March 24, 1970 T. A. STANSBERRY ET AL 3,501,773

ATHLETIC GLOVE

Filed March 13, 1969 3 Sheets-Sheet 1

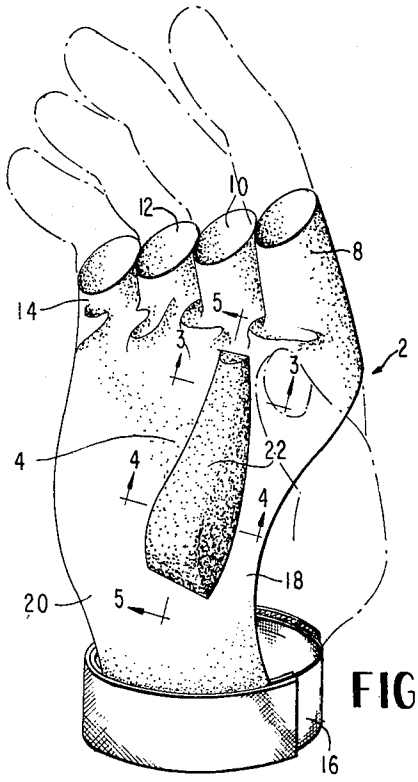
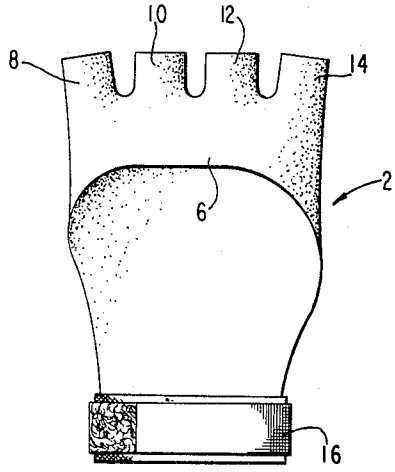


FIG 1

FIG 2



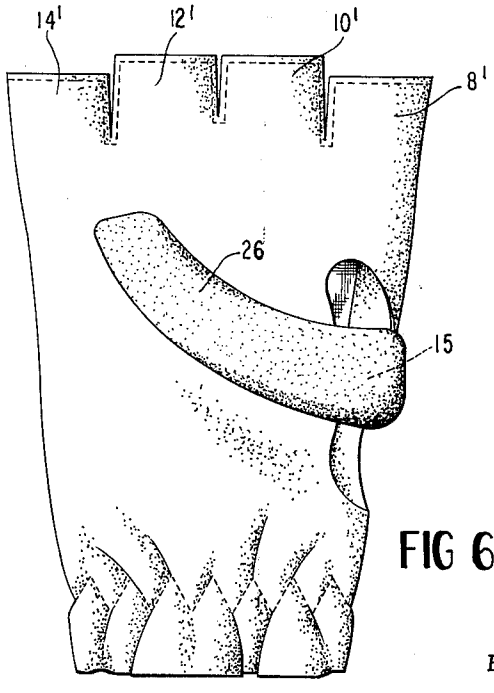


FIG 6

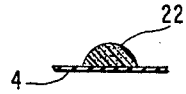


FIG 3

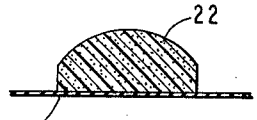


FIG 4

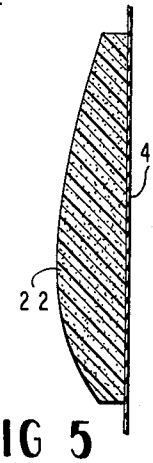


FIG 5

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ATHLETIC GLOVE

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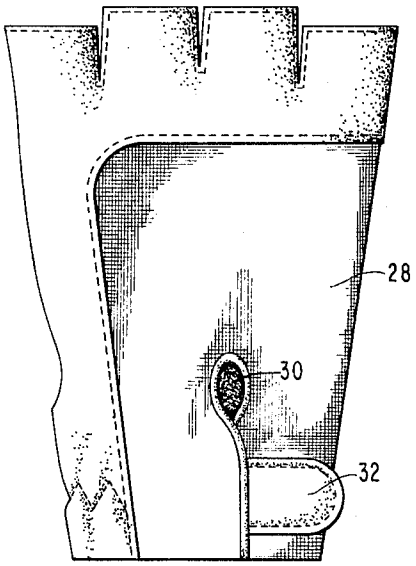

