Dec. 30, 1969 C. D. ZIERHUT 3,486,171

BOWLING GLOVE

Filed Dec. 17, 1968 2 Sheets-Sheet 1

Fig. 1

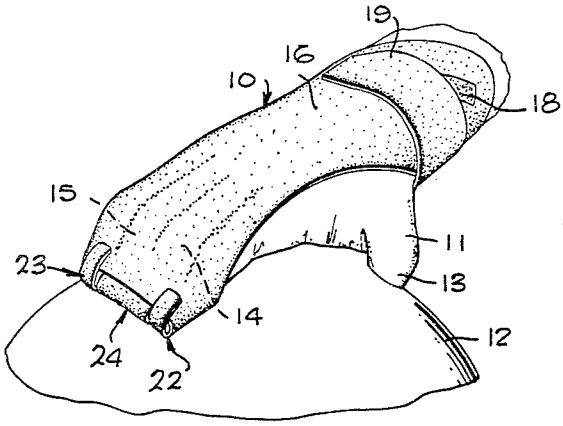
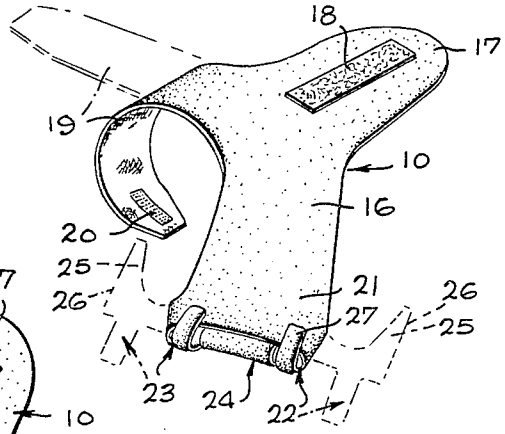


Fig. 2



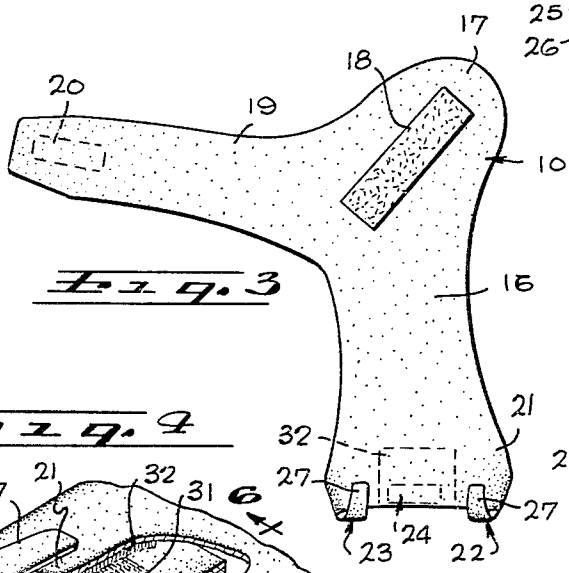


Fig. 3

Fig. 5

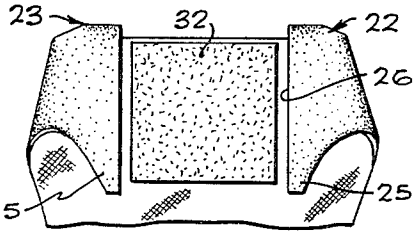
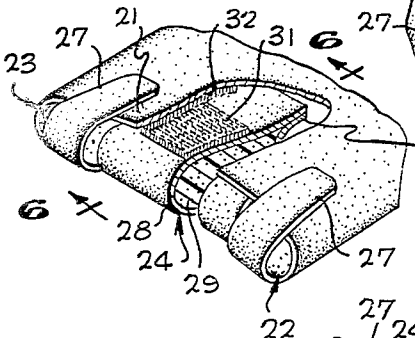


