Sept. 26, 1950 T. C. METZGER 2,523,773

DART TARGET WITH INDICATOR

Filed Oct. 16, 1946 3 Sheets-Sheet 1

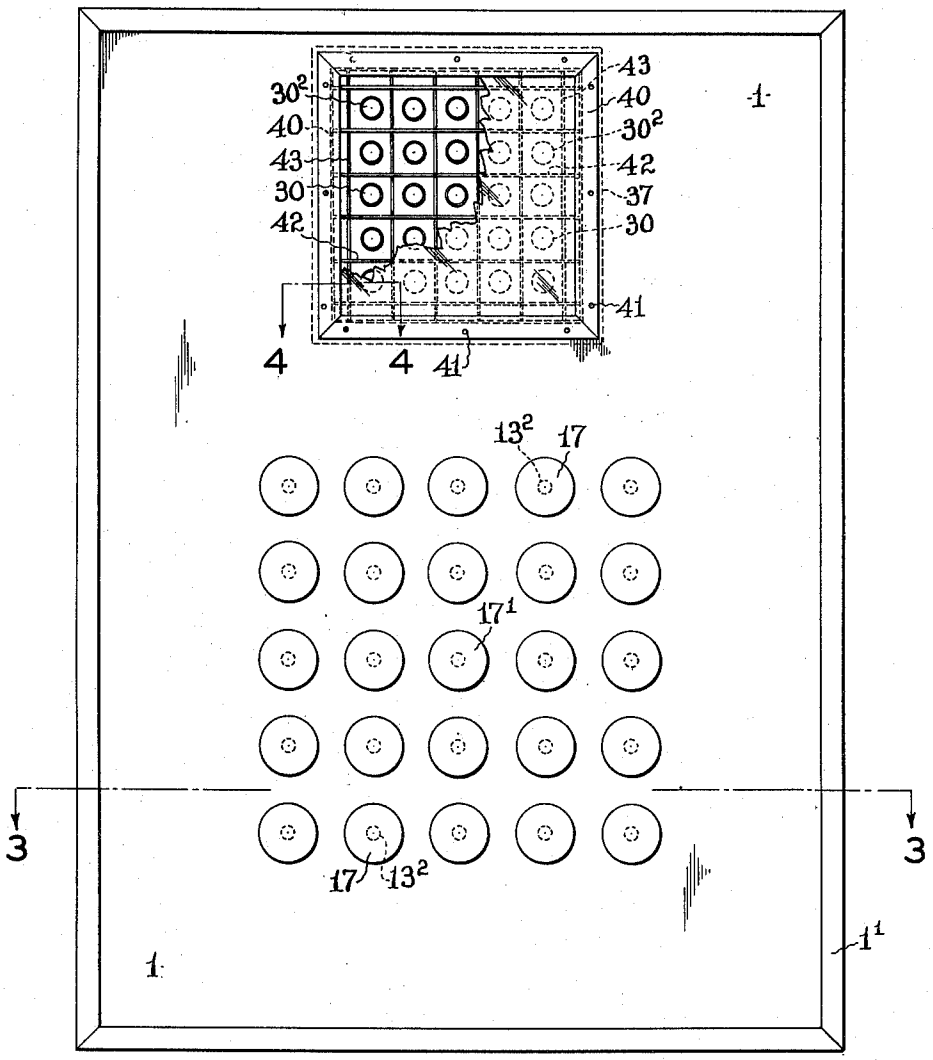


FIG. 1

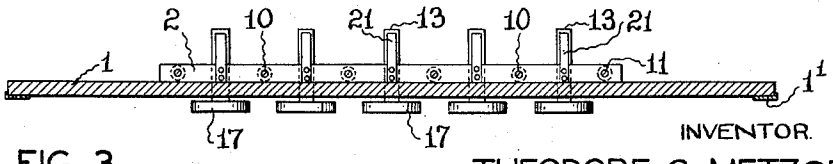


FIG. 3

INVENTOR.
THEODORE C. METZGER
BY
George W. Saywell
ATTORNEY.

