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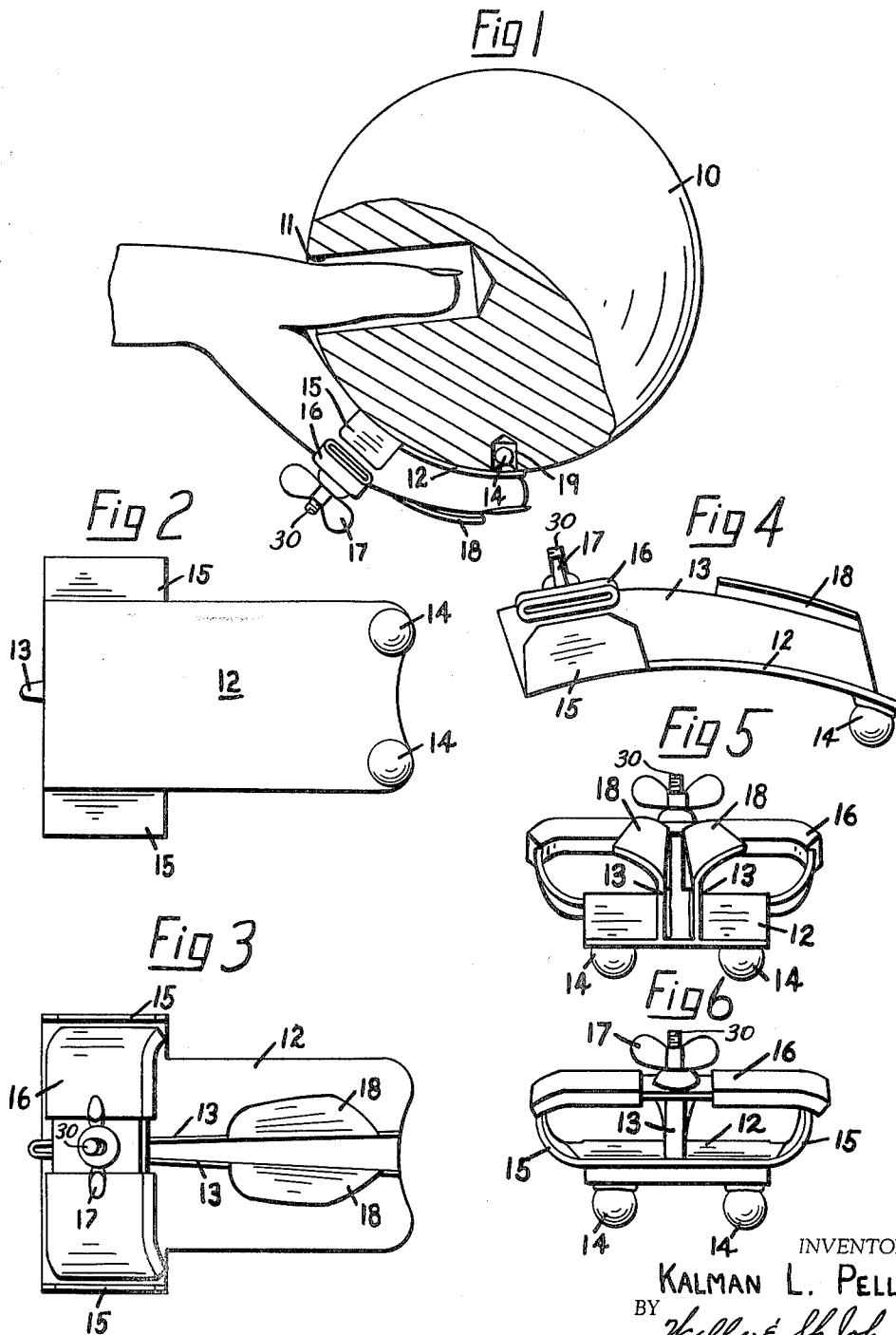
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3,214,167