Fig. 4



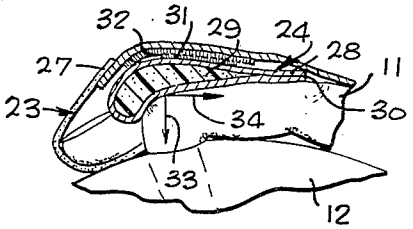
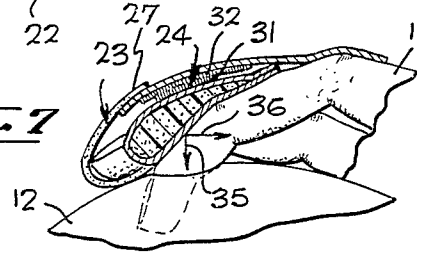


Fig. 6

Fig. 7



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BOWLING GLOVE

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Fig. 8

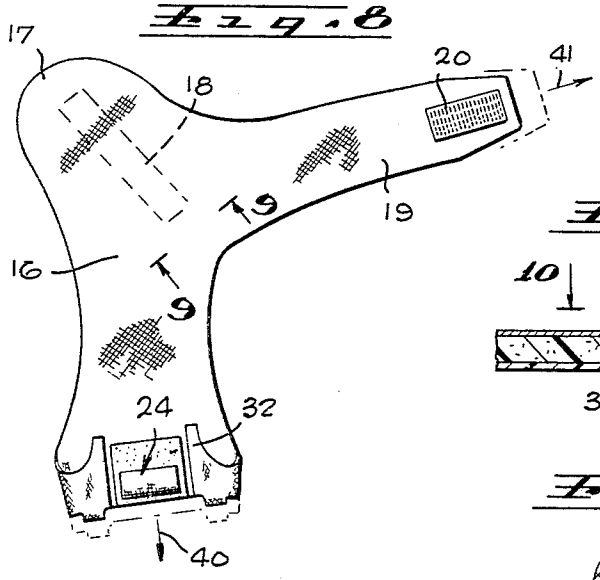


Fig. 9

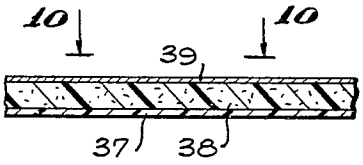


Fig. 10

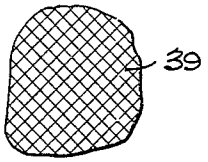


Fig. 11

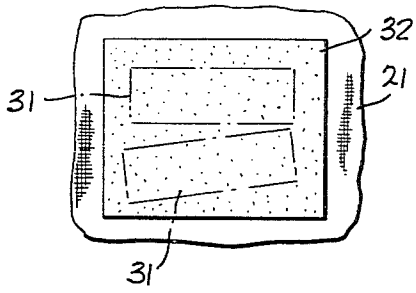


Fig. 12

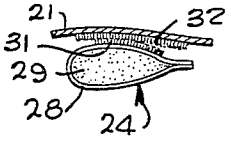
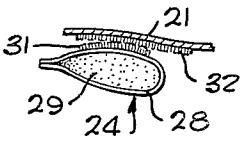


Fig. 13



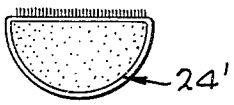


Fig. 14

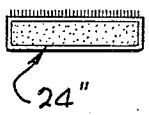


Fig. 15

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BOWLING GLOVE

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U.S. Cl. 2—159 14 Claims

ABSTRACT OF THE DISCLOSURE

A bowling glove securable about the wrist and having a pair of sheaths for receiving the tips of the index and little fingers, with a finger pad adapted to be removably attached to the bowling glove between the fingertip sheaths to form a radial and tangential support against the middle two fingers of the bowler's hand. The finger pad may be adjusted in location to fit the size of the bowler's hand or to allow the bowler to use either a regular grip or a fingertip grip on the bowling ball. Differently configured finger pads may be employed alternatively, and a variety thereof are disclosed.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to bowling gloves and, more particularly, to means for supporting the third and fourth fingers, more commonly known as the middle and ring fingers, of the bowling hand of the user.

In the proper delivery of a bowling ball, particularly in the delivery of a hook ball, there are many facets to consider. Some of the more important steps are a smooth four or five step approach, an easy pendulum swing, a stiff wrist during the pendulum swing and, finally, a proper release of the ball. Although each individual step is important in its own right and proper timing of the entire delivery is essential, the hardest step to master is the release.

