

May 29, 1962

J. ENGAN
ARM LOCK ARRANGEMENT
Filed Aug. 8, 1960

3,036,831

Fig. 1

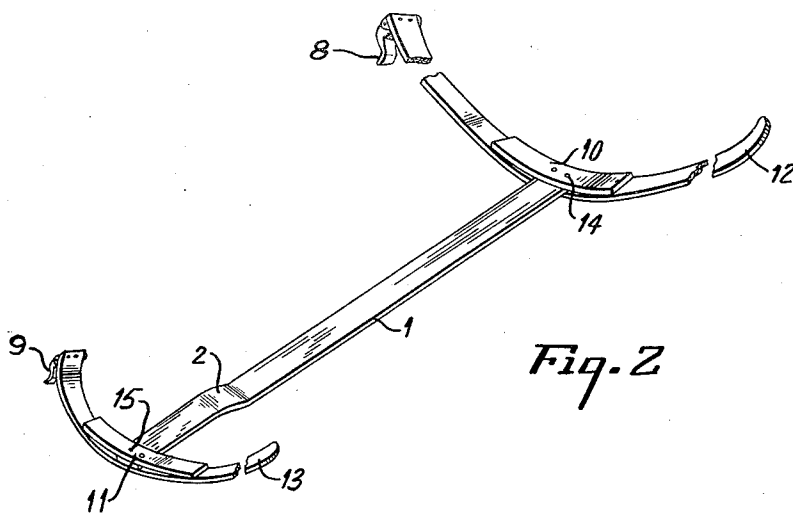
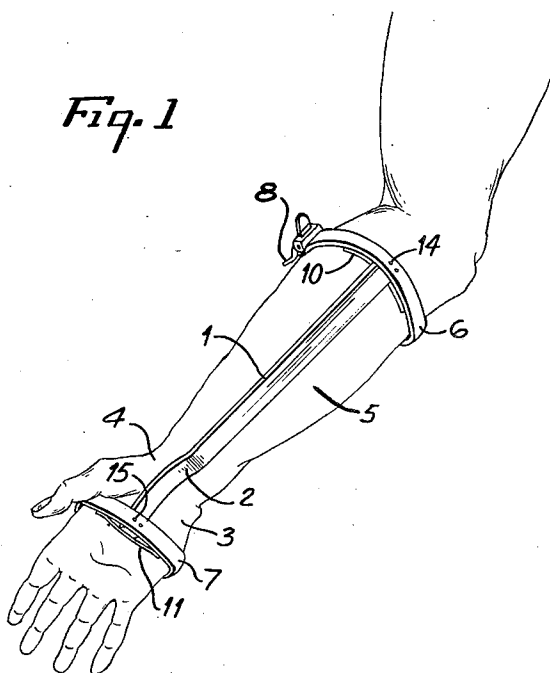


Fig. 2

INVENTOR.
JOHN ENGAN

BY *Matthew H. Russo*
ATTORNEY

1

3,036,831

ARM LOCK ARRANGEMENT

John Engan, 4914 7th Ave., Brooklyn, N.Y.

Filed Aug. 8, 1960, Ser. No. 47,986

4 Claims. (Cl. 273-54)

This invention relates to a device used in the sport of bowling, and more particularly, to an arm support arrangement to insure proper delivery of a bowling ball.

Bowling has become one of the most popular indoor sports. The secret of bowling's universal appeal is that it can be enjoyed by all regardless of sex, age, or condition. In the past ten years, bowling establishments have undergone tremendous changes. The development of automatic pin setters, foul-line detectors, electronic scoreboards, and many other electro-mechanical devices have been instrumental in revolutionizing bowling as well as increasing its popularity.

Proficiency in bowling is therefore a common goal and the prime purpose of this invention is to improve the proficiency of all its participants. One of the essential factors to consider in improving one's game of bowling is the proper "delivery" of the bowling ball. A delivery in bowling is defined as the position of the body prior to release of the bowling ball. The achievement of a good delivery depends primarily on the control of the bowler's hand, wrist, and forearm.

To this end, my invention consists of a device which will considerably aid the bowler in delivering and controlling the ball more efficiently and effectively.

