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(54) **ASSEMBLY FOR CONNECTING A MOUTH GUARD TO A HELMET OR FASTENING APPARATUS FOR A HELMET**

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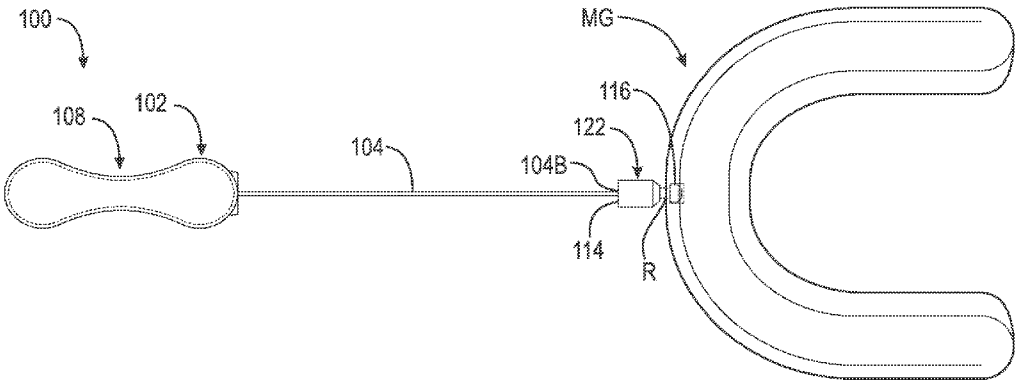
(57) **ABSTRACT**

A mouth guard assembly with a retractable mouth guard connection, including: a retraction element including a first housing and a retraction device disposed within the first housing; a cord including a first end attached to the retraction device and a second end; a coupling element including a third end connected to the second end and a fourth end arranged to engage a mouth guard to secure the mouth guard to the coupling element; and a connection assembly arranged to attach the retraction element to a protective helmet or a fastening apparatus for a protective helmet. The cord is arranged to be pulled from the retraction assembly in a first direction. The retraction device applies a force urging the cord in a second direction opposite the first direction.



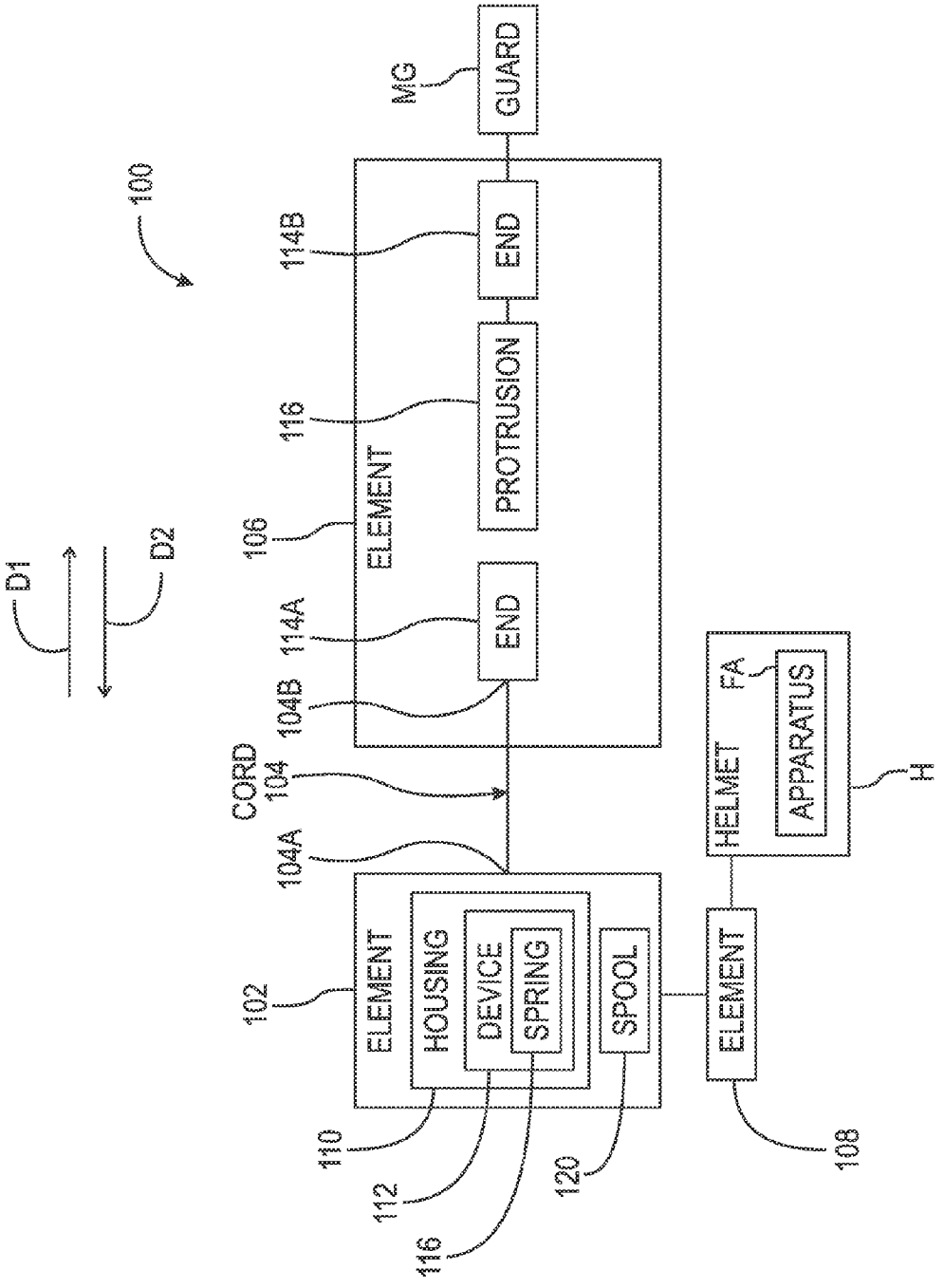

100
D1
D2
MG
GUARD
114B
END
116
PROTRUSION
106
ELEMENT
114A
END
104B
CORD
104
104A
102
ELEMENT
HOUSING
DEVICE
SPRING
SPOOL
110
112
116
120
HELMET
FA
APPARATUS
H
ELEMENT
108