In order to throw a consistent hook ball, the bowling hand should always be at substantially the same position at the point of release of the ball. For a right handed bowler, at the point of release, the thumb should be at an eleven o'clock position, with the middle and ring fingers at approximately the four and five o'clock positions. During the release of the ball, the thumb leaves its hole first with the middle and ring fingers continuing to move upwardly. Such a movement imparts a lift on the ball, enabling the ball to spin in a counterclockwise direction. As the ball moves down the alley, the momentum of the ball forces it to move in a substantially straight line. After the ball has travelled about half way down the alley, the ball loses momentum sufficiently to enable the spin to take hold on the alley and move the ball to the left, thus contacting the pins from a desired angle.

As can be seen, the amount of lift imparted to the ball is very important. Naturally, consistency plays an essential role in bowling and the same amount of lift should be used for each delivery. If too much lift is used, the ball will hook too far to the left. If not enough lift is used, the ball will continue to go straight and not hook at all.

It is obvious from the foregoing disccussion that there is a great deal of tension and strain put on the middle and ring fingers of the bowler's hand. The average bowling ball weighs up to 16 lbs., and, when it is being delivered, it develops considerably more centrifugal force due to the swinging motion. After bowling a period of time, these two fingers tend to weaken and thus fail to

maintain the proper hold on the ball. This results in the fingers tending to slip out of the ball holes prematurely, without imparting sufficient lift to the ball.

Descripion of the prior art

Heretofore, many devices have been used as bowlers' aids in assisting the bowler's delivery. There have been devices which improve one's grip of the ball to enhance the effectiveness of his delivery. Other devices serve as wrist braces or supports to maintain a person's wrist joint relatively inflexible during delivery. Other types of aids are fingertip attachments which prevent the fingers from slipping out of the bowling ball holes prematurely. Palm pads are also used to aid in support of the bowling ball to help achieve greater accuracy.

However, none of these devices offered any effective assistance to the bowler where it is needed most, namely, in giving outer support to the middle and ring fingers of the bowler's hand.

SUMMARY OF THE INVENTION

The present invention overcomes this deficiency by providing a bowling glove having an elongated body which is adapted to overlie the back of the user's hand and wrist. The rearward or wrist end of the body includes a laterally projecting strap portion which is adapted to extend around the user's wrist for securing the glove of the user's hand. The forward or fingers' end of the body includes a pair of fingertip sheaths for receiving and limiting the movement of the tips of the second and fifth fingers, more commonly known as the index and little fingers. A finger pad having attachment means is adapted to be connected to the forward end of the body located between the fingertip sheaths to form a support for applying a force having radial and tangential components against the middle and ring finger of the bowler's hand. The shaped type of finger pad is selectable and the positioning of the finger pad is adjustable to compensate for the size of the bowler's hand and to permit the bowler to use either a regular grip or fingertip grip on the bowling ball. The glove preferably is integrally constructed from a single piece of vinyl having resiliency for permitting longitudinal tensioning of the body and lateral tensioning of the wrist strap whereby proper application of the desired forces is assured. The vinyl preferably is provided with a comfortable liner of foam rubber which in turn is covered by a smooth fabric to prevent sticking to the rubber; a conventional one-way stretch fabric is employed and is cut on a bias to permit resilient tensioning both longitudinally and laterally.

Accordingly, a principal object of the invention is to provide an improved bowling glove.

Another object of the invention is to provide a bowling glove having novel support means for reinforcing the strength of the middle and ring fingers.

Another object of the invention is to provide new and improved means for maintaining repeatibility of delivery of the ball.

Another object of the invention is to provide new and improved means to transfer the delivery action to the proper fingers.

Still other objects, features and attendant advantages of the present invention, together with various modifications, will become apparent to those skilled in the art from a reading of the following detailed description of the preferred embodiment constructed in accordance therewith, taken in conjunction with the accompanying drawings wherein like numerals designate like parts in the several figures.

