# United States Patent [19]

**Beal**

[11] **3,890,648**

[45] **June 24, 1975**


[54] **PROTECTIVE DEVICE FOR USE BY PLAYER OF A HARDBALL GAME, PARTICULARLY BASEBALL**


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[22] Filed: **Sept. 11, 1974**

[21] Appl. No.: **505,096**

[52] **U.S. Cl.** ..... **2/20**

[51] **Int. Cl.**[2] ..... **A41D 13/00;** A47J 45/10

[58] **Field of Search** ..... 2/159, 161 R, 161 A, 16, 2/19, 20, 21



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[57] **ABSTRACT**

A protective device for use by the player of a hardball game, such as baseball, adapted to be supported on the player's hand and positioned between the palm of the player's hand and a conventional glove to protect the palm of the hand including knuckle joints and associated carpal and metacarpal bones from injury due to impact forces on the palm of the hand which occur during the act of catching a hardball.


**10 Claims, 4 Drawing Figures**

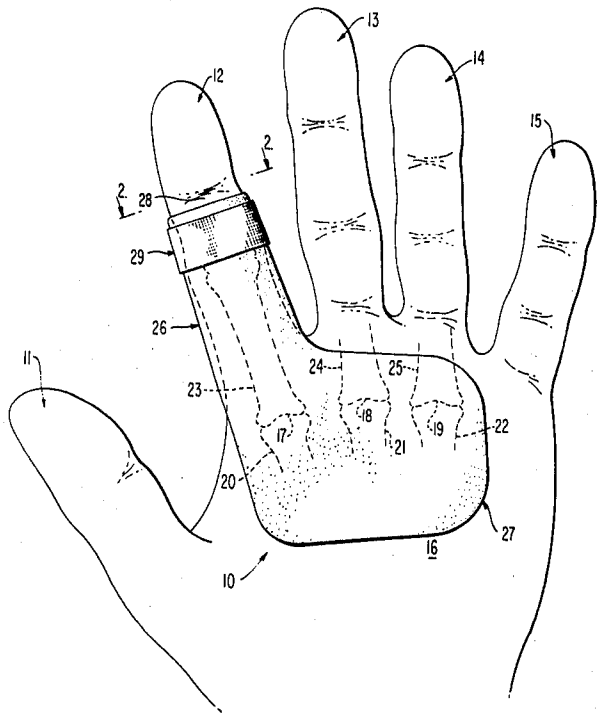


FIG.1

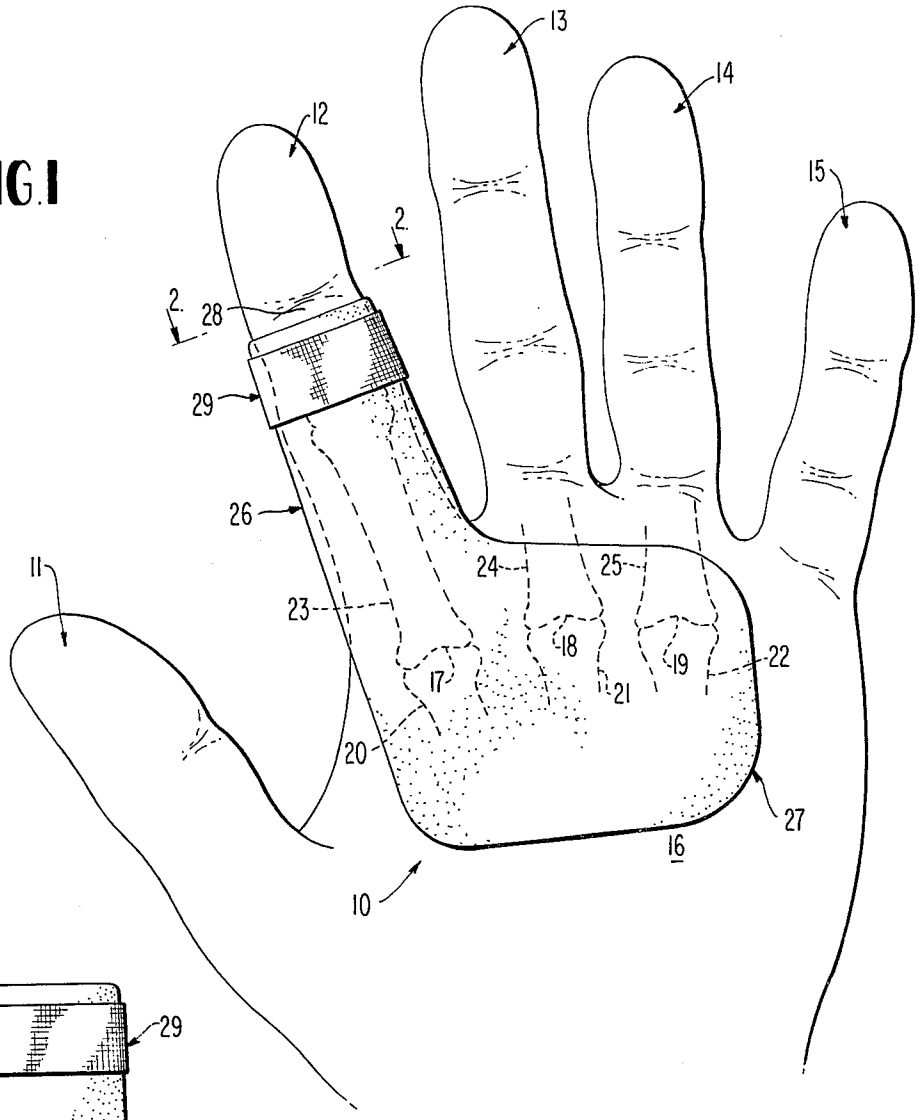



FIG.3

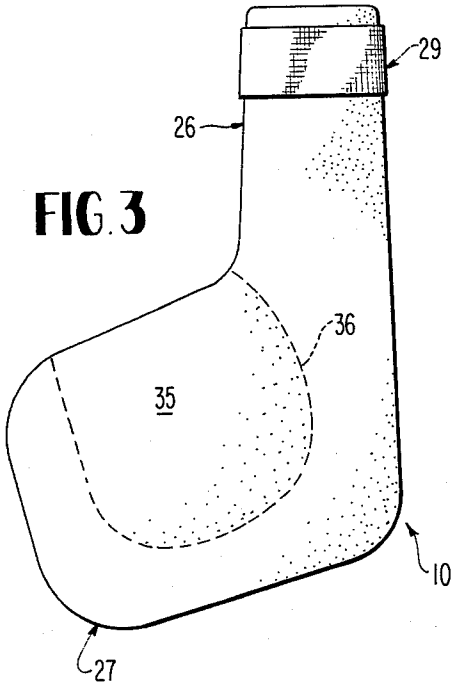
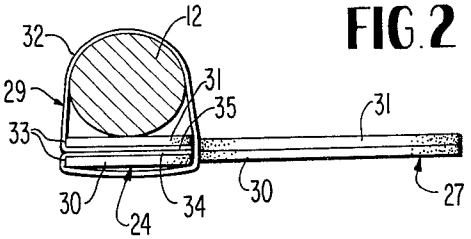



FIG.2



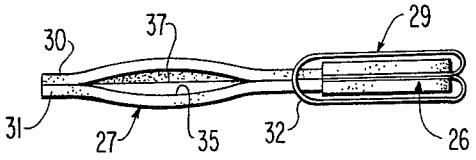




FIG.4

# PROTECTIVE DEVICE FOR USE BY PLAYER OF A HARDBALL GAME, PARTICULARLY BASEBALL

## BACKGROUND OF THE INVENTION

In playing games using a handball, especially baseball, where the player's hand is subjected to repeated impact forces upon catching a hardball traveling at high velocity, the palm of the hand and the joints and bones overlied by the palm of the hand may be bruised or otherwise injured although a conventional glove is used. Conventional hardball gloves are provided with a pocket into which the ball is received and the padding in the area of the pocket is minimized to provide the required flexibility for manipulation of the glove. As a consequence, the palm side of the first finger, and the palm of the hand including the knuckles and associated bones of the first, second and third fingers are particularly vulnerable to such injuries.

It is therefore an object of the present invention to provide a protective device that gives added protection to the areas of the hand that are susceptible to injury due to the fact of catching a hardball.