Fig. 1

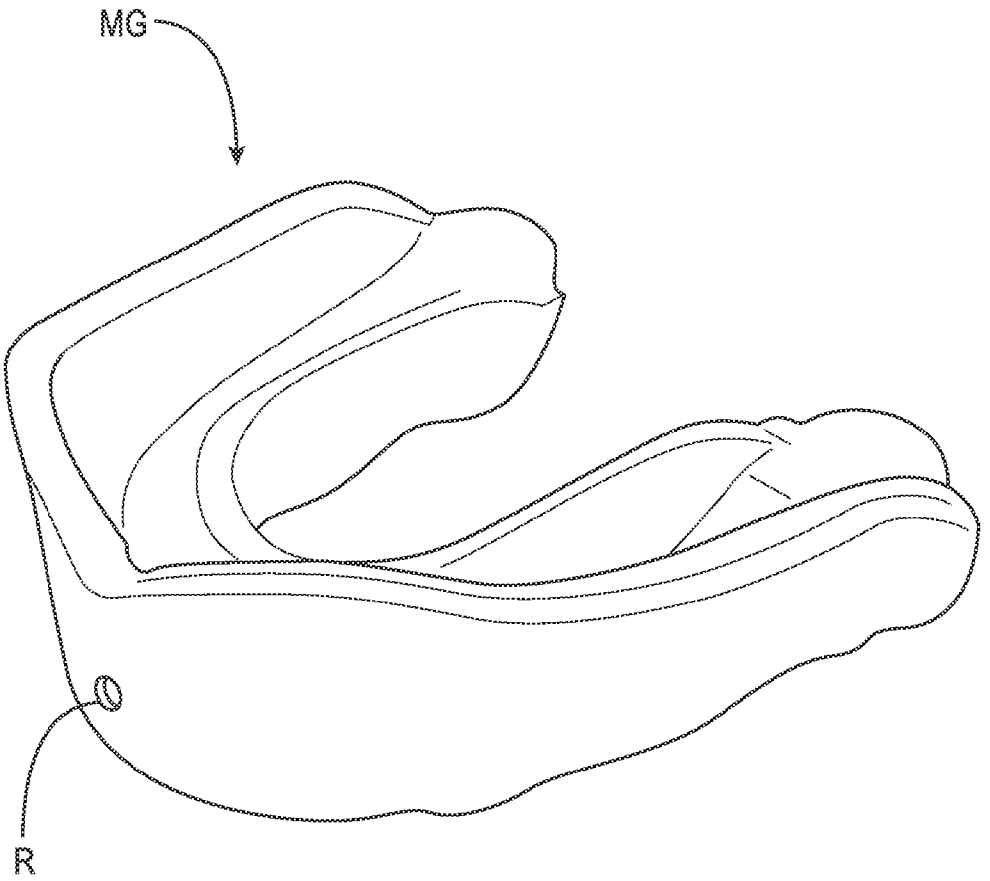


Fig. 2

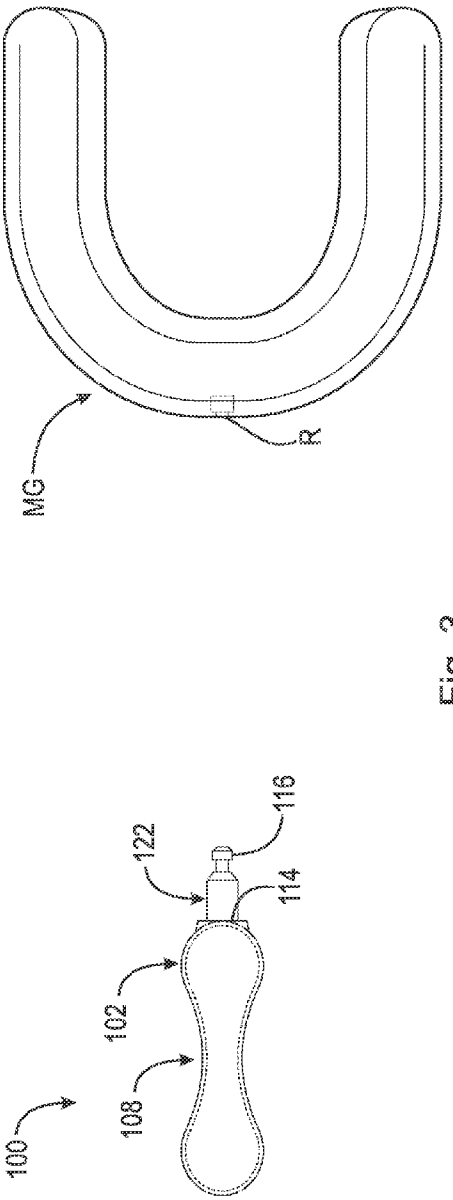


Fig. 3

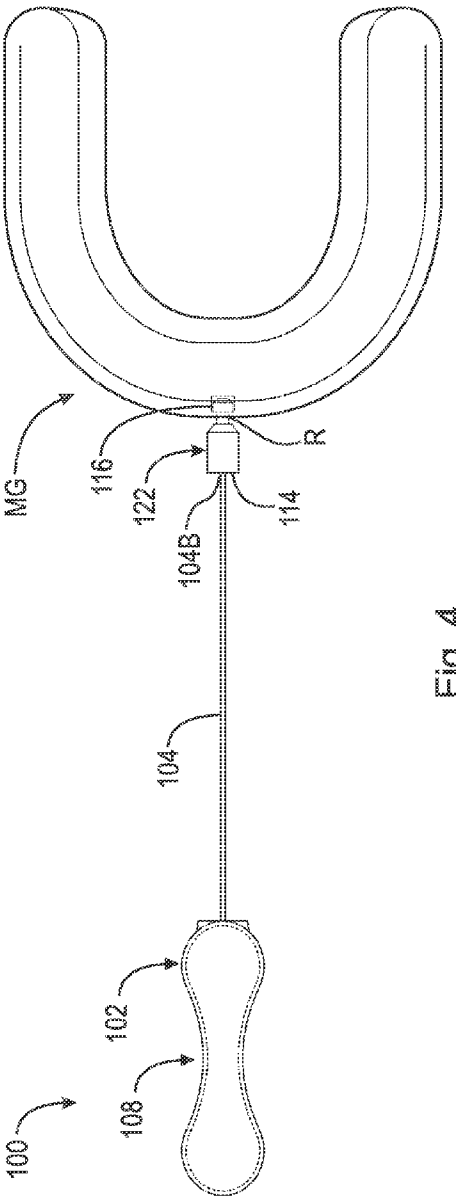


Fig. 4

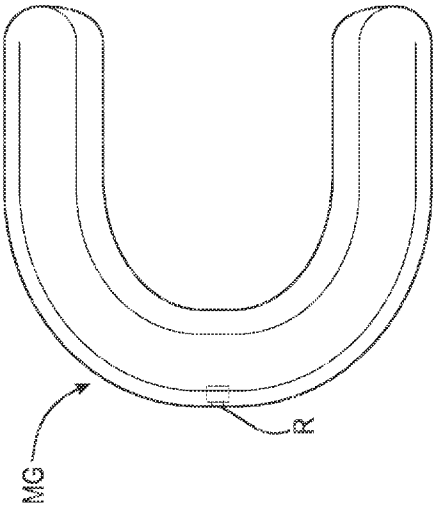


Fig. 5

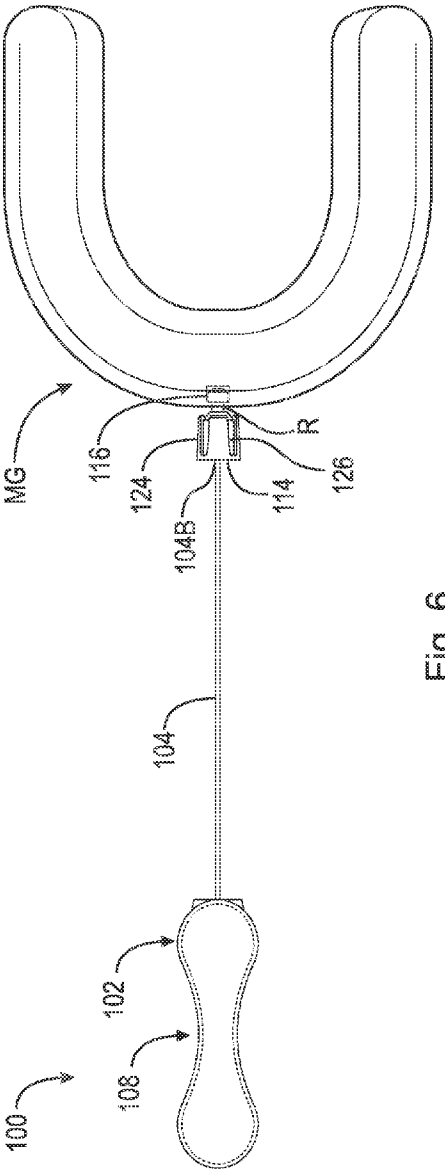


Fig. 6

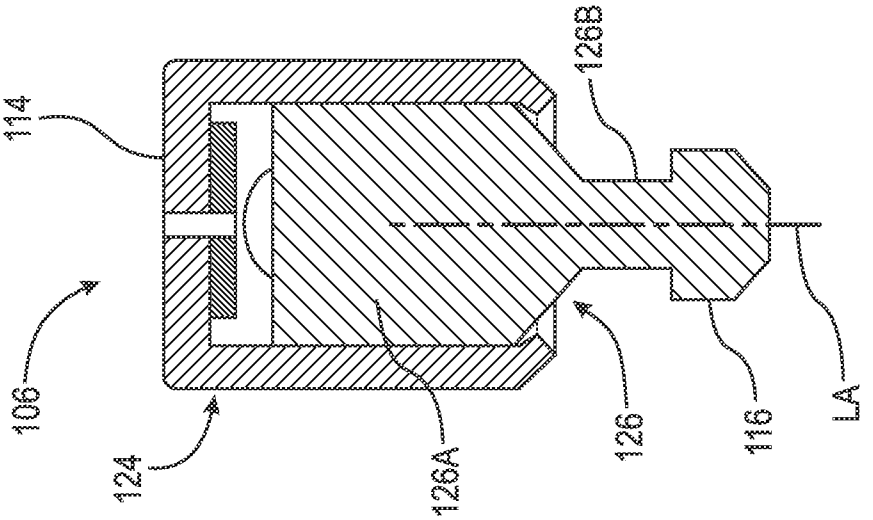


Fig. 8

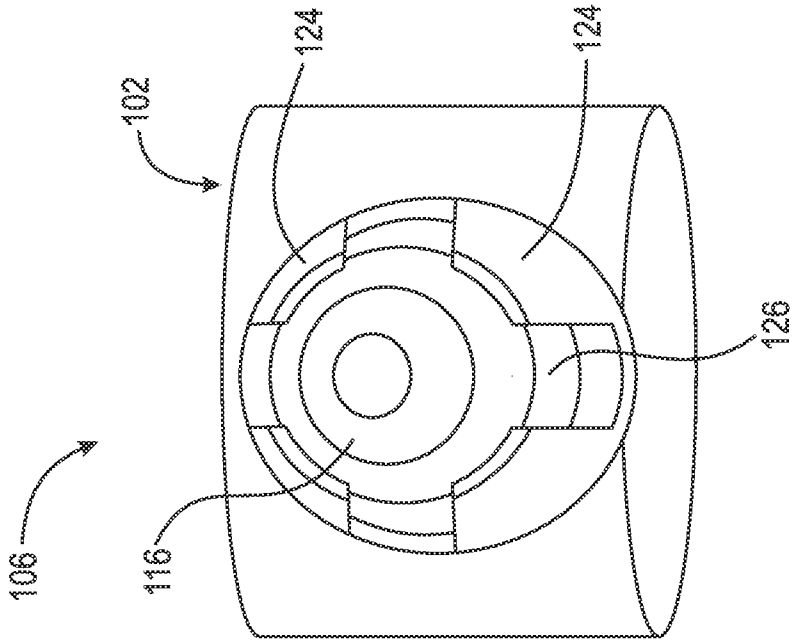


Fig. 7

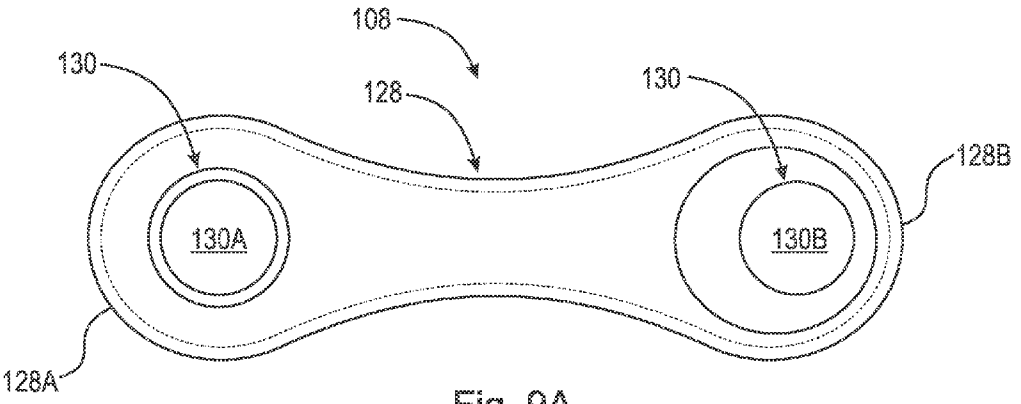


Fig. 9A

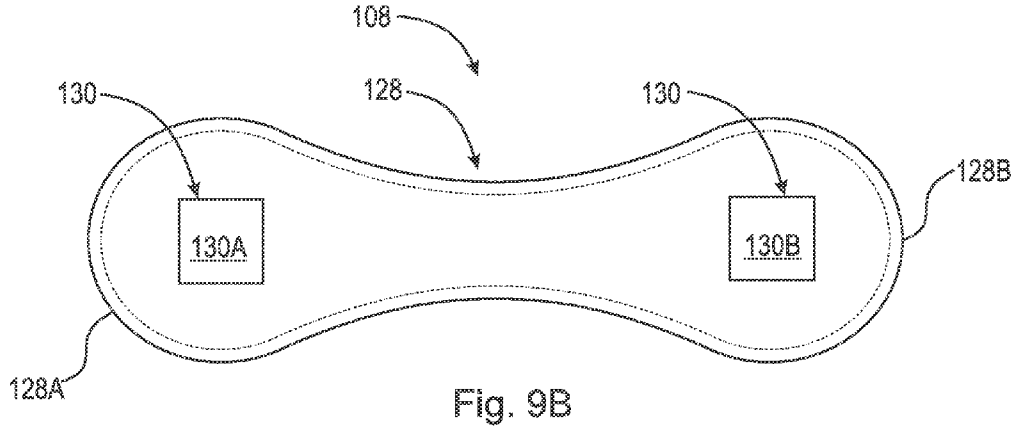


Fig. 9B

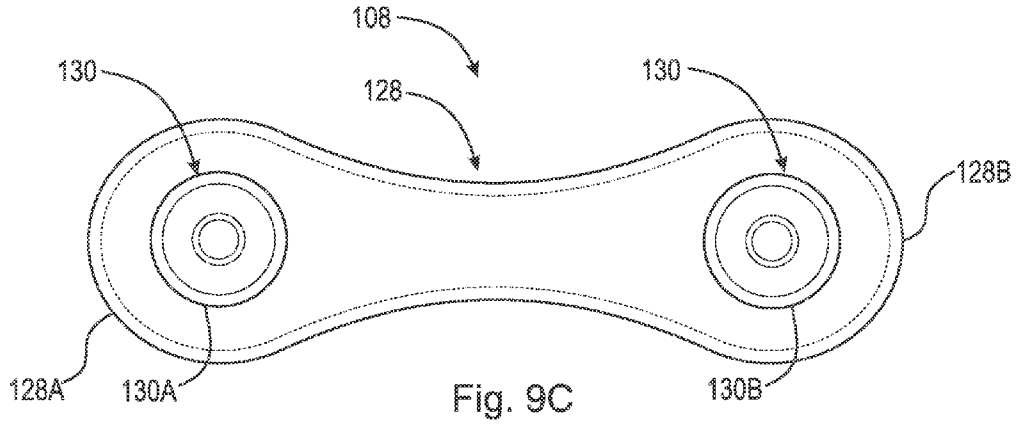


Fig. 9C

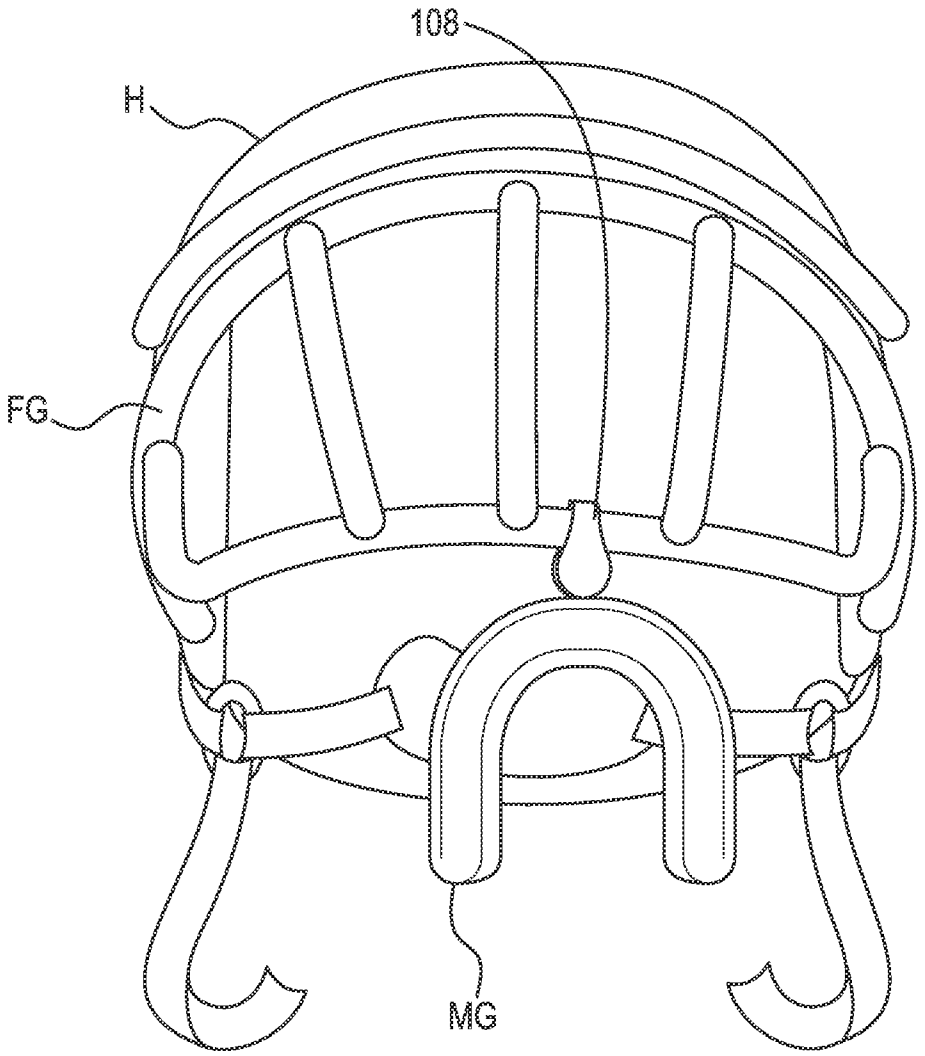


Fig. 10

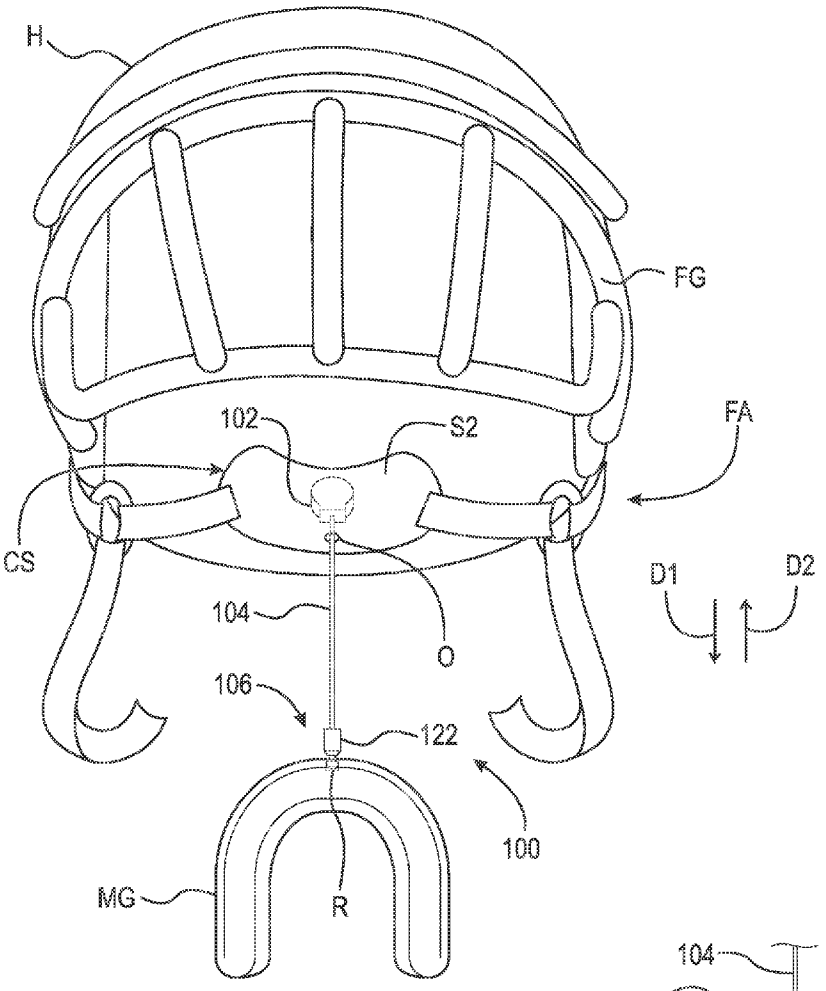


Fig. 11A

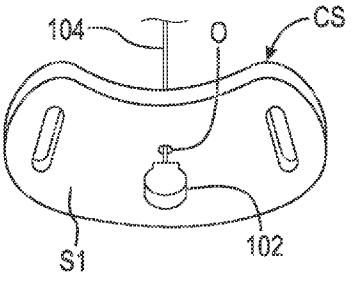


Fig. 11B

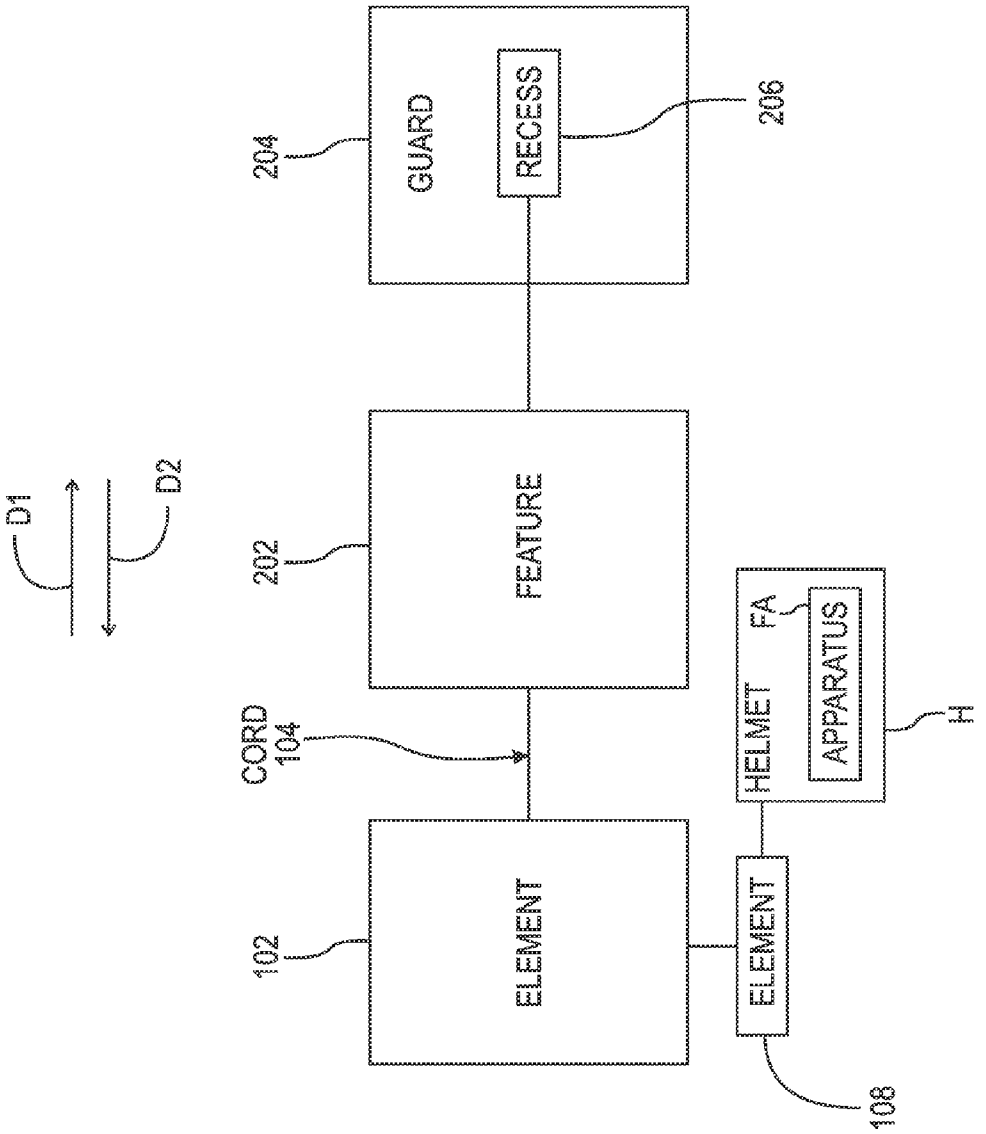

D1
D2
204
GUARD
RECESS
206
202
FEATURE
CORD
104
102
ELEMENT
ELEMENT
HELMET
FA
APPARATUS
H
108

Fig. 12

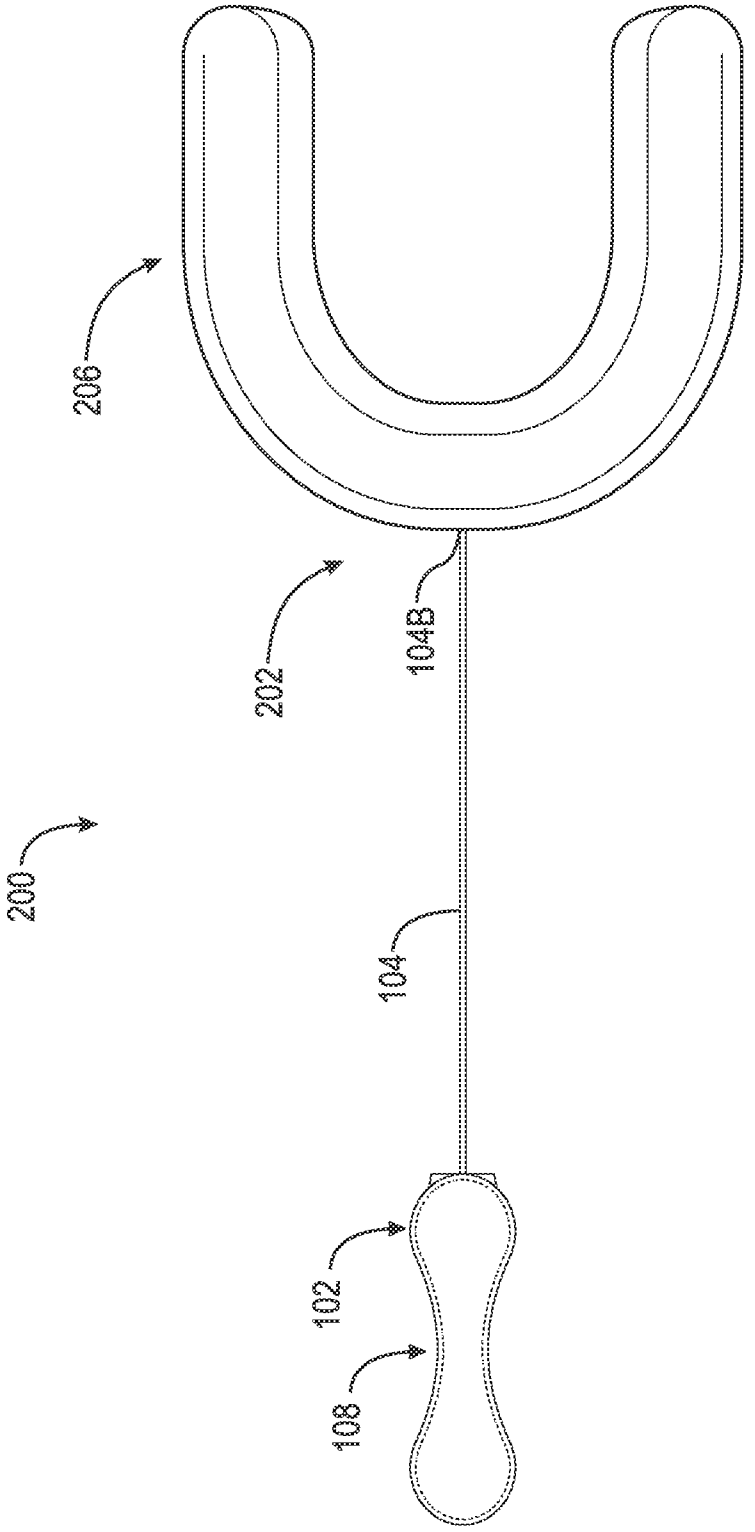


Fig. 13

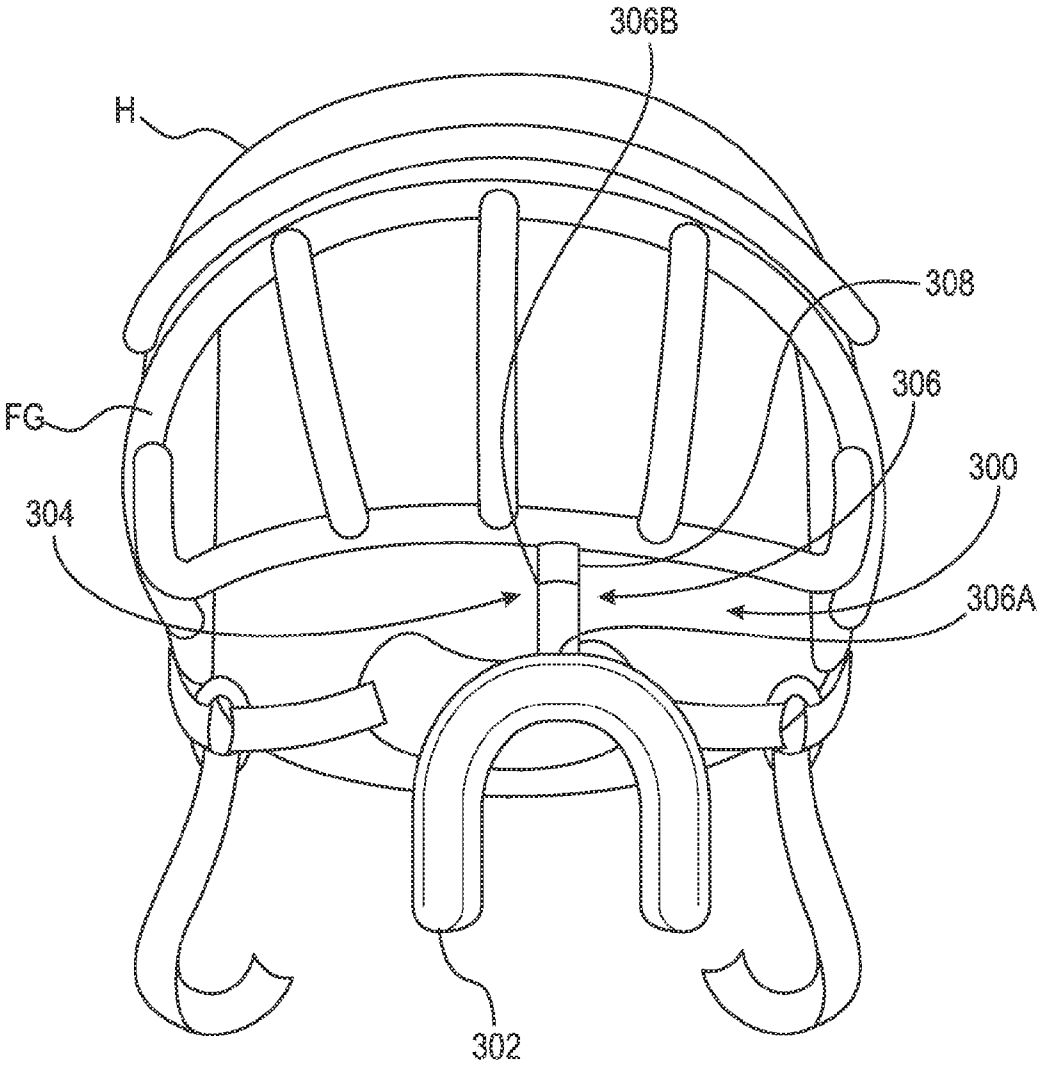


Fig. 14

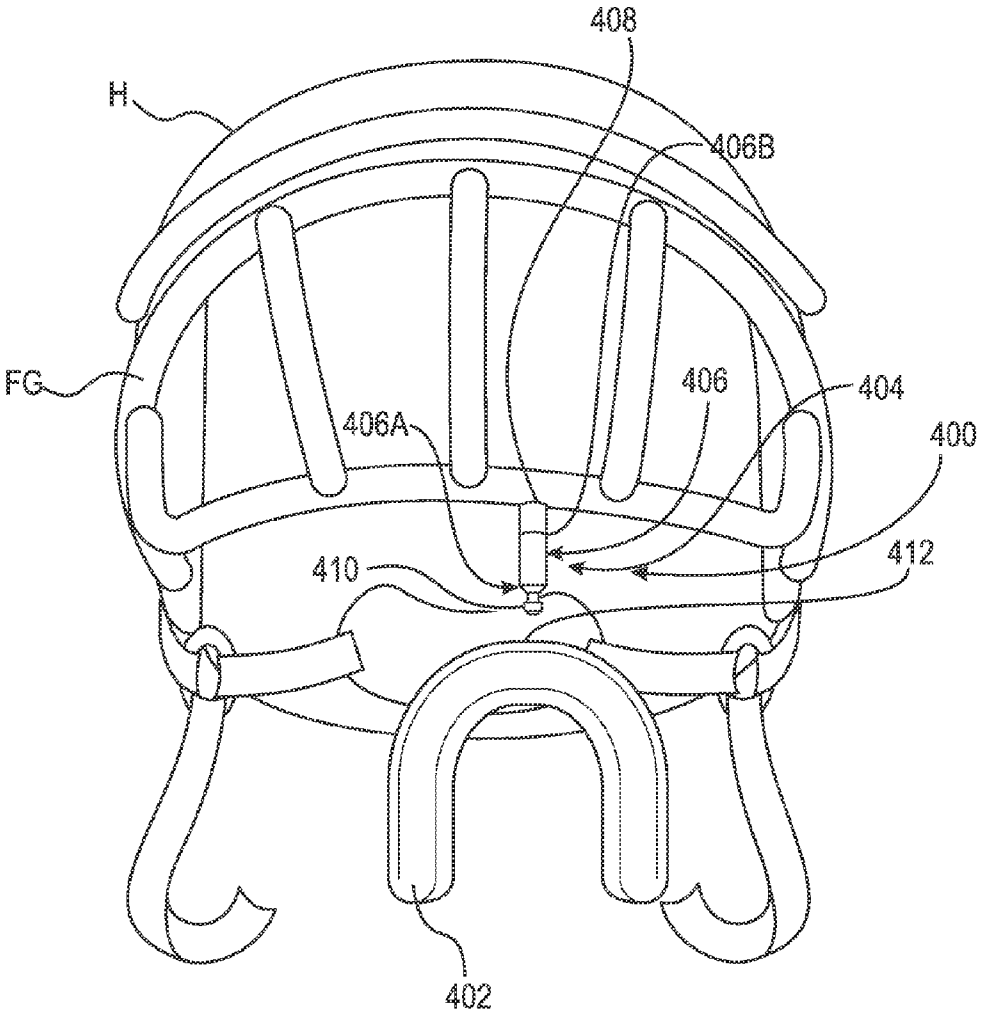


Fig. 15

ASSEMBLY FOR CONNECTING A MOUTH GUARD TO A HELMET OR FASTENING APPARATUS FOR A HELMET

CROSS-REFERENCES TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Patent Application No. 61/932,244, filed Jan. 28, 2014, which application is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present disclosure generally describes an assembly for connecting a mouth guard to a helmet or fastening apparatus for a helmet. In particular, the present disclosure describes an assembly with a retraction element, a cord connected to the retraction element, and coupling elements for connecting the cord to the mouth guard, helmet and/or fastening apparatus. The cord can be pulled out of the retraction element and the retraction element applies a force retracting the cord. The present disclosure also describes a means of magnetically connecting a mouth guard to a helmet.

BACKGROUND

