

[54] **BOWLER'S WRIST SUPPORT**

[76] Inventor: **Yoshio Hashimoto**, 3-11, 2-chome, Sakuragi-cho, Seima-ku, Kobe-shi, Japan

[22] Filed: **May 29, 1973**

[21] Appl. No.: **364,922**

[52] U.S. Cl. **273/54 B, 2/161 A**

[51] Int. Cl. **A63b 71/14**

[58] Field of Search **273/54 B, 189 A, 89 R; 2/161 A**

[56] **References Cited**

UNITED STATES PATENTS

3,512,776 5/1970 Thomas **273/54 B**

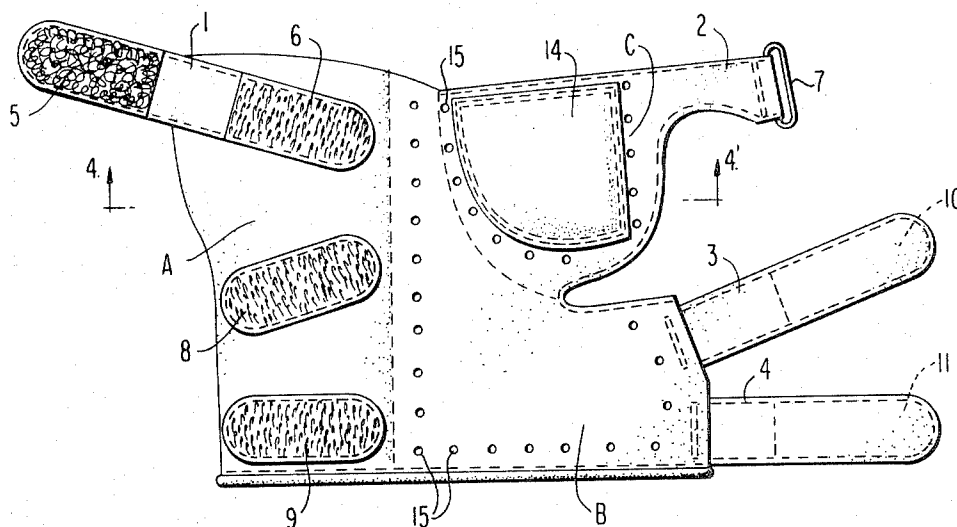
3,564,613 2/1971 Fowler **273/54 B X**
3,704,994 12/1972 Krzewinski **273/54 B**
3,728,738 4/1973 Andolino **273/54 B X**

Primary Examiner—Anton O. Oechsle
Attorney, Agent, or Firm—Browdy and Neimark

[57] **ABSTRACT**

A bowler's wrist support has a rigid core member curved longitudinally and laterally to cover both the wrist and back of the hand and having fastening bands and fastening members for securing the wrist support over the upper and lower portions of the back of the hand and over the wrist portion.