In order to achieve a good delivery, footwork, bowling-ball grip, and arm swing must work together and be synchronized in perfect harmony. There are four basic types of delivery which, depending on the settings of the bowling pins, may be utilized. They are as follows:

- (1) The Straight Ball
- (2) The Hook Ball
- (3) The Curve Ball
- (4) The Backup Ball

A bowling ball ordinarily has three radial openings. To throw the "straight ball" one's thumb and fingers should form a V with the thumb pointing straight up in a relative position, which corresponds to the 12 o'clock setting of an imaginary clock. The thumb should be positioned directly above the fingers and the wrist should be straight. The thumb must remain in the 12 o'clock position throughout the entire delivery. The wrist should be kept straight and in line with the forearm throughout the entire swing. There should be no twisting motion of the wrist.

The biggest problem facing a bowler is to prevent his wrist from twisting and to confine his hand and forearm to movement in a given plane. This movement should be in the arc corresponding to the future travel direction of the ball. Utilization of the present invention is suggested as an aid in preventing any twisting motion of the hand, arm, or wrist upon delivery of the ball. It must be remembered that as the ball leaves the fingers, a spin is automatically imparted so that the ball rolls freely and will not skid towards the pins. A properly delivered bowling ball has a double motion, namely sliding and revolving. It slides towards the pins in the direction in which it is released and it revolves in the direction given to it by the position of the fingers. After the ball has slid a certain distance the force of its slide is decreased by friction. Then the rotation of the ball overcomes the force of the slide and the ball begins to curve in the direction of rotation.

The hook ball is delivered in a manner similar to that of the straight ball. About two-thirds of the way down the alley, the hook ball veers sharply to the left toward

2

the pins. As in the straight ball delivery, the fingers and thumb make a V, the sole difference being that the thumb now points at the 10 or 11 o'clock position instead of the straight up 12 o'clock position. Since the thumb leaves the ball first, the fingers that remain in the ball give the ball a counter-clockwise lift and consequently a spin in that direction. It is essential to realize that the wrist plays no part at all in this spin and that it should be kept in a straight line with the forearm at all times.

To throw a curve ball, one simply moves the wrist position still further in a counter-clockwise position. Here the thumb will be pointing to the 9 o'clock position.

In throwing the backup ball, the ball is delivered with the thumb pointing toward the 1 or 2 o'clock position so that the ball leaves the hand with a clockwise motion to the right instead of the normal spin to the left. This type of delivery is used when attempting to make difficult "spares."

Thus, it must be noted, that no matter which bowling delivery is desired, the wrist is not to be turned or twisted during the instant of release of the ball, as the desired delivery is solely dependent on the position of the thumb and fingers in the radial openings. No twisting motion of the wrist is needed in order to impart a hook or curve to a bowling ball. If the wrist or arm is turned over so slightly on delivery, the result will be a spinning ball revolving on the bottom instead of on its full diameter. Such a ball has less grip on the alley, its accuracy is extremely difficult to control, and it is easily deflected by the pins it hits.

An object of the present invention therefore is to provide a novel form of an arm support arrangement which will insure the proper delivery of a bowling ball.

Another object of the present invention is to provide an arm support arrangement which will control the movement of the hand with respect to the bowler's forearm.

Still another object of this invention is to prevent unnecessary twisting motion of the bowler's wrist and restrain the movement of the arm to a given plane.

A feature of this invention is the utilization of an arm support arrangement used primarily in the sport of bowling comprising a bar, and a pair of adjustable clamping members disposed at opposite ends of said bar and normal thereto. One of said clamping members is adapted to encircle the forearm of the wearer so as to maintain it in a predetermined position with respect to said bar. The other of said clamping members is adapted to encircle the hand of the wearer including the thumb crotch so as to maintain it in a predetermined position with respect to said bar. The bar has a lateral profile which corresponds to the profile of the palm.

The above mentioned and other features and objects of this invention will become more apparent by reference to the following description taken in conjunction with the accompanying drawing in which FIG. 1 represents a perspective view of the arm support arrangement applied to the hand and arm of a wearer; and

FIG. 2 is a detailed perspective of the arm support arrangement.