FINGER-TIP GRIPPING AID FOR BOWLERS

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

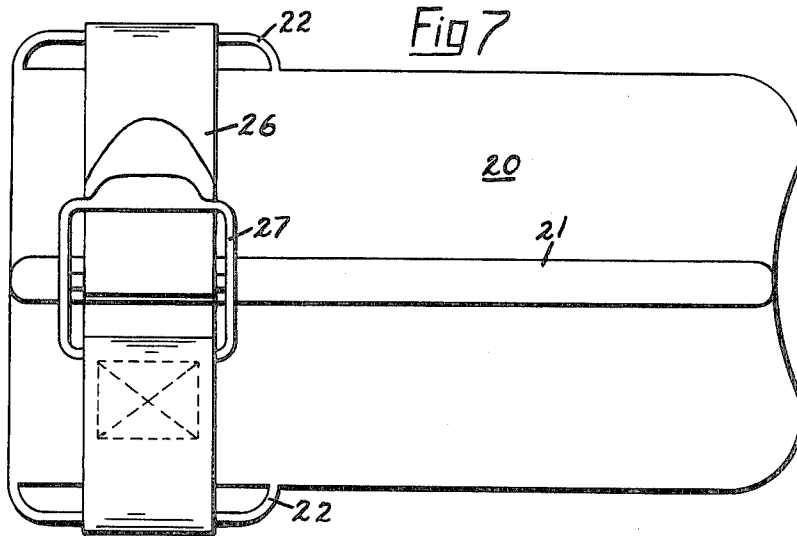
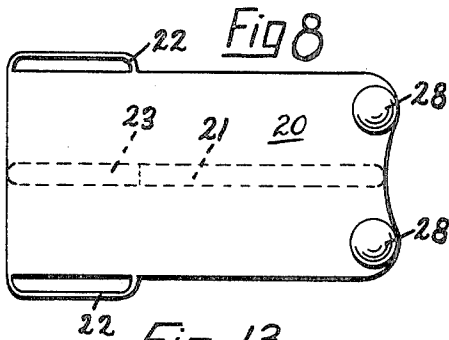
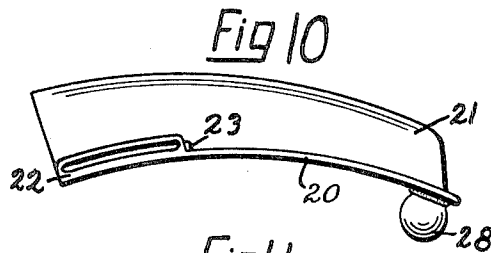
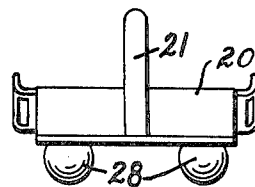
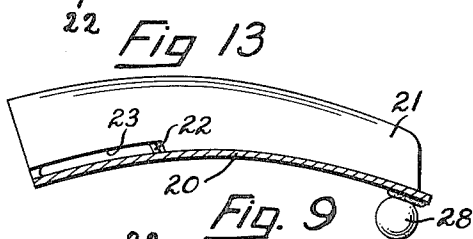
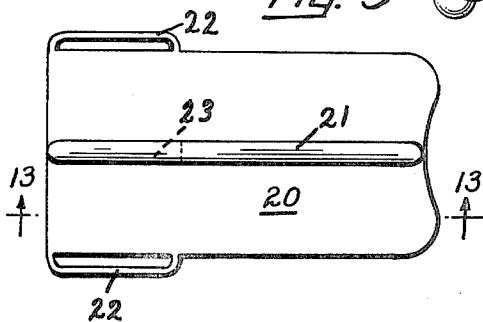
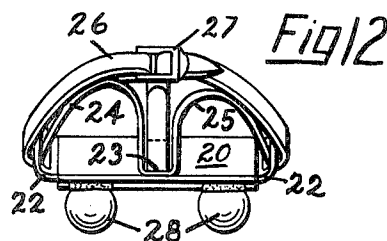


Fig 11



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FINGER-TIP GRIPPING AID FOR BOWLERS
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This application is concerned with a novel finger tip device for bowlers. It is especially designed to eliminate the conventional bowling grip wherein the fingers of the bowler are inserted within apertures formed in the bowling ball structure.

The present invention is concerned with a mechanical aid for bowlers adapted to more uniformly provide a finger tip grip on the bowling ball. The common practice among bowlers of using the finger tips to control the rolling motion of the ball relative to the surface on which it is directed places great stress on the fingers and substantially lessens the chances of an average bowler maintaining a uniform grip. The desirable uniformity in the grip of a ball is lost through fatigue and due to moisture and perspiration which causes the ball to erratically slip from a person's fingers.

It is a first object of this invention to provide a finger tip device for use by bowlers which maintains the normal leverage to control a ball but which completely eliminates the insertion of the fingers into the ball. In place of one's fingers, this device contemplates a pair of projections which are received within complementary apertures of the ball and which act to transmit forces from the user's hand to the ball for purposes of control.