## DESCRIPTION OF THE DRAWINGS

In the drawings, in which similar reference characters denote similar elements throughout the several views:

FIG. **1** is an illustration of a protective device provided by the present invention in position on the left hand of a user as viewed when looking toward the palm of the left hand;

FIG. **2** is a view partly in section taken along the line **2—2** of FIG. **1**, the first finger only being shown in section;

FIG. **3** is an illustration of a modified form of protective device provided by the present invention; and

FIG. **4** is a top view of the protective device shown in FIG. **3**.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT AND MODIFICATIONS

A protective device **10** embodying the principles of the present invention is shown in FIG. **1** attached to the left hand of the user, the left hand including: a thumb **11**, first, second, third and fourth fingers **12, 13, 14,** and **15,** respectively; a palm **16** which overlies the knuckle joints **17, 18** and **19** of the first, second and third fingers **12, 13** and **14,** respectively, and adjacent carpal bones **20, 21** and **22** and adjacent metacarpal bones **23, 24** and **25** of the first, second and third fingers, respectively. The protective device **10** includes a first body portion **26** of elongated shape and a second body portion **27** of generally rectangular shape; the first and second body portions comprising a unitary structure. As shown in FIG. **1**, the first body portion **26** is shaped to overlie the palm side of the first finger **12** across its width and through an extent of the length of the first finger from at least immediately below the first joint **28** of the first finger to the region where the first finger merges with the palm of the hand, and the second body portion **27** is shaped to overlie a portion of the palm of the hand which in turn overlies the knuckle joints **17, 18** and **19** of the first, second and third fingers, respectively, as well as adjacent carpal bones **20,** 21 and **22** and adjacent metacarpal bones **23, 24** and **25** of the first, second and third fingers, respectively. As also seen from FIG. **1**, the first and second body portions are relatively disposed in unitary relation so that the second body portion **27** overlies the knuckle joints **17, 18** and **19** and adjacent carpal and metacarpal bones when the first body portion **26** is in overlying relation with the palm side of the first finger between the first joint **25** and the palm. Attaching means **29** is provided on the first body member **26** for engagement with the first finger to position the first body member in overlying relation with the palm side of the first finger across its width throughout an extent of its length between the first joint **28** and the palm of the hand.



The first and second body portions may be formed from a single piece of material having impact absorbing characteristics, such as leather or plastic material and, as shown in FIG. **2,** the body portions of unitary structure may comprise first and second members **30** and **31** of impact absorbing material cut to the shape of the composite unitary structure and stitched together or joined together by adhesive. A layer of impact absorbing material, not shown, may be sandwiched between the members **30** and **31** when greater impact absorbing property is desired.

The attaching means **29** preferably comprises a loop **32** of resilient material encircling a longitudinally extending portion of the first body portion and being joined to the first body portion at one of its longitudinal edges only, such as longitudinal edge **33.** As shown, the free end portions **34** and **35** of the resilient material forming the loop **32** may be sandwiched between adjacent marginal portions of the members **30** and **31** forming the first body portion along the longitudinal edge **33** and positively secured thereto by stitching or adhesive material. The loop **32** has a substantial dimension generally parallel to the longitudinal dimension of the first body portion so as to engage the first finger along a sufficient length of the first finger to position and support the first body portion in overlying relation with the palm side of the first finger. The loop **32** is attached to the first body portion at a region along its length to permit the loop to engage the first finger between the first joint and the palm with the second body portion in overlying relation with the palm of the hand as shown in FIG. **1.** Thus, in order to provide a protective device for use on hands of different sizes, the loop **32** may be secured to the first body portion in spaced relation with the free end of the first body portion.

The modified protective device shown in FIGS. **3** and **4** provides an arrangement for selectively increasing the impact absorbing properties of the device which is especially useful when a player has a bruised or otherwise injured hand. As shown, the members **30** and **31** are unattached generally in the central area of the second body portion to form a pocket **35** therebetween as outlined by the broken line **36** in FIG. **3,** and the marginal edges of the members **30** and **31,** such as along the top side of the second body member, are unattached relative to each other to provide an opening **37** to the pocket **35.** In use, impact absorbing material may be inserted through the opening **37** into the pocket **35** to provide additional protection.