Sept. 26, 1950 T. C. METZGER 2,523,773

DART TARGET WITH INDICATOR

Filed Oct. 16, 1946 3 Sheets-Sheet 2

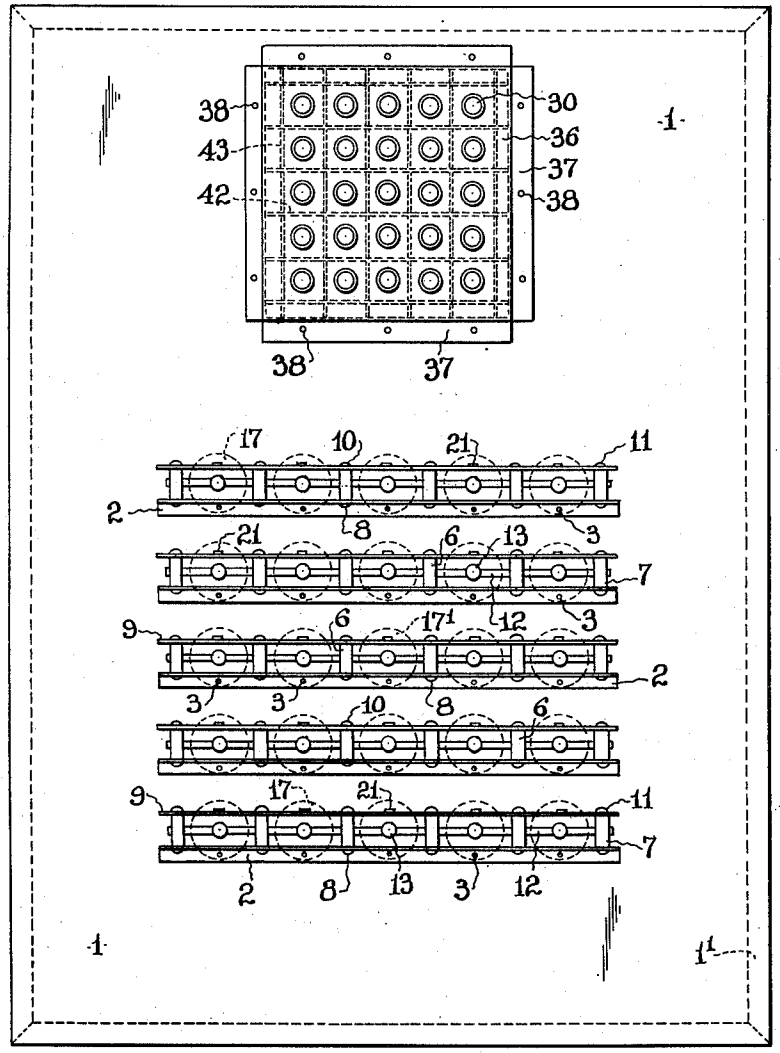


FIG. 2

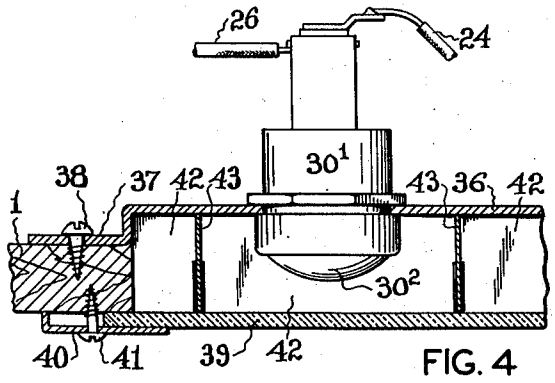


FIG. 4

INVENTOR.
THEODORE C. METZGER
BY George W. Saywell
ATTORNEY.