[0003] In athletic activities which utilize a helmet or other protective headgear, and in particular high impact sports such as football and hockey, the use of a protective mouth guard is typically mandatory. It is desirable for the mouthpiece to be tethered in close proximity to the mouth of the user, preferably to the helmet or face mask for at least the following reasons. First, having the mouth guard tethered to the helmet or face mask eliminates the chance that the mouth guard will be lost or misplaced. Second, and perhaps most importantly, a number of instances have arisen in which the user has inadvertently swallowed a mouth guard as a result of impact or otherwise during an athletic activity. Swallowing a mouth guard can result in the user choking on the mouth guard, causing severe injury or death. In addition, it is often difficult for players to comfortably position the mouthpiece in the mouth, particularly for younger players. Furthermore, known mouth guard tethering products are not modular and limiting a player to set tether and mouth guard combinations.

SUMMARY

[0004] The present disclosure broadly comprises a mouth guard assembly with a retractable mouth guard connection, including: a retraction element including a first housing and a refraction device disposed within the first housing; a cord including a first end attached to the retraction device and a second end; a coupling element including a third end connected to the second end and a protrusion arranged to engage a mouth guard to secure the mouth guard to the coupling element; and a connection assembly arranged to attach the retraction element to a protective helmet or a fastening apparatus for a protective helmet. The cord is arranged to be pulled from the retraction assembly in a first direction. The retraction device applies a force urging the cord in a second direction opposite the first direction.

[0005] The present disclosure broadly comprises a mouth guard assembly with a retractable mouth guard connection, including: a retraction element arranged to engage a chin strap for a protective helmet and including a first housing and a retraction device disposed within the housing; a cord including a first end attached to the retraction device and a second end; and a