9 Claims, 14 Drawing Figures



SHEET 1 OF 3

FIG. 1

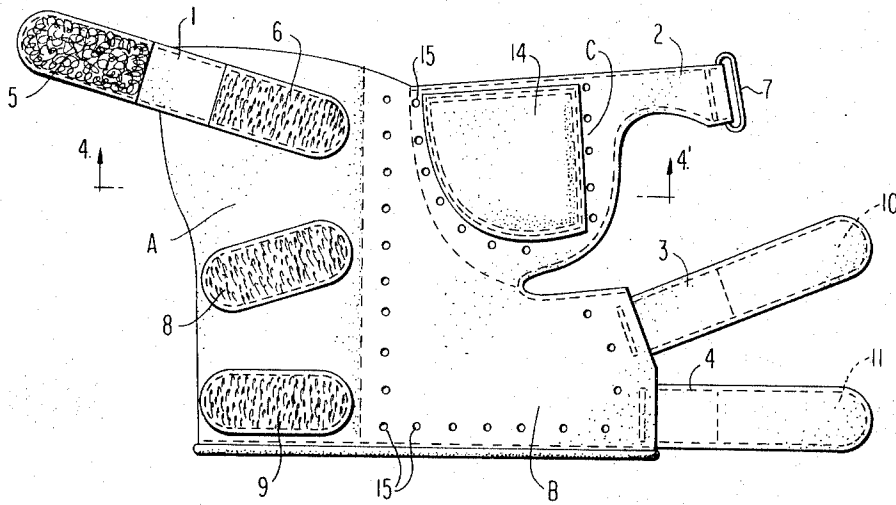


FIG.2

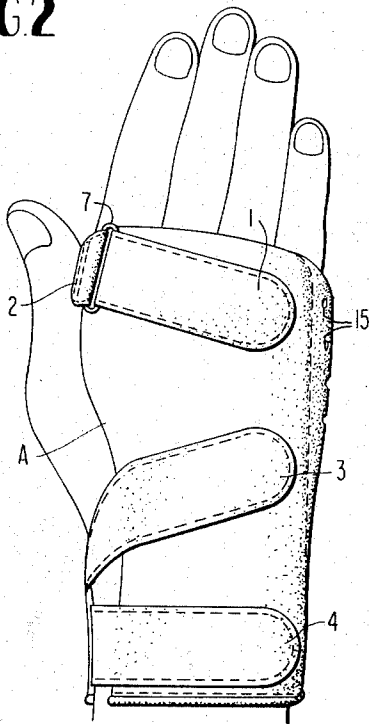


FIG. 3

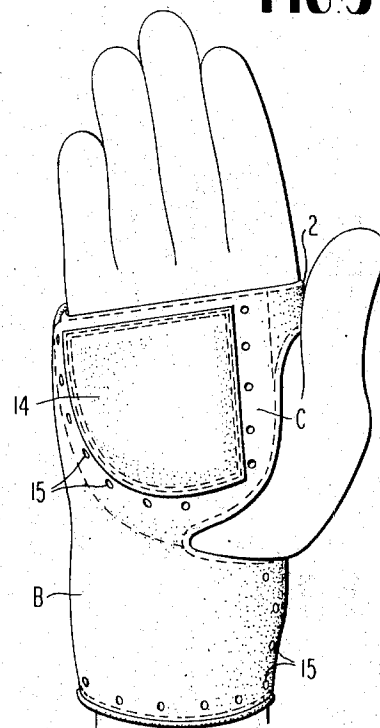


FIG. 4

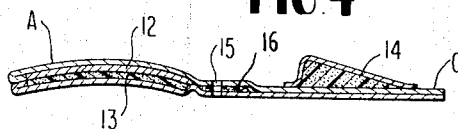


FIG. 10

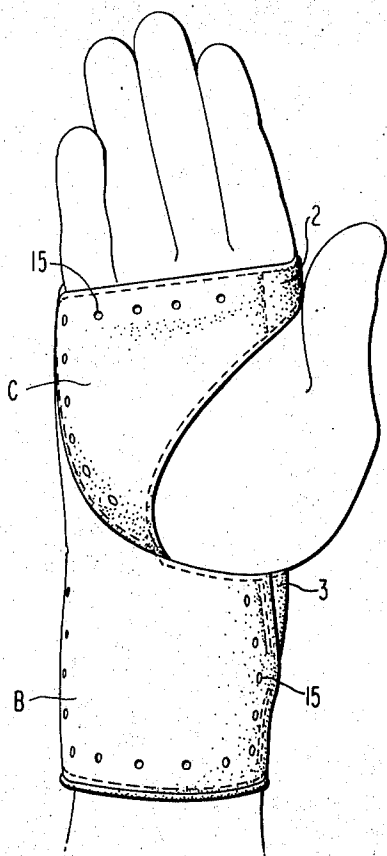


FIG. 12

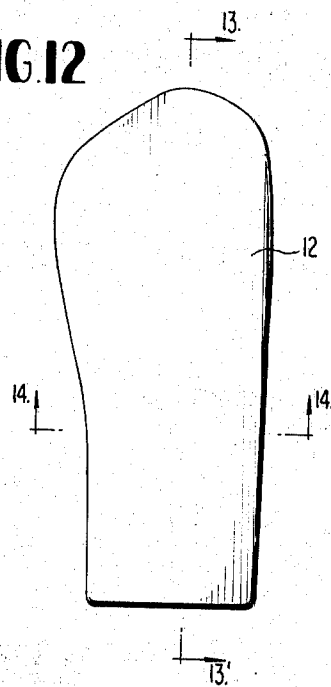


FIG. 13

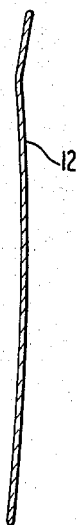


FIG. 14

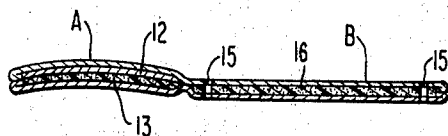
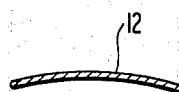