Another object of this invention is to provide such a device which is extremely simple to manufacture and which may be fabricated at an economical cost so as to be available to any participant in the sport.

Another object of this invention is to provide such a device which may be readily attached to or removed from a person's hand so as to afford relaxation between deliveries of the ball and so as not to interfere with the normal habits of the bowler.

These and further objects will be evident from a study of the following description, which is concerned with two examples of the invention. The specific embodiments are illustrated in the accompanying drawings but are not intended to limit or restrict the scope of the invention which is defined in the claims following this description.

In the drawings:

FIGURE 1 is a fragmentary view of a bowling ball prior to delivery, a portion of the bowling ball being broken away so as to show the relation of the bowler's hand, the instant device and the ball;

FIGURE 2 is a bottom underside view of the device illustrated in FIGURE 1;

FIGURE 3 is a top view of this device;

FIGURE 4 is a side view of the device;

FIGURE 5 is an end view taken toward the outer end of the device;

FIGURE 6 is an opposite end view of the device;

FIGURE 7 is an enlarged top view of a second embodiment of the device;

FIGURE 8 is a bottom view of the device shown in FIGURE 7 with the strap removed;

FIGURE 9 is a top view of the device shown in FIGURE 7 with the strap removed;

FIGURE 10 is a side view of the device shown in FIGURE 7 with the strap removed;

FIGURE 11 is a view looking toward the outer end of the device shown in FIGURE 7 with the strap removed;

FIGURE 12 is an opposite end view of the complete device illustrated in FIGURE 7; and

FIGURE 13 is a sectional elevation taken along line 13-13 in FIGURE 9.

The present invention is concerned with a finger tip bowling aid for use in the conventional game of bowling or tenpins. It is common practice today to utilize a three-finger grip having one enlarged hole within which the user's thumb is inserted and two smaller holes within which are inserted the two middle fingers of the user's hand. By use of this three-finger grip the bowler may accurately and uniformly control the sense of rotation of the ball about its center as the ball rolls along the alley. However, this desirable uniformity is often not available to the occasional bowler due to fatigue of his fingers and also due to moisture and perspiration, both along his finger surfaces and along the surfaces of the holes in the ball. In order to alleviate this problem, the present device substitutes mechanical tips in place of the user's fingers so that the fingers themselves do not engage the ball.

As shown in FIGURE 1 a conventional bowling ball 10 is utilized with a conventional thumb hole designated by the numeral 11. The device is shown on a person's hand and would normally be engaged by second and third fingers of the hand when in use on a ball. The finger tip includes a curved plate 12 which is bent so as to approximately conform to the outer spherical surface of ball 10. The plate 12 is sufficiently wide to receive the necessary two fingers which are to be supported thereon and is sufficiently long so as to be covered by the last two knuckles of the fingers supported thereby. The plate 12 is provided with a central upstanding rib 13 which in actual use is a separator wall bent back upon itself and adapted to be abutted by the fingers on both sides thereof. The plate 12 is further provided with two projections 14 fixed to the underside thereof adjacent its outer longitudinal end. Each projection 14 as illustrated is a spherical ball welded or otherwise secured to the plate 12. The projections 14 are adapted to be received within complementary apertures 19 formed through the surface of the ball 10. Thus the projections 14 substitute for the normal insertion of the user's fingers within the ball 10.

In order to effectively control the ball 10, the user must be able to positively locate the projections 14 relative to his hand. This is accomplished primarily through rib 13 which is abutted along its entire length by the user's fingers. However, since the projections 14 must also be pulled from the ball 10 when the ball is released, it is also necessary to more positively locate plate 12 relative to the user's fingers. This is first accomplished by overhanging ledges 18 at the outer edge of rib 13 adjacent the outer end thereof. The ledges 18 are adapted to partially overlap the finger tips of the user. Primarily the grip of plate 12 is accomplished by upwardly bent wings at either side of plate 12, the wings 15 being shown specifically in FIGURES 4 and 6. Wings 15 cooperate with a padded clamp 16 which is adapted to be tightened on the user's fingers by means of a wing nut 17 threadably engaged on a screw 30 fixed to rib 13 and projecting upwardly therefrom. Thus by tightening the nut 17 one can positively clamp the plate 12 to his fingers and thereby substitute the projections 14 for his finger tip grip which is so widely used at the present.

