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SCORING DEVICE

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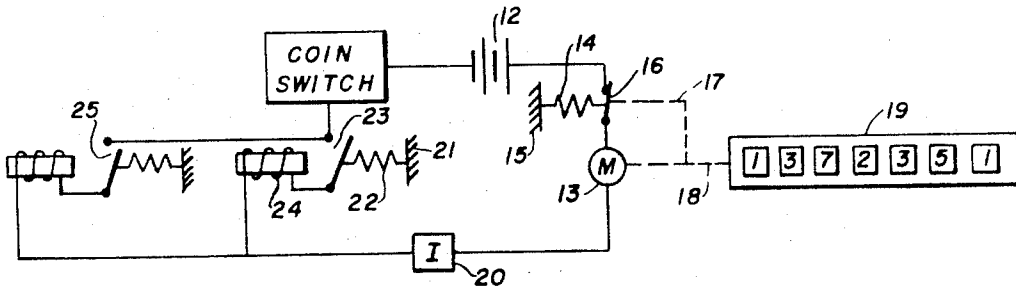


FIG. 2.

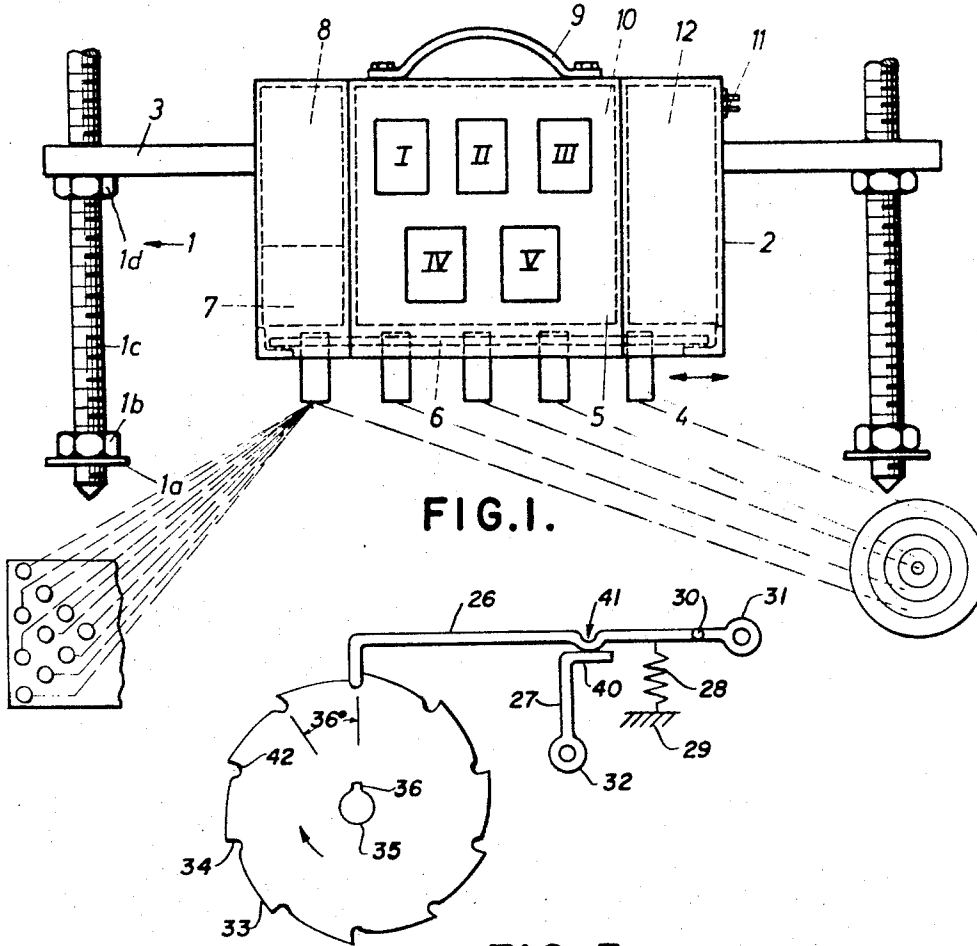


FIG. 1.

FIG. 3.

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## SCORING DEVICE

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6 Claims

### ABSTRACT OF THE DISCLOSURE

A scoring device portable to any game site; it includes bolt means characterized by a disk bolt and disk to give a wide range of adjustability to insure that the housing of the device is level. Impact sensing contact switches are connected into an electrical scoring means carried in the housing. These contact switches are adjustable on the housing along a guide rail thereof or they can be removed from the housing and set remotely therefrom in the form of a play article such as a target.

The present invention relates to scoring devices for games such as employing a missile to be directed toward a target. More particularly the invention pertains to a portable device which can be employed for purposes of scoring the results of games of the type mentioned above.

The objects of the invention are:

- to provide a multipurpose scoring device that can be used for any game in which a scoring event can be made to close an electrical contact;
- to provide such a scoring device that is portable to any game site;
- to provide counting, indicating and money collecting capabilities in a device providing the above objects.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which like reference numerals designate like parts throughout the figures thereof and wherein:

FIGURE 1 is a partially schematic elevational view of an embodiment of the invention.

FIGURE 2 is a circuit diagram of an embodiment of the invention.

FIGURE 3 shows a switch in the invention.

