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(54) **PROTECTIVE GLOVE WITH A WRIST GUARD INCLUDING AN INTEGRAL CUFF**

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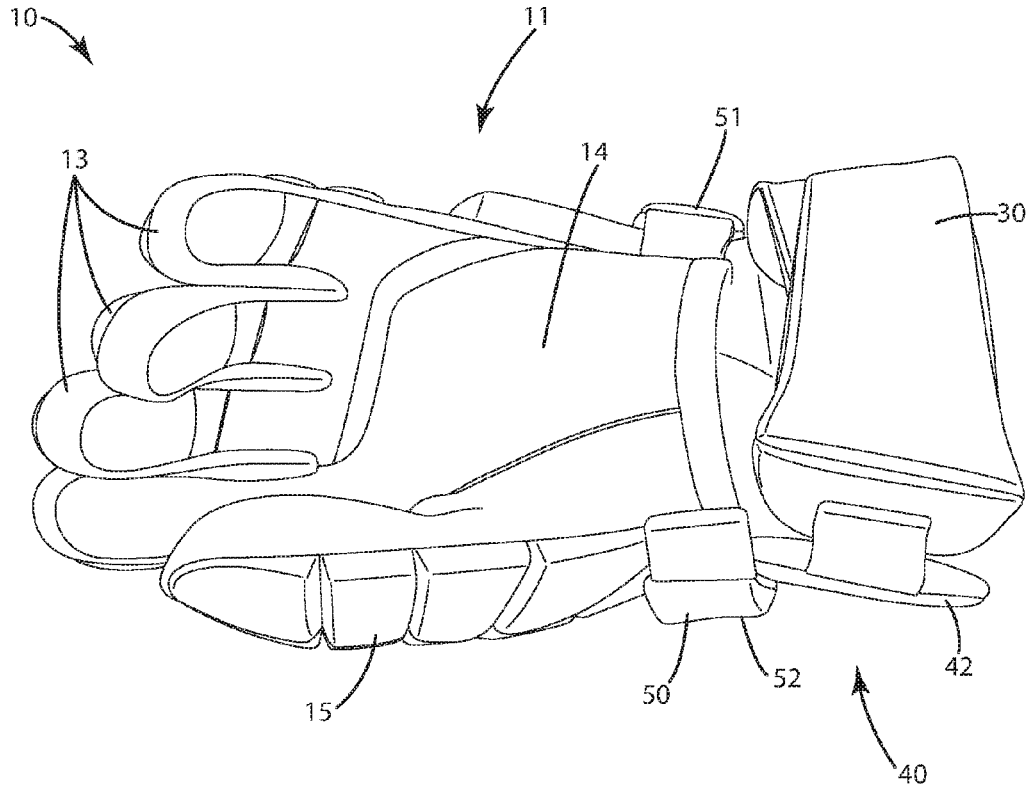
(57) **ABSTRACT**

A protective glove includes a hybrid wrist guard with an integral cuff. The glove can include a hand portion, a cuff portion joined with the hand portion and defining a cuff opening, and a wrist guard joined with the hand portion, the wrist guard including an elongated band and a secondary wrist guard cuff extending rearward from the elongated band and covering the cuff opening. The wrist guard can include a wrist guard tertiary backhand panel extending forward from the elongated band and covering a dorsal opening defined by the backhand of the hand portion. The wrist guard provides enhanced flexibility to the glove, particularly during wrist extension, and can reduce the overall weight of the glove by combining different structural features in the wrist guard.