Sept. 26, 1950 T. C. METZGER 2,523,773

DART TARGET WITH INDICATOR

Filed Oct. 16, 1946 3 Sheets-Sheet 3

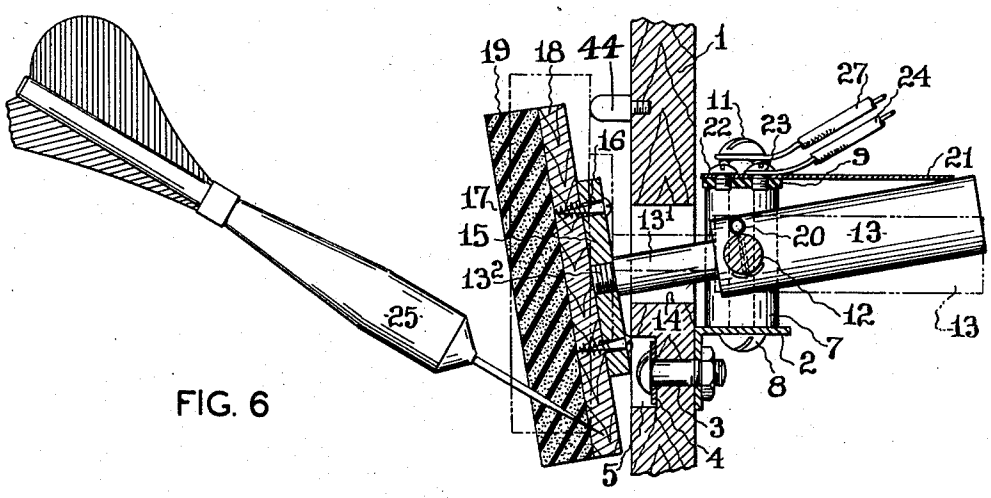


FIG. 6

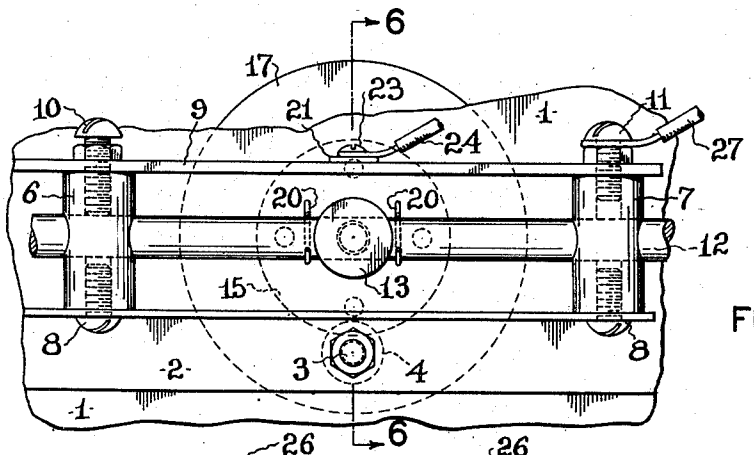


FIG. 5

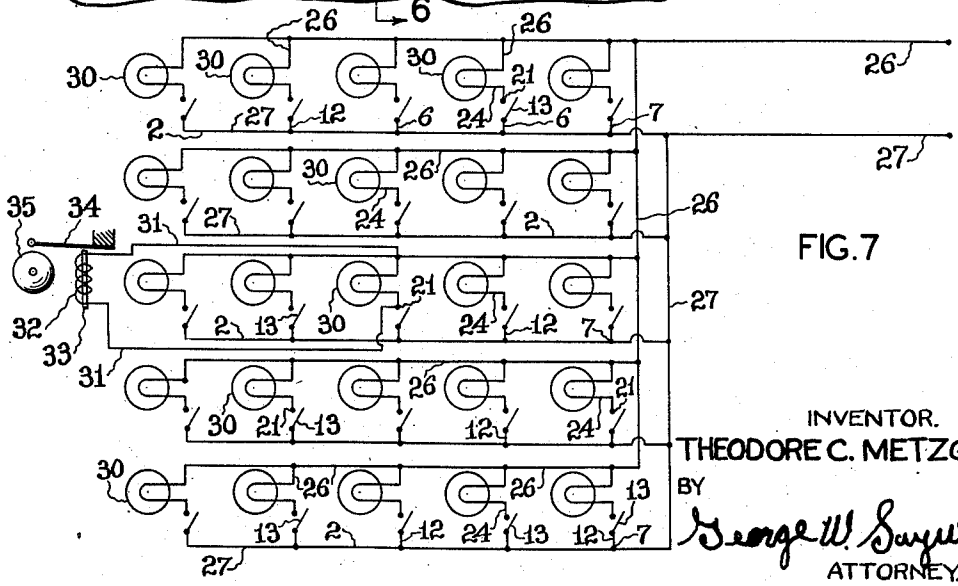


FIG. 7

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DART TARGET WITH INDICATOR

Theodore C. Metzger, Lorain, Ohio, assignor of one-half to L. Paul Wottring, Amherst, Ohio

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3 Claims. (Cl. 273—102.2)

1

The invention relates to improvements in games and particularly to a game of skill in which darts and targets are employed. An important part of the invention consists in improved means for indicating when a dart hits a target.

The following description and the accompanying drawings present in detail certain means illustrating the invention, such means disclosing, however, only one of the various forms in which the principle of the invention may be embodied.

In said drawings:

Figure 1 is a front elevation of the game, the indicating mechanism forming part thereof being partially broken away;

Figure 2 is a rear elevation of the game;

Figure 3 is a horizontal section, taken in the plane indicated by the line 3—3, Figure 1;

Figure 4 is a partial horizontal section, on an enlarged scale, taken in the plane indicated by the line 4—4, Figure 1;

Figure 5 is a fragmentary rear elevation, upon an enlarged scale;

Figure 6 is a fragmentary vertical section, taken in the plane indicated by the line 6—6, Figure 5, the view showing a dart engaged with a target, the view also showing in dot and dash lines the several positions of certain parts of the game when the target is not engaged by a dart; and

Figure 7 is a wiring diagram.

Referring to the annexed drawings in which the respective parts are indicated by the same respective numbers in the several views, an insulating fibre board 1 strengthened and trimmed by peripheral front angles 1^1 serves as a base or backing for the operating elements comprising the improved game. This board 1 is mounted in a substantially vertical position, such as illustrated in Figures 1 and 2, when playing the game, and has secured to its rear face by bolts 3, Figure 2, a plurality of horizontal vertically-spaced steel angles 2, of which angles five are shown