FIG. 11

BOWLER'S WRIST SUPPORT**FIELD OF INVENTION**

The present invention relates to a wrist support and more particularly to a bowler's wrist support designed to hold the bowler's wrist and the back of his hand fixed so that the hand and forearm will move in union with the wrist slightly bent inwardly.

BACKGROUND OF THE INVENTION

In order to better the score in bowling matches it is important to throw the ball in such a way as to produce heavy pin action. Various ways of throwing the ball have been studied, and it has been found that it is important to impart strong spinning to the ball at the instant when the ball leaves the fingers. In order to produce such strong spinning action, it is necessary to remove the thumb from the ball hole earlier than the other two fingers so that the remaining fingers may tend to pull up and turn the ball. At this time, if the bowler's wrist is upwardly or outwardly bent, the thumb and the other fingers would be withdrawn from the respective holes at the same time, so that the spinning can no longer be given to the ball. The thumb can be withdrawn from the hole sooner if it is positioned more rearwardly of the ball as it is swung down forwardly from the backward upper position. Also, if the remaining fingers are positioned in the lower part of the ball, the ball can be pulled up and turned more strongly and for a longer time. In order to meet this condition, it is desirable that the bowler slightly bend his wrist inwardly. To this end, a wrist support means, which permits the thumb to be withdrawn from the ball hole earlier than the other fingers, has heretofore been desired. A prior-art wrist support means that has been provided to meet this requirement has a wrist support pad reinforced with a flat rigid core, which is applied over the outer side of the wrist or applied to cover the wrist and the back of the hand and fastened thereto by means of leather strings. This prior-art wrist support means is fairly effective in preventing the wrist from bending outwardly since the rigid pad is fastened and fixed to the outer side of the wrist. However, it has some shortcomings. Firstly, the wrist cannot be bent inwardly due to the rigid pad. Secondly, compatibility with various sizes and forms of the wrist and the back of the hand is not obtained. Thirdly, it is very inconvenient to fit the wrist support means to the bowling hand by the other hand since it is intended to be fitted to the bowling hand by fastening a buckle provided on a fastener band. It has been strongly desired, accordingly, that the above shortcomings inherent in the prior-art wrist support means be overcome and a novel wrist support means free from these shortcomings be devised.

SUMMARY OF THE INVENTION

It is accordingly an object of the present invention to eliminate these shortcomings of the prior-art.

Another object of this invention is to provide a wrist support means which can hold the bowler's wrist and the back of his hand fixed such that the hand and forearm will move in union with the wrist bent slightly inwardly.

A further object of the invention is to provide a wrist support means, which can be readily fitted to and removed from the bowling hand by the other hand of the bowler.

The above and other objects of the invention will become apparent from the following description.

The above objects of the invention are achieved by the provision of a rigid core member having a particular configuration, being curved longitudinally to cover both wrist and the back of the hand and being curved laterally to be closely fitted thereto, and also by the provision of fastening members permitting fastener bands to be fastened in positions over the upper and lower portions of the back of the hand and over the wrist portion.

BRIEF DESCRIPTION OF THE DRAWINGS

The features of the invention will now be described in connection with the accompanying drawings, in which;

FIG. 1 is a plan view showing one embodiment of the bowler's wrist support means according to the invention;

FIG. 2 is a perspective view showing the embodiment of FIG. 1 actually fitted on the hand and viewed from the back of the hand;

FIG. 3 is a perspective view of the same viewed from the palm side;

FIG. 4 is a sectional view taken along line 4—4' in FIG. 1;

FIG. 5 is a plan view of a rigid member 12 enclosed within the rigid section A;

FIG. 6 is a sectional view of the rigid member 12 taken along line 6—6' in FIG. 5;

FIG. 7 is a sectional view of the rigid member 12 taken along line 7—7' in FIG. 5;