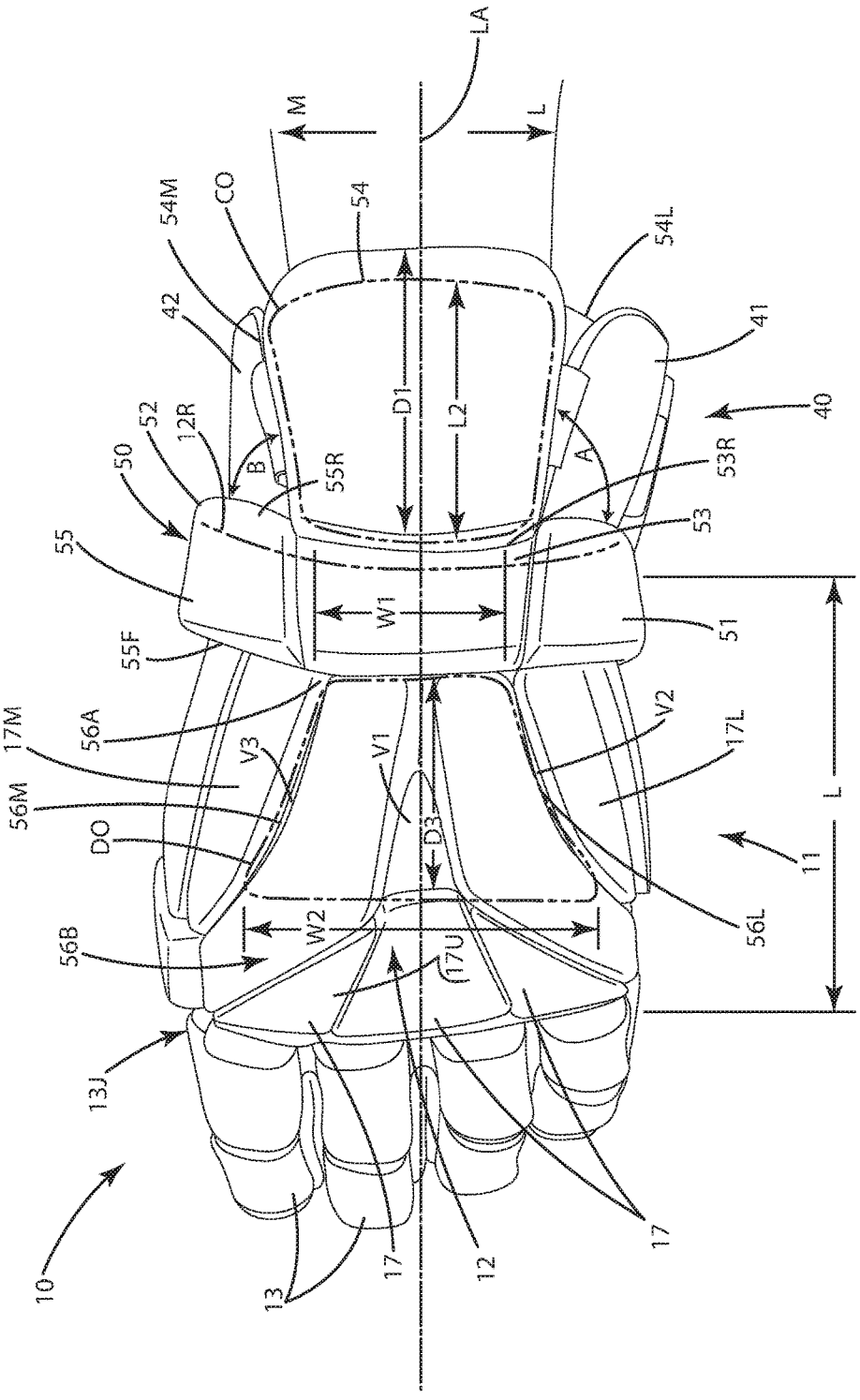

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Fig. 1

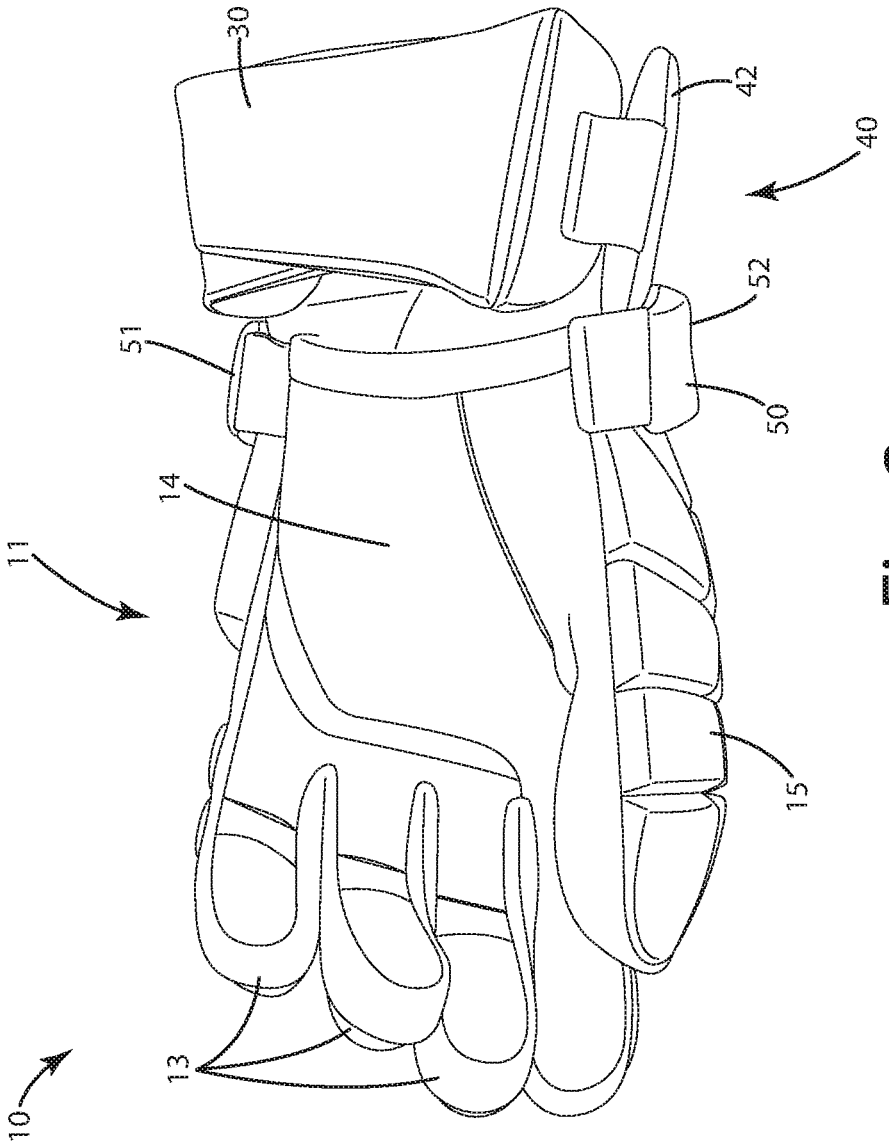
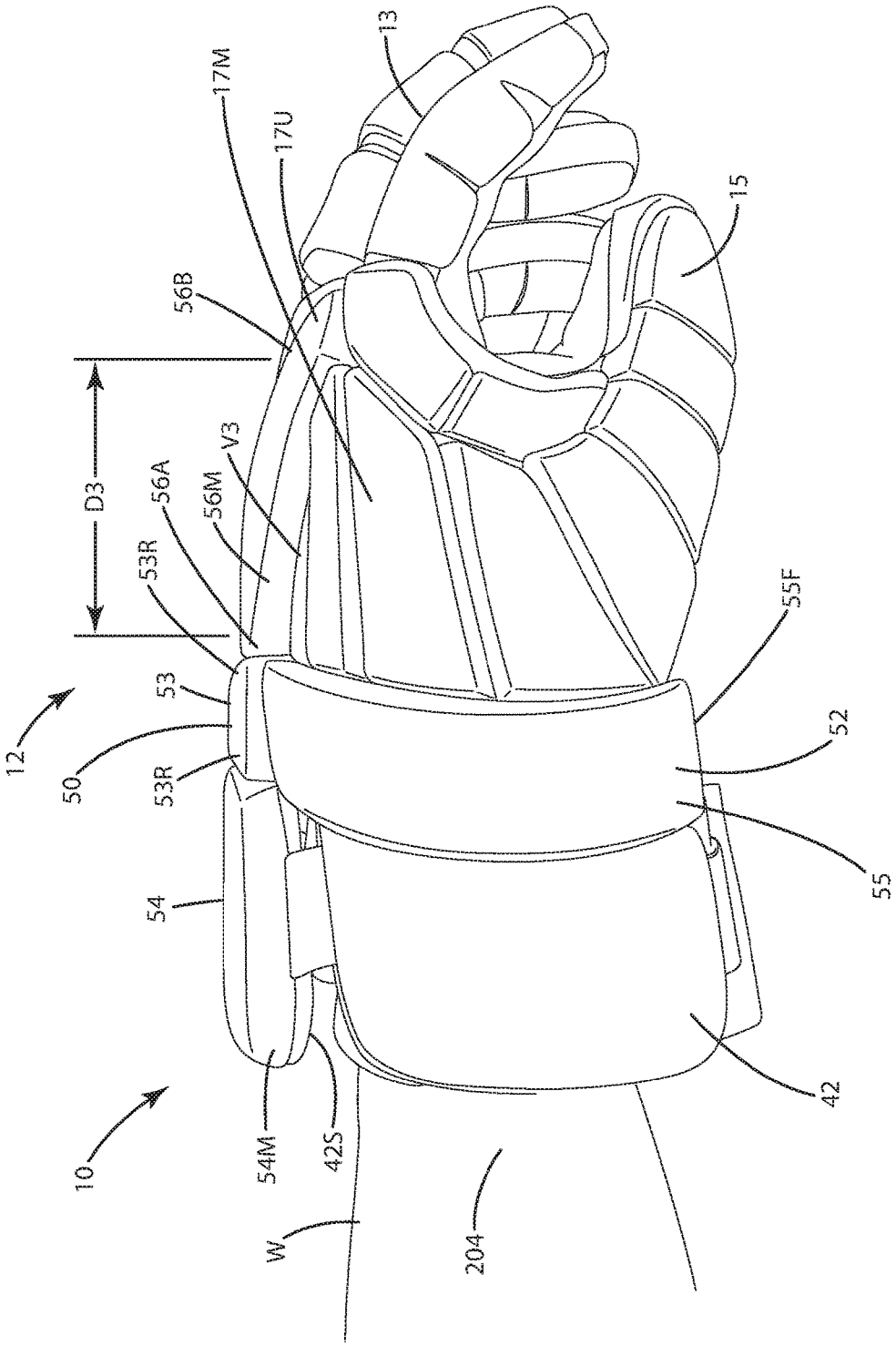


