July 15, 1969 R. S. VAIL 3,455,032

AID FOR SPOT BOWLERS

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FIG. 1

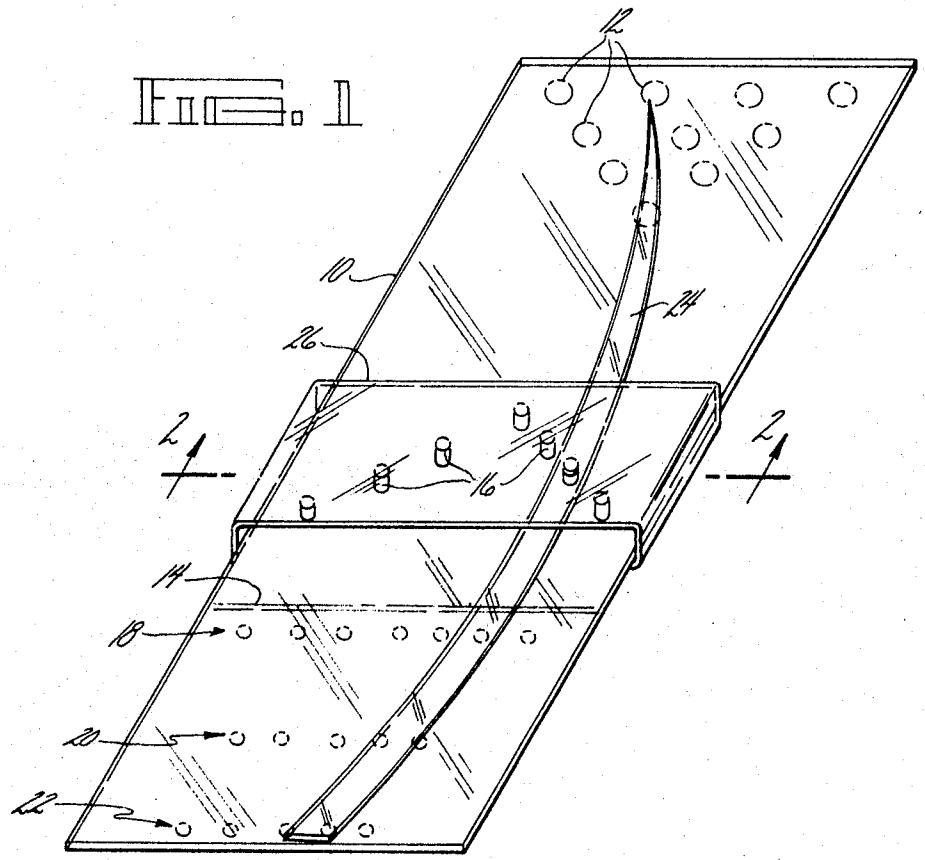
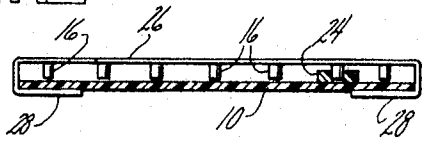


FIG. 2



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AID FOR SPOT BOWLERS

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ABSTRACT OF THE DISCLOSURE

A rectangular plastic card having indicia thereon representing a conventional formation of ten bowling pins adjacent one end, a series of seven triangularly disposed guide spots spaced forwardly of a foul line, and starting and delivery sight markings behind the foul line. A cover is slidably received on the card and defines a plurality of depending pintles arranged in a triangular array similar to the guide spots. An arcuate pointer is pivotally received on a pintle between the card and the cover so that a forwardly extending portion permits the user to select a target among the pin formation indices. The pointer also has a rearwardly extending curved portion, corresponding in shape to the forwardly extending portion, and serving to aid the bowler-user in selecting his approach path to the foul line.

SUMMARY OF THE INVENTION

This invention relates to devices for aiding bowlers, and deals more particularly with an aid for spot bowlers which permits the user to plan his approach to the foul line so that he can use substantially the same delivery and release of his ball over a particular guide spot for hitting any pin or group of pins in the target area.

The conventional bowling alley has a target area at one end where a plurality of pins are arranged in triangular formation. A clear unobstructed intermediate area is also provided in which a triangular array of guide spots is located in forwardly spaced relation to a foul line which extends laterally across the alley. Finally, a plurality of delivery sight markings is usually arranged in three rows located in rearwardly spaced relation to the foul line, one of which rows is located adjacent the rear edge of the alley. The guide spots located forwardly of the foul line have been standardized to permit the bowler to aim over these spots rather than having to look directly at the pin formation. This method of aiming has been referred to as spot bowling, and as the sport has developed has become virtually essential to the serious bowler. In the same vein, the location of the delivery sight markings has been standardized in the approach zone rearwardly of the foul line in order to permit the serious bowler to achieve a greater degree of consistency in planning his approach and delivery of the ball. While the guide spots are useful to the bowler in aiming during the last stages of his delivery, the delivery sight markings have been found to be useful as a reference to the bowler in executing his approach during the early stages of his delivery.

The object of the present invention is to provide a device which will permit the spot bowler to pre-plan his approach for a particular shot even before he steps upon a conventional bowling alley.

The drawing shows a preferred embodiment of the invention and such embodiment will be described, but

it will be understood that various changes may be made from the construction disclosed, and that the drawing and description are not to be construed as defining or limiting the scope of the invention, the claims forming a part of this specification being relied upon for that purpose.

BRIEF DESCRIPTION OF DRAWING

FIG. 1 is a perspective view of a bowling aid constructed in accordance with the present invention.

FIG. 2 is a sectional view taken on the line 2—2 of FIG. 1.