FIG 7

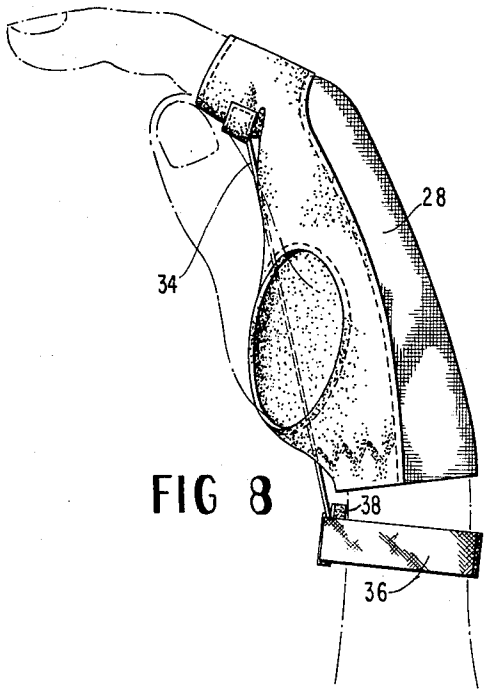

FIG 8

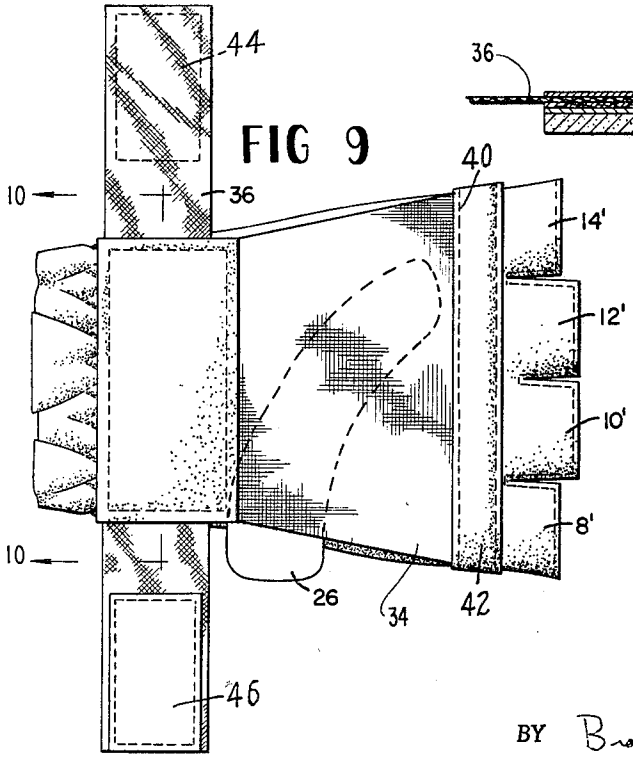

FIG 9

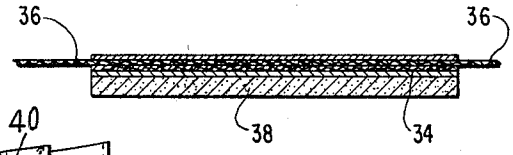

FIG 10

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ATHLETIC GLOVE

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FIG.11

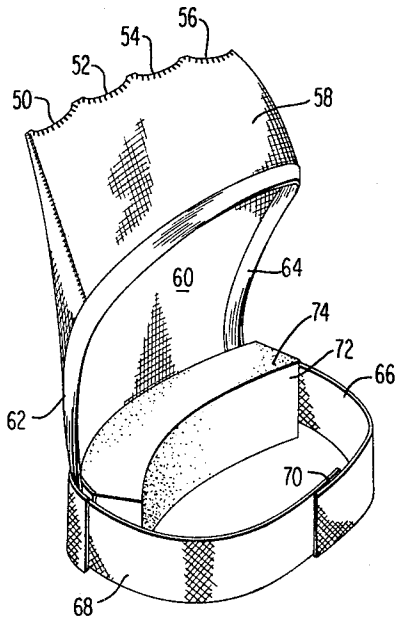
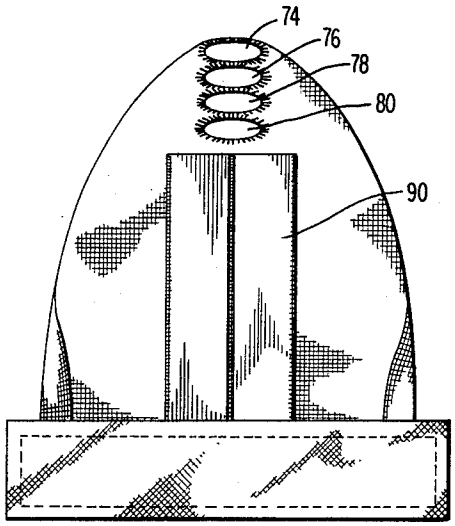