Fig. 2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42S
W
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Fig. 3

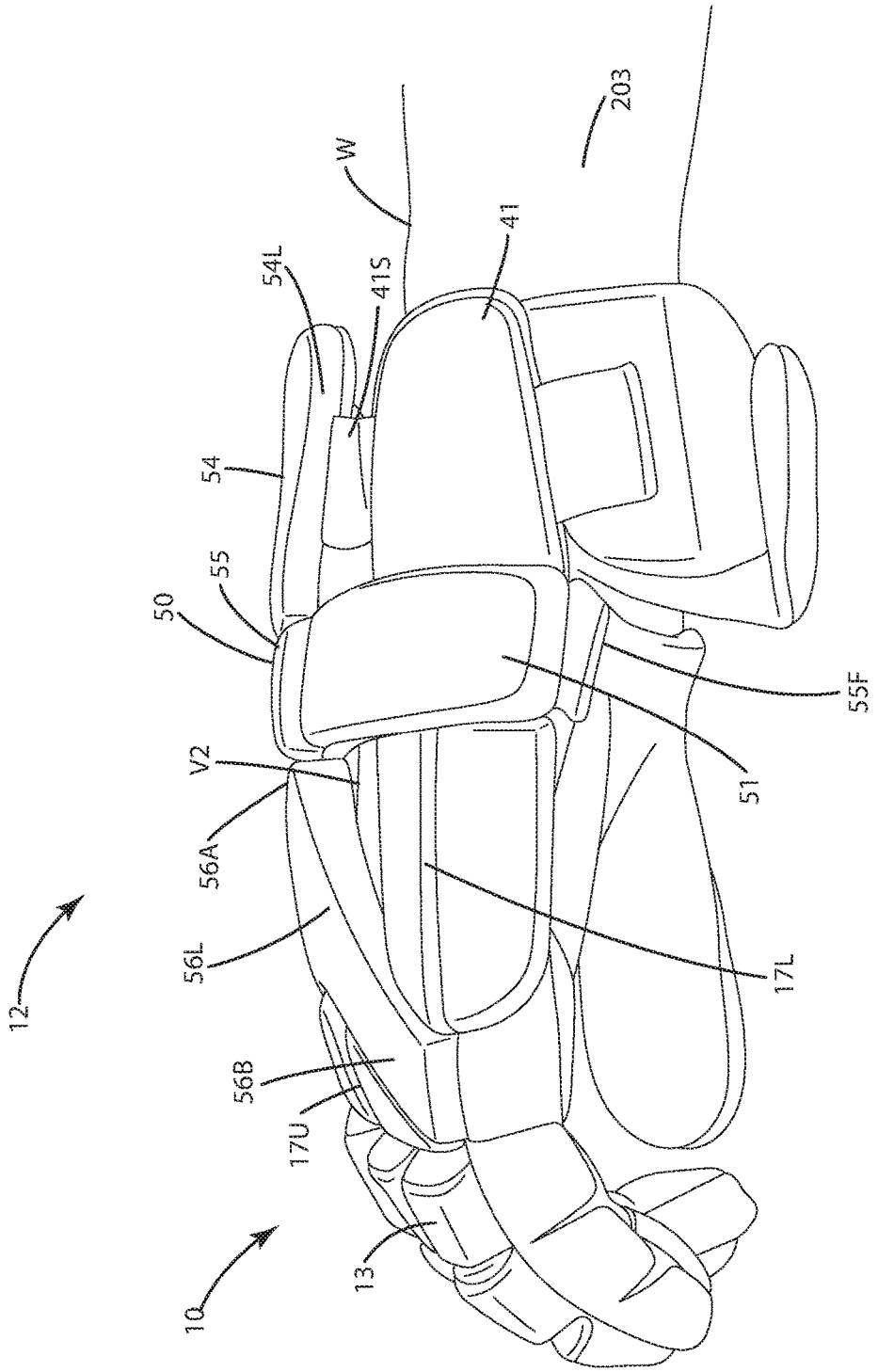
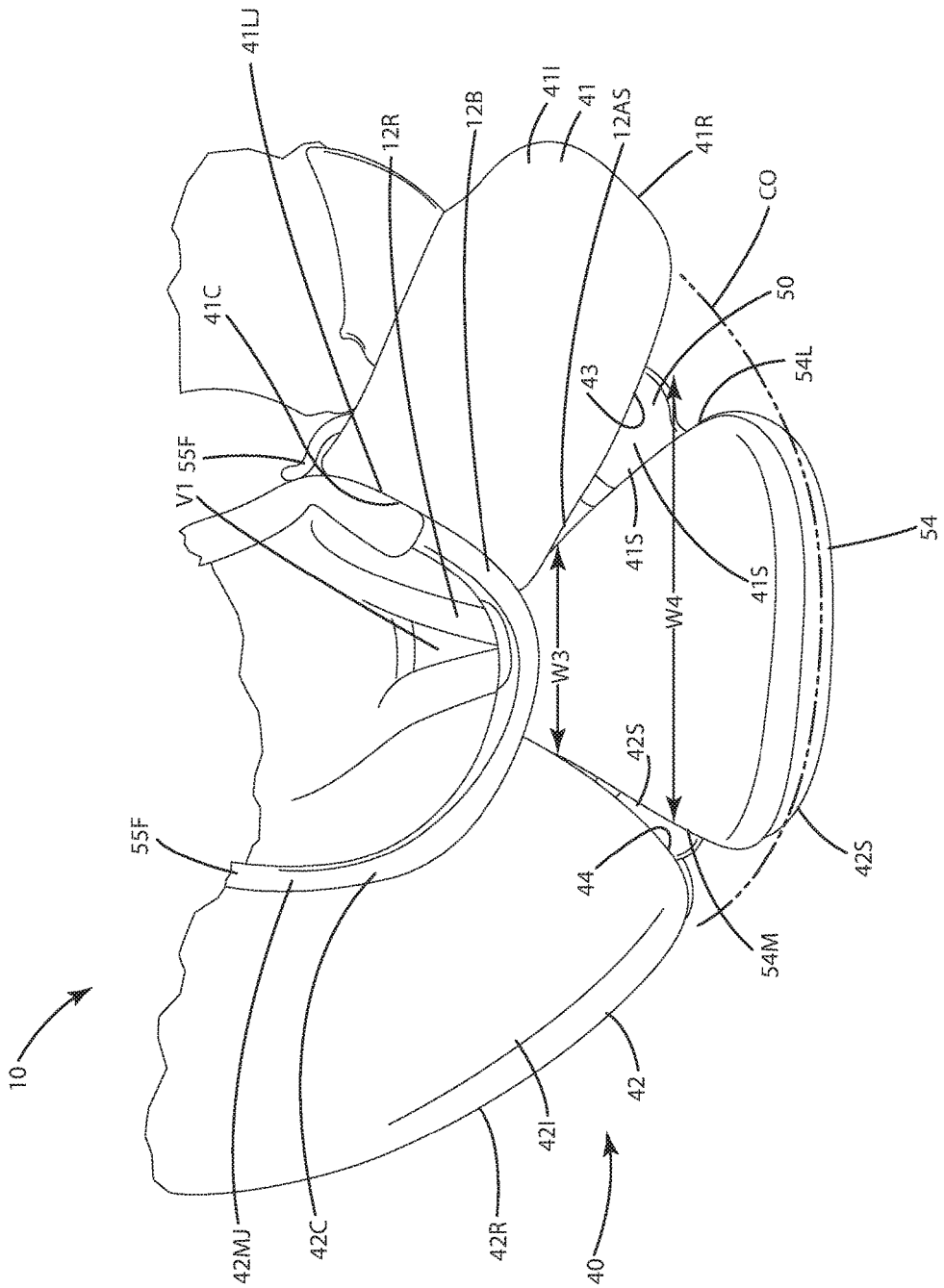