coupling element including a third end connected to the second end and a fourth end arranged to attach the refraction element to a mouth guard. The cord is arranged to be pulled from the retraction assembly in a first direction. The retraction device applies a force urging the cord in a second direction opposite the first direction.

[0006] The present disclosure broadly comprises a mouth guard assembly, including: a U-shaped mouth guard arranged to receive teeth on an upper or lower jaw of a user; and a connection assembly. The connection assembly includes: a flexible tab including a first connected to the mouth guard and a second end; and, a magnet connected to the second end and arranged to magnetically engage a portion of a protective helmet made of a magnetic material.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The nature and mode of operation of the present disclosure will now be more fully described in the following detailed description of the present disclosure taken with the accompanying figures, in which:

[0008] FIG. **1** is a schematic block diagram of a retractable mouth guard assembly;

[0009] FIG. **2** is a perspective view of a mouth guard usable with a retractable mouth guard assembly;

[0010] FIG. **3** is a perspective view of the retractable mouth guard assembly of FIG. **1** with a coupling element detached from the mouth guard;

[0011] FIG. **4** is a perspective view of the retractable mouth guard assembly of FIG. **3** with the coupling element attached to the mouth guard and the cord at least partially extended;

[0012] FIG. **5** is a perspective view of the retractable mouth guard assembly of FIG. **1** with a coupling element detached from the mouth guard and having a rotating function;

[0013] FIG. **6** is a perspective view of the retractable mouth guard assembly of FIG. **5** with the coupling element attached to the mouth guard and the cord at least partially extended;

[0014] FIG. **7** is perspective bottom view of the coupling element of FIGS. **5** and **6**;

