

April 18, 1961

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DEVICE FOR BOWLERS

2,980,426

Filed Sept. 25, 1959

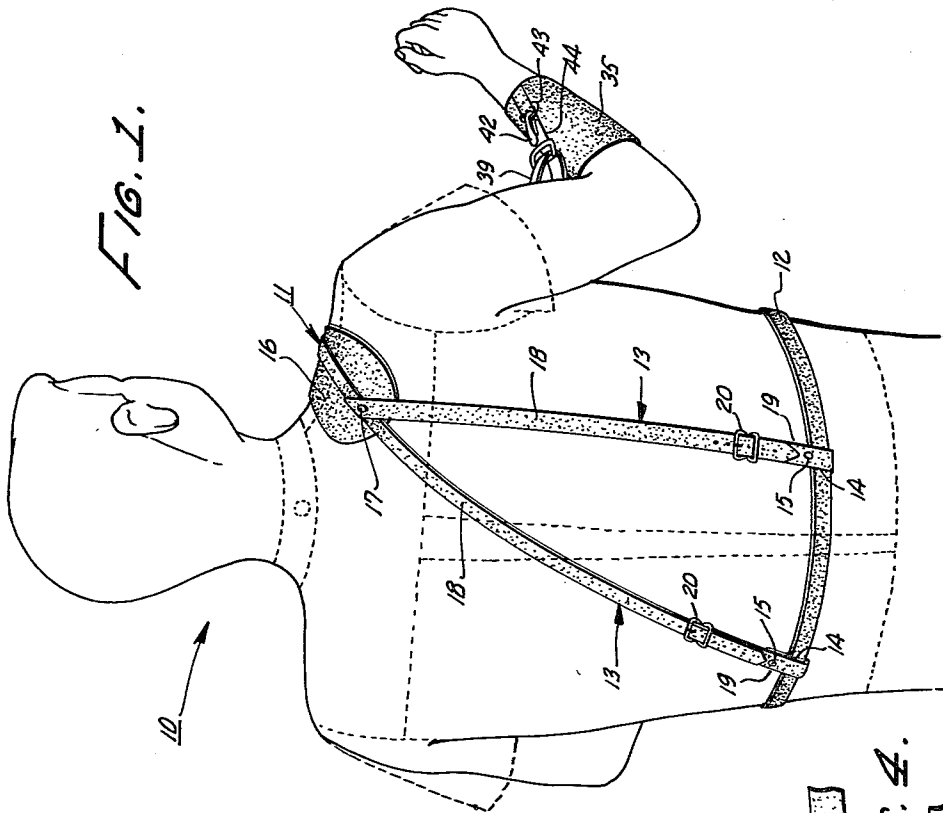


FIG. 1.

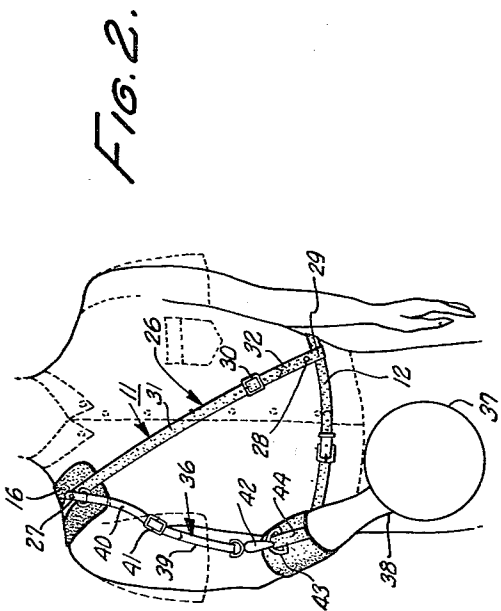


FIG. 2.

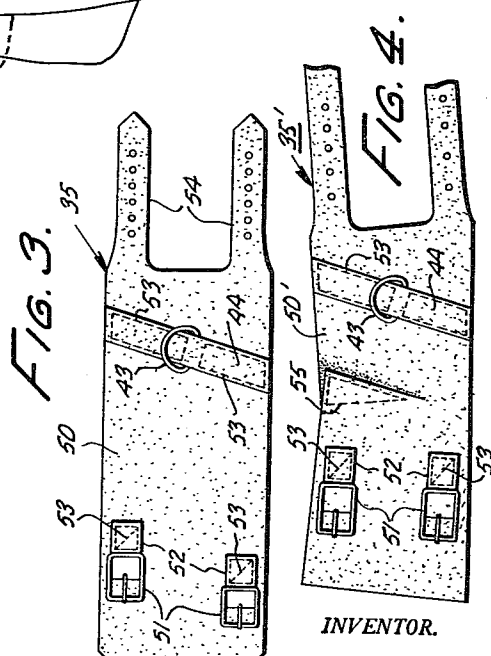


FIG. 3.

FIG. 4.