Fig. 4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42C
42R
42I
42
44
42S
54M
55F
V1 55F
41C
41LJ
12R
12B
41I
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41R
CO
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54L
43
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41S
41S
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W4
42S

Fig. 5

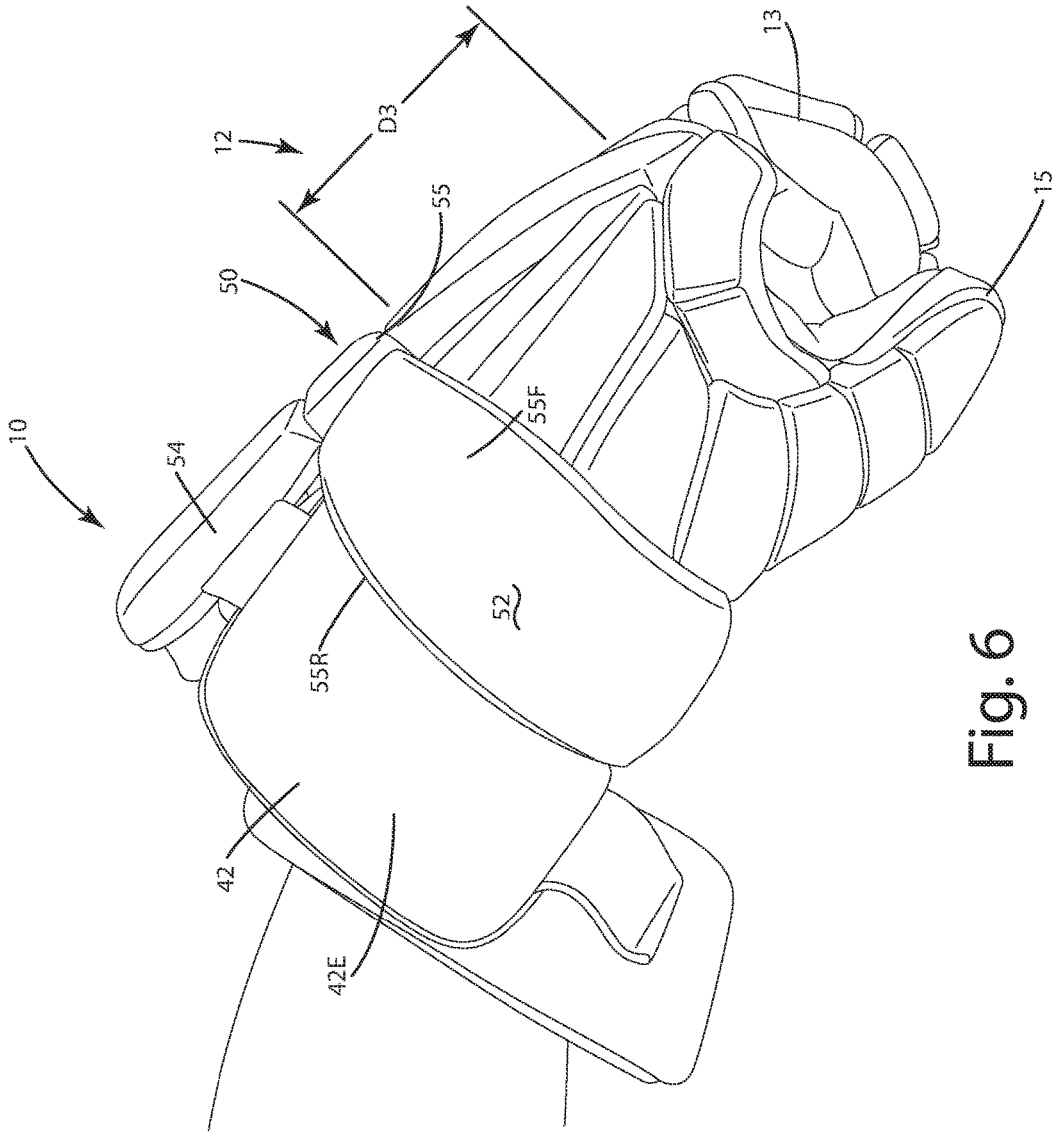

Fig. 6

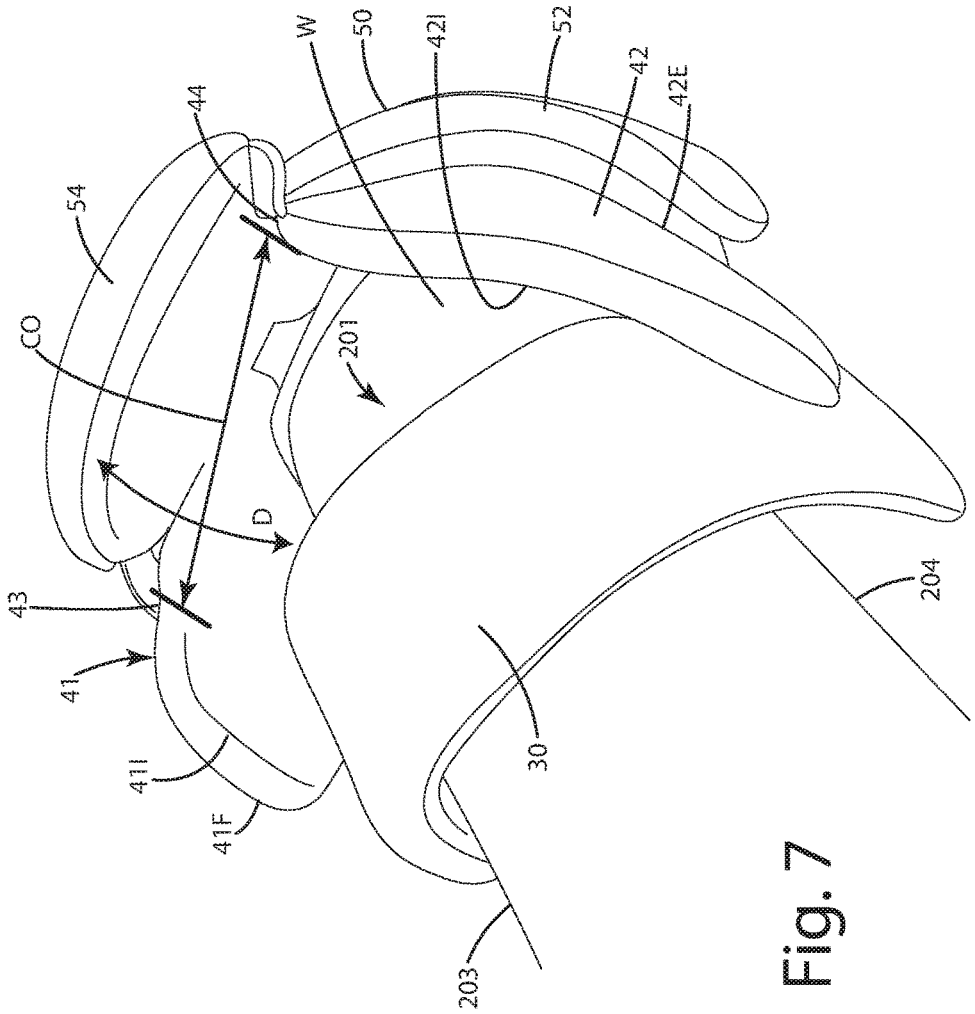

Fig. 7

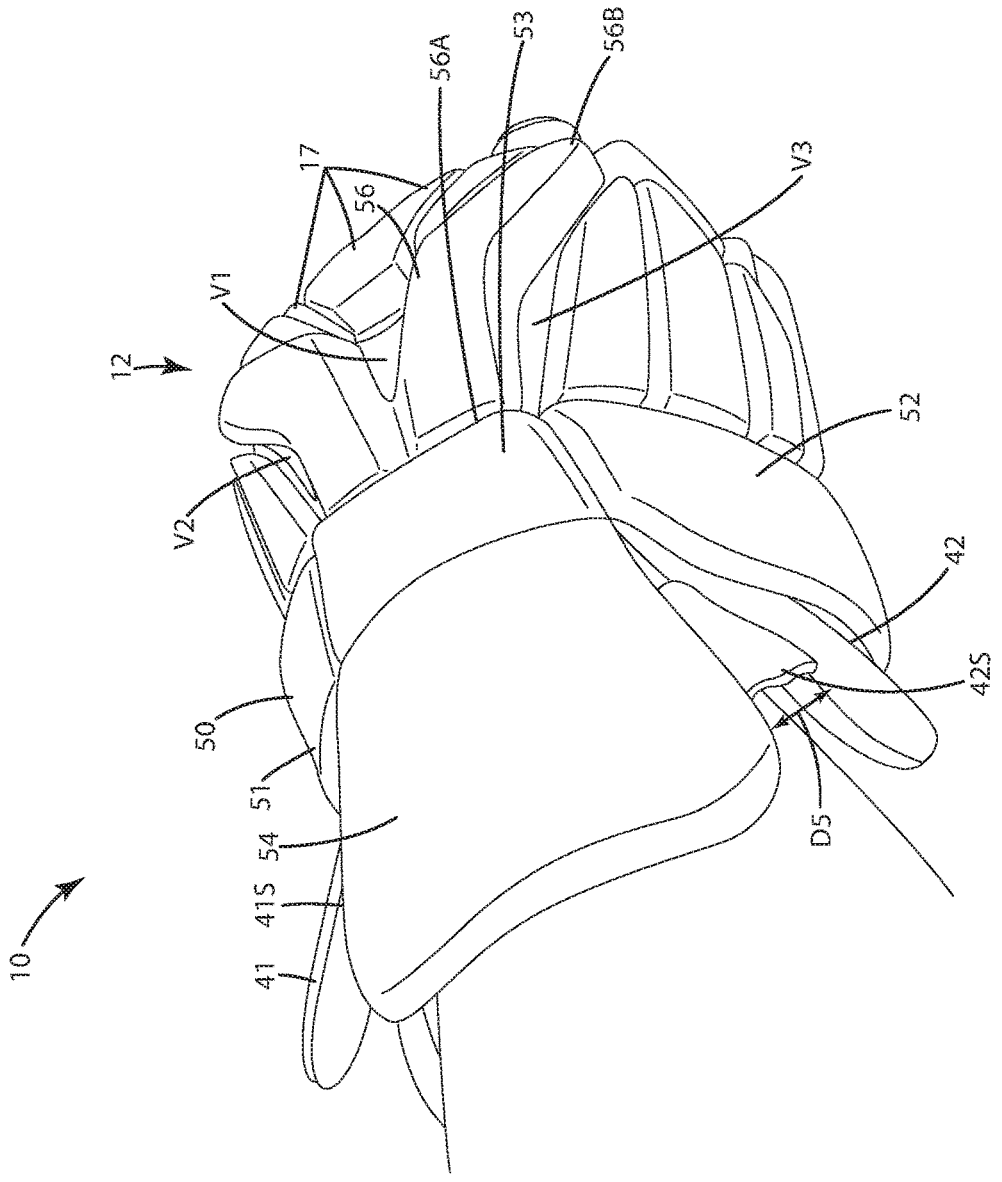

Fig. 8

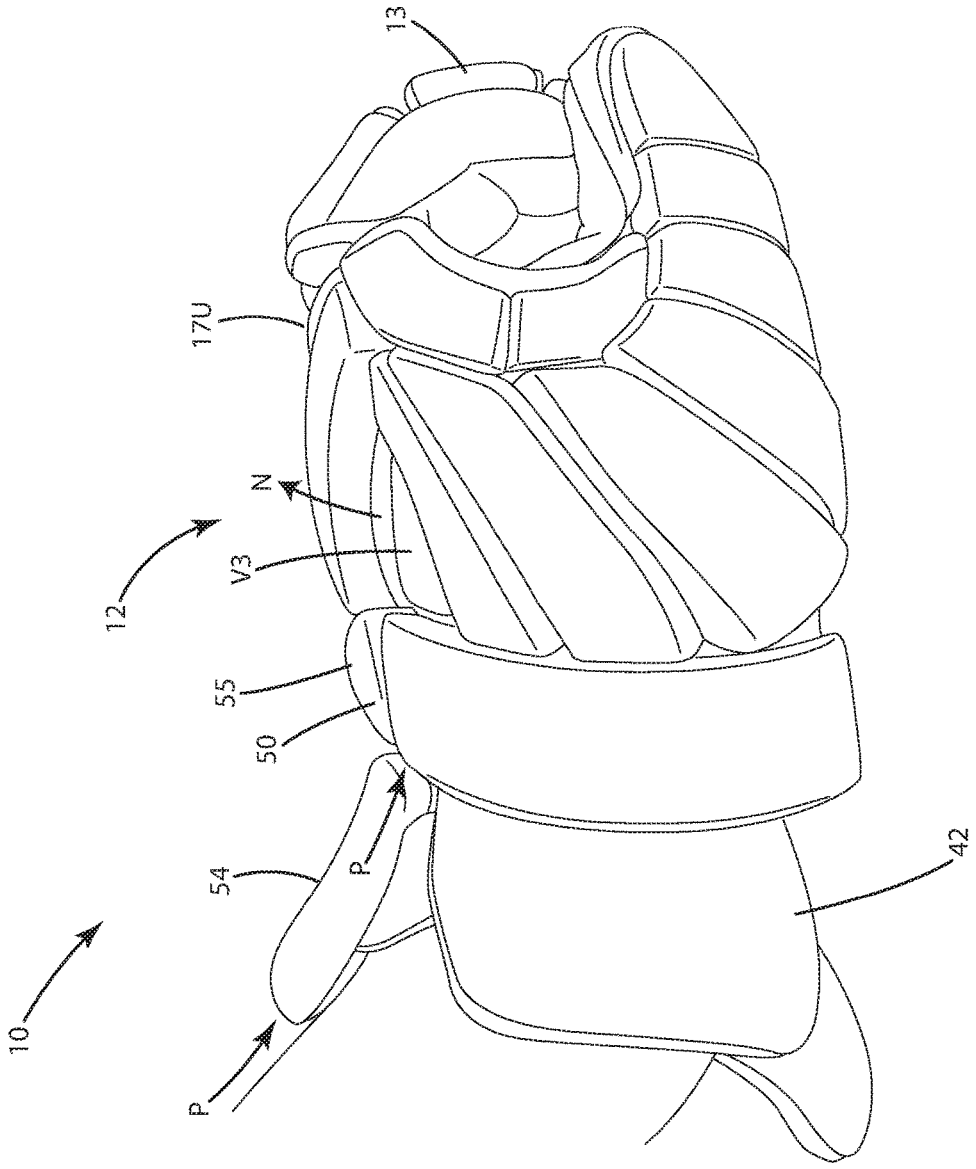

Fig. 9

PROTECTIVE GLOVE WITH A WRIST GUARD INCLUDING AN INTEGRAL CUFF

BACKGROUND OF THE INVENTION

[0001] The present invention relates to protective equipment, and more particularly to a protective glove having a wrist guard having an integral rearward extending cuff that cooperates with spaced apart cuff panels to provide enhanced flexibility and protection, and to promote ergonomic movement.

[0002] In many contact sports, such as lacrosse and hockey, sticks are elements of the game. A player's hands, wrists, and lower arms are vulnerable to minor and sometimes significant injury when being checked by another player's stick. For this reason, players typically wear padded gloves to protect their hands, wrists and lower arms during play of the sport.

[0003] An issue with most padded sports gloves, however, is that they can impede natural movement of the hand and wrist, thereby making stick control difficult, and in some cases not as fine-tuned. This movement impairment is particularly prevalent in some gloves having wrist "tri-cuffs." Tri-cuffs usually include three pads, with two pads overlapping and covering a third pad. These three pads collectively overlay the upper part of a user's wrist, and that are attached directly to the back hand of the glove. These tri-cuffs provide decent mobility during wrist flexion and extension; however, because the tri-cuff moves with the back of the glove, it might not provide maximum protection to a wearer's wrist when the wrist is flexed forward. In such a case, the exposed wrist can be struck by a stick.

[0004] The tri-cuff and its movement also can be complicated by a wrist guard associated with the glove, located where the tri-cuff and hand portion of the glove meet over the wrist. This wrist guard usually is of a uniform thickness or width from end to end. In some cases, when the tri-cuff is extended or bent forward during flexion, the wrist guard binds against it, making the glove feel rigid so movement of the wrist and hand is impaired. Thus, while conventional tri-cuffs and wrist guards provide enhanced protection, they also can reduce wrist mobility and can impair efficient stick handling in some cases.

