Feb. 24, 1953 R. L. GAUT 2,629,599

ELECTRICALLY INDICATING DART GAME BOARD

Filed Aug. 14, 1950

Fig. 1.

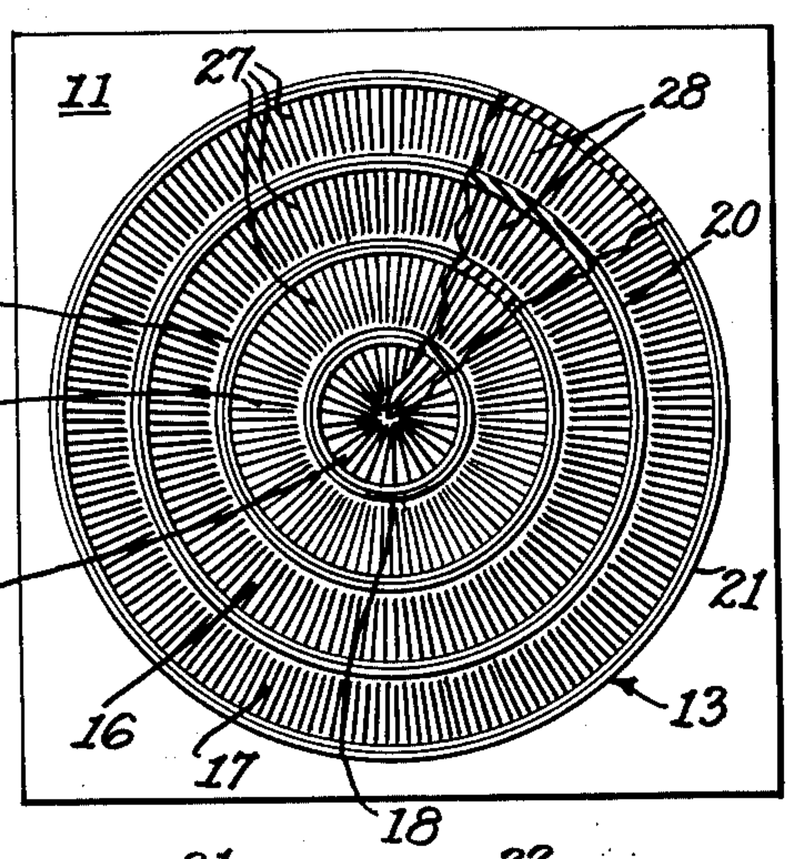


Fig. 2.