The device is obviously very simple to attach to one's fingers and is easily adapted to an existing ball by simply locating the position of projections 14 on the ball and drilling the small apertures 19 to receive them. The projections 14 will normally be located beyond the usual finger holes since they will be positioned adjacent the tips of the user's fingers rather than at the first or second

knuckle. For this reason the apertures 19 may be readily drilled in a ball although the ball is equipped with the conventional grip holes. The device is readily secured or removed from the bowler's hand so that he need not wear it at all times and may be readily positioned for delivery of ball 10 when desired.

A second embodiment of this device is illustrated in FIGURE 7. It comprises a curved plate 20 similar to the plate 12 and bent to conform to the ball surface. The plate 20 is provided with two projections 28 identical in structure to the previously described projections 14. The plate 20 has an outer surface on which is located a rib 21 which extends along the full length of plate 20. Rib 21 is separated from the plate 20 adjacent the near end of rib 21 so as to form a slot 23. Two rigid loops 22 are formed along each side of plate 20 adjacent the near end thereof. The slots 23 and loops 22 carry a flexible belt comprising two loops 24 and 25 formed respectively between the loops 22 and the slot 23. The outer ends of the belt form a third overlapping loop 26 and are secured to one another by a quick releasing buckle 27. The structure of buckle 27 is conventional and is not particularly material to the invention at hand. The loops 24 and 25 of the belt are adapted to individually receive the two fingers of the user which are applied to the plate 20 and any looseness in the belt may be readily taken up by tightening the buckle 27. To remove the device from the fingers, one need only to release the buckle 27 and pull outwardly on the plate 20. This will cause the belt to pull out of the slot 23 and thereby form a single large loop which can be readily slipped from the fingers. The plate 20 is therefore readily accessible to the user and may be removed or attached to his hand in a matter of a few seconds.

I have disclosed two specific embodiments of my invention. It is to be understood that various other means may be used to locate the plate and projections relative to the user's hand while maintaining the basic relationship necessary between the bowler's fingers and the artificial finger tip provided herein. For this reason I do not intend to present the above descriptions as limiting definitions of the invention but merely as examples thereof.

Having thus described my invention, I claim:

- 1. A bowling ball finger tip comprising:
 - a curved plate having an underside formed complementary to the outer surface of a bowling ball, said plate being adapted to be interposed between the ball and the fingers of a user with the underside of the plate resting on the ball;
 - a plurality of projections fixed to the underside of said plate adapted to fit within complementary apertures of a bowling ball;
 - and means on the plate adapted to releasably clamp said plate to the fingers of a user.
- 2. A bowling ball finger tip comprising:
 - a curved plate having an underside formed complementary to the outer surface of a bowling ball, said plate being adapted to be interposed between the ball and the fingers of a user with the underside of the plate resting on the ball;

- an upstanding longitudinal central rib fixed to the outer surface of said plate adapted to be abutted by the fingers of a user;
 - a plurality of projections fixed to the underside of said plate at the outer end thereof adapted to be received within complementary apertures of a bowling ball;
 - and means on said plate adapted to releasably clamp said plate to the fingers of a user.
3. A bowling ball finger tip comprising:
 - a curved plate having an underside formed complementary to the outer surface of a bowling ball, said plate being adapted to be interposed between the ball and the fingers of a user with the underside of the plate resting on the ball;
 - an upstanding longitudinal central rib fixed to the outer surface of said plate adapted to be abutted by the fingers of a user;
 - a plurality of projections fixed to the underside of said plate at the outer end thereof adapted to be received within complementary apertures of a bowling ball;
 - and releasable means mounted on said plate and extending over the upper surface thereof adjacent its inner end, said means being spaced from said plate and being adapted to clamp the fingers of a user against said outer surface of said plate.
4. A device as defined in claim 3 wherein said releasable means comprises:
 - a strap extending through fixed loops at each side of said plate and freely received within an open slot separating one end of said rib and said plate, the outer ends of said strap being provided with quick releasing buckle means adapted to selectively secure said outer ends of said strap to one another.
5. A bowling ball finger tip comprising:
 - a curved plate having an underside formed complementary to the outer surface of a bowling ball, said plate being adapted to be interposed between the ball and the fingers of a user with the underside of the plate resting on the ball;
 - upstanding rib means on the outer surface of said plate adapted to contact the fingers of a user;
 - means fixed to the underside of said plate adapted to be received freely within apertures formed through the surface of a bowling ball;
 - and means on said plate releasably engageable with the fingers of a user adapted to releasably clamp the plate to the fingers.

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