SUMMARY OF THE INVENTION

[0005] The present invention provides a glove including a hybrid wrist guard having an integral rearward extending wrist guard cuff that cooperates with adjacent, spaced apart cuff panels to provide enhanced flexibility and protection, and to promote ergonomic movement.

[0006] In one embodiment, the glove can include a hand portion joined with a cuff portion. The cuff portion can define a cuff opening between spaced apart cuff panels. The wrist guard can be joined with the hand portion, and can include an elongated band and a secondary wrist guard cuff extending rearward from the elongated band and covering at least a portion of the cuff opening.

[0007] In another embodiment, the wrist guard can include a tertiary pad extending forward from the elongated band. The tertiary pad can cover a dorsal opening defined by the backhand of the hand portion. With this construction, a part of the wrist guard can cover the backhand, negating additional material and padding in the hand portion backhand.

[0008] In another embodiment, the glove, and in particular, the cuff portion can include a first cuff panel and a second cuff panel, distal from one another, and extending rearward from a rearward edge of the hand portion. The first and second cuff panels can be disposed opposite one another, across a longitudinal axis of the glove, on respective lateral and medial sides of the glove, and across the cuff opening from one another. These cuff panels can cooperate with the secondary wrist guard cuff to form a complete cuff pad covering the rear of a wearer's wrist.

[0009] The glove of the current embodiments, with its hybrid wrist guard having an integral secondary wrist guard cuff, provides enhanced flexibility to a wearer of the glove, particularly during wrist extension, and can be configured to ride up a wearer's forearm during such wrist extension to provide increased coverage of the forearm. In addition, the hybrid wrist guard can provide a minimal amount of padding about wrist, yet still provide enhanced protection, flexibility and mobility to the wrist.

[0010] These and other objects, advantages, and features of the invention will be more fully understood and appreciated by reference to the description of the current embodiment and the drawings.

[0011] Before the embodiments of the invention are explained in detail, it is to be understood that the invention is not limited to the details of operation or to the details of construction and the arrangement of the components set forth in the following description or illustrated in the drawings. The invention may be implemented in various other embodiments and of being practiced or being carried out in alternative ways not expressly disclosed herein. Also, it is to be understood that the phraseology and terminology used herein are for the purpose of description and should not be regarded as limiting. The use of "including" and "comprising" and variations thereof is meant to encompass the items listed thereafter and equivalents thereof as well as additional items and equivalents thereof. Further, enumeration may be used in the description of various embodiments. Unless otherwise expressly stated, the use of enumeration should not be construed as limiting the invention to any specific order or number of components. Nor should the use of enumeration be construed as excluding from the scope of the invention any additional steps or components that might be combined with or into the enumerated steps or components.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. **1** is a top view of a dorsal side of a glove including a hybrid wrist guard according to a current embodiment;

[0013] FIG. **2** is a bottom view of a palmar side of the glove;

[0014] FIG. **3** is a side view of a medial side of the glove, while the glove is in a neutral mode;

[0015] FIG. **4** is side view of a lateral side of the glove, while the glove is in a neutral mode;

[0016] FIG. **5** is a rear view of the glove and its interior;

[0017] FIG. **6** is a side view of the glove when in an extended mode;

[0018] FIG. **7** is a rear view of the glove when in the extended mode;

[0019] FIG. **8** is a rear perspective view of the glove when the glove is in a flexed mode; and

[0020] FIG. **9** is a side view of the glove when in the flexed mode.

DESCRIPTION OF THE CURRENT EMBODIMENTS

[0021] A protective glove in accordance with a current embodiment is illustrated in FIGS. **1-9** and generally designated **10**. While the drawings are illustrative of a left hand glove, the current embodiments can be incorporated into a right hand glove, which is generally a mirrored version of the left hand glove. Additionally, the glove **10** as illustrated is designed for use in the game of lacrosse, however, the glove can be used in a variety of other sports or other activities, such as ice or field hockey, or any other activity where a user may move their hand about their wrist, optionally in the process of manipulating a game stick or other grasped item. For example, the glove can be incorporated into protective gear used by law enforcement, military or in other occupational or commercial endeavors.

[0022] The description of the glove **10** can be aided by brief discussion of anatomy and movement of a hand, wrist and forearm. Generally, as used herein, the wrist can refer to the wrist and/or the lower forearm. The wrist can include a posterior side, a lateral side, a medial side and an anterior side, as defined by conventional anatomy. The hand itself of a wearer can generally include fingers and a thumb. The hand can be delineated into a dorsal side, that is, the back of the hand, a palmar side, that is, the front or palm of the hand, an ulnar side, which corresponds to the side of the hand near which the ulna bone in the forearm is disposed, and a radial side, which corresponds to the side of the hand near which the radius bone in the forearm is disposed. Generally, the wearer's wrist can flex and extend to and from a neutral position. An example of a wrist in a neutral mode with the glove on a wearer is shown in FIG. **3**, while an extended mode of the wrist is shown in FIG. **6**, and a flexed mode of the glove is illustrated in FIG. **9**. Varying degrees of the neutral mode, the flexed mode and the extended mode are possible.

[0023] As shown in FIGS. **1** and **2**, the protective glove **10** can include a hand portion **11** which can be configured to enclose different portions of the hand, such as the palmar side, dorsal side, ulnar side, radial side and/or fingers of the wearer when the glove is applied to the hand. The protective glove **10** can include a back portion **12** and a palm portion **14**, between which an interior space adapted to receive a wearer's hand is defined. The back portion **12** can be configured so that it is generally adjacent a dorsal side of the wearer's hand when the hand is inserted into the glove, while the palmar portion **14** of the glove can be adjacent a palmar side of the hand when the hand is inserted into the glove. The back portion **12** and its various components generally can be referred to as the hand dorsal portion of the glove.

[0024] The hand dorsal portion **12** optionally can include multiple protective elements **17**, which can be in the form of padded portions secured thereto that provide padding and protection to a wearer's hand. The protective portions can be constructed of one or more layers of foam, polyurethane, polymers or other suitable materials. These individual protective portions can further be covered with a covering such as leather, plastic or other material to protect any internal foam or other padding therein. The multiple protective portions **17** can be sewn to a protective outer material such as a cloth, spandex or the like. Each of the protective portions **17** can define one or more flex lines there between, which allow the glove, and in particular, the hand dorsal portion, to move as the wearer's hand moves to provide a better fit and comfort during play. Flex lines could take on a variety of different configurations and placements as desired.

[0025] The hand dorsal portion can include upper dorsal pads **17**U that are located at an upper end of the dorsal portion of the glove, optionally adjacent and transitioning to the finger portions **13**. These upper dorsal pads can be located immediately below the finger joint **13**J, which is where the fingers can flex relative to the hand portion **11**. The upper dorsal pads can extend downward from adjacent the finger joint toward the cuff **40**. Optionally, the upper dorsal pads can terminate at about ¼, ⅓ or ½ the length L of the hand portion down from the finger joint.

[0026] The hand dorsal portion **12** also can include lateral dorsal pads **17**L and medial dorsal pads **17**M, which cooperate with the upper dorsal pads **17**U to cover a portion of the hand dorsal portion of the glove. The dorsal hand portion **12** and these components in general can cooperatively define a dorsal opening DO in the backhand. This dorsal opening can be a complete through hole in the backhand of the glove such that no part of the dorsal portion, for example, its pads, covers the dorsal portion of a hand of a wearer donning the glove. As explained below, a portion of the wrist guard can cover all or part of the dorsal opening DO to cover and protect the underlying dorsal side of the wearer's hand. Optionally, where that portion of the wrist guard is not present, or there are openings or apertures between that portion of the wrist guard and other parts of the dorsal hand portion, the dorsal side of a wearer's hand is exposed, unconcealed and in plain view when the glove is on the wearer's hand.

[0027] The dorsal opening can include one or more widths W**1**, W**2**. Width W**1** can be a width closer to the wrist guard **50** than width W**2**, which can be closer to the upper dorsal pads. Width W**1** can be less than, the same as or greater than width W**2**, depending on the application and the desired shape of the dorsal opening. As shown, width W**1** is less than width W**2**.

[0028] Openings or apertures in the backhand can form one or more vents, for example, V**1**, V**2** and V**3**. These vents or openings can enable air to circulate freely into and out from the wearer's hand thereby providing a cooling effect to improve comfort during extended periods of play. The shape and number of vents of course can vary, and can be formed between and/or within different components. For example, vent V**1** can be formed in the tertiary cuff portion **53** of the wrist guard **50**; vent V**2** can be formed between the tertiary cuff portion **53** and the lateral dorsal pad **17**L; and the vent V**3** can be formed between the tertiary cuff portion **53** and the medial dorsal pad **17**M.

[0029] Optionally, the backhand of the dorsal portion **12** of the hand portion **11** can be outfitted with a particular type of padding that can reduce hyperextension of the wrist. Such a construction is described in U.S. Pat. No. 8,769,720 to Aoki, entitle "Lacrosse Glove," which is hereby incorporated by reference in its entirety.

[0030] The hand portion **12** can include optional finger portions **13** as mentioned above, which can correspond to the number of fingers on a user's hand. The number of finger portions can vary depending on the particular sport and/or activity. In addition, although shown with a thumb portion **15**, which generally encloses or houses a thumb, the glove can be void of this thumb portion in certain applications.

[0031] The glove **10** can define a longitudinal axis LA which is best shown in FIG. **1**. The longitudinal axis LA can bisect the glove **10** down its center. On one side of the longitudinal axis LA is a medial side M, which can correspond to a medial side of the wearer's wrist when the glove is worn by the wearer. Opposite the medial side is a lateral side L, which can correspond to a lateral side of a wearer's wrist. The length L of the hand portion can be measured along this longitudinal axis. The widths W**1** and W**2** of the dorsal opening DO can be measured perpendicular to the longitudinal axis.