FIG.12



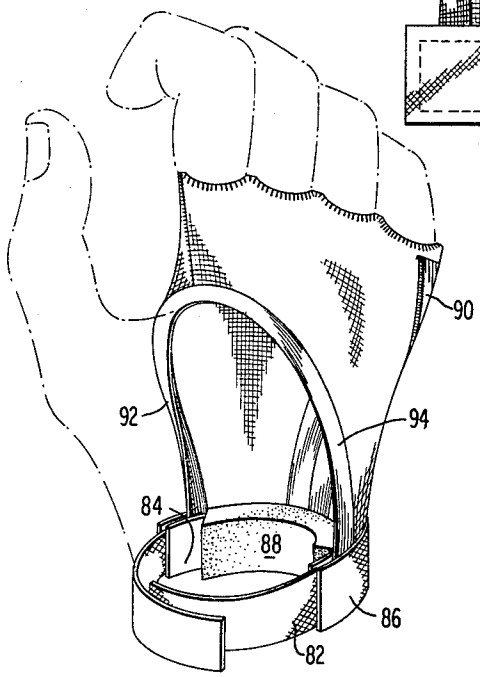


FIG.13

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United States Patent Office 3,501,773 Patented Mar. 24, 1970

3,501,773

ATHLETIC GLOVE

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Continuation-in-part of application Ser. No. 658,471, Aug. 4, 1967. This application Mar. 13, 1969, Ser. No. 814,877

Int. Cl. A41d *19/00*

U.S. Cl. 2—159 10 Claims

ABSTRACT OF THE DISCLOSURE

A glove has an elastic member extending between a wristband and finger loops. The length of the elastic member causes it to bias the metacarpal bones in a direction promoting appropriate wrist action in athletic events.

A glove for basketball players includes an elastic member with free edges which run approximately parallel to the metacarpal bones when worn, and is attached at one end around the first phalanges of the wearer's hand, so that forward movement of the hand about the wrist joint is produced. The basketball glove may also include pads which prevent a player from resting the ball in the palm of his hand.

REFERENCE TO RELATED APPLICATIONS

This is a continuation-in-part of our copending application Ser. No. 658,471 filed Aug. 4, 1967, now abandoned, for Basketball Glove and Method of Training Basketball Players.

BACKGROUND

In various athletic events, it is important for players to snap their wrist to effect a proper follow-through, as when swinging a bat or throwing a ball. The importance of this wrist action is often forgotten or neglected, which results in impaired performance by the individual player. This is particularly true in basketball, but is also applicable to other athletic contests.

This invention is directed to a glove which is useful in teaching athletes the importance of the proper wrist action, and for promoting such wrist action during athletic contests.

The proper passing and shooting of a basketball also requires that the player handle the ball with the thumb and fingers, rather than resting the ball on his palm. Some coaches believe that only the finger tips should be used, while others permit the use of other portions of the fingers. Some forms of the invention disclosed herein deter the player from "palming" the ball by providing a suitably shaped pad in the palm.

SUMMARY OF THE INVENTION

According to a principal feature of this invention a glove has an elastic member which extends between the athlete's wrist and hand to produce a desired inclination of the metacarpal bones with respect to the arm. The elastic member is attached at one end to a wrist-encircling band and at the other end to finger-encircling loops at the base of the fingers.

A spacer member on the inside of the wristband is preferably used to hold the elastic member outwardly from the player's wrist, and to provide an abutment surface which deters movement of the wristband in a direction toward the fingers.