in the accompanying drawings for purposes of illustration. The angles 2 need not necessarily be formed of steel or conductive material but are shown so formed for the purpose of ruggedness inasmuch as the apparatus of the game is often subjected to hard usage. The bolts 3 extend through the base 1 and are secured at the rear thereof, the heads of the bolts being seated on washers 4 at the base of recesses 5 formed in the front of the base 1, Figure 6.

Mounted on the top leg of each of the angles 2 are a series of upright transversely-spaced brass or steel cylinders, Figure 5, which are longitudinally internally-threaded at top and bottom and are secured by screws 8 which pass through the top leg of the angle 2 and engage the bottom threaded portions of the cylinders. For purposes of illustration, six such cylinders are shown mounted on each of the angles 2, of which five are indicated by the number "6" and one by the number "7," for a reason hereinafter fully described. Supported on the top of each series of cylinders 6 and 7 and secured by screws 10 and 11 which engage the top threaded portions of the cylinders 6 and 7 are insulating strips 9. The central portions of the cylinders 6 and 7 are transversely reamed and mounted therein and secured by the screws 8 and 10 engaging the cylinders 6 is a steel shaft 12, one shaft for each series of cylinders 6 and 7. Mounted on the shaft 12, intermediate each pair of cylinders, is a cylindrical brass rocker 13, Figure 6, having a reduced intermediate portion 13^1 and a still further reduced terminal portion 13^2. The mounting of the rocker 13 on the shaft 12 is adjacent the inner end of the enlarged portion of the rocker, and the reduced portion 13^1 thereof passes through an enlarged hole 14 formed in the base 1, and the terminal portion 13^2 extends outwardly forwardly of the front face of the base 1. The front terminal portion 13^2 of each of the rockers 13 has screw-threaded engagement with a backing member 15 for a target, which member 15 is secured by screws 16 to the rear wood portion 18 of a composite target 17 whose front portion 19 is formed of a soft rubber-like material. To retain the rockers 13 in proper position on the shafts 12 cotters 20 are employed which engage the shafts 12 adjacently to and upon each side of the rockers 13.