FIG. 8 is a plan view showing another embodiment of the bowler's wrist support means according to the invention;

FIG. 9 is a perspective view showing the embodiment of FIG. 8 actually fitted on the hand and viewed from the back of the hand;

FIG. 10 is a perspective view of the same viewed from the palm side;

FIG. 11 is a sectional view taken along line 11—11' in FIG. 8;

FIG. 12 is a plan view of a rigid member 12 enclosed within the rigid section A;

FIG. 13 is a sectional view of the rigid member 12 taken along line 13—13' in FIG. 12, and

FIG. 14 is a sectional view of the rigid member 12 taken along line 14—14' in FIG. 12.

DESCRIPTION OF PREFERRED EMBODIMENTS

FIGS. 1 to 7 show one embodiment of the invention. It consists of a rigid section A, whose left hand edge is joined to a substantially L-shaped wrist fastening section B, whose upper right portion is in turn joined to a palm cover section C. As an alternative, the palm cover section C may be directly connected to an upper portion of the right hand edge of the rigid section A.

A leftwardly extending fastener band 1 is provided at the upper end portion of the rigid section A, and to the hand end of the fastenerband 1 a pile fastening member 5 is provided. Also, hook fastening members 6, 8 and 9 are respectively provided at the upper right hand portion, intermediate portion and lower portion of the rigid section A. Two fastening bands 3 and 4 are connected to the right hand edge of the wrist fastening section B, and pile fastening members 10 and 11 are provided over the back of right hand end portions of the

fastening bands 3 and 4. These fastening members may, for instance, be "Velcro." Although only a single fastening band may be attached to the wrist fastening section B, in order to closely fix the rigid section A to a wrist of whatever shape it is desirable to provide two fastening bands. A further fastening band 2 is attached to the right hand edge of the palm cover section C, and a buckle 7 is provided at the right hand edge of the fastening band 2. Suitable sheet-like material such as cloth, synthetic resin sheets, leather and artificial leather may be employed to form the front and back of the rigid section A, wrist fastening section B, palm cover section C and fastening bands 1, 2, 3 and 4. The rigid member A has an inner core consisting of a front side rigid member 12 and a back side resilient member 13.

Although the rigid member 12 may have a length such that it extends up to the fore end of the back of the hand as shown in FIGS. 1 to 7, it may desirably extend up to the first joint of the fingers, as shown in FIGS. 8 to 14, in order to prevent outward bending of the fingers. This is because if the fingers are bent outwardly, the afore-mentioned effect obtained by slightly bending the wrist inwardly is partly offset. Thus, the rigid member 12 may have a length of 11 to 22 cm, desirably 14 to 19 cm, and a width of 5 to 9 cm, desirably 6 to 8 cm. The radius of curvature of its longitudinal section as shown in FIGS. 6 and 13 is about 250 to 3,000 mm, desirably about 500 to 1,500 mm, while the radius of curvature of its lateral section as shown in FIGS. 7 and 14 is about 30 to 1,000 mm, desirably about 50 to 500 mm. The core of this curved configuration permits the rigid section to be closely fitted on the back of the hand and the wrist, so that it has a pronounced effect of preventing the outward bending of the wrist. Such a core has never been known heretofore. The material of the rigid member 12 is subject to no restrictions, and well-known materials such as iron, steel and like metals and also various plastic materials may be effectively used. The wrist fastening section B joined to the rigid section A has an enclosed resilient member 16 as shown in FIGS. 4 and 11, so that the wrist can be fixed more effectively. The palm cover section C is provided with a number of openings or air holes 15 penetrating from its back to its front as shown in FIGS. 1 and 3 and in FIGS. 8 and 10, so that the inner side of the wrist and the palm will not be stuffy with sweat. The size of the opening is about 1 to 4 mm in diameter and desirably about 2 to 3 mm in diameter. Numeral 14 designates a palm pad of a resilient material, which is applied over the front side of the palm cover section C and covered with leather or like material. It serves to fill the gap formed between the surface of the ball and the palm when the ball is gripped, whereby the ball can be gripped stably.