An important feature of the invention is the presence of a pad in the palm of the wearer's hand at a location where the pad will deter "palming" of a basketball. The pad has its area of maximum thickness located in the player's palm in the vicinity of the transverse carpal ligament

or at a location at least two inches from the juncture of the index and middle finger portions of the player's hand and the glove.

BRIEF DESCRIPTION OF THE DRAWINGS

The construction of various exemplary forms of the invention are described in the accompanying drawings in which

FIGURE 1 is a perspective view of a glove which has a projecting pad portion forming a ridge across the palm;

FIGURE 2 is a rear plan view of the glove of FIGURE 1;

FIGURES 3, 4 and 5 are sectional views of the projecting pad member, shown in FIGURE 1 as seen along the lines **3—3**, **4—4** and **5—5**, respectively;

FIGURE 6 is a view of the front of a glove employing an arcuately-shaped projecting pad member;

FIGURE 7 is a view of the rear face of a typical glove;

FIGURE 8 is a side elevation of a basketball glove provided with an elastic member which produces the desired wrist action follow-through when throwing a basketball;

FIGURE 9 is a view of the front portion of a glove of the type shown in FIGURE 8;

FIGURE 10 is a sectional view taken along the line **10—10** in FIGURE 9;

FIGURE 11 is a perspective view of a glove formed of elastic fabric which is similar in principle to the glove of FIGURE 1, but without a pad in the wearer's palm;

FIGURES 12 and 13 are side and perspective views, respectively, of a modified form of the invention which promotes inclination of the wrist about an axis which lies perpendicular to the palm of the wearer.

DESCRIPTION OF THE INVENTION

Referring to FIGURES 1 and 2, it will be seen that one suitable construction according to the invention includes a molded elastic rubber glove **2** which has a front panel portion **4** and a rear panel portion **6** which is shown in FIGURE 2. The glove **2** has a series of finger portions **8**, **10**, **12** and **14** which have openings in their uppermost ends for the index, middle, ring and little fingers, respectively, of the wearer. The finger portions do not extend over the second and third phalanges.

The rubber glove **2** may be attached tightly to the wrist of the wearer by means of a band **16**. Suitable fastening means such as snaps, buttons or Velcro fabric may be used for uniting the opposite ends of the band **16**.

It will be noted that the palm portion of the glove **2** provides an elastic member which extends between the finger loops **8**, **10**, **12** and **14** and the wrist-encircling band **16**. The intermediate portion of this elastic member has free side edges which are unconnected to anything which will restrict it from expanding and contracting as the player flexes his wrist. The suitable longitudinal dimensions of this elastic palm portion will vary from individual-to-individual, depending upon the size of his hand; but, in any event, its relaxed length from the finger loops to the wristband will be less than the corresponding distance on the player's hand. Accordingly, the elastic palm portion will be under tension when the glove is worn in order to bias the metacarpal bones in a forward direction to promote the proper wrist action when the ball is thrown.

The front panel **4** of the glove includes a palm portion which overlies the palm of the wearer's hand and a pair of heel pad portions **18** and **20** which overlie the pads at the heel of the wearer's hand. The heel pad portion near the thumb overlies the abductor pollicis brevis muscle and the flexor pollicis brevis muscle, and the heel pad on the little finger side of the hand is that portion which overlies the abductor digiti V muscle and the flector

digiti V brevis muscles. The area of the front of the hand intermediate the two heel pad portions is the area in which the transverse carpal ligament lies.

A projecting pad member **22** is located in the palm portion of the glove. This pad member provides a straight elongated ridge across the front portion of the glove which is aligned with a line which extends from a point at the juncture of the index finger portion **8** and the middle finger portion **10** to a point located between the heel pad portions **18** and **20**. FIGURES 3 and 4 show that the pad member **22** has a rounded uppermost surface which is desirable since it will prevent a player from balancing the ball on the palm of his hand. As indicated in FIGURE 5, the longitudinal cross section of the pad member **22** also is rounded and has an area of maximum thickness located in the palm at a point at least two inches from the juncture of the index and middle finger portions **8** and **10**. At its area of maximum thickness, the pad **22** has a thickness of ⅜ to ¾ inch.