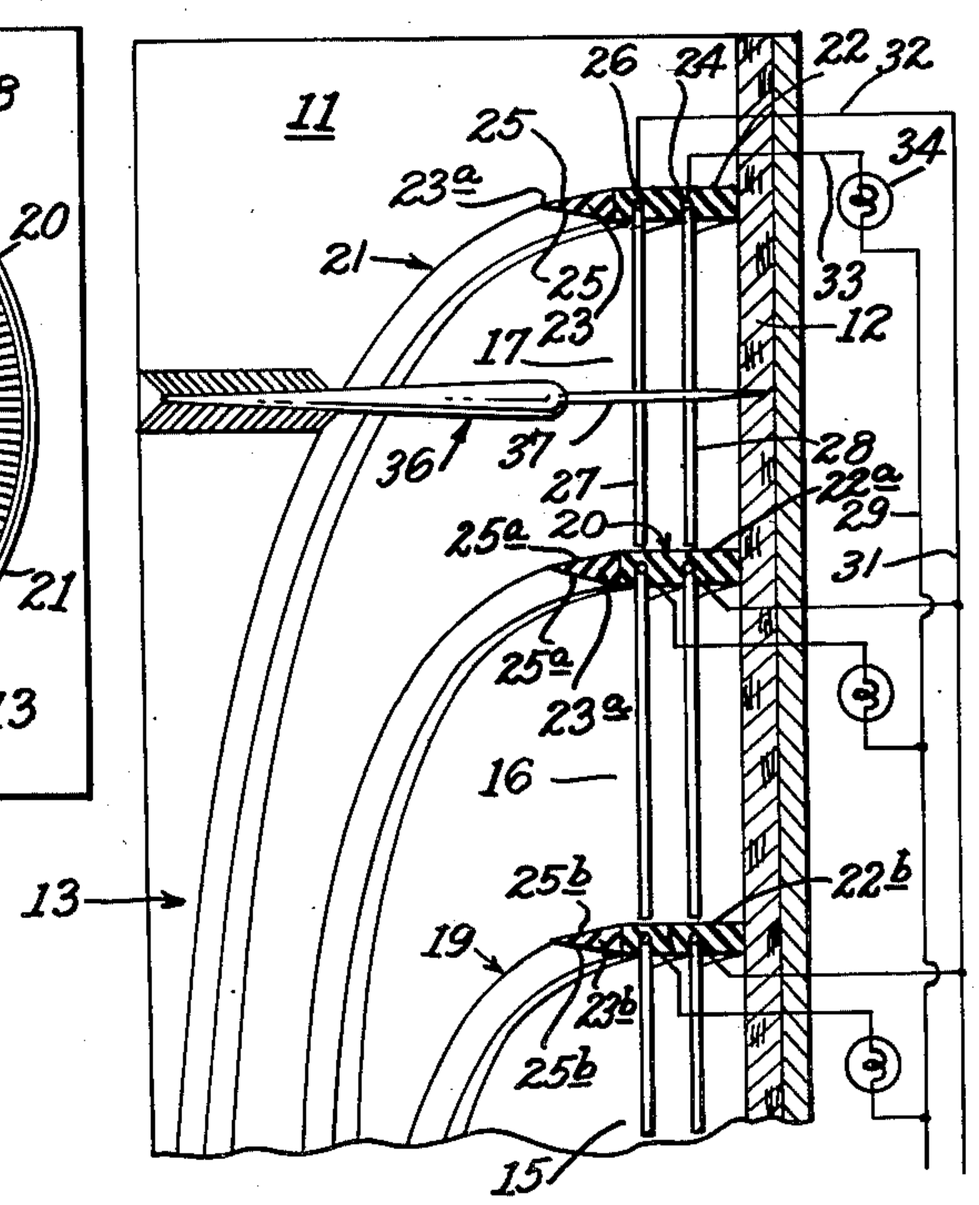


Fig. 3.

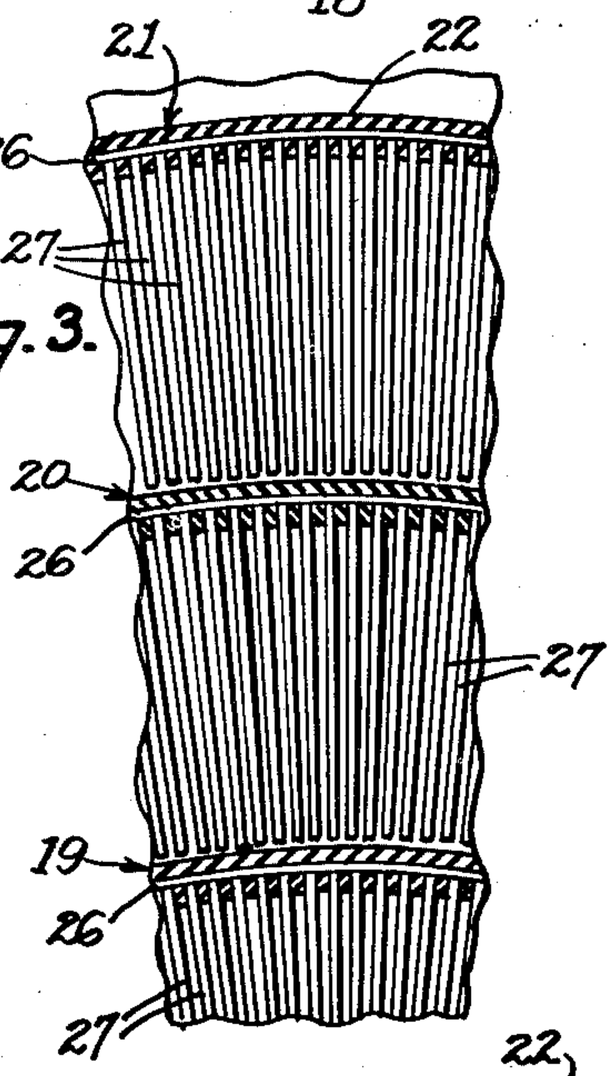


Fig. 4.

