.

[0021] Turning now to FIG. 2, a single apparatus 10 according to a first embodiment is illustrated. The apparatus 10 comprise a strap or band 12 of material extending between first and second ends 14 and 16, respectively. The first end 14 includes a first coupling half 20 and the second end 16 includes a second coupling half 40. The first and second coupling halves 20 and 40 are lockably connectable to each other so as to encircle the wrist of a wearer and form a coupling 18.

[0022] The first coupling half 20 comprises a body having first and second sides, 22 and 24, respectively and extending between first and second ends, 26 and 28, respectively. The first coupling half 20 is connectable to the first end 14 of the strap by a junction 30 extending from the first side 22 thereof. The second coupling half 40 comprises a body having first and second sides, 42 and 44, respectively and extending between first and second ends, 46 and 48, respectively. The second coupling half 40 is connectable to the second end 16 of the strap 12 by a junction 50 extending from the second side 44 thereof. The junctions 30 and 50 may comprise extended portions from the first and second coupling halves 20 and 40, respectively and may connect the first and second coupling halves 20 and 40 to the first and second ends 14 and 16 of the strap 12 in any known method. By way of non-limiting example, the junctions 30 and 50 may comprise sleeves into which the first and second ends 14 and 16 of the strap 12 may be fitted and then secured though any known means such as using adhesives, fasteners or the like.

[0023] As illustrated in FIG. 2, the first ends 26 and 46 of the first and second coupling halves 20 and 40 are mateable to each other along line which lies along a coupling surface, generally indicated at 52 to form the coupling 18. As illustrated in FIG. 2 the coupling surface 52 may be perpendicular to an axis of the wrist of the wearer, generally indicated at 54 although it will be appreciated that the coupling surface 52 may be oriented substantially orthogonal to the wrist axis 54 or at any other angle relative there to as well. The first coupling half 20 may include a stop button 56 on a top surface thereof to selectively retract the cable 60 as will be more fully described below.

[0024] The strap 12 comprises a band of flexible material having a length selected to extend around the wrist of a wearer. The strap 12 may be formed of any suitable material, such as, by way of non-limiting example, plastic, rubber, leather or a plurality of metal links. As illustrated in FIG. 1, the wearer may be either the first or second person such that the length of the strap 12 is selected to extend around the wrist of either an adult or a child. Where the strap 12 is designed to extend around the wrist of an adult the strap may have a length selected such that the circumference of the strap 12 and coupling 18 is between 6 and 9 inches (152 and 228 mm) whereas if the strap 12 is designed to extend around the wrist of a child, a diameter of between 4 and 7 inches (102 and 178 mm) may be adequate depending upon the age and size of the child. The first and second coupling halves 20 and 40 may be formed of any suitable material, such as, by way of non-limiting example, plastics or metals.

[0025] The cable 60 extends from the second end 28 of the first coupling halves 20. The cable 60 may optionally be retractable into the first coupling by a retractor contained therein as illustrated in FIG. 4. The cable 60 may be windably retractable onto a spool 66 supported on a spindle 68 contained within the first coupling half 20. The spool 66 may be spring loaded to wind the cable 60 therearound and thereby to maintain a desired amount of tension on the cable 60. Optionally, the spool 66 may be settable at a desired position so as to leave a desired amount of the cable 60 extending from the first coupling half 20. The stop button 56 may be operably coupled to the spool 66 so as to limit any further unwinding of the cable 60 therefrom when the stop button 56 is pressed. In particular, the spool 66 may have a plurality of notches or recesses therein 70 engageable by at least one extension 72 extending from the bottom of the stop button 56. The extensions 72 may optionally be biasedly engaged within successive notches 70 as the spool 66 is unwound from the first coupling half 20 to provide a ratcheting or indexing to alert a wearer as to the rate at which the cable 60 is being unwound from the first coupling half 20. When the stop button 56 is depressed, the extensions 72 are rigidly engaged with the notches 70 so as to prevent any further rotation of the spool 66 and thereby to prevent any further unwinding of the cable 60. In alternative embodiments, the first coupling half 20 may comprise a cyclical indexing mechanism so as to engage the spool 66 with a first depression of the stop button 56 and release the spool 66 with a second depression of the stop button 56 as are commonly known in pen retraction mechanisms, by way of non-limiting example. It will also be appreciated that any other known method of limiting rotation of the spool 66 by depressing the stop button 56, such as a friction brake, wedges or pins, by way of non-limiting example may also be utilized.

[0026] The first and second coupling halves 20 and 40 may be securable to each other with at least one latch 80. As illustrated in FIG. 3, the apparatus 10 may include two latches 80 extending from the first end 46 of the second coupling half 40. The two latches 80 may be receivable within apertures 82 of the first end 26 of the first coupling half 20 as illustrated in FIG. 5. The two latches 80 may be retained within the apertures 82 so as to retain the first and second coupling halves 20 and 40 in proximate and locked orientation to each other. As illustrated in FIG. 3, the latches 80 may comprise first and second planar fingers 84 each having a notch 88 on opposed sides thereof. The apertures 82 and latches located therein form keepers for retaining the latches 80 therein until released as will be described further below. The notches may be engaged by corresponding catches (not shown) in the first coupling half 20 when the latches 80 are inserted into the apertures 82 thereof.

[0027] The first and second coupling halves may each include a release button 84 so as to release the latches 80 from the apertures 82. As illustrated in FIG. 2, one release button may be located on the first side 42 of the second coupling half 40 while the other release button may be located on the second side 24 of the first coupling half 20. In such a way, it will be seen that the release buttons are located to opposed sides of the coupling 18 and therefore a user will be required to use their thumb and finger to depress each of the two release buttons to open the coupling 18.