Referring more specifically to FIG. 1, it is seen that the invention comprises an arm support arrangement disposed about the arm of a wearer for maintaining the wrist in a predetermined position. This arrangement consists of a lateral bar 1 having an offset 2 in the direction of the length of the bar and which offset conforms to the lateral profile of the palm 3, and wrist 4. Attached to the lateral bar 1 at opposite ends are a pair of clamping members 6 and 7, for the forearm and wrist respectively. The hand and forearm are passed through clamping members 6 and 7. The clamping members consist of straps 12 and 13 which cooperate with members 6 and 7, re-

3

spectively, and are fitted about the forearm and hand of the wearer in the manner illustrated in FIG. 1. Strap 7 is fitted in the thumb crotch of the wearer. Buckles 8 and 9, or any other suitable adjustable fastening means engage the ends of straps 12 and 13 (see FIG. 2) respectively, as the straps are tied and fitted to the size and shape of the wearer's arm and hand. Sponge rubber pads 10 and 11 are used to relieve the pressure of the straps 12 and 13 about the arm and hand respectively. It is also noted that the straps 12 and 13, and the pads 10 and 11 are riveted at 14 and 15 to the bar 1. Any other suitable form of attaching means may be utilized instead of rivets to attach the straps and pads to the bar.

This device after being applied to the arm of a bowler will prevent the bowler from twisting his wrist and maintain it in a straight line with the forearm at all times. In this way, a bowler will only have to shift the position of his thumb and fingers to obtain optimum accuracy and control of the movement of the ball. Such an arm support arrangement will enable any bowler to perfect his delivery and more effectively control the accuracy of movement of the bowling ball which will result in a substantial improvement in his bowling game.

While I have described above the principles of my invention in connection with a specific embodiment, it is to be clearly understood that this description is made only by way of example and not as a limitation to the scope of my invention as set forth thereof in the accompanying claims.

What is claimed is:

1. An arm support arrangement for aiding a bowler in delivering a bowling ball along a pre-selected path down a bowling alley comprising a bar having a length approximately equal to the distance between the wrist and elbow, a pair of clamping members disposed at opposite ends of said bar and normal thereto respectively, a first one of said clamping members of a size to encircle a portion of the upper forearm of the wearer slightly beneath the elbow so as to maintain the forearm in a predetermined position with respect to said bar, the other of said clamping members of a size to encircle a portion of the hand of the wearer including the thumb crotch so as to maintain the hand in a predetermined position with respect to said bar, said pair of clamping members and said bar cooperating with one another and with the forearm and hand to prevent relative rotation of the wearer's hand with respect to his forearm in the direction normal to the direction of delivery of said bowling ball.

2. An arm support arrangement for aiding a bowler

4

in delivering a bowling ball along a pre-selected path down a bowling alley comprising a bar having a length approximately equal to the distance between the wrist and elbow, a pair of clamping members disposed at opposite ends of said bar and normal thereto respectively, a first one of said clamping members of a size to encircle a portion of the upper forearm of the wearer slightly beneath the elbow so as to maintain the forearm in a predetermined position with respect to said bar, the other of said clamping members adapted to encircle a portion of the hand of the wearer including the thumb crotch so as to maintain the hand in a predetermined position with respect to said bar, said bar further having a lateral offset which corresponds to the profile of the palm and wrist of the wearer whereby said bar will abut the inner portion of the hand and forearm lengthwise thereof, said pair of clamping members and said bar cooperating to prevent relative rotation of the wearer's hand with respect to his forearm in the direction normal to the direction of delivery of said bowling ball.

3. An arm support arrangement as in claim 1, wherein said clamping members further comprise a pair of straps, means for attaching different ones of said straps to said bar at opposite ends thereof, pressure-relieving elements positioned at said strap attaching means on the surface of said bar adjacent the wearer's arm, and adjustable fastening means attached to the ends of said straps for adjustably fitting said straps about the hand and forearm of the wearer.

4. An arm support arrangement for aiding a bowler in delivering a bowling ball accurately along a pre-selected path along a bowling alley comprising a bar whose length is approximately equal to the length of a human forearm, one end of said bar being laterally offset for a distance approximately equal to the distance between the wrist and palm, and the amount of lateral offset being approximately equal to the distance between the palm and the lower forearm of a bowler when the bowler grips a bowling ball for delivery, and means disposed at both ends of said bar for engaging the lateral offset end about the hand and the other end about the upper forearm to prevent relative rotation of the wearer's hand with respect to his forearm in a direction normal to the direction of delivery of said bowling ball.

References Cited in the file of this patent

UNITED STATES PATENTS

1,469,315	Hansard	Oct. 2, 1923
2,794,638	Risher et al.	June 4, 1957
2,924,458	Barry	Feb. 9, 1960