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2,980,426

DEVICE FOR BOWLERS

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Filed Sept. 25, 1959, Ser. No. 842,483

4 Claims. (Cl. 273—54)

This invention relates to a device which enables a person having an infirmity in his shoulder, arm, or elbow to engage in the game commonly known as bowling without experiencing significant pain or discomfort. The device also has utility as an aid in the proper training of a person in the game of bowling.

The game of bowling, or more properly, tenpins, has achieved great popularity in recent times. In this game, a ball weighing approximately fifteen pounds is utilized. Heretofore, persons who may have experienced an injury to their shoulder, arm or elbow, which made it impossible or painful for them to lift and control the weight of such a ball, have found it uncomfortable to engage in bowling. Furthermore, accurate control of the motion of the ball is necessary in order to enjoy the game. Such persons, often, due to their infirmity, have not been properly able to control the ball during its delivery.

Many bowlers, who have no such infirmity in their arm, have an improper motion in the delivery of the ball, in that the arm is swung back too far prior to commencement of the forward swing of the arm when the ball is delivered. An excessive amount of such back swing results in the bowler releasing the ball when off-balance or with an incorrect stride, thus resulting in an inaccurate delivery of the ball.

According to the present invention, a device is worn by the bowler during bowling, which consists essentially of a waist band and a shoulder patch which are connected together by several connecting members so that the shoulder patch is held in place against the shoulder of the bowler and the waist band encloses the waist of the bowler. A forearm band encloses the forearm used to hold the bowling ball. A support member which has the characteristic of being elastic is connected between the forearm band and the shoulder patch. The length of the support member is such that extension of the arm of the bowler in a vertical downward direction causes the support member to stretch and thereby provide support of a substantial portion of the weight of the ball held by the bowler. The support member connection on the shoulder patch is positioned in such a manner that the amount of back swing of the arm of the bowler is limited.

The invention may be more readily understood by reference to the accompanying drawing in which:

Figure 1 is a drawing of the invention as worn by a bowler, showing the back of the bowler;

Figure 2 is a drawing of the invention as worn by a bowler, showing the front of the bowler;

Figure 3 is a drawing of one embodiment of the forearm band according to the invention; and

Figure 4 is a drawing of an alternate embodiment of the forearm band.

Referring now to Fig. 1, there is shown a bowler 10 wearing a device for a bowler 11 according to the invention. The device 11 has a waist band 12 to which are connected two connecting members 13. The connecting members 13 are connected to the waist band 12

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so as to be slidable therealong by means of a loop 14 on each connecting member 13. The loop 14 is formed by means of a stud 15 passing through the material of the connecting member 13 at the neck of the loop. A shoulder patch 16 and the two connecting members 13 are connected together by a second stud 17 which passes through the material of each.

The two connecting members 13 consist of first portions 18 which are connected to the shoulder patch 16 and second portions 19 which include the loops 14. Adjustment of the length of the connecting members 13 is provided for by a buckle 20 connected to the second portion 19 and adapted to buckle to the first portion 18. Adjustment of the connecting members 13 is made to suit the size of the individual bowler in this preferred embodiment. However, it is to be understood that the device according to the invention may be made to size for the particular bowler, thus obviating the need for the adjustability of the connecting members. In either embodiment the length of the connecting members 13 is such that the shoulder patch 16 rides on the top of the shoulder of the bowler.

Figure 2 shows a front view of the bowler 10 wearing the device 11. A front connecting member 26 is connected to the shoulder patch 16 by means of a third stud 27. The front connecting member 26 is slidable along the waist band 12 in the same manner as was described with respect to the back connecting members 13. A fourth stud 28 passing through a loop 29 in the material of the front connecting member 26 provides the structure whereby the front connecting member 26 may slide along the waist band 12. A buckle 30 connects an upper portion 31 and a lower portion 32 of the front connecting member 26 in the same manner as was described with respect to the back connecting members 13.

A forearm band 35 girds the forearm of the bowler 25. A support member 36, preferably in the form of a loop, is connected between the forearm band 35 and the shoulder patch 16 and provides support for a bowling ball 37 held in the hand 38 of the bowler 10 when the arm of the bowler 10 is extended downward. The support member 36 has the characteristic of being elastic. In the illustrated embodiment, which is the preferred embodiment, the support member 36 consists of the first portion 39 constructed of an elastic material and a second portion 40 constructed of substantially inelastic material. In this embodiment, the first portion 39 is constructed from material which maintains its width on stretching and has the characteristic of requiring three pounds tension per inch of expansion. Such material is commonly available from cobblers.

The first and second portions, 39 and 40, of the support member 36, are connected together by means of a buckle 41 in the same manner as was described with respect to the back connecting members 13. The forearm support member 36 is connected to the shoulder patch 16 in the preferred embodiment by means of the third stud 27. The forearm support member 36 is connected to the forearm band 35 by means of a swivelled snap hook 42 on the support member 36 which engages a ring 43 attached to the forearm band 35 by a connecting strap 44, as is more clearly shown in Fig. 3.