2

Secured adjacent one end by screws 22 to the non-conducting strips 9 and extended rearwardly from said strips 9 over, parallel to, and in vertical alinement with each of the cylindrical rockers 13 is a contact plate 21. Adjacently rearwardly of each screw 22 is a binding post 23 which passes through the contact plate 21 and engages the non-conducting strip 9.

The game is played by hurling darts 25 toward the board 1 in an attempt to engage one, or a certain one, of the targets 17. These targets 17 may have values, as desired, or different values amongst themselves, for the purpose of building up by special skill a maximum score by the throwing of a certain number of darts 25.

Indication of success in hitting a target 17 with a dart 25 is given by a lamp 30 which is automatically lighted by the engagement of the

dart 25 with the target 17. This lighting of the lamp 30 is occasioned by the closing of a light circuit through the weight of the dart 25. It has been stated that the cylindrical members 13 rock on the shafts 12. These rockers 13 are so relatively balanced upon the two sides of the axis of the shaft 12 that the weight and leverage of the cylinder 13 rearwardly of the axis of the shaft 12 are slightly in excess of those forwardly of the axis of the shaft 12 so that ordinarily the several elements occupy the position shown in dot and dash lines in Figure 6, the rocker 13 being held substantially horizontal by a stop 44 mounted in the front face of the frame 1, which stop is engaged by the upper rear face of the wood portion 18 of the target 17. However, when a dart 25 engages the target 17, the additional weight of the dart 25 swings the target 15 on its pivotal axis away from the stop and thus rocks the cylinder 13 into the position shown in full lines in Figure 6 so that it engages the contact plate 21. The cylindrical rocker 13 thereby serves as a switch to close an electric circuit.

Referring particularly to Figure 7, main conductors 26 and 27 connect with a source of power (not shown), conductor 27 being connected to end cylinders 7 by binding posts 11, Figures 5 and 6, and conductor 26 being connected to lamps 30, by respective branch conductors. The two sides of the line for each lamp are connected or disconnected through the cylindrical rocker 13, which serves as a switch, and a branch conductor 24, one end of each of which is connected to a lamp 30 and the other end connected by the binding post 23 to the contact plate 21. There is a lamp 30 for each of the targets 17 and each of the rocker switches 13 and its cooperating contact plate 21, so that each individual lamp 30 is individually controlled by the effect of the weight of a dart 25 upon a certain one of the targets 17.

Referring to Figures 5, 6, and 7, a complete electric circuit, when a dart 25 pierces and remains attached to a target 17, includes the conductor 27, binding post 11, cylinder 7, shaft 12, rear target extension 13, contact plate 21, binding post 23, conductor 24, lamp 30, and conductor 26.

In addition, one or more of the targets, the central one 17^1, as illustrated in the accompanying drawings, is associated with a chime 35, Figure 7, by reason of the lamp 30 which is controlled by said target 17^1 being connected in multiple by a branch conductor 31 including a coil 32 therein actuating a solenoid 33. The solenoid 33 is adapted to actuate a clapper 34 which impinges upon the chime 35. The action is rather that of a chime than a bell since the clapper 34 is held in engagement with the chime 35 after the initial impingement thereof until the associated light 30 goes out due to the removal of the dart 25 from the target 17^1 and the consequent rocking of the switch 13 out of contact with the plate 21.

The lamps 30 are mounted in customary lamp housings 30^1 provided with front caps 30^2 having glass face portions. All of these lamp housings 30^1 are mounted in a frame 36 which is of angular tin box formation having peripheral flanges 37 secured to the rear face of the baseboard 1 by screws 38. A glass front 39 for all of the lamps 30 is slidably positioned in or removed from the front of the baseboard 1 by removing one of certain peripheral trim members 40, Figures 1 and 4, which trim members 40 are

angular formation secured to the front face of the baseboard 1 by means of screws 41 for retaining the glass front 39, as clearly appears in Figure 4. A formation, similar to an egg crate is provided between the base of the tin box 36 and the inside face of the glass front 39 to provide separate compartments within which the lamps 30 are contained, said formation comprising spaced criss-cross members 42 and 43.