[0015] FIG. **8** is a cross-sectional view of the coupling element of FIGS. **5** and **6**;

[0016] FIGS. **9**A through **9**C are representations of respective connection assemblies for the retractable mouth guard assembly of FIG. **1**;

[0017] FIG. **10** illustrates the retractable mouth guard assembly of FIG. **1** connected to a protective helmet;

[0018] FIG. **11**A illustrates the retractable mouth guard assembly of FIG. **1** connected to a fastening apparatus for a protective helmet;

[0019] FIG. **11**B is a detail of FIG. **11**B showing the retraction element in FIG. **11**A;

[0020] FIG. **12** is a schematic block diagram of a retractable mouth guard assembly including a mouth guard;

[0021] FIG. **13** is a perspective view of the retractable mouth guard assembly of FIG. **12** with the cord fixedly secured to the mouth guard;

[0022] FIG. **14** illustrates a magnetic mouth guard assembly; and,

[0023] FIG. **15** illustrates a magnetic mouth guard assembly.

DETAILED DESCRIPTION

[0024] At the outset, it should be appreciated that like drawing numbers on different drawing views identify identical, or functionally similar, structural elements of the disclosure. It is to be understood that the disclosure as claimed is not limited to the disclosed aspects.

[0025] Furthermore, it is understood that this disclosure is not limited to the particular methodology, materials and modifications described and as such may, of course, vary. It is also understood that the terminology used herein is for the purpose of describing particular aspects only, and is not intended to limit the scope of the present disclosure.

[0026] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this disclosure belongs. It should be understood that any methods, devices or materials similar or equivalent to those described herein can be used in the practice or testing of the disclosure.