In using a glove constructed in accordance with FIGURES 1 and 2, a player will discover that the pad **22** will be generally parallel to the index finger when the hand is in a normal ball-throwing position with the fingers spread apart. Similarly, it will be noticed that the location of the pad **22** is midway between the tip of the player's thumb and the tip of his little finger. This arrangement is desirable because it encourages the player to distribute the weight and contact with the ball equally upon all of his fingers including the thumb. The thickness of the pad is such that it will prevent the player from bringing the ball into contact with the palm of the hand while still permitting him to hold his fingers apart at a normal throwing spread. Whenever the player tends to lapse into a condition where he "palms" the ball, the ball will contact the pad and the pressure will be transmitted to the palm of the player's hand, reminding him that he is holding the ball improperly.

In the embodiment of FIGURE 6, an arcuate pad portion **26** has its center of curvature located in a direction toward the index and middle finger portions **8'** and **10'**. The arcuate pad may be in the shape of an arc of a circle, but such is not essential. The radius of its inner edge should be at least 2 and ½ inches.

One end of the arcuate pad **26** extends in a direction toward the little finger portion **14'**, while its opposite end extends toward and over the thumb portion **15**. This particular shape and location of the pad is related to and cooperates with the tips of the player's little finger and thumb when holding a ball and provides a somewhat continuous ridge which extends from the thumb to the little finger.

There are several features which are shared by the pads **22** and **26**. Both are preferably made of soft porous resilient material such as sponge rubber or resilient foam in order to permit the front portion of the glove to conform somewhat to the contour of the player's hand while shooting. In both, a player will be induced to use all of his fingers while maintaining the fingers in their spread position without resting the ball in his palm. The maximum thickness of the pads is from ⅜ to ¾ inch and there is no portion thicker than that portion lying intermediate the heel pad portions of the hand and at least two inches from the juncture of the index and middle finger portions of the hand and glove.

FIGURES 7–10 illustrate a glove similar to the FIGURE 1 embodiment, in that it encourages a wrist action follow-through of a player when throwing a basketball. FIGURE 7 merely shows the rear portion of a glove which may also be used in the type of glove shown in FIGURE 6. It includes a panel **28** of elastic fabric, a vent **30** and a fastening tab **32** which is used to hold the glove on the wearer. The tab **32** has fastening means such as a snap or Velcro fabric which engages a mating element therebeneath.

The glove which is shown in FIGURE 8 has a relatively wide band **34** of flexible elastic fabric or other elastic material which is attached at one end to the front portion of the glove adjacent to finger portions. The other end of the elastic member **34** carries a wrist band **36** which is adapted to encircle the wearer's wrist in the vicinity of the dorsal carpal ligament.

The length of the elastic member **34** is such that it will be under tension when the band **36** encircles a wrist. This will be appreciated from FIGURE 9 where the elastic member **34** is in a relaxed condition and the band **36** is spaced inwardly of the wrist of the glove.

The band **36** has an interiorly located spacer **38** which may be of cellulose sponge material which serves the dual function of spacing the lower end of the elastic member **34** outwardly from the wrist and providing an abutment surface which prevents the wristband from slipping toward the palm.

It will be appreciated from FIGURE 8 that the tendency of the elastic member **34** is to produce a forward biasing force which causes the entire hand to snap forwardly from the wrist when throwing a basketball.

The glove shown in FIGURE 11 is similar in principle to the glove shown in FIGURES 1 and 2 in the sense that it provides an elastic member with free side edges which extend across the palm of the wearer. The glove of FIGURE 11 is made of a knit elastic fabric and it has openings **50**, **52**, **54** and **56** which provide finger loops for receiving the wearer's fingers. This glove includes a back panel **58** and a palm panel **60**. The palm panel is formed of an elastic member which preferably but not essentially is longitudinally extensible along each increment thereof from the finger loops to the wristband. The free side edges **62** and **64** of the palm portion **60** are bound by an elastic material and they are unconnected to anything which will limit the freedom of palm portion **60** to expand and contract during wear.

The lower portion of the glove of FIGURE 11 includes a wristband having portions **66** and **68** which join by Velcro material or other suitable fasteners at the adjoining surfaces **70** so that the wristband will snugly fit about the wrist of a wearer. A relatively thick pad of resilient foam material **72** is located on the inside of the wrist loop and provides an abutment surface **74**. When the device is worn, the abutment surface **74** will ride against the folds in the skin at the wearer's wrist, thereby preventing displacement of the wristband in a direction toward his palm.