The invention lends itself to the use of not only darts but also all other missiles which will engage and cling to the targets, such as arrows.

What I claim is:

1. A game comprising a main substantially vertical insulating support, a horizontal conductive shaft mounted thereon in parallel relation thereto, conductive mountings for the shaft and in circuit therewith, a target pivotally mounted on the shaft and formed with a conductive switch end portion in circuit with and extended from the shaft on the side of the latter opposite to the face of the target, the two target portions upon opposite sides of the pivotal axis being unbalanced with the switch end portion of the target tending to move the target face toward the support, a stop secured to the support, the stop limiting the movement of the target face toward the support to a substantially vertical position with the conductive switch end portion of the target in substantially horizontal position, the unbalanced relation being such as to permit the target to swing on the pivotal axis away from the stop when the weight of a missile is added to the target face, a contact plate mounted on the support and extended adjacent said switch end portion of the target to be contacted by the latter when the target swings on its pivotal axis under the weight of a missile, a conductor electrically connected to the shaft mountings, a second conductor electrically connected to the contact plate, and a sensible signal in the circuit which includes the first conductor, the mountings, the shaft, the conductive switch end portion of the target, the contact plate, the signal, and the second conductor.

2. A game comprising a main substantially vertical insulating support, an angle secured thereto and extended thereacross, a series of spaced metallic mountings secured to the angle, a horizontal conductive shaft extended through and supported by said mountings in parallel relation to the support, the shaft being in electrical contact with the mountings, a conductor secured by a binding post to one of said mountings, a plurality of contact plates secured to the mountings and insulated therefrom, a plurality of targets pivotally mounted on the shaft and each formed with a conductive switch end portion in circuit with and extended from the shaft on the side of the latter opposite to the face of the target, the conductive switch end portions of the respective targets being disposed adjacent to but out of contact with the respective contact plates in the normal condition of the respective targets with no missile supported thereby, the two target portions upon opposite sides of the pivotal axis being unbalanced with the switch end portion of the target tending to move the target face toward the support, a stop secured to the support, the stop limiting the movement of the target face toward the support to a substantially vertical position with the conductive switch end of the target in substantially horizontal position, the unbalanced relation being such as to permit the target to swing on the pivotal axis away from the stop when the

weight of a missile is added to the target face and cause the conductive switch end portion to contact the contact plate, a second conductor having branches electrically connected to the respective contact plates, and a sensible signal in each of said branch conductors.

3. A game comprising a main substantially vertical insulating support, a series of vertically spaced angles secured thereto and extended thereacross, a series of spaced metallic mountings secured to each angle, a horizontal conductive shaft extended through and supported by each series of mountings, said shafts being mounted in parallel relation to the main support, a conductor having branches secured to the end mountings of the respective series of mountings, insulating support plates secured to the respective series of mountings, a plurality of contact plates, one for each mounting, secured to each of the respective insulating support plates, a plurality of targets pivotally mounted on each shaft and each formed with a conductive switch end portion in circuit with and extended from the shaft on the side of the latter opposite to the face of the target, the two target portions upon opposite sides of the pivotal axis being unbalanced with the switch end portion of the target tending to move the target face toward the support, a stop for the target secured to the support, the stop limiting the movement of the target face toward the support to a substantially vertical position

with the conductive switch end portion of the target in substantially horizontal position adjacent to but out of contact with the contact plate, the unbalanced relation being such as to permit the target to swing on the pivotal axis away from the stop when the weight of a missile is added to the target face and effect the contact of the conductive switch end portion with the contact plate, a second conductor having branches for each of the series of targets, branch conductors from the aforementioned second conductor branches for the respective targets of each series electrically connected to the respective contact plates, and a sensible signal in each of said last-mentioned branch conductors.

THEODORE C. METZGER.

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