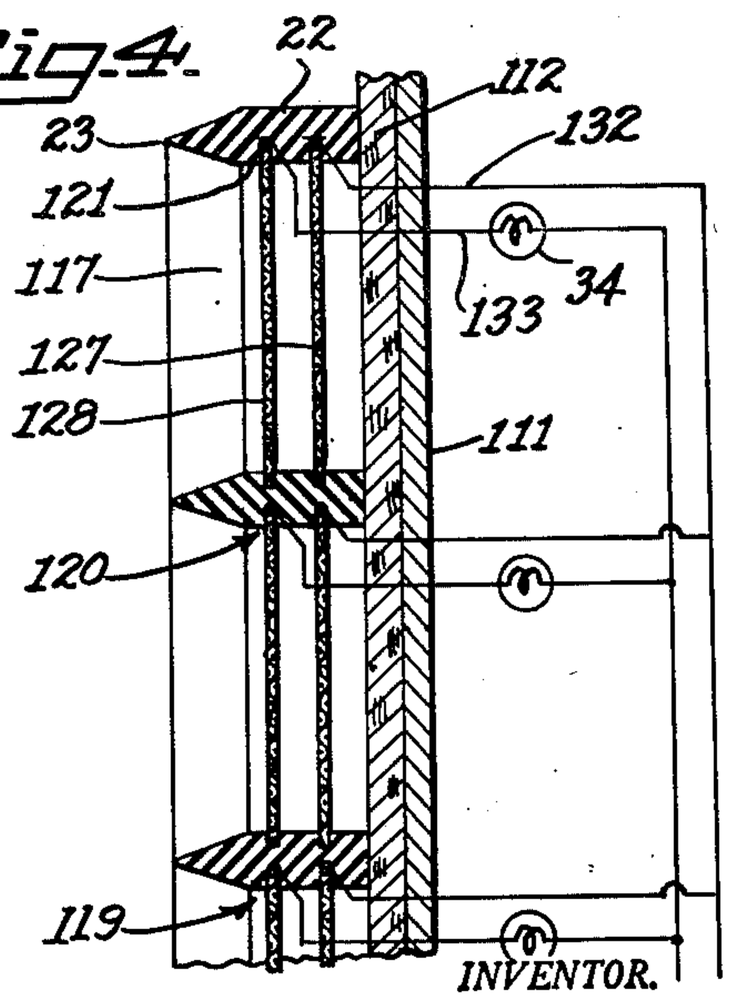
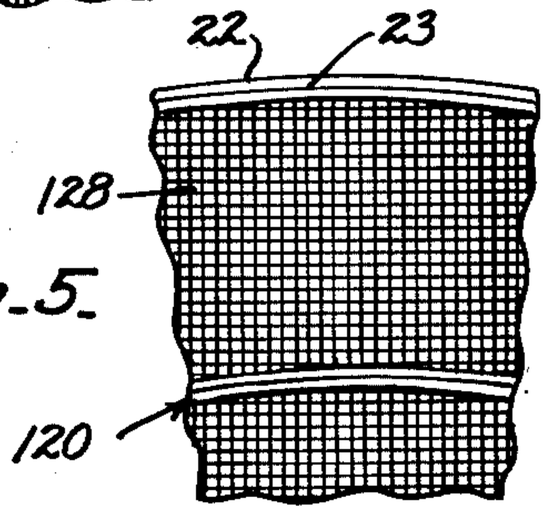


Fig. 5.



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ELECTRICALLY INDICATING DART GAME BOARD

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3 Claims. (Cl. 273—102.2)

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This invention relates to an improved game-board and more particularly relates to an electrically activated dartboard for use with darts having electrically conductive shanks.

In the several embodiments of the present invention illustrated in the accompanying drawings and hereinafter described in more detail, each embodiment comprises, generally, a dart impact area on which is visually delineated a target area. Associated with the target area and substantially co-extensive therewith are first and second electrically conductive dart-penetrable means which are attached to different lead wires from a source of electrical current. The first and second electrically conductive means are spaced from one another and form in effect an open switch—the circuit between said first and second means being adapted to close upon penetration through both means by a dart having an electrically conductive shank.

A principal object of the present invention is to provide a dart-board having a target area which incorporates electrical means associated with a signal element, the arrangement of parts being such that when a dart penetrates a given target area of determined target value the signal associated with that particular area is actuated. An important practical advantage of such an arrangement is that there is practically no possibility of dispute between dart game contestants as to the particular target area into which a dart has penerated.

Another object of the present invention is to provide on a dart-board novel dart deflection means disposed along each of the lines which delineate different target areas. Said means are adapted to deflect a dart into a definite and determinable area of value and to prevent a dart from penetrating into a borderline area between two adjacent target areas and/or into the borderline area between the target area and the non-target area of the board.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings in which similar characters of reference represent corresponding parts in each of the several views.

In the drawings:

Fig. 1 is a front elevational view of a first embodiment of the invention.