[0028] Each of the planar fingers may be deformable or rotatable along the plane defined by thereby so as to disengage the notches from the catches and thereby to release the latches 80 from the apertures when it is desired to separate the first and second couplings halves 20 and 40. As illustrated in
FIG. 5, one of the sets of fingers 86 maybe deformable by a pair of opposed wedges 90 located to the outside of the fingers 86 within the first coupling half 20 so as to deform the fingers towards each other when the release button 84 is depressed so as to disengage the fingers from the catches. The wedges 90 are connected to a release button 84 located within the first coupling half 20. The other set of fingers 86 may be deformable from within the second coupling half 40 by a spreader pin 92 insertible between the fingers 86 so as to separate the ends of the fingers 86 located within the second coupling half 40 and thereby urging their opposed ends located within the first coupling half 20 together so as to disengage the notches from the catches. The wedges spreader pin 92 is connected to a release button 84 located within the second coupling half 40. It will be appreciated that other methods of engaging and securing the latches within an opposed coupling half may also be utilized. Optionally, the first or second coupling half 20 or 40 may include a recess 96 proximate to the coupling surface 52 such that a finger nail or the like may be inserted therein to pry the first and second coupling halves apart. In such embodiments, the latches 80 may be retained within their respective catches after the release buttons 84 are pushed such that an additional prying force is required to separate the first and second coupling halves. Optionally, each of the release buttons 84 may be located in one of either the first or second coupling halves 20 or 40.

0029] The cable 60 may be formed of any flexible tension member having sufficient strength to retain the child proximate to the adult and may be formed of a wire, braided wire, rope or chain by way of non-limiting example. The cable 60 may also be formed of a material similarly having sufficient strength, such as, by way of non-limiting example, steel, stainless steel, plastics or aramids. The cable 60 may include a clasp 64 or any other suitable fastener at a distal end of for securing to a corresponding loop or other object. Optionally, the apparatus 10 may include a locator beacon, such as a global positioning beacon (GPS) for determining the location of the apparatus. In particular, a GPS beacon may be located within one of the first or second coupling halves of an apparatus sized to be located on the wrist of a child so as to facilitate location of that child. In other embodiments, a first apparatus, such as a child's apparatus may include a proximity detector, such as an radio frequency identification (RFID) tag operable to sense the continued proximity of a second apparatus, such as a corresponding parent's apparatus. In such embodiments, the child's apparatus will detect when it has been moved a predetermined distance from the parent's apparatus and provide an audible or visual indication of this condition, such as, by way of non-limiting example a siren, alarm or flashing light. In such embodiments, the child's apparatus may optionally include an alarm override button, 98 as illustrated in FIG. 1 to turn off the alarm when desired by the parent.

0030] While specific embodiments have been described and illustrated, such embodiments should be considered illustrative only and not as limiting the invention as construed in accordance with the accompanying claims. What is claimed is:

1. An apparatus for operably connecting a first person to a second person comprising:
   a wrist strap having first and second connectable ends sized to closely extend around a wrist of a first person;
   a coupling formed of a first coupling half located at said first end and a second coupling half located at said second end being lockably engageable with said first coupling half; said coupling having a pair of buttons to opposed sides thereof wherein said pair of buttons cooperate to disengage said second coupling half from said first coupling half; and
   a connector extending from said wrist strap member connectable to a second person.

2. The apparatus of claim 1 wherein said connector comprises a loop connectable to a line extending from said second person.

3. The apparatus of claim 1 wherein said connector comprises a flexible tension member extending from said wrist strap and having a distal end, said distal end being connectable to a second person.

4. The apparatus of claim 3 wherein said distal end is connectable to a loop connector of a corresponding wrist strap worn by said second person.

5. The apparatus of claim 1 wherein first coupling half includes at least one latch extending therefrom, said at least one latch being lockably engageable with a corresponding keeper in said second coupling half.

6. The apparatus of claim 5 wherein said first coupling half includes two latches and said second coupling half includes two keepers.

7. The apparatus of claim 6 wherein said pair of buttons cooperate to disengage said two latches from said two keepers.

8. The apparatus of claim 6 wherein each of said pair of buttons disengages one of said two latches from its corresponding keeper.

9. The apparatus of claim 1 wherein both of said pair of buttons are located one of said first or second coupling half.

10. The apparatus of claim 1 wherein each of said first and second coupling half includes one of said pair of buttons.

11. The apparatus of claim 1 further comprising a retractor assembly located on said wrist strap, said flexible tension member extending from said retractor assembly.

12. The apparatus of claim 10 wherein said flexible tension member is retractable into said retractor assembly.

13. The apparatus of claim 12 wherein said flexible tension member is maintained in tension by said retractor assembly.

14. The apparatus of claim 11 wherein said flexible tension member comprises a wire.

15. The apparatus of claim 14 wherein said wire comprises a braided wire.

16. The apparatus of claim 15 wherein said wire is formed of metal.

17. The apparatus of claim 1 further including a locator beacon within at least one of said first or second coupling half.

18. The apparatus of claim 1 wherein said first and second coupling halves are mateable to each other along a coupling surface substantially orthogonal to an axis of the wrist of a wearer.

19. A method of connecting a first person to a second person, the method comprising:
   lockably and closely securing a wrist strap to a wrist of the first person, said wrist strap extending between first and second ends and having a length sized to closely surround the wrist of said first person, said first and second ends comprising a coupling formed of first and second coupling halves and being lockably securable to each other and releasable by cooperatively pressing a pair of buttons on opposed sides of coupling; and
   securing a connector extending from said wrist strap to a second user.

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