Referring in detail to FIGURE 1, the device has a housing 2 with supporting arms 3 which are engaged by three leveling mechanisms 1, two of which are shown. The leveling mechanisms employed in this embodiment are screw bolts 1c having a nut 1d on which the respective support 3 rests. By turning the nut 1d, the distance of the housing 2 from the ground can be varied. At the foot of the screw bolt 1c, a disk 1a is provided which has a further nut 1b. This disk is to prevent the screw bolt from sinking into soft ground. When appropriate ground conditions prevail, the disk can be omitted. At the housing 2, several contact rods are provided. These rods close switches such as 23 and 25 in FIGURE 2, when a missile such as a ball touches them. When hit, the contact rod itself or a predetermined zone on the indicator board lights up or rings. For instance, FIGURE 2 shows a circuit to light the Roman numeral I, when the contact rods actuating switches 23 or 25. In a modification, the contact rod can be disengaged when touched by the play article, so that it no longer participates in the further game process. At the front face of the housing, an indicator board 5 is provided, with numbers or indicia of

the game to be played. Furthermore, a handle 9 for carrying the device is attached to the housing, along with a plug 11 for connecting the device to the electrical mains. Alternatively it is also possible to employ a battery 12 provided within the housing for operating the device.

As mentioned above, the device can have a conventional coin-responsive mechanism 8 which ejects, after the insertion of a coin, one or several play articles from a box 10 and regulates the play period. Furthermore, a counting mechanism 7 for registering the results of the game can be provided.

FIGURE 2 shows the electrical part of an embodiment of the invention. If, for instance, a ball hits the contact rods 4 actuating switch 23, the switch lever closes contact. When the contact is closed, current flows from the battery 12 and the electromagnet 24 holds the switch closed. In the particular game shown here, the closing of switches 25 or 23 causes panel 20 to light up the Roman numeral I. In addition, the small self-starting motor 13 starts running and its shaft moves the counter 19.

Counter 19 is of conventional type in which the number wheels are numbered 0 to 9 around their circumference. Cam wheel 33 of FIGURE 3 is mounted on the motor shaft by hole 35 and keyway 36 and allows the motor to run only long enough to move the counter forward one unit. The cam wheel operates switch 16. The detailed structure is shown in FIGURE 3. Ordinarily, the contacts 40 and 41 of the switch 16 are touching. When the motor is not running, the tip of the arm 26 is resting in the groove 42 and contact 40 is resiliently pressed downwards by spring 28 attached to support 29. The arm 26 rotates about pivot 30. As the cam rotates in the direction shown by the arrow, the arm is lifted out of a groove 42, but the switch still remains in the closed position. As rotation continues further, a cam 34 lifts the arm further, so that the contact is broken. Because of the rotational inertia of the motor, rotation continues until the arm 26 again falls into a groove 42. When the switch 16 is opened by the cam wheel, the electromagnet fails, thereby opening switch 23.

The particular cam wheel shown has 10 equally spaced cams and so it provides counting by ones. Counting by ones is provided either by the closing of switch 23 or by the closing of switch 25. If counting by, for instance, fives is desired, the circuit diagram can be analogously duplicated and a switch operated by a cam wheel with two cams spaced 180° apart. A Roman numeral V light can be placed in this circuit.

An optional, conventional coin switch is shown in FIGURE 2. It can be used to close a circuit switch for a desired length of playing time.

Although the contacts 4 are shown in FIGURE 1 near the device, in a further modification of the present invention, the switches and contacts can be adjustably locatable away from the body of the device by the provision of electrical cord fed from conventional spring wind cord feeders. A contact and its switch can then be placed anywhere in a target area. The contact rods can also be adjustably mounted, for example, on guide rails 6. The contacts or contact rods can furthermore be provided at the housing or at the cables in such a manner that they can be exchanged, for example, plugged in. The shape and size of the contacts or contact rods can be varied, depending upon the purpose of the game, for example, rod 4 can be a figure, or known play articles, and finally a disk or a ring.

The present invention is applicable to any game in which a scoring event can be made to close a contact switch. Thus, the embodiment presented here is applicable for carnival games, wherein a successfully tossed missile

closes a contact switch, for target practice, wherein a successfully aimed bullet closes a contact switch in a ones counting circuit, in a fives counting circuit, etc., or for bowling, wherein the absence of a pin causes an inertial contact switch to swing into the closed position for the instant needed for actuation of the electromagnet. Other examples of applicable games are:

(a) Ball games of various types and ball sizes, or disks shot off by means of pushers, i.e., shuffleboard.

(b) Balls on lawn areas to be propelled by golf clubs or croquet mallets.

(c) Ice games on natural ice or on a prepared rink; here, the contact rods can serve as target areas having the shape of disks or rings.

(d) Throw games and billiards.

The invention is applicable to many more games, the only adaptation needed being a workable contact switch for the particular game. Thus, the present invention represents an almost universally applicable scoring device for use, for instance in carnivals and schools.

It should be understood, of course, that the foregoing disclosure relates to only preferred embodiments of the invention and that it is intended to cover all changes and modifications of the examples of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention set forth in the appended claims.

I claim:

1. A scoring device, comprising: a portable housing; a leveling means therefor; an electrical scoring means mounted in the housing; and at least one contact switch controllingly connected to said scoring means; said housing including a guide rail mounted in the bottom of said housing, said at least one contact switch movably mounted on said guide rail adjustably locatable to respond to every direction of impact.

2. A scoring device, comprising: a portable housing; a leveling means therefor; an electrical scoring means

mounted in the housing; and at least one contact switch controllingly connected to said scoring means; said leveling means comprising a plurality of bolt units, each of said bolt units comprising a support arm connected to said housing; a screw bolt extending downwards through said arm and a nut on the bolt for the support of said arm; said bolt units further each comprising on the bottom end of the bolt: a disk and a disk nut.

3. A scoring device as claimed in claim 2, further comprising means to locate said at least one contact switch at different positions relative to said housing.

4. A scoring device as claimed in claim 3, said at least one contact switch shaped as a play article.

5. A scoring device as claimed in claim 4, said at least one contact switch mounted replaceably and detachably from said scoring means.

6. A scoring device as claimed in claim 3, wherein said at least one contact switch is positioned remotely from said housing.

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