[0027] Unless defined otherwise, all technical and scientific terms used herein have the same meaning as commonly understood to one of ordinary skill in the art to which this present disclosure belongs. It should be appreciated that the term "substantially" is synonymous with terms such as "nearly", "very nearly", "about", "approximately", "around", "bordering on", "close to", "essentially", "in the neighborhood of", "in the vicinity of", etc., and such terms may be used interchangeably as appearing in the specification and claims. It should be appreciated that the term "proximate" is synonymous with terms such as "nearby", "close", "adjacent", "neighboring", "immediate", "adjoining", etc., and such terms may be used interchangeably as appearing in the specification and claims.

[0028] FIG. **1** is a schematic block diagram of retractable mouth guard assembly **100**.

[0029] FIG. **2** is a perspective view of mouth guard MG usable with a retractable mouth guard assembly. Mouth guard MG includes recess R further described below. In general, known mouth guards include some type of recess to use for tethering the mouth guard to a helmet. The following should be viewed in light of FIGS. **1** and **2**. Retractable mouth guard assembly **100** includes retraction element **102**, cord **104**, coupling element **106**, and coupling element **108**. Element **102** includes housing **110** and retraction device **112** disposed within housing **110**. Cord **104** includes ends **104**A and **104**B. End **104**A is attached to retraction element **102**. In an example embodiment, coupling element **106** includes ends **114**A and **114**B. In an example embodiment, end **114**A is connected to end **104**B of the cord. In an example embodiment, end **114**A is connected to end **104**B of the cord. By "fixedly connected" we mean the connection is essentially permanent. For example, the connection is not intended to allow end **104**B of the cord to be removed and reconnected to end **114**A. End **114**B is arranged to connect element **106** to the mouth guard. In an example embodiment, end **114**B includes protrusion **116**. Protrusion **116** is arranged to engage mouth guard MG to secure the mouth guard to element **106**.