In use, the protective device **10** is secured to the hand and positioned in overlying relation with a part of the palm and a part of the first finger by the attaching means **29.** The position of the protective device on the left hand of the user is shown in FIG. **1** and, when the protective device is worn on a user's right hand, the device is positioned so that the second body portion extends to the left, as viewed in FIG. **3,** with the first fin-

ger inserted into the loop **32** between the loop and the opposite side of the first body portion. The protective device, being attached to the hand by the loop **32** which engages the first finger between its first joint and the palm of the hand, may be worn without any interference with normal movement of the fingers of the hand. The shapes of the first and second body portions and their unitary relationship result in protecting the palm of the hand including the knuckle joints of the first, second and third fingers and adjacent carpal and metacarpal bones as well as the palm side of the first finger and the metacarpal bone of the first finger, the portions of the hand most likely to be injured upon high impact pressures applied to the hand during the act of catching a hardball. By extending the length of the first body portion beyond the attaching means so as to overlie the first joint and a part of the phalange bone of the first finger, additional protection may be provided. As may be desired, the body portions may be made of material providing different degrees of impact absorbing materials and the degree of impact absorption provided may be sclectively increased by inserting suitable material in the pocket of the modified embodiment of FIGS. **3** and **4**.

Although several embodiments of the invention have been disclosed, it will be apparent that various changes and modifications may be made without departing from the spirit of the invention as well understood by those skilled in the art. Reference therefor will be had to the appended claims for a definition of the limits of the invention.

What is claimed is:

**1.** A protective device for a hand adapted to be worn on the hand between the palm side of the hand and a conventional glove used in hardball games such as baseball, comprising

a first body portion of elongated shape adapted to overlie a part of the first finger on the palm side of the hand adjacent the palm of the hand,

a second body portion of generally rectangular shape adapted to overlie at least the part of the palm of the hand which overlies the knuckle joint of the first finger, the knuckle joint of another finger and parts of the carpal and metacarpal bones adjacent such knuckle joints,

the first body portion and the second body portion being of unitary construction and including impact absorbing material,

and attaching means for attaching the first body portion to the first finger of the hand to support the first body portion in overlying relation with said part of the first finger,

the relative unitary relation between the first body portion and the second body portion being such that when the first body portion overlies said part of the first finger the second body portion overlies at least said part of the palm of the hand which overlies the knuckle joint of the first finger, the knuckle joint of another finger and the carpal and metacarpal bones adjacent such knuckle joints.

**2.** A protective device as defined in claim **1** in which

the first body portion has spaced longitudinal edges, and in which

the attaching means comprises a loop of resilient material extending from one of the spaced longitudinal edges of the first body portion and encircling the first body portion throughout a portion of the longitudinal length of the first body portion.

**3.** A protective device as defined in claim **1** in which the another finger is the second finger of the hand.

**4.** A protective device as defined in claim **1** in which the second body portion is shaped to overlie the knuckle joint of the first finger, the knuckle joint of the second finger, the knuckle joint of the third finger and the carpal and metacarpal bones adjacent such knuckle joints when the first body portion overlies said part of the first finger.

**5.** A protective device as defined in claim **4** in which

the first body portion is shaped to overlie the part of the first finger extending between the palm of the hand and the first joint of the first finger,

and in which the attaching means is secured to the first body portion in spaced relation with the second body portion for supporting engagement with the first finger between the palm of the hand and the first joint of the first finger.

**6.** A protective device as defined in claim **5** in which

the first body portion and the second body portion comprise first and second members of impact absorbing material joined together at least along a major part of the marginal edges of the body portions.

**7.** A protective device as defined in claim **6** in which

the first body portion has spaced longitudinal edges, and in which

the attaching means comprises a loop of resilient material extending from one of the spaced longitudinal edges of the first body portion and encircling the first body portion throughout a portion of the longitudinal length of the first body portion.

**8.** A protective device as defined in claim **6** wherein

the first body portion and the second body portion include impact absorbing material located between the first and second members.

**9.** A protective device as defined in claim **6** in which

a central portion of the first and second members is in non-joined relation to form a pocket therebetween, and in which

the first and second members are in non-joined relation along an adjacent minor part of the marginal edges of the body portions to provide an opening to said pocket.

**10.** A protective device as defined in claim **9** in which

the first body portion has spaced longitudinal edges, and in which

the attaching means comprises a loop of resilient material extending from one of the spaced longitudinal edges of the first body portion and encircling the first body portion throughout a portion of the longitudinal length of the first body portion.

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