The forearm support member 36 is connected to the shoulder patch by a ring 45 and strap 46. The strap 46 is connected to the shoulder patch by the third stud 27 and fifth stud which is not shown. Alternatively, the strap 46 may be stitched to the shoulder patch 46 and the front connecting member 26. The swivelled snap hook 42 is preferably slidable inside the loop which constitutes the forearm support member 36 in the illustrated embodiment in order to equalize the tension on the two sides of the loop when the support member supports

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the ball 37, one side of the loop being less elastic than the other in this embodiment. In a second embodiment, the support member 36 consists entirely of elastic material, which may be either a single thickness or a loop. The snap hook 42 is not slidable in this embodiment.

The forearm band 35 is shown in greater detail in Fig. 3. The forearm band 35 consists, in its preferred embodiment, of a flat piece of material 50, which may be elk skin, for example, to which are attached the snap ring 43 and a pair of buckles 51 by means of straps of elk skin 44 and 52 respectively. The straps 44 and 52 are attached to the material 50 by being sewn as indicated by the dotted lines 53. At the end of the forearm band 35 opposite the buckles 51, there are formed two extensions 54. These extensions 54 have holes punched therein and are each adapted to engage an appropriate one of the buckles 51 when the band 35 is positioned around the wrist of the bowler. The buckles 51 are offset from each other to allow for the diminution in circumference of the forearm of the bowler in the direction of the hand, thereby providing a tight fit for the band 35 about the forearm. An alternate embodiment of the forearm band is shown in Fig. 4. In this alternate embodiment, a forearm band 35' is constructed by removing a triangular section of appropriate size from one side of the material 50 and sewing this side as shown by the dotted lines 55. Thus, the length of the band 35' on the side from which the section has been removed is less than the length of the band 35' on its opposite side. In this embodiment the buckles 51 are preferably aligned rather than being offset as shown in Fig. 3.

In order to utilize the device 11, the device is worn by the bowler 10 as shown in Figs. 1 and 2. The waist band 12 is tightened by means of the buckle 28 so as to select a circumference which provides a firm anchor for the shoulder patch 16 in conjunction with the support members 13 and 26. The lengths of the support members 13 and 26 are selected by means of the buckles 20 and 30 as required by the physical dimensions of the bowler 10. The support members 13 and 26 are positioned about the waist band 12 so as to provide a comfortable fit while simultaneously maintaining the required position of the shoulder patch 16. The length of the support member 36 is adjusted as required by the physical dimensions of the bowler to provide the required amount of support for the bowling ball at the bottom of the swing of the bowler.

The device 11, when worn under a shirt having short sleeves, is practically unnoticeable and eliminates embarrassment on the part of the bowler which might otherwise occur when utilizing the invention. When not actually in the process of bowling, freedom of action for the bowler is accomplished by unhooking the support member 36 from the wrist band 35 and sliding the front and back support members 26 and 13 along the waist band 12 as required.

I claim:

1. A device for a bowler comprising a waist band, a shoulder patch, a plurality of connecting members con-

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nected between the shoulder patch and the waist band, a forearm band, and a support member connected between the forearm band and the shoulder patch, at least the major portion of said support member consisting of an elastic material, said support member having a length so that it is placed in tension upon movement of the bowler's arm to a substantially straightened position.

2. A device for bowler comprising a waist band, a shoulder patch, a plurality of connecting members connected between the shoulder patch and the waist band and disposed about the perimeter of the waist band, at least one of said connecting members being connected to the waist band so as to be slidable therealong, a forearm band adapted to gird a forearm of the bowler, and a support member, a substantial portion of which consists of an elastic material, said support member being connected between the shoulder patch and the forearm band and having a length so that it is placed in tension upon movement of the bowler's arm to a substantially straightened position.

3. A device for a bowler comprising a waist band, the circumference of which can be varied, a shoulder patch, a plurality of connecting members, the length of at least one of which can be varied, said connecting members being connected between the shoulder patch and the waist band and disposed about the perimeter of the waist band, at least one of said connecting members being connected to the waist band so as to be slidable therealong, a forearm band adapted to gird a forearm of the bowler, and a support member, a substantial portion of which consists of an elastic material, said support member being connected between the shoulder patch and the forearm band having a length so that it is placed in tension upon movement of the bowler's arm to a substantially straightened position.

4. A device for a bowler comprising a waist band, means for selecting the circumference of the waist band, a shoulder patch, a plurality of connecting members connected between the shoulder patch and the waist band and slidable along said waist band, said connecting members being disposed about the perimeter of said waist band, means for selecting the lengths of each of said connecting members, a forearm band adapted to gird a forearm of the bowler, and a support member, a substantial portion of which consists of an elastic material, said support member being connected between the shoulder patch and the forearm band and including means to selectively adjust the length of the support member whereby the support member is placed in tension upon movement of the bowler's arm to a substantially straightened position.

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