[0030] Coupling element **108** is arranged to attach refraction element **102** to protective helmet H or fastening apparatus FA for the helmet. By "fastening apparatus" we mean any straps, chin straps, or similar devices used to secure the helmet to the head of a wearer of the helmet. The cord is arranged to be pulled, or extended, from retraction element **102** in direction D**1** and retraction device **112** applies a force urging the cord in direction D**2** opposite direction. D**1** and back into housing **110**. Mouth Guard MG can be any mouth guard known in the art, for example, a U-shaped mouth guard arranged to receive teeth on an upper or lower jaw of a user.

[0031] In an example embodiment, retraction device **116** includes spring **118**, for example, coil spring **118**. In an example embodiment, retraction element **102** includes spool **120** and retraction device **116**, for example, coil spring **116**, is arranged to wrap the cord about the spool. It should be understood that any device known in the art that enables a cord to be withdrawn from a housing and applies a force to retract the cord back into the housing can be used for retraction element **102**.

[0032] FIG. **3** is a perspective view of retractable mouth guard assembly **100** of FIG. **1** with a coupling element detached from the mouth guard.

[0033] FIG. **4** is a perspective view of retractable mouth guard assembly **100** of FIG. **3** with the coupling element attached to the mouth guard and the cord at least partially extended. The following should be viewed in light of FIGS. **1** through **4**. In an example embodiment, coupling element **106** includes coupler **122** with end **114**A and protrusion **116**. In an example embodiment, protrusion **116** is arranged for insertion in recess R in mouth guard MG. In an example embodiment, protrusion **116** and recess R are arranged to enable protrusion **116** to be inserted into and withdrawn from recess R. Thus, protrusion **116** and recess R provide a means to easily attach and detach the mouth guard from the coupling element, for example to clean or replace the mouth guard. It should be noted that the engagement of protrusion **116** with the mouth guard via recess R is sufficient to keep element **106** connected to the mouth guard in response to the forces expected to be encountered by a user of assembly **100**. In an example embodiment, element **106** is fixed to the mouth guard when protrusion **116** is inserted in the recess for the mouth guard.

[0034] FIG. **5** is a perspective view of retractable mouth guard assembly **100** of FIG. **1** with a coupling element detached from the mouth guard and having a rotating function.

[0035] FIG. **6** is a perspective view of the retractable mouth guard assembly of FIG. **5** with the coupling element attached to the mouth guard and the cord at least partially extended.

[0036] FIG. **7** is perspective bottom view of the coupling element of FIGS. **5** and **6**.

[0037] FIG. **8** is a cross-sectional view of the coupling element of FIGS. **5** and **6**. The following should be viewed in light of FIGS. **1**, **2** and **5** through **8**. In an example embodiment, coupling element **106** includes housing **124** and rotation element **126**. Housing **124** includes end **114**. Element **126** is separate from housing **124** and includes portions **126**A and **126**B. Portion **126**A is disposed within housing **124**. Portion **126**B extends from portion **126**A to the exterior of housing **124** (extends beyond the housing) and includes protrusion **116**. The discussion of protrusion **116** for FIGS. **3** and **4** is applicable to FIGS. **5** and **6**.

[0038] Portion **126**B includes longitudinal axis LA, and in an example embodiment, element **126** is rotatable about axis LA. Thus, element **126** can rotate in housing **124** to prevent the cord from becoming twisted. In an example embodiment, element **126** is formed by coupler **122**.

[0039] FIGS. **9**A through **9**C are representations of respective connection assemblies for the retractable mouth guard assembly of FIG. **1**.

[0040] FIG. **10** illustrates the retractable mouth guard assembly of FIG. **1** connected to a protective helmet. The following should be viewed in light of FIGS. **1** through **10**. In an example embodiment, coupling element **108** includes strap **128** connected to housing **110**. Strap **128** includes ends **128**A and **128**B with fastening elements **130**. As shown in FIG. **10**, strap **128** is arranged to wrap about a portion of protective helmet H or fastening apparatus FA so that fastening elements **130** are connected to each other to connect assembly **100** to helmet H or apparatus FA. In an example embodiment (not shown), strap **128** is arranged to wrap around fastening apparatus FA.

[0041] In an example embodiment, fastening elements **130**A and **130**B at ends **128**A and **128**B, respectively, in FIG. **9**A are magnetic devices. By "magnetic devices" we mean two magnets or a magnetic and a material to which the magnet is magnetically attracted. In an example embodiment, fastening elements **130**A and **130**B at ends **128**A and **128**B, respectively, in FIG. **9**B are hook and loop devices, respectively. In an example embodiment, fastening elements **130**A and **130**B at ends **128**A and **128**B, respectively, in FIG. **9**C are snap devices. It should be understood that any connecting means known in the art can be used for fastening elements **130**.

[0042] FIG. **11**A illustrates a retractable mouth guard assembly of FIG. **1** for connection to a fastening apparatus for a protective helmet. FIG. **11**B is a detail of FIG. **11**B showing retraction element **102** in FIG. **11**A. The respective discussions for element **102**, cord **104**, and element **106** are applicable to FIG. **11** except as noted. Element **102** is arranged to engage chin strap CS of fastening apparatus FA for helmet H. For example, element **102** is arranged to engage or to contact interior side S**1** of the chin strap. Side S**1** is the side of the chin strap facing the chin of the user, for example, portions of side S**1** may be in contact with the user when the chin strap is secured to the user. Cord **104** is arranged to pass through opening O in the chin strap. Cord **104** is connected to element **106** as described above. Coupling element **106** is arranged to engage mouth guard MG as described above, for example via recess R.

[0043] As cord **104** is drawn from and retracted into element **102**, the cord passes through opening O while element **102** remains on side S**1**, that is, element **102** does not pass through opening O and, for example, the chin strap blocks movement of element **102** in direction D**1**. In an example embodiment, when cord **104** is fully retracted into element **102**, the mouth guard is proximate exterior side S**2** of the chin strap or in contact with side S**2**. In an example embodiment (not shown), element **102** is embedded in the chin strap. In an example embodiment (not shown), a bushing is placed in opening O to guide cord **104** and reduce abrading of cord **104**.

[0044] The respective discussions of coupler **122**, housing **124**, and element **126** for FIGS. **1** through **10** are applicable to FIG. **11** except as noted. In an example embodiment, coupling element **106** includes coupler **122** with end **114**A connected to end **104**B of the cord and protrusion **116** arranged to be inserted in recess R of the mouth guard. In an example embodiment, coupling element **106** includes housing **124**, connected to end **104**B of the cord, and rotation element **126**. Protrusion **116** is arranged to be inserted in recess R of the mouth guard. The discussion of protrusion **116** and recess R for FIGS. **1** through **10** is applicable to FIG. **11**.

[0045] FIG. **12** is a schematic block diagram of retractable mouth guard assembly **200** including a mouth guard. Retractable mouth guard assembly **200** includes retraction element **102**, cord **104**, connection assembly **108**, connection feature **202**, and mouth guard **204**. The discussion for FIGS. **1** through **10** regarding element **102** is applicable to assembly **200**. The discussion for FIGS. **1** through **10** regarding connection assembly **108** is applicable to assembly **200**. Cord **104** is arranged to be pulled, or extended, from retraction element **102** in direction D**1** and retraction device **112** applies a force urging the cord in direction D**2** opposite direction. D**1** and back into housing **110**. Mouth guard **204** can be any mouth guard known in the art, for example, a U-shaped mouth guard arranged to receive teeth on an upper or lower jaw of a user.

[0046] Referring to FIGS. **3** and **4**, in an example embodiment, connection feature **202** includes coupling element **106** with coupler **122** and the respective discussions for FIGS. **1** through **10** regarding coupling element **106**, coupler **122**, and mouth guard MG are applicable to connection feature **202** and mouth guard **204**. For example, mouth guard **204** includes recess **206** arranged to receive protrusion **116**.

[0047] Referring to FIGS. **5** through **8**, in an example embodiment, connection feature **202** includes coupling element **106** with housing **124** and rotation element **126** and the respective discussions for FIGS. **1** through **10** regarding coupling element **106**, housing **124**, rotation element **126**, and mouth guard MG are applicable to connection feature **202** and mouth guard **204**. For example, mouth guard **204** includes recess **206** arranged to receive protrusion **116**.