[0032] Referring to FIGS. **1-5**, the hand portion **11** is joined with a cuff portion **40**. As shown in FIGS. **1** and **5**, the hand portion **12** can define a rearward edge **12**R. This hand portion rearward edge **12**R can generally extend and/or circumferentiate the wearer's hand and/or wrist when the glove is worn. The rearward edge **12**R can form portions of different parts of the hand portion **12**. For example, the rearward edge **12**R can form an end of the dorsal hand portion of the glove, the palmar hand portion of the glove, as well as lateral and medial portions **17**M and **17**L of the glove.

[0033] As shown in FIG. **5**, the rearward edge **12**R of the hand dorsal portion can be in the form of or can include a binding **12**B. This binding can secure ends of pads, covers and other materials in the respective parts of the hand portion. This binding can include a piece of material that is wrapped, stitched, glued or otherwise fastened to, abutted and/or overlapped ends the respective dorsal hand portion parts. The binding can extend forward from and generally wrap around or be placed adjacent the rearward edge **12**R. The binding optionally can connect the lateral backhand pad **12**L and a medial backhand pad **12**M across a portion of the dorsal opening DO. The binding **12**B optionally can be the only element connecting the pads **12**M and **12**L at the lowermost part of the dorsal opening DO. In this case, the binding can also form a support member to maintain the dimensions and structure of the dorsal portion of the hand portion of the glove. In some cases, the binding can span across the dorsal opening with other remnants or portions of materials, such as parts of covers, pads, foam or fabrics of the dorsal backhand. In this case, these other elements can add to the support provided by the binding. Further, the binding **12**B in the region between the lateral and medial backhand pads can form a connecting bridge between these elements and other elements of the glove depending on the application and precise location of the binding.

[0034] Optionally, the binding also can serve as an anchor point on the dorsal hand portion for the wrist guard **50**. For example, the wrist guard **50** can be tethered to the binding **12**B via an elastic anchor strap **12**AS. This strap can be elastic, and can extend from the portion of the binding located between the lateral and medial backhand pads, to the underside or interior facing surface of the wrist guard **50** as shown in FIG. **5**. Of course, in some cases, the elastic strap can overlap the binding where the binding overlaps the medial and lateral backhand pads.

[0035] As mentioned above, the hand portion is joined with the cuff portion **40**. With reference to FIGS. **1-4**, the glove **10** can include first **41** and second **42** cuff panels joined with the hand portion **11**. These panels can be joined with the hand portion rearward edge **12**R of, and in particular, portions of the rearward edge that extend to the lateral **12**L and medial **12**M parts of the glove **10**. The first and second cuff panels can be similar in size, connection and dimension. The first cuff panel **41**, also referred to as the lateral cuff panel, can be disposed on a lateral side L of the glove, while the second cuff panel **42**, also referred to as a medial cuff panel, can be disposed on the medial side M of the glove, distal from the first cuff panel. The cuff panels optionally can be unattached to one another, and only attached to the hand portion, for example, the rearward edge **12**R or biding **12**B.

[0036] Optionally, the second cuff panel **42** can be dimensioned slightly larger than the first cuff panel due to the placement of the second cuff panel on the medial side M of the wrist. This location on the medial side M of the wrist, under the thumb, can generally be subject to increased number of slashes and/or hits by an opponent's stick, as that thumb side or medial side **12**M of a glove more frequently faces upward than the lower side **12**L of the glove during maneuvering of a game stick. In some cases, the second cuff panel optionally can be 10%, 20%, 30%, 40%, 50% or greater in size than the first cuff panel. In some cases, the first cuff panel can be eliminated altogether. If desired, both cuff panels can be absent from the glove.

[0037] Generally, the components of the first cuff panel **41** and second cuff panel **42** can be similar and/or identical, and therefore only the first cuff panel will be described in further detail here. To begin, the first cuff panel again generally is disposed on the lateral side of the wrist L when the glove is donned by a wearer, while the second cuff panel is disposed on the medial side of the wrist M when the glove is donned by the wearer. As shown in FIGS. **5-7**, the first cuff panel can include a first cuff panel exterior **41**E and a first cuff panel interior **411**. Likewise, the second cuff panel **42** can include an exterior **42**E and an interior **421**. The exteriors **41**E and **42**E of the respective panels can face outward and form visible outer surfaces of the cuff portion **40**, which can be unconcealed by other elements of the glove. The interior **411** of the cuff elements can face inward toward the wearer's wrist W as shown in FIG. **7**.

[0038] Returning to FIGS. **5** and **7**, the first cuff panel **41** can include a first cuff panel interior edge **43**, and the second cuff panel can include a second cuff panel interior edge **44**. This interior edge **43** of the first cuff panel can transition or project toward the hand portion **11**, and more particularly, the rearward edge **12**R and/or binding **12**B of the hand portion **11**. Likewise, the interior edge **44** of the second cuff panel can transition and can extend toward the rearward edge **12**R of the hand portion **11**. Collectively and cooperatively, the rearward edge **12**R and/or binding **12**B, first cuff panel interior edge **43** and second cuff panel interior edge **44** can define a cuff opening CO as shown in FIG. **1**. More generally, the first cuff panel **41** and second cuff panel **42** of the cuff **40** can define the cuff opening therebetween. This opening optionally can be unoccupied by any portion of the dedicated cuff panels **41**, **42**.

[0039] In some embodiments, the glove can include a floating cuff **30**. The floating cuff **30** can be disposed immediately under the first and second cuff panels. Optionally, the floating cuff can be similar to that described in U.S. Pat. No. 7,636,951 to Morrow et al, which is hereby incorporated by reference in its entirety. The floating cuff can be interposed on a wrist of the wearer, located generally between the cuff portion **40** and the wearer's wrist W.

Optionally, the floating cuff can extend under the cuff opening CO, as well as the cuff panels and secondary wrist guard cuff.

[0040] Referring to FIG. **5**, the first and second cuff panels **41** and **42** can extend rearward and terminate at a respective first panel rear edge **41**R and a second panel rear edge **42**R. These rear edges can form the limits or rearmost boundaries of the cuff panels. Opposite the respective rear edges can be a connecting edge **41**C of the first cuff panel and a second connecting edge **42**C of the second cuff panel **42**. These connecting or forward edges or portions edges can be bound, stitched, fused, welded, glued or otherwise attached to the hand portion, for example the rearward edge **12**R of the hand portion and/or the binding **12**B. These connecting edges **41**C and **42**C can be connected to the rearward edge **12**R or binding **12**B distal from one another and disposed primarily on the respective medial M and lateral L sides of the wrist. Optionally, the connecting edges are not joined with the binding **12**B in the location that it forms a connecting bridge between the lateral and medial dorsal pads. Further optionally, the connecting edges can be flexibly joined with the hand portion so as to form a first lateral joint **41**LJ between the first cuff panel and the hand portion, and to form a second medial joint **42**MJ between the second cuff panel and the hand portion. With these joints, the panels can be flexible relative to the hand portion. For example, the cuff panels can fold, freely hinge or move relative to the hand portion about respective pivot axes or folding regions of the respective joints. These joints can be bolstered with extra material if desired to withstand the multiple bending actions during the life of the glove.

[0041] As shown in FIGS. **1** and **5**, the first and second cuff panels **41** and **42** can be separated from one another approximately the width of the cuff opening CO. For example, near the binding **12**B, the cuff panels **41**, **42** can be separated by a first width W**3** of the cuff opening from one another at their inner edges **43**, **44**. Near the rear edges **41**R and **42**R, these panels can be separated from one by a second width W**4** of the cuff opening from one another at their inner edges **43**, **44**. The second width can be greater than the first width, or optionally the same as or less than the first width. These first and second cuff panels can be dedicated to primarily protecting the lateral side L and medial side M of the wrist respectively, without substantially extending upward over the posterior **201** of the wearer's wrist W. Again, this is because the floating cuff **40** can cooperate with the wrist guard **50** as described below to offer substantial protection, without the aid of other panels, pads or protective layers.

[0042] As mentioned above, the glove **10** also includes a hybrid wrist guard **50**. The wrist guard can be disposed adjacent the hand portion **11** and adjacent the cuff portion **40**, optionally straddling both of those portions. The wrist guard **50** can further be positioned so that it covers the rearward edge **12**R and binding **12**B of the glove. The wrist guard can include an elongated band **55**. This band can include a forward edge **55**F and a rearward edge **55**R. The band **55** can be configured to include a first elongated band **51** extending toward the lateral side L and optionally covering the first joint **41**LJ, and a second elongated band **52** extending toward the medial side M and optionally covering the second joint **42**MJ. In some applications, the first and second elongated bands can be formed from separately and independently constructed pads that are disposed in a common cover disposed over the bands.

[0043] Optionally, the band **55** can circumferentiate optionally at least 40%, further optionally at least 50%, and even further optionally at least 60% or more of a wearer's wrist. The ends of the first and second band portions can be secured to the hand portion **11** with a fastening element **55**F. This fastening element can be in the form of an elastic strap, a fabric web, a hook-and-loop fastener, such as Velcro™, buttons, latches, strings or the like. Where the fastening element is an elastic strap, it can be elastic or stretchable enough to enable the wrist guard to float over the backhand yet stay generally centered over the user's wrist.