BRIEF DESCRIPTION OF THE DRAWINGS

FIGURE 1 is a perspective view of a bowling glove in accordance with the present invention shown being worn on the bowler's hand and operatively associated with the bowling ball;

FIGURE 2 is a perspective view of the bowling glove as it is adapted to be placed on the bowler's hand, with some portions being shown in broken lines prior to their placement into the full line portions;

FIGURE 3 is a top plan view of the bowling glove further illustrating the unitary construction of the main body;

FIGURE 4 is a fragmentary perspective view, partly broken away and in section, of one end of the glove;

FIGURE 5 is a fragmentary bottom plan view of the bowling glove, showing the fingertip sheaths for the index and little fingers;

FIGURE 6 is a sectional view, partly in elevation, taken substantially along line **6—6** of FIGURE 4 with a regular bowling grip being used;

FIGURE 7 is a sectional view, similar in aspect to FIGURE 6, with a finger tip bowling grip being used;

FIGURE 8 is a bottom plan view of the glove, illustrating the tensioning directions of the body and wrist strap;

FIGURE 9 is a fragmentary enlarged sectional view, taken along line **9—9** in FIGURE 8, showing the preferred construction of vinyl, foam rubber and fabric layers in exaggerated proportions;

FIGURE 10 is a plan view in the direction of line **10—10** in FIGURE 9, showing the warp and woof of the fabric in exaggerated scale;

FIGURE 11 is a schematic illustration of variable positioning of the finger pad relative to the body;

FIGURES 12 and 13 are fragmentary sectional views illustrating reverse positions of the finger pad; and

FIGURES 14 and 15 are sectional views, similar in aspect to FIGURES 12 and 13, showing alternative pad shapes.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the drawings, FIGURE 1 shows a bowling glove, generally indicated at **10**, being worn on the hand **11** of a bowler. The bowler's hand is positioned on a bowling ball **12**, with the thumb **13** being inserted into a conventional thumb hole (not shown) and the middle and ring fingers **14** and **15** being inserted into the conventional finger holes.

As seen in FIGURE 2, the bowling glove **10** includes an elongated body **16** having a heel portion **17** located at the rearward end thereof. A fastening means **18** is secured to the upper surface of the heel portion **17**. Extending out of the side of the body **16** at its rearward end **17** is a lateral strap **19** having a fastening means **20** secured to the underside thereof. The fastening means **18** and **20** are preferably of the pile and hook type, respectively, such as are exemplified by Velcro fasteners, which are sewn to the glove **10** at the areas indicated. In this type of fastening means, the hook fastening portion **20** is adapted to engage tightly but releasably with the relatively soft fibrous pile portion **18**.

The forward end **21** of the body **16** includes a pair of fingertip sheaths **22** and **23** which are adapted to receive the tips of the bowler's index and little fingers, respectively.

As shown in FIGURE 1, the body portion **16** is worn on the back of the bowler's hand with the tips of the index and little fingers being inserted into the sheaths **22** and **23** as described. The heel portion **17** extends rearwardly over the wrist and somewhat diagonally behind the thumb prominence adjacent the wrist. The lateral strap **19**, folded down from its original position shown in broken lines in FIGURE 2, is then wrapped around the bowler's wrist so as to effectively hook behind the thumb prominence for longitudinal anchoring of the body **16**.

The lateral strap **19** continues around the wrist from a position shown in broken lines in FIGURE 1 until its free end lies flush with the surface of the heel portion **17** whereby the fastening means **20** engages the fastening means **18**. A finger pad **24** is attached to the forward end **21** of the body **16** between the sheaths **22** and **23** to give support to the two middle fingers, i.e., the middle and ring fingers **14** and **15** which are intermediate the index and little fingers, and will be described in greater detail hereinafter.

FIGURES 2–5 more clearly show the one-piece construction of the bowling glove with the body **16**, heel end **17**, lateral strap **19** and sheaths **22** and **23** being cut from a single piece of material such as leather or preferably vinyl. FIGURE 2, in broken lines, and FIGURES 5 show the sheaths **22** and **23** each being formed as a two-ended flap with one extension **25** being folded around the underside of the body **16** and sewn thereto along its edge **26**. The other extension **27** is folded around the body **16** to lie flush with the upper surface thereof and is securely sewn thereto.