DETAILED DESCRIPTION

Turning now to the drawing in greater detail, FIG. 1 shows a device of the present invention as comprising a generally rectangular card **10** of relatively rigid plastic material having various indicia provided thereon corresponding to the conventional markings usually provided on present day bowling alleys. More particularly, at the top of FIG. 1 adjacent the forward end of the card **10** there is provided a generally triangular formation of circles **12, 12** representing a conventional pin formation. Each circle preferably includes a numeral which represents the number of an associated bowling pin. The conventional foul line is represented by a line extending laterally across the card **10**, as indicated in FIG. 1 at **14**. A conventional array of guide spots is provided in forwardly spaced relation to the foul line **14** and in a generally triangular pattern as is customary on present day bowling alleys. In accordance with the present invention, a pivot post, or pintle **16, 16** is provided at each guide spot location. While these pintles could be integrally formed in the card **10**, or might comprise short posts secured in an opening provided for this purpose in the card upon assembly, they are preferably formed in a cover or slide **26** to be described.

Still with reference to the card **10**, a plurality of delivery sight markings are provided rearwardly of the foul line **14**, corresponding to the markings usually provided on present day bowling alleys as mentioned above. More particularly, a first row of such sight markings is indicated generally at **18** in closely spaced relation to the foul line **14**, and in generally aligned relationship longitudinally of the card, with the guide spots mentioned above. As is conventional, seven sight markings are provided in the first line **18** of delivery sight markings. Second and third lines of delivery sight markings are provided as indicated at **20** and **22** respectively with the last-mentioned row **22** being provided adjacent the rear edge of the card **10**. As is conventional only five spots or markings are provided in each of these last-mentioned rows **20** and **22**.

In further accordance with the present invention, an arcuate pointer **24** is pivotally received on one of the pintles **16** so that its forward end extends into the target area, so as to overlie the indicia representing the bowling pin formation. The arcuate pointer **24** is preferably pivoted intermediate its ends and has a rearwardly extending portion which is adapted to overlie the delivery sight markings on the card **10** to enable the bowler-user to plan the delivery phase of his approach prior to the actual release of his ball.

The slide or cover **26** serves to hold the pointer **24** in position on an associated pintle **16**, and the cover **26** is slidably received on the card **10** to permit the card and pointer to be moved longitudinally of the card for

removing the pointer or positioning it on another pintle **16**. The cover **26** has inturned side edge flanges **28, 28** best shown in FIG. 2 which are slidably received on the marginal side edges **30, 30** of the card **10**. It will be apparent that the cover **26** can be conveniently formed of one-piece plastic by injection molding or the like, and that the indicia on the flat plastic card **10** can be economically printed thereon.

It is an important feature of the present invention that several pointers, varying in curvature from one another, would be provided with each card and slide cover so that any bowler could pick a pointer, such as the one shown at **24** in FIG. 1, corresponding most closely with the path taken by a ball thrown by him on a conventional bowling alley. It has been found that each bowler, having attained some minimal degree of skill, tends to throw his ball in a characteristically curved path depending upon the degree of spin which he imparts to the ball at the release point. Further, it has been found that the bowler who throws his ball along a path such as the one shown in FIG. 1 must himself follow an approach to the foul line which is also characterized by a generally curved path. In fact, the degree of curvature taken by the ball between the foul line and the target area bears a predictable relation with the direction followed by the bowler during his approach to the foul line. Thus it is possible to provide an arcuate pointer which closely resembles the characteristics of a particular bowler both during his approach to the foul line and after delivery.

It will, of course, be apparent that a left-handed bowler would be able to use, or select from the same group of pointers used by a right-handed bowler by simply reversing the pointer and mounting the same on a pintle **16** at the opposite side of the card **10**.

In conclusion then, the spot bowler can, with the aid of the device described herein, pre-plan his approach by noting the relative relationship between the pointer **24** and the sight markings on the card **10**. Since the actual bowling alley will have similar markings thereon, he can merely follow the prescribed approach path by reference to such markings. The device itself can be readily carried on his person for ready reference during bowling.

I claim:

1. A device for spot bowlers comprising a rectangular card having indicia adjacent one end representing a conventional formation of bowling pins and having guide spots corresponding to the conventional spots provided

in forwardly spaced relation to the foul line on a conventional bowling alley, a pointer having an arcuate shape which corresponds at least approximately to the curved path taken by a bowling ball after release by a bowler-user of said device, means for pivotally mounting said pointer on said card, so that a forwardly extending portion thereof overlies said pin formation, said pointer mounting means being so constructed that said pointer can be pivotally mounted at any one of said guide spots to permit the bowler-user to see graphically the results of releasing his ball in a range of directions over any of said guide spots, said means for pivotally mounting said pointer on said card comprising a plurality of pintles each of which is located at one of said spots, said pointer defining an opening for receiving one of said pintles, said pintles provided on a transparent plastic cover for said card, which cover has inturned side edge flanges for slidably receiving the marginal side edges of said card, said cover serving to retain said pointer on an associated pintle when arranged in overlying relation to said guide spots and to permit the removal of said pointer when said cover is moved longitudinally of said card.

2. A device for spot bowlers as set forth in claim **1** wherein said card is further characterized by delivery sight markings rearwardly of said foul line, and wherein said pointer has a rearwardly extending portion which overlies said sight markings to enable the bowler-user to plan the delivery phase prior to release of the ball.

3. A device for spot bowlers as set forth in claim **2** wherein said forwardly and rearwardly extending portions of said pointer are curved in the same direction to provide an arcuate pointer of concave-convex plan form.

4. A device for spot bowlers as set forth in claim **3** wherein said delivery sight markings are arranged in sets one of which sets is located in closely spaced relation to said foul line, with the remainder of said sets being spaced rearwardly therefrom in a manner corresponding to similar markings on a bowling alley.

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