Fig. 2 is an enlarged fragmentary view partly in perspective and partly in vertical section of said first embodiment of the present invention.

Fig. 3 is a fragmentary plan view partly in section of the electrically conductive dart-penetrable means incorporated within said first embodiment of the invention.

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Fig. 4 is a fragmentary vertical sectional view of a second embodiment of the invention.

Fig. 5 is a fragmentary view partly in section of a second type of electrically conductive dart penetrable means.

Referring now more specificially to the drawings the numeral 11 designates a rectangular supporting section of a suitable relatively rigid material and which is adapted to form a backing for a sheet of cork 12, or like material, disposed thereover. The cork layer 12 presents a dart impact area into which darts may penetrate and embed themselves.

A target proper, indicated generally at 13, is visually delineated on the face of the board and, as shown, may be in the form of a conventional marksman's target consisting of a central bull's-eye 14, and a plurality of concentrically arranged target areas having different target values. The different target areas are designated by the numerals 15, 16, and 17, respectively.

In the preferred embodiment of the present invention, the various target areas are delineated by a plurality of concentrically disposed annular ridges indicated at 18, 19, 20, and 21, respectively. All of the ridges are formed and constructed similarly to one another except, of course, for the differences in their respective circumferences. It will suffice, therefore, to make specific reference herein to only one of the ridges—ridge 21 being chosen as exemplary of all.

Ridge 21 comprises a body portion 22 attached to the face of impact surface 12 and which, in cross-section, terminates in an isosceles triangular shaped portion 23, defining an apex 23*a* and inclined surfaces 25. Preferably, the ridge is made of a relatively hard, tough electrically insulative material such as relatively hard plastic or the like. As heretofore indicated, there is associated with each separate target area individual electrical means each of which is adapted to operate an electrically activated signal when a dart is thrown into the particular area with which said electrical means is associated. Since the separate electrical means for all of the separate target areas are substantially identically constructed, particular reference is hereby made only to the specific electrical means associated with target area 17 (delineated by ridges 20 and 21, respectively, as hereinabove identified).

In the preferred embodiment of the invention

a pair of spaced annular electrical buses or conduits 24 and 26, respectively, are supported by and preferably housed within the body of ridge 21. A plurality of closely spaced electrically conductive fingers or barbs, such as are indicated at 27, are each attached at one of their ends to bus 24, and each finger extends transversely across the entire width of target area 17. Each finger 27 is formed of metallic wire (such as piano wire) having a high tensile strength, it being readily understood that the fingers may be copper-coated to increase their electrical conductivity potential. The object in making fingers 27 of high tensile strength wire is so that they will be resiliently yieldable to contact, such as may occur when the point or shank of a dart strikes the wires. In other words, the fingers should be formed of a material which will not permanently deform or bend upon impact thereagainst of a thrown dart.

Outer bus 26 is also provided with a plurality of projecting closely spaced electrically conductive dart-penetrable fingers 27 hereinabove described.

It is noted that only one end of each of the fingers 27 and 28 is attached to an associated bus 24 or 26 and that the free ends of the fingers terminate just short of ridge 20.

From a main source of electrical current (not shown) extend a pair of lead wires 29 and 21 to which are connected in series buses 24 and 26 via wires 32 and 33, respectively. Wires 32 and 33 together with buses 24 and 26 and associated fingers 27 and 28 establish in effect a branch circuit to which is connected in series a suitable electrically activated signal, such as lamp 34.

In operation a dart, as indicated generally at 36, having an electrically conductive metal shank 37, when thrown into target area 17 will penetrate through the two layers of spaced fingers 28 and 27 and the pointed end 38 of the dart will embed in cork layer 12. The electrically conductive shank of the dart, upon penetration through the closely spaced fingers into the board, will always establish contact with at least one of the resiliently yieldable fingers 28 and with at least one of the fingers 27. The shank, being electrically conductive, completes the circuit between the electrically charged fingers and between buses 24 and 26, thereby activating signal 24 and automatically indicating the fact that the dart has been projected into target area 17.

As heretofore indicated, target delineating ridges 18, 19, and 20 are all constructed substantially identically to ridge 21 hereinabove specifically described, except for the differences in respective circumferences between said ridges. Therefore, the component elements comprising ridges 19 and 20, as shown in Fig. 2, are numbered similarly to corresponding elements 22 and 23 of ridge 21, but are suffixed by the letters *"a"* and *"b,"* respectively, to distinguish them in the drawings.