[0044] The band **55** or the wrist guard **50** can also include a central portion **53**. This central portion can be disposed between the ends of the first and second elongated bands **51**, **52**, and/or can be incorporated into the respective first and second elongated bands. The central portion **53** can include a rearward part **53**R, which can coincide or be aligned with a portion of the rearward edge **55**R of the band. The wrist guard **50** can include a secondary wrist guard cuff **54** extending rearward from the rearward part of the central portion **53**. The secondary wrist guard cuff **54** can be joined with the rearward part **55**R of the central portion of the wrist guard at an articulating joint configured to enable the secondary wrist guard cuff **54** to articulate downward upon extension and flexion of a wrist of a wearer of the glove **10**. This joint can be the result of the pads of the elongated band being separately and independently constructed from a pad that is included in the secondary wrist guard cuff. Further, the cover over the elongated band pads and the secondary wrist guard cuff pads can be flexible or thinned where the secondary wrist guard cuff is joined to the band at the joint, so as to promote the flexibility of the cuff relative to the band.

[0045] The secondary wrist guard cuff **54** can extend a first distance D**1** out and over or into the cuff opening CO so that the secondary wrist guard cuff substantially fills or covers that cuff opening. Generally, the cuff opening can be of a length L**2**, and the distance D**1** can be greater than the length L**2**. In turn, this secondary wrist guard cuff can protect a wrist when the wrist is under the cuff opening CO.

[0046] The secondary wrist guard cuff **54** can include a medial side edge **54**M and a lateral side edge **54**L, on the respective lateral L and medial M sides of the axis LA. These side edges can be closer to the longitudinal axis than the first and second cuff panels in some cases. In others, these elements can be the same distance from the longitudinal axis. Optionally, these side edges can be substantially parallel to the outermost lateral and medial boundaries of the cuff opening so as to adequately and cleanly cover the same. Further, the width of the secondary wrist guard cuff can be greater than the respective widths of the cuff opening in corresponding locations. For example, near the rear edge of the wrist guard cuff **54**, the width of that cuff **54** can be greater than the width W**4** of cuff opening CO when the glove is in a neutral mode. Near the forward edge of the wrist guard cuff, the width of the cuff can be greater than the width W**3** of cuff opening CO of the opening when the glove is in a neutral mode.

[0047] The secondary wrist guard cuff **54** medial side edge **54**M and a lateral side edge **54**L can be tethered or anchored to the first and second cuff panels in some applications. For example, as shown in FIG. **5**, the medial side edge **54**M can

be elastically coupled to the interior edge of the second cuff panel **42** via an elastic element, such as a second elastic strap **42**S. The lateral side edge **54**L can be elastically coupled to the interior edge of the first cuff panel **41** via an elastic element, such as a first elastic strap **41**S. These elastic straps can be tethered to the respective cuff panels at the seams of the respective cuff panels and secondary wrist guard cuff if desired.

[0048] The secondary wrist guard cuff **54** can be disposed and movable within the cuff opening CO. Optionally, the secondary wrist guard cuff **54** substantially fills the cuff opening, spanning from the first cuff panel interior edge **43** to the second cuff panel interior edge **44**. As shown in FIGS. **1-4**, neither the first cuff panel nor the second cuff panel substantially overlaps the secondary wrist guard cuff **54**. In this manner, the wrist guard cuff is free to move upward and bend, as shown in FIG. **8**, thereby facilitating mostly free extension of the wrist without the wrist guard cuff engaging or being bound or impeded in its movements by the respective first cuff panel **41** and/or second cuff panel **42**. In some cases, during the upward extension as further described below, these first and second cuff panels will flex outward away from the longitudinal axis LA of the glove to permit the desired amount of extension and/or flexion of the wrist.

[0049] With reference to FIGS. **5** and **7**, the secondary wrist guard cuff **54** can form an uppermost or highest protective layer covering a posterior side **201** of a wearer's wrist W. This secondary wrist guard cuff can be uncovered or not overlapped above the posterior side **201** of the wearer's wrist W by any other additional padding layers or protective layers. The secondary wrist guard cuff, however, can itself extend over an underlying floating cuff **30**, if the same is included in the glove.

[0050] The respective edges of the secondary wrist guard cuff **54** and the first and second cuff panels **41**, **42** can be oriented so that they abut or are adjacent one another, with the secondary wrist guard cuff slightly covering or disposed over the interior edges of the cuff panels when the glove is in the neutral mode as shown in FIGS. **1**, **3** and **4**. When these components, that is, the cuff panels and the secondary wrist guard cuff move during flexion and/or extension of the wrist, the respective panels move relative to one another as further described below to provide the desired mobility of the wrist W.

[0051] Referring to FIGS. **1**, **3** and **5**, the wrist guard **50** can include and/or be joined with a wrist guard tertiary backhand panel **56** extending from the forward edge **55**F of the band **55**. This tertiary backhand panel **56** can be located adjacent and connected to a forward portion of the central portion **53**. The panel itself can be flexibly coupled to the central panel of band so that the panel can flex and move with the glove. The wrist guard tertiary backhand panel can be disposed on the central portion **53**, opposite the secondary wrist guard cuff **54** extending from the rear edge of the band.

[0052] Generally, the tertiary backhand panel **56** extends over and at least partially covers the dorsal opening DO. In the glove **10**, there optionally are no pads of the hand portion or the associated dorsal portion that extend over the dorsal opening between the lateral backhand portion **17**L and the medial backhand portion **17**M. Put another way, the tertiary backhand panel **56** of the wrist cuff optionally can be the only element covering all or a substantial portion of the dorsal opening.

[0053] The wrist guard tertiary backhand panel **56** can include a first end **56**A joined with the front edge **55**F, and a second end **55**B joined with or adjacent the upper dorsal pads **17**U. The tertiary backhand panel **56** thus is generally disposed between the elongated band **55** and the upper dorsal pads **17**U. The tertiary backhand panel can extend at least half a distance D**3** between the elongated band and the upper dorsal pad as shown. In other applications, the tertiary backhand panel can extend optionally at least ¾, further optionally at least %, even further optionally ⅓, yet further optionally ¼ or other proportions of the distance D**3**.

[0054] As mentioned above, the tertiary backhand panel can define one or more vent openings, for example, vent opening V**1**, which extends completely through that panel. Of course, in some cases, the vent openings can be covered with a breathable material such as mesh or a fabric. The lateral **56**L and medial **56**M edges of the tertiary backhand panel can be separated from the lateral and medial backhand pads **17**L and **17**M respectively. In turn, this can form additional vent openings V**2** and V**3** in the dorsal portion of the hand. Generally, these openings can be contiguous with and/or overlap the dorsal opening DO.

[0055] As shown, the tertiary backhand panel can include one or more pads therein, that are covered by a cover of material. The pads in this panel can be separately constructed from and independent from the pads of the band and/or the secondary wrist guard cuff. Of course, in some cases, all of the pads can be contiguous and integral, formed as a single pad.

[0056] As mentioned above, the hybrid wrist guard **50** and the glove **10** in general are operable in a neutral mode, an extended mode and a flexed mode. These modes correspond to the neutral position of the wrist, the extended position of the wrist and the flexed position of the wrist. In the neutral mode, shown in FIGS. **1**, **3** and **4**, when the glove is on the wearer's hand, the hybrid wrist guard **50** generally encircles the wearer's wrist W. The secondary wrist guard cuff **54** extends rearward from the band **55**, and is disposed on or over the posterior **201** of the wearer's wrist. The secondary wrist guard cuff in this configuration operates to cover a majority if not all of the cuff opening CO in the cuff portion **40**. Indeed, this wrist guard cuff **54**, in combination with the lateral and medial cuff panels **41** and **42**, generally form the cuff portion **40**.

[0057] The lateral and medial cuff panels **41** and **42** flank the secondary wrist guard cuff **54**, and are disposed on the respective lateral **203** and medial **204** sides of the wrist W. In this neutral mode, the lateral **54**L and medial **54**M side edges of the secondary wrist guard cuff **54** can be disposed adjacent the interior edges **43**, **44** of the respective lateral and medial cuff panels **41** and **42**. Indeed, these edges can slightly overlap the exterior surfaces of these panels in this configuration. Further, in this configuration, the lateral edge **54**L can form an acute angle A with the rear edge **55**R of the band **55**, and the medial edge **54**M can form another acute angle B with the rear edge **55**R of the band **55**. These acute angles optionally can be less than 90°, further optionally less than 85°, even further optionally less than 80°, and yet further optionally less than 75°. Of course, in some cases the angles can be obtuse or right angles, depending on the configuration of the band and/or the secondary wrist guard cuff.

[0058] The glove **10** can transition from a neutral mode shown in FIGS. **1**, **3** and **4** to an extended mode shown in

FIGS. **6** and **7**. There, the wrist is extended upward so that the hand moves upward as well. In this manner, the orientation of the hand relative to the wrist and forearm changes. When the hand moves to the extended position as shown in FIGS. **6** and **7**, the cuff **54** moves relative to the hand portion **11** of the glove. As an example, the secondary wrist guard cuff angles or rotates upward to an angle D relative to the wrist W or the floating cuff **30**. Generally, even when so rotated up, the cuff **54** covers a substantial portion of the cuff opening. In this extended mode, the cuff **54** may move away from the lateral and medial cuff panels **41**, **42**, as well as the optional floating cuff **30**. The elastic straps, where included, can optionally stretch, yet can maintain the orientation of these elements, and prevent them from separating completely. This can maintain adequate protection of the wrist via the cuff portion **40**. During this flexing, the tertiary panel **56** extending from the forward edge of the band **55** also maintains coverage of the dorsal opening DO.

