April 7, 1964 R. S. LA ROCCA 3,128,097

ELECTRIC FENCING TARGET FOR INSTRUCTING THE BLIND

Filed June 1, 1962

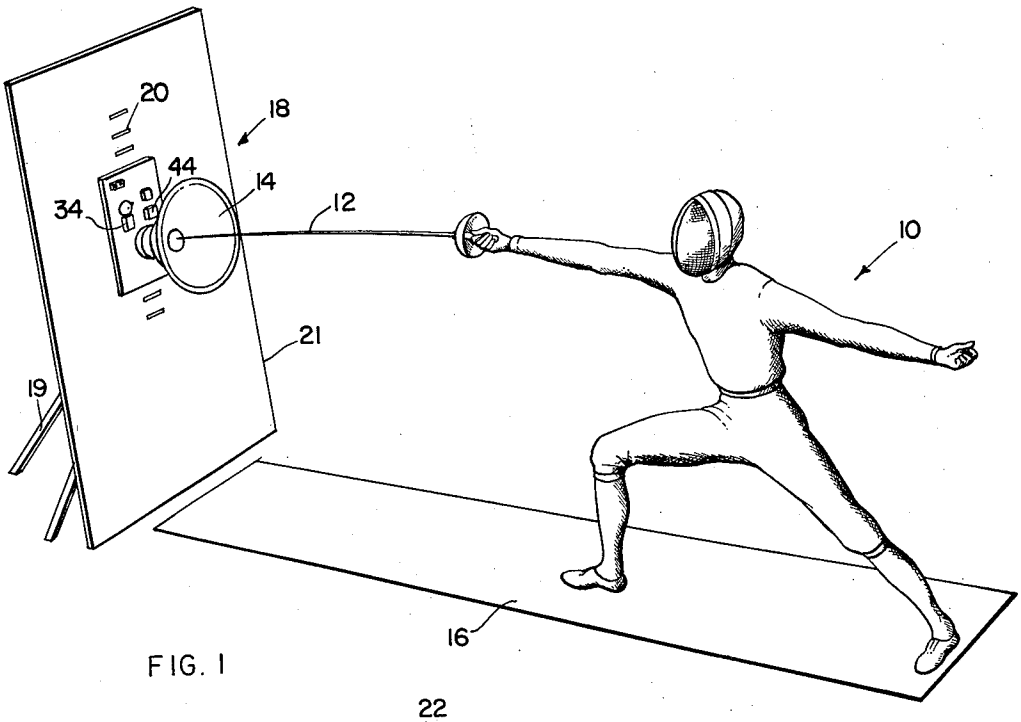


FIG. 1

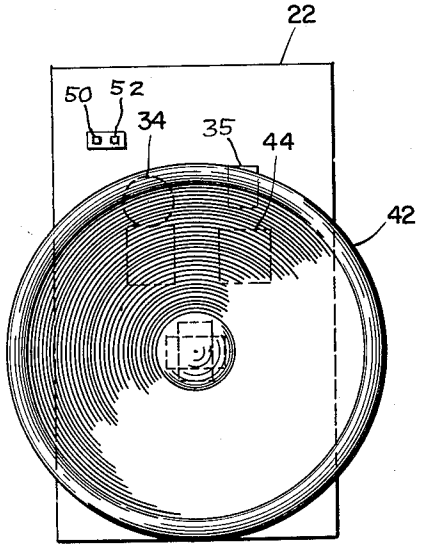


FIG.2

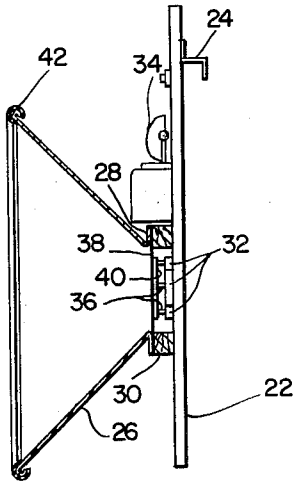


FIG.3

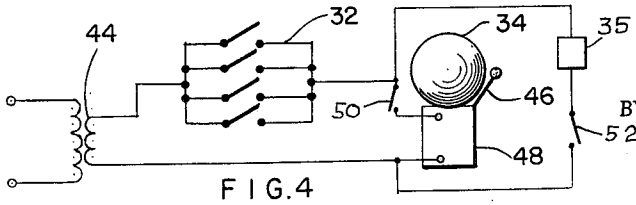


FIG.4

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ELECTRIC FENCING TARGET FOR INSTRUCTING THE BLIND

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This invention relates generally to fencing equipment and more particularly is directed towards a novel target for use in instructing blind students in the art of fencing.

One of the most difficult problems encountered by instructors engaged in teaching fencing to the blind involves orienting the student to a particular target area whether this area is on another student or a dummy target. Once the student has properly oriented himself with respect to a particular target, he may develop, by practice and under guidance, into a skillful fencer. However, the development of precise orientation requires long hours of practice and without the constant presence of an instructor to guide the student, such orientation normally would be impossible to attain.

Accordingly, it is an object of the present invention to provide a target which may be used either with or without an instructor for orienting blind students with respect to a particular target area.

Another object of this invention is to provide a fencing target which blind students may use effectively with complete safety and which may be adjusted to various heights to suit the particular student.

More particularly, this invention features a fencing target which is audibly responsive to impingement by a fencing foil and which is provided with a hollow conical dummy target for assisting the student in locating the true target area. As another feature of this invention, the target is arranged for vertical adjustment on a portable stand and is used with a friction mat which is placed in front of the target whereby the student, by reason of the surface texture of the mat, may sense his general alignment with respect to the target.