As seen in FIGURES 4 and 5, the finger pad **24** includes a cover member **28** preferably composed of vinyl and encapsulating a resilient member **29** preferably composed of foam rubber or similar material. Cover member **28** is constructed of a single layer folded over and sewn together at the ends **30** with the resilient member **29** located inside the fold. A hook portion **31** as of a Velcro fastener is secured as by sewing to the upper surface of the cover member **28**, while a Velcro pile portion **32** is similarly secured to the underside of the glove body **16** at its forward end **21**. The finger pad **24** is thus attached to the body **16** via the attachment means comprising the hook and pile sections **31** and **32** of a Velcro fastener.

It should be noted that the attachment area of the pile section **32** is substantially longer than the length of the hook section **31**. Thus enabling the finger pad **24** to be removably attached to the body **16** at a variety of positions lengthwise of the glove. Such positioning depends primarily on whether the bowler uses a fingertip grip or a regular grip on the ball, it being understood that the spacing of the holes in the ball is normally predetermined for the particular type of grip as well as individual bowlers. If a ball with fingertip holes is used, only that portion of each of the middle and ring fingers down to the first joint would be inserted into the respective hole (see FIGURE 7). In this position, the finger pad **24** would be attached to the body **16** adjacent the forward extremity of the forward end **21** thereof and would give support to these fingers around the area of their first joints. If a ball with regular holes is used, that portion of each of the two middle fingers down to their respective second joint would extend into the respective hole (see FIGURE 6). In this position, the finger pad **24** would be attached to the body **16** at a longitudinal position along the forward end region **21** is slightly inward of its forward extremity and would give support to the middle fingers around the area of their second joints.

FIGURE 6 shows the finger pad **24** extending over the second joints of the middle two fingers when the regular grip is being employed. It should be noted that the finger pad **24** exerts two force components of support to the fingers relative to the ball, a radial force indicated by arrow **33** and a tangential force indicated by arrow **34**. The radial force is sometimes called the gripping force, which reinforces the gripping strength of the middle and ring fingers. The tangential force exerted by the finger pad **24** effects a resilient action tending to flex the two middle fingers upwardly and toward the palm of the hand whereby, as the bowler's fingers disengage from the ball fingerholes, the two middle fingers will impart an additional lift to the ball supplemented by the resilient action of the device.

FIGURE 7 shows the finger pad **24** extending over the first joints of the middle two fingers when the fingertip grip is being used. Again, it should be noted that the finger

pad 24 exerts two force components of support to the fingers, a radial force indicated by arrow 35 and a tangential force indicated by arrow 36, which act in the same manner discussed in the operation of FIGURE 6.

Referring particularly to FIGURES 8–10, inclusive, an embodiment of the glove is seen wherein the vinyl material constitutes an outer layer 37 and is provided coextensively with an outer layer 37 and is provided coextensively with an intermediate layer 38 of resilient material such as foam rubber and an inner fabric layer 39. The intermediate layer 38 provides soft cushioning for the bowler's hand for additional comfort rather than direct skin contact with the vinyl material 37. The vinyl material layer 37 is inherently elastic in all directions. In order to provide improved integrity and preferably slightly reduced elasticity of the vinyl 37, the fabric 39 is of the type having what is commonly known as one-way stretch in either the warp or woof direction of the fabric. However, in order to maintain the desired degree of elasticity of the body 16 of the glove in its longitudinal direction, as indicated by arrow 40 and the adjacent phantom lines in FIGURE 8, as well as the desired degree of elasticity of the wrist strap 19 in the effectively lateral direction as indicated by arrow 41 and the adjacent phantom lines in FIGURE 8, the glove blank is cut so that the fabric 39 is cut on a bias whereby elastic tensioning in both directions 40 and 41 is obtained by virtue of the same warp or woof stretch characteristic.

FIGURE 11 illustrates more clearly the effectively large Velcro pile fastener section 32 secured to the underside of the glove body portion 21 as compared to the variably positioned finger pad fastener section 31, shown in broken lines to indicate both longitudinally and angularly varied positions.

FIGURES 12 and 13 illustrate that the finger pad 24, which is asymmetrical in longitudinal section relative to the glove, can be positioned in reverse orientation, as desired, for greater effectivity, comfort and "feel" as selected by the individual bowler, as well as longitudinally and angularly varied in position as indicated in FIGURE 11.