The distance between the wrist band and the finger loops **50**, **52**, **54** and **56** is selected to bias the hand in a forward direction with respect to the arm. Accordingly, the distance from the finger loops to the wristband is less than the corresponding dimension of a wearer's hand so that the elastic palm portion **60** will be under tension when the glove is worn.

The modified form of the invention shown in FIGURES 12 and 13 is suited for athletic events where the desired wrist action is in a transverse direction, i.e., in a direction parallel to the palm and perpendicular to the fingers. In this embodiment, the glove has finger loop openings **74**, **76**, **78** and **80**. The glove is made of knit elastic fabric which extends from the finger loops to a wristband **82** in a fashion whereby the portion between the finger loops and the wristband will have a U-shaped transverse cross section. Layers of inextensible fabric **84** and **86** surround the strap **82** of the wristband where it is sewn to the elastic portions of the glove. A pad **88** is located on the interior of the wristband to provide an abutment surface preventing upward displacement of the wrist band. As in the previous embodiments, suitable fastener materials or devices may be used to interconnect the opposite ends of the wristband.

A piece of heavy-duty elastic material **90** is sewn to that portion of the glove member which lies along the little finger side of the hand. The dimensions of this glove

are such that the distance from the finger loops to the wristband is less that the corresponding dimension of the wearer's hand. The results in the tendency of the glove to bias the entire hand in a transverse direction since the elastic glove is under tension along the little finger side of the hand. The presence of free side edges **92** and **94** avoids any counteraction of the lateral biasing force. As explained previously, this type of glove is useful in training athletes for events such as batting in baseball where a side wrist action is desired.

The above described devices have been found to be useful in the training of athletes for events which require a proper wrist action and follow-through. The objects of the invention are satisfied by the structure defined in the following claims.

We claim:

1. An athletic glove, comprising

finger loops for encircling the base of a wearer's fingers,

an elastic member connected to the finger loops at the base of a wearer's fingers,

a wrist band connected to the elastic member at a location spaced from the finger loops, said wristband having releasable fastener means for holding it tightly around the wrist of a wearer in the form of a loop to prevent displacement of the band in a direction toward the wearer's fingers,

said elastic member having free side edges and dimensions from the finger loops to the wristband which will maintain it normally under tension when worn; thereby producing an inclination of the metacarpal bones with respect to the arm.

2. An athletic glove according to claim **1** wherein the wristband includes a spacer for lying against the wearer's wrist, said spacer having an abutment edge facing in a direction toward a palm of a wearer to prevent slipping of the wristband under the influence of the elastic member.

3. An athletic glove according to claim **1** wherein the entire glove, exclusive of the finger loops and the wristband, is made of elastic material.

4. An athletic glove according to claim **1** wherein the elastic member has a U-shaped transverse cross section with each of the finger loops being attached to the elastic member on both the palm and back side of the glove whereby the elastic member will incline the metacarpal bones in a transverse direction.

5. An athletic glove according to claim **4** wherein the wristband includes a spacer for lying against the wearer's wrist, said spacer having an abutment edge facing in a direction toward a palm of a wearer to prevent slipping of the wristband under the influence of the elastic member.

6. An athletic glove according to claim **1** suited for the game of basketball, said elastic member having both free side edges extending across the palm side of the glove to bias the metacarpal bones in a forward direction.

7. An athletic glove according to claim **6** having a projecting pad located to overlie the palm of a wearer's hand, said pad having its maximum thickness located at least two inches from the juncture of the middle and index finger of a wearer.

8. An athletic glove according to claim **6** wherein the wristband includes a spacer for lying against the wearer's wrist, said spacer having an abutment edge facing in a direction toward a palm of a wearer to prevent slipping of the wristband under the influence of the elastic member.

9. An athletic glove according to claim **8** having a projecting pad located to overlie the palm of a wearer's hand, said pad having its maximum thickness located at least two inches from the juncture of the middle and index fingers of a wearer.

10. An athletic glove according to claim **8** wherein the entire glove, exclusive of the finger loops and the wrist band, is made of elastic material.

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U.S. Cl. X.R.

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