[0048] FIG. **13** is a perspective view of the retractable mouth guard assembly of FIG. **12** with the cord fixedly secured to the mouth guard. In an example embodiment, connection feature **202** includes end **104**B of the cord. In particular, end **104**B is directly connected to mouth guard **206**, for example, fixedly connected to mouth guard **206**.

[0049] FIG. **14** is a perspective illustration of magnetic mouth guard assembly **300**. Assembly **300** includes U-shaped mouth guard **302** and connection assembly **304**. Mouth guard **302** is arranged to receive teeth on an upper or lower jaw of a user. Assembly **304** includes flexible tab **306** and magnet **308**. Tab **306** includes ends **306**A end **306**B. End **306**A is fixedly connected to mouth guard **302** by any means known in the art. Magnet **308** is connected to end **306**B and is arranged to magnetically engage a portion of protective helmet H made of a magnetic material. For example, in FIG. **14**, magnet **308** is magnetically connected to face guard FG.

[0050] FIG. **15** is an exploded illustration of magnetic mouth guard assembly **400**. Assembly **400** includes U-shaped mouth guard **402** and connection assembly **404**. Mouth guard **402** is arranged to receive teeth on an upper or lower jaw of a user. Assembly **404** includes flexible tab **406** and magnet **408**. Tab **406** includes ends **406**A end **406**B. End **406**A includes protrusion **410** and mouth guard **402** includes recess **412**. Recess **412** is arranged to receive protrusion **410**. That is, protrusion **410** and recess **412** are arranged to enable protrusion **410** to be inserted into and withdrawn from recess **412**. Thus, protrusion **410** and recess **412** provide a means to easily attach and detach the mouth guard from the protrusion, for example to clean or replace the mouth guard. Stated otherwise, protrusion **410** is not fixedly connectable to mouth guard **402**, but is removeably connectable to mouth guard **402**. Magnet **408** is connected to end **406**B and is arranged to magnetically engage a portion of protective helmet H made of a magnetic material. For example, in FIG. **13**, magnet **408** is magnetically connected to face guard FG.

[0051] Advantageously, assemblies **100**, **200**, **300**, and **400** provide respective safe, convenient, and modular means of tethering a mouth guard to a helmet. For example, the preceding assemblies address the problems noted above. Regarding safety issues, the retraction functionality of element **102** results in the mouth guard being retracted from a user's mouth in the event the mouth guard is separated from the user's teeth. Thus, in situations, such a high energy impact, causing the mouth guard to separate from the user's teeth, rather than being loose and possibly being swallowed by the user, the mouth guard is retracted from the mouth of the user by element **102**. Stated otherwise, assemblies **100**, **200**, **300**, and **400** provide hands-free retraction in high impact situations and reliable tethering of a mouth guard to a helmet when the mouth guard is not in use.

[0052] Element **102** can be connected to virtually anywhere on a helmet by use of assembly **108** or one of the magnetic options. For example, the length and flexibility of cord **104** enable element **102** to be located at locations not possible with known tether systems. For example, element **102** can be at greater distance from the mouth of the user and does not need to be directly in front of the mouth of the user. In some embodiments, the coupling assembly is rotatable, which further adds to the range of locations and positions possible for the attachment of element **102**.

[0053] Regarding modularity, with assemblies **100**, **200**, **300**, and **400**, a user has a wide range options for a combination of a mouth guard and tethering means. A user can choose from a vast selection of mouth guards with a variety of materials, shapes and colors. As noted above, a typical known mouth guard includes a recess, such as recess R in FIG. **2**, usable for tethering purposes. Thus, protrusion **116** is a universal connector suitable for use with virtually any known mouth guard recess. In like manner, protrusion **132** (or protrusion **116** replacing protrusion **132**) can be made adaptable to various recesses formed in chin straps for helmets.

[0054] It will be appreciated that various of the above-disclosed and other features and functions, or alternatives thereof, may be desirably combined into many other different systems or applications. Various presently unforeseen or unanticipated alternatives, modifications, variations, or improvements therein may be subsequently made by those skilled in the art which are also intended to be encompassed by the following claims.

What is claimed is:

1. A mouth guard assembly with a retractable mouth guard connection, comprising:
- a retraction element including:
  - a first housing; and,
  - a retraction device disposed within the first housing;
- a cord including:
  - a first end attached to the retraction device; and,
  - a second end;
- a first coupling element including:
  - a third end connected to the second end; and,
  - a fourth end arranged to engage a mouth guard to secure the mouth guard to the coupling element; and,
- a second coupling element arranged to attach the retraction element to a protective helmet or to a fastening apparatus for a protective helmet, wherein:
  - the cord is arranged to be pulled from the retraction assembly in a first direction; and,
  - the retraction device applies a force urging the cord in a second direction opposite the first direction.

2. The mouth guard assembly of claim **1**, wherein the retraction device includes a coil spring.

3. The mouth guard assembly of claim **1**, wherein:
- the retraction element includes a spool; and,
- the retraction device is arranged to wrap the cord about the spool.

4. The mouth guard assembly of claim **1**, wherein the fourth end includes a protrusion arranged to engage the mouth guard.

5. The mouth guard assembly of claim **1**, wherein:
- the first coupling element includes:
  - a second housing including the third end; and,
  - a rotation element including:
    - a first portion disposed within the second housing; and,
    - a second portion separate from the first portion, extending from the first portion to an exterior of the second housing, and including the fourth end; and,
- wherein the fourth end includes a protrusion arranged to engage a recess in the mouth guard.

6. The mouth guard assembly of claim **5**, wherein:
- the second portion has a longitudinal axis; and,
- the rotation element is rotatable about the longitudinal axis.

7. The mouth guard assembly of claim **1**, wherein:
- the second connection element includes a strap connected to the first housing;
- the strap includes fourth and fifth ends with first and second fastening elements, respectively; and,
- the strap is arranged to wrap about a portion of the protective helmet so that:
  - the first and second fastening elements are connected; and,
  - the retraction assembly is connected to the protective helmet.

8. The mouth guard assembly of claim **7**, wherein the first and second fastening elements are selecting from the group consisting of magnetic devices, snap devices, or hook and loop devices.

9. The mouth guard assembly of claim **1**, wherein the fastening apparatus includes a strap or a chin strap.

10. A mouth guard assembly with a retractable mouth guard connection, comprising:
- a retraction element arranged to engage a chin strap for a protective helmet and including:
  - a first housing; and,
  - a retraction device disposed within the housing;
- a cord including:
  - a first end attached to the retraction device; and,
  - a second end; and,
- a coupling element including:
  - a third end connected to the second end; and,
  - a fourth end arranged to attach the retraction element to a mouth guard, wherein:
- the cord is arranged to be pulled from the retraction assembly in a first direction; and,
- the retraction device applies a force urging the cord in a second direction opposite the first direction.

11. The mouth guard assembly of claim **10**, wherein:
- the retraction assembly is arranged to engage an interior surface of the chin guard; and,
- the cord is arranged to pass through an opening in the chin guard.

12. The mouth guard assembly of claim **10**, wherein the retraction assembly is arranged to urge the cord in the second

direction such that the coupling element is drawn toward an exterior surface of the chin strap.

13. The mouth guard assembly of claim **10**, wherein the chin strap is arranged to block movement of the retraction assembly in the first direction.

14. The mouth guard assembly of claim **10**, wherein the retraction device includes a coil spring.

15. The mouth guard assembly of claim **10**, wherein the fourth end includes a protrusion arranged to engage the mouth guard.

16. The mouth guard assembly of claim **10**, wherein:

the coupling element includes:

a second housing including the third end; and,

a rotation element including:

a first portion disposed within the second housing; and,

a second portion separate from the first portion, extending from the first portion to an exterior of the second housing, and including the fourth end; and,

wherein the fourth end includes a. protrusion arranged to engage a recess in the mouth guard.

17. The mouth guard assembly of claim **16**, wherein:

the second portion has a longitudinal axis; and,

the rotation element is rotatable about the longitudinal axis.

18. A mouth guard assembly, comprising:

a U-shaped mouth guard arranged to receive teeth on an upper or lower jaw of a user; and,

a connection assembly including:

a flexible tab including:

a first connected to the mouth guard; and,

a second end; and,

a magnet connected to the second end and arranged to magnetically engage a portion of a protective helmet made of a magnetic material.

19. The mouth guard assembly of claim **18**, wherein the first end is fixedly secured to the mouth guard.

20. The mouth guard assembly of claim **18**, wherein:

the mouth guard includes a recess;

the first end includes a protrusion; and,

recess is arranged to receive the protrusion such that the protrusion is not fixedly secured to the mouth guard.

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