FIGURE 14 illustrates another configuration of finger pad 24' which is substantially symmetrical in cross-section and semi-cylindrical in configuration. FIGURE 15 illustrates still another form of symmetrical finger pad 24'' which is substantially rectangular in cross-section. Either of the finger pads 24' or 24'' may have any desired dimensions, although it should be noted that pad 24' is particularly designed for increased height, both in an absolute sense as well as relative to its other dimensions, for applying a greater support force to the middle two fingers, while pad 24'' is designed particularly for relatively shorter height for effectively broader area force application.

It is also important to note that the sheaths 22 and 23 control the positions of the outer or non-hole fingers. These sheaths 22 and 23 prevent the aforesaid fingers from wandering and interfering with the proper release of the ball.

Another advantage of the device is that not only can the finger pad be adjusted to suit the type of grip but it can be adjusted to fit the size of the hand to give the bowler a better feel. Furthermore, since the finger pad is resilient, it adapts to the shape of the fingers to give a more comfortable support. The thickness of the finger pad can be predeterminedly varied to control the amount of pressure the bowler wishes to be applied to the bowling fingers, as by selection of one of the pads 24, 24' or 24''. Thus, the more positive finger feel achieved with the inventive glove 10 gives the bowler the ability to more accurately control the position of the hand during the entire approach, from starting position to delivery, while the resiliently forceful support given to the two middle fingers enables the bowler to apply the proper lift to the ball and to apply it consistently.

What is claimed is:

1. A bowling glove comprising:
an elongated body adapted to extend over the back of the user's hand and having a forward end and a rearward end;
means for securing said rearward end of said elongated body relative to the user's hand;
a pair of housing means located at said forward end of said elongated body for receiving and limiting the movement of the respective index and little fingers of the user's hand; and
support means located at said forward end of said elongated body and between said pair of housing means for giving support to the middle and ring fingers of the user's hand.

2. The invention in accordance with claim 1
wherein said securing means comprises a strap extending laterally from said rearward end and adapted to wrap around the user's wrist for effectively immobilizing said elongated body relative to the user's hand, and including means for removably fastening said strap to said rearward end.

3. The invention in accordance with claim 1
wherein said support means comprises a resilient pad attached to the underside of the forward end of said body for bearing against the middle and ring fingers on at least a portion of their upper surfaces.

4. The invention in accordance with claim 3
including attachment means for removably attaching said pad to said body.

5. The invention in accordance with claim 4
wherein said attachment means includes means for adjustably positioning said pad on said body.

6. The invention in accordance with claim 5
wherein said attachment means includes a pile section located on said body and a hook section located on said pad.

7. The invention in accordance with claim 6 wherein said pile section extends longitudinally over a portion of said body of sufficient length to permit said hook section to engage said pile section at a variety of longitudinal positions relative to said body.

8. The invention in accordance with claim 1
wherein said pair of housing means comprises a pair of sheaths adapted to receive the tips of the index and little fingers.

9. The invention in accordance with claim 8 wherein said pad selectively extends over a selected one of the first and second joints of the middle and ring fingers of the user's hand whereby, when the user's hand grips a bowling ball, said pad exerts a force on the backs of such fingers, such force having radial and tangential components relative to the ball.

10. The invention in accordance with claim 9 wherein said securing means comprises a strap extending laterally from said rearward end and adapted to wrap around the user's wrist for effectively immobilizing said elongated body relative to the user's hand, and including means for removably fastening said strap to said rearward end.

11. The invention in accordance with claim 10 wherein said elongated body, said lateral strap, and said sheaths are of a one-piece construction formed from a single piece of material.

12. The invention in accordance with claim 11
wherein said material is vinyl.

13. The invention in accordance with claim 11
wherein said material consists of coextensive layers of vinyl, foam rubber and cloth fabric.

14. The invention in accordance with claim 13
wherein said cloth fabric is elastic in only one of its warp and woof directions, and such warp and woof directions are angled relative to said elongated body.

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U.S. Cl. X.R.

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