It has also been indicated heretofore that the individual electrical means associated with the respective target areas are all substantially identically constructed. Therefore, the component elements comprising the individual electrical means associated with target areas 16 and 15, respectively, as shown in Fig. 2, are numbered similarly to corresponding elements comprising the electrical means associated with target area 17, but are suffixed by the letters *"a"* and *"b"* to distinguish them in the drawings. It is also readily understood that bull's-eye area 14, as shown in Fig. 1, is also provided with associated electrical means (not shown) substantially similar in construction and operation to the electrical means associated with target area 17. Thus, a dart thrown into the bull's-eye area would activate a signal associated with said bull's-eye area.

In lieu of the double rows of electrically conductive contact fingers, heretofore indicated at 27 and 28, other electrical contact means such as are more specifically illustrated in Figs. 4 and 5 may be employed.

Referring now more particularly to the embodiment of the invention illustrated in Figs. 4 and 5, a plurality of concentrically arranged ridges 119, 120, and 121, respectively, are attached to the face of cork layer 112 superimposed on backing 111 and define target areas of different values. The ridges, cork layer, and backboard may be constructed substantially similar to corresponding constructions heretofore explained with respect to the embodiment illustrated in Figs. 1 through 3, inclusive.

However, in lieu of the plurality of projecting layers of fingers heretofore indicated at 27 and 28, there are provided two spaced relatively fine mesh screens 127 and 128 made of electrically conductive wire. These screens are each attached at their opposite edges to ridges 120 and 121, respectively, whereby each of said screens presents an electrical contact area substantially coextensive with target area 117 with which said screens are associated. Each screen presents a plurality of closely spaced apertures or interstices through which the pointed end and shank of a dart may be projected.

The screens are connected in parallel to a main source of current (not shown) by wires 132 and 133 and establish a branch circuit to which is connected in series a suitable electrically activated signal 34.

There are, of course, also provided similarly constructed pairs of spaced screens over each of the other target areas which, in turn, are adapted to electrically actuate a signal upon penetration of a dark shank therethrough.

As heretofore noted, each of the projected ridges delineating a target area terminates adjacent its projecting end in a substantially triangular shaped portion defining a pointed point or apex 23. This arrangement is advantageous in that a dart striking a line of target delineation (comprising one of the pointed ridges) is deflected to one side of the ridge or the other and into an undisputable area of target value, or into an area of no target value. The arrangement prevents or substantially lessens the possibility of disputes arising between contestants in the game as to the particular area in which a dart has penetrated.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

I claim:

1. A dart-board for use with a dart or the like having an electrically conductive shank comprising; a dart impact surface, means visually delineating a target area on said impact surface, a first dart-penetrable electrically-conductive means associated with said target area presenting an electrical contact area substantially coextensive with said target area, a second dart-

penetrable electrically-conductive means spaced from said first named means and presenting a contact area substantially coextensive with said target area and said first named means, said first and second means connected respectively to first and second lead wires from a source of current establishing a normally open circuit between said first and second means and between said lead wires whereby penetration by an electrically conductive shank of a dart through both said first and second means closes the circuit between said lead wires via said shank, said first and second dart-penetrable means comprising a bus and a plurality of closely spaced resiliently yieldable fingers attached at one of their ends to said bus and projecting over said target area.

2. A dart-board according to claim 1 and wherein said first and second means are connected in series to the lead wires of a main source of current establishing a normally open branch circuit, and wherein there is provided an electrically actuated signal connected in series in said branch circuit adapted to actuate on closing of said secondary circuit.

3. A dart-board for use with a dart or the like having an electrically conductive shank comprising, a dart impact surface having marked thereon a target defining a plurality of target areas of different values, individual outer electrically-conductive dart-penetrable means associated with each target area, each outer electrically conductive means presenting an electrical contact area substantially coextensive with the target area with which it is respectively associated, individual inner electrically-conductive dart-penetrable means associated with each

target area, each said inner electrically conductive means presenting an electrical contact area substantially coextensive with the target area with which it is associated and spaced inwardly from the outer electrically conductive means associated with said target area, each of said outer electrically-conductive means connected to one lead wire from a source of electrical current and each of said inner electrically-conductive means connected to the other lead wire from said source of current, whereby when a dart having an electrically conductive shank penetrates both said inner and outer electrically conductive means associated with one of said target areas, an electrical circuit between said inner and outer means and between said first and second lead wires is closed via said shank, said individual inner and outer electrically conductive means each comprising a bus and a plurality of closely spaced resiliently yieldable fingers attached at one of their ends to said bus and projecting over the target area with which said fingers are respectively associated.

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