[0059] The glove **10** also can transition from the neutral mode to the flexed mode shown in FIGS. **8-9**. As shown there, when the wrist W flexes, the secondary wrist guard cuff **54** remains on the wearer's wrist, encircling it and protecting it, and in particular, the posterior **201** of the wearer's wrist. In this configuration, the first cuff panel **41** and second cuff panel **42** can flex or dynamically move slightly outward a distance D**5**. The amount of outward movement the distance D**5** can be limited by the elastic straps **41**S and **42**S, which can prevent the cuff panels from opening too large a gap between one another. With this optional outward movement of the respective first and second cuff panels, movement of the wrist guard cuff **54** is relatively free.

[0060] In the flexed mode, the wrist guard can also move in other ways. For example, as mentioned above the wrist guard includes the tertiary panel **56** extending over the dorsal opening DO. In the flexed mode, shown in FIG. **9**, the secondary wrist guard cuff can be pushed forward slightly by the wearer's wrist. This in turn can cause the band **55** to move slightly forward in direction P as well. Because the band **55** is joined with the tertiary panel **56**, it can move that panel. For example, the band can push on the rearward part of the panel **56**. Because the forward part of the panel is fixed to the upper dorsal pads **17**U, the tertiary backhand panel **56** can be configured to arch upward in direction N over the dorsal opening. This in turn further opens up the vent holes V**2** and V**3** on the sides. With this motion, the tertiary backhand panel can enable the wrist to flex more than with a rigid, stationary backhand set of panels, thereby improving mobility of the wrist and hand, all while the wrist guard tertiary panel **56** maintaining protection over the dorsal opening DO.

[0061] Directional terms, such as "vertical," "horizontal," "top," "bottom," "upper," "lower," "inner," "inwardly," "outer" and "outwardly," are used to assist in describing the invention based on the orientation of the embodiments shown in the illustrations. The use of directional terms should not be interpreted to limit the invention to any specific orientation(s).

[0062] The above description is that of current embodiments of the invention. Various alterations and changes can be made without departing from the spirit and broader aspects of the invention as defined in the appended claims, which are to be interpreted in accordance with the principles of patent law including the doctrine of equivalents. This disclosure is presented for illustrative purposes and should not be interpreted as an exhaustive description of all embodiments of the invention or to limit the scope of the claims to the specific elements illustrated or described in connection with these embodiments. For example, and without limitation, any individual element(s) of the described invention may be replaced by alternative elements that provide substantially similar functionality or otherwise provide adequate operation. This includes, for example, presently known alternative elements, such as those that might be currently known to one skilled in the art, and alternative elements that may be developed in the future, such as those that one skilled in the art might, upon development, recognize as an alternative. Further, the disclosed embodiments include a plurality of features that are described in concert and that might cooperatively provide a collection of benefits. The present invention is not limited to only those embodiments that include all of these features or that provide all of the stated benefits, except to the extent otherwise expressly set forth in the issued claims. Any reference to claim elements in the singular, for example, using the articles "a," "an," "the" or "said," is not to be construed as limiting the element to the singular. Any reference to claim elements as "at least one of X, Y and Z" is meant to include any one of X, Y or Z individually, and any combination of any number of X, Y and Z, for example, X, Y, Z; X, Y; X, Z; and Y, Z.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A protective glove, comprising:

a hand portion including a hand palmar portion and an opposing hand dorsal portion, the hand portion including a lateral side and a medial side, the hand portion including a hand portion rearward edge, the hand dorsal portion defining a dorsal opening spanning from the hand portion rearward edge toward a finger portion joined with and extending from the hand portion;

a thumb portion joined with and extending from the hand portion;

a first cuff panel extending rearward from the hand portion substantially only on the lateral side, the first cuff panel including a first cuff panel forward edge that is flexibly joined at a first joint with the hand portion rearward edge;

a second cuff panel extending rearward from the hand portion substantially only on the medial side, the second cuff panel including a second cuff panel forward edge that is flexibly joined at a second joint with the hand portion rearward edge at a location distal from the first joint so that the first cuff panel and second cuff panel can move independently of one another, the first cuff panel and second cuff panel define a cuff opening therebetween; and

a wrist guard joined with the hand portion, the wrist guard including a first elongated band extending toward the lateral side and covering the first joint, the wrist guard including a second elongated band extending toward the medial side and covering the second joint, the wrist guard including central portion between the first and second elongated bands, the central portion having a rearward part;

a secondary wrist guard cuff extending rearward from the rearward part of the central portion a first distance over

the cuff opening so that the secondary wrist guard cuff protects a wrist when the wrist is under the cuff opening.

2. The protective glove of claim **1**,

wherein the secondary wrist guard cuff includes a medial side edge and a lateral side edge,

wherein the medial side edge is elastically joined with an interior edge of the second cuff panel,

wherein the lateral side edge is elastically joined with an interior edge of the first cuff panel.

3. The protective glove of claim **2**,

wherein the medial side edge is joined with the interior edge of the second cuff panel via an elastic strap.

4. The protective glove of claim **1**, comprising a floating cuff disposed under the first cuff panel, the second cuff panel and the secondary wrist guard cuff.

5. The protective glove of claim **1**, comprising:

a tertiary backhand panel extending from a forward edge of the wrist guard, opposite the secondary wrist guard cuff,

wherein the tertiary backhand panel extends over and at least partially covers the dorsal opening.

6. The protective glove of claim **4**,

wherein the secondary wrist guard cuff includes a medial side edge and a lateral side edge,

wherein the medial side edge and lateral side edge are each disposed closer to a longitudinal axis of the glove than the first cuff panel and the second cuff panel.

7. The protective glove of claim **1**,

wherein the wrist guard includes a plurality of pads covered by a common cover,

wherein the secondary wrist guard cuff includes a secondary pad, separately and independently constructed from the plurality of pads,

wherein the cover extends rearward over the secondary pad.

8. The protective glove of claim **7**,

wherein the secondary wrist guard cuff is joined with the rearward part of the central portion of the wrist guard at an articulating joint configured to enable the secondary wrist guard cuff to articulate downward upon extension of a wrist of a wearer of the glove.

9. A protective glove, comprising:

a hand portion including a rearward edge and a backhand portion defining a dorsal opening;

a cuff portion joined with the hand portion along a joint at the rearward edge, the cuff portion including first and second cuff panels separated from one another by a cuff opening in the cuff portion;

a wrist guard joined with the hand portion, the wrist guard having an elongated band portion extending substantially around a wrist portion of the hand portion, a secondary wrist guard cuff extending rearward from the elongated band portion and covering the cuff opening in the cuff portion and configured to thereby protect a wrist of a wearer lying directly under the secondary wrist guard cuff, the wrist guard including a wrist guard tertiary backhand panel extending forward from the elongated band portion and covering the dorsal opening.

10. The protective glove of claim **9**,

wherein the hand portion includes a binding that extends forward from the rearward edge,

wherein the binding connects a lateral backhand pad and a medial backhand pad, the lateral backhand pad and medial backhand pad being separated by the dorsal opening.

11. The protective glove of claim **10**,

wherein the binding is secured to the wrist guard between the lateral backhand portion and the medial backhand portion.

12. The protective glove of claim **11**,

wherein the hand portion includes no pads over the dorsal opening between the lateral backhand portion and the medial backhand portion,

wherein the wrist guard tertiary backhand panel of the wrist cuff is the only element covering the dorsal opening.

13. The protective glove of claim **9**,

wherein the first cuff panel includes a first cuff panel forward edge that is flexibly joined at a first joint with a hand portion rearward edge of the hand portion,

wherein the second cuff panel includes a second cuff panel forward edge that is flexibly joined at a second joint with the hand portion rearward edge of the hand portion,

wherein the wrist guard covers the first joint and the second joint and a binding extending between the first joint and the second joint.

14. A protective glove, comprising:

a hand portion;

a finger portion joined with the hand portion;

a cuff portion joined with the hand portion along a joint, the cuff portion including a forward edge and a rearward edge, the cuff portion defining a cuff opening extending from the forward edge to the rearward edge; and

a wrist guard joined with the hand portion, the wrist guard including an elongated band portion and a secondary wrist guard cuff extending rearward from the elongated band portion and covering the cuff opening,

wherein the secondary wrist guard cuff extends from adjacent the joint to the rearward edge so that the secondary wrist guard cuff, first cuff panel and second cuff panel cooperatively protect a wrist of a wearer lying directly under the secondary wrist guard cuff, the first cuff panel and the second cuff panel,

wherein the secondary wrist guard cuff does not substantially overlap the first cuff panel or the second cuff panel adjacent the cuff opening.

15. The protective glove of claim **14**,

wherein the hand portion defines a dorsal opening;

wherein the wrist guard includes a wrist guard tertiary backhand panel extending forward from the elongated band portion and covering the dorsal opening.

16. The protective glove of claim **15**,

wherein the wrist guard tertiary backhand panel is joined with an upper dorsal pad,

wherein the wrist guard tertiary backhand panel extends at least half a distance between the elongated band and the upper dorsal pad.

17. The protective glove of claim **14**,

wherein the cuff portion includes first and second cuff panels that are attached to the secondary wrist guard cuff via at least one elastic strap.

18. The protective glove of claim **15**,
wherein the first cuff panel includes a first interior edge,
wherein the second cuff panel includes a second interior edge,
wherein the first interior edge is anchored to the secondary wrist guard cuff with a first elastic strap and the second interior edge is anchored to the secondary wrist guard cuff with a second elastic strap.

19. The protective glove of claim **14**,
wherein the secondary wrist guard cuff is a trapezoidal shape with a forward portion adjacent the elongated band portion and a rearward portion, that is wider than the forward portion, distal from the elongated band portion.

20. The protective glove of claim **15**,
wherein the cuff portion includes a lateral first cuff panel and a medial second cuff panel,
wherein the lateral first cuff panel includes a first width,
wherein the medial second cuff panel includes a second width,
wherein the first width is less than the second width.

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