But these and other features of the invention, along with further objects and advantages thereof will become more fully apparent from the following detailed description of a preferred embodiment thereof, with reference being made to the accompanying drawings in which:

FIG. 1 is a view in perspective of a target made according to the invention and in use by a student,

FIG. 2 is a view in front elevation of an electric fencing target made according to the invention,

FIG. 3 is a sectional view in side elevation thereof, and,

FIG. 4 is a circuit diagram of the audible signal system employed by the invention.

Referring now to the drawings, the reference character **10** generally indicates a blind student wielding a foil **12** before a target **14** and standing upon a mat or strap **16** which may be of rubber, leather or any similar material having a friction surface. Typically, the strap **16** is two feet in width and may be twenty feet or so in length. The strap is generally rectangular and is placed lengthwise directly in front of the target so that the blind student, by reason of the frictional character of the mat surface, as felt through his feet, may orient himself in a general manner with respect to the target **14**.

The target **14**, as shown in FIG. 1, is mounted upon a portable stand **18** which is supported by tripod legs **19**. The front surface of the stand may be a rectangular board **21** of perhaps six feet in height by two feet in width and provided with a series of hangers **20** spaced from one another vertically so that the target **14** may be adjusted to the height best suited for the particular student.

The target itself includes a recangular mounting board **22** on the back surface of which is a hook **24** for engagement with a selected hanger **20**. On the front surface of the board **22** there is a hollow, frusto-conical guide **26**, of metal, plastic, or the like, the apex of which terminates in a flange **28** mounted against the board **22** by means of an annulus **30**. Typically the guide **26** is 22" in diameter across its outer rim and 5" in diameter across its inner end. Clustered within the cone and mounted against the board **22** is a group of switches **32** which are electrically connected to a bell **34** and a buzzer **35** also mounted on the board **22**. Preferably, these switches comprise four rectangular, normally open spring loaded switches each having an elongated bar-type actuator **36** and are arranged as four sides of a square as illustrated in FIG. 2. A leather or fabric diaphragm **38** masks the switches and carries a thin disc **40** made of wood or the like. The peripheral margin of the diaphragm **38** may be sandwiched between the annulus **30** and the flange **28**. Preferably the exposed surface of the diaphragm **38** should have the somewhat roughened texture characteristic of leather so that the tip of the foil will not tend to slip across it when it strikes it directly but rather will tend to be held at the point of contact.

Attached about the outer peripheral edge of the guide cone **26** is an annular rubber guard **42** which protects the student from lacerations should be accidentally bump into the target. It will be understood that the student practicing with the target in the manner suggested in FIG. 1 will learn to orient himself with respect to the target by means of the audible signal given off by the target when struck with the foil. A direct touché at the diaphragm **40** will close one or all of the switches **32** completing the circuit to the alarm and providing an audible signal whereby the student will know that he found the target. A close hit with the foil within the guide cone **26** will deflect the tip of the foil in against the diaphragm **40**. The dummy target provided by the conical guide will ease the student's task in finding the true target.

In FIG. 4 there is illustrated a circuit which may be used to operate the alarm **34**. The power for the circuit may be drawn from a battery or from an ordinary 115 volt line as shown. In such a case a step down transformer **44** is provided and is connected through the switches **32**, arranged in parallel to the intermittently actuated flapper **46** which is operated by the solenoid **48**. The flapper, in turn, is arranged to strike the bell **34** thereby providing the audible signal which indicates to the student that he has struck the target.

The bell **34** and buzzer **35** are arranged for selective operation by means of a pair of control switches **50** and **52**. Either one of these switches may be closed by the instructor or by the student depending upon which of the two alarms is to be used. Once the use of the target is concluded, both switches should be opened.

It will be noted in FIGS. 2 and 3 that the bell, buzzer and transformer are clustered behind the guide **26** so that they cannot be hit by the foil. As a further safeguard, these components may be enclosed within a suitable housing (not shown) mounted on the board **22**. By locating the bell **34** directly behind the guide **26**, the student may thereby also use the noise source as a means to orient himself properly with respect to the target.

It will be appreciated that the target described herein will be of substantial advantage in instructing blind students in the art of fencing. The target may be used for individual practice by a student without supervision or an instructor may use a number of them when teaching a large group. The target may be used together with the portable stand or it may be conveniently mounted on a wall or any upright support having a suitable hanger. In addition, the target may be used with any of a variety of fencing devices such as foils and epees for example.

While the invention has been described with particular

reference to the illustrated embodiment, it will be understood that numerous modifications thereto will appear to those skilled in the art without departing from the invention. Accordingly, the above description should be taken as illustrative of the invention rather than in a limiting sense.

Having thus described my invention, what I claim and desire to obtain by Letters Patent of the United States is:

A target for instructing blind students in the art of fencing, comprising a base support, a frustrum of a hollow cone mounted on said support and having its base portion extending outwardly therefrom, said cone being formed from a hard, smooth material having a relatively low co-efficient of friction, electrically operated signal means associated with said target, a plurality of switches arrayed in a common plane on said support at the inner end of said cone, said switches being operatively connected to said signal means, a normally flat flexible diaphragm mounted across the inner end of said cone in

spaced parallel relation to said switches, said diaphragm being formed from a material having a relatively high co-efficient of friction and a rigid disc mounted on the inner surface of said diaphragm and spanning said switches whereby at least one of said switches will be closed by the tip of a fencing foil impinging against any point on said diaphragm.

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