To fit the wrist support means according to the invention, the rigid section A is closely placed over the back of the hand and the wrist. Then, the wrist fastening section B and palm cover section C are folded back to be applied over the inner side of the wrist and the palm respectively. Then, the hook fastening members 8 and 9 provided on the rigid section A are fastened to the respective pile fastening members 10 and 11 on the fastener bands 3 and 4 connected to the wrist fastening section B. Also, the fastener band 1 provided on the upper end portion of the rigid section A is passed through the buckle 7 provided on the fastener band 2

connected to the palm cover section C, and the pile fastening member 5 and hook fastening member 6 provided at the opposite ends of the fastener band 1 are fastened to each other. In the above way, the bowler's wrist support means can be fastened to the wrist and hand of the bowler.

With the bowler's wrist support means described above according to the invention fitted to the ball since, the wrist is held in a slightly inwardly bent state, it is possible to ensure that the thumb is located rearwardly of the ball and the other fingers at the bottom of the ball when the ball is swung down forwardly from a backward upper position thereof so that the thumb can be withdrawn from the ball hole earlier than the other fingers and that the ball can be pulled up and turned strongly for an extended time by the remaining fingers. Thus, strong spinning action will be imparted to the ball, and the released ball will produce pin action of high strike efficiency.

Also, the bowler's wrist support means can be fitted and removed very simply since this can be done by merely fastening or unfastening the fastener bands by means of the fastening members.

Further, even if the bowler's wrist support means is fitted for a long time, the palm will not get stuffy with sweat so much by virtue of the air holes.

It is to be understood that the invention is not limited to the embodiments disclosed which are illustratively offered and that modifications may be made without departing from the invention.

What is claimed is:

1. A bowlers wrist support means comprising:

- a rigid section having first and second lateral sides;
- a wrist fastening section having first and second lateral sides connected at the first lateral side thereof to the first lateral side of said rigid section;
- a palm cover section connected to an upper portion of the second lateral side of said wrist fastening section;
- a first fastener band connected to the upper portion of the second lateral side of said rigid section and extending outwardly therefrom;
- a first fastening member connected to the outwardly extending portion of said first fastener band;
- a second fastener band connected to the lower portion of the second lateral side of said wrist fastening section and outwardly extending therefrom;
- a second fastening member connected to the outwardly extending portion of said second fastener band;
- a first fastening means connected to the upper portion of said rigid section for cooperating with said first fastening member to fasten said first fastening member to said first fastening means;
- a second fastening means connected to the lower portion of said rigid section for cooperating with said second fastening member to fasten said second fastening member to said second fastening means;
- a third fastener band connected to said palm cover section and outwardly extending therefrom, said third fastener band having a buckle on the outwardly extending end thereof, whereby said first fastener band passes through said buckle and bends back to connect with said first fastening means;

wherein said rigid section includes an enclosed core comprising a rigid member curved in both the longitudinal and lateral directions.

2. The bowler's wrist support in accordance with claim 1, wherein said rigid section further includes a resilient member in the core thereof provided on the concave side of said rigid member.

3. The bowler's wrist support in accordance with claim 1, wherein said rigid member included in said rigid section has a length ranging from 11 to 22 cm and a width ranging from 5 to 9 cm.

4. The bowler's wrist support in accordance with claim 1, wherein said rigid member has a radius of curvature in the longitudinal direction ranging from 250 to 3,000 mm and a radius of curvature in the lateral direction ranging from 30 to 1,000 mm.

5. The bowler's wrist support in accordance with claim 1, wherein said wrist fastening section and said palm cover section are provided with a number of air holes penetrating from the front side to the back side thereof.

6. The bowler's support in accordance with claim 1, wherein said palm cover section is provided with a

palm pad.

7. The bowler's wrist support in accordance with claim 1, further including:

a third fastener band connected to said second lateral side of said wrist support section and outwardly extending from above said second fastener band;

a third fastening member connected to the outwardly extending portion of said third fastener band; and

a third fastening means connected to said rigid member, above said second fastening means, for cooperating with said third fastening member to fasten said third fastening member to said third fastening means.

8. The bowler's wrist support in accordance with claim 1, wherein said wrist fastening section includes an enclosed resilient member.

9. The bowler's wrist support in accordance with claim 1, wherein said first and second fastening members and said first and second fastening means comprise the pile portion and the hook portion of a hook and pile fastener.

* * * * *

25

30

35

40

45

50

55

60

65