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Grant

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[54] **DETERRENT FOR SELF-DESTRUCTIVE ACTIONS**

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[51] **Int. Cl.**..... **A61n 1/38**

[58] **Field of Search**..... 128/132, 419 R, 419 S, 128/418, 380, 362; 119/106, 29, 143; 128/172.1, 404, 410, 422, 423, 411, 384; 340/407, 279; 35/1, 22

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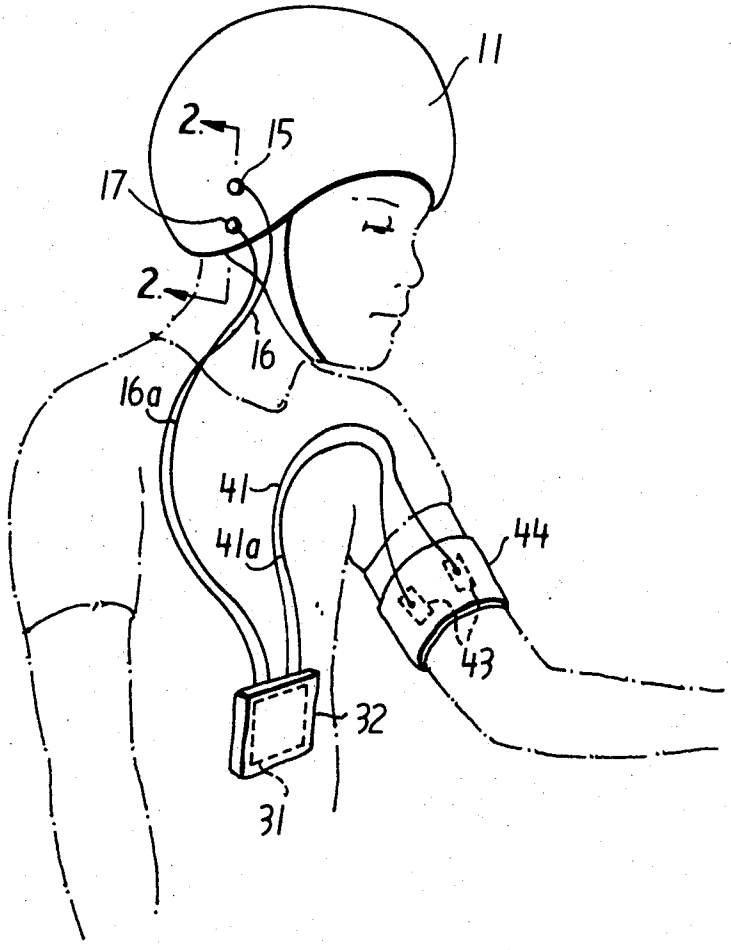
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Attorney, Agent, or Firm—Boris Haskell; Alfred B. Levine

[57] **ABSTRACT**

A helmet to be worn by a patient having a tendency to inflict self-destructive blows to the head, contains a transducer switch. Actuation of the transducer switch by a blow to the helmet, activates an electrical circuit which generates an electrical pulse of predetermined voltage, current and time. The electrical pulse is used to shock the patient.

3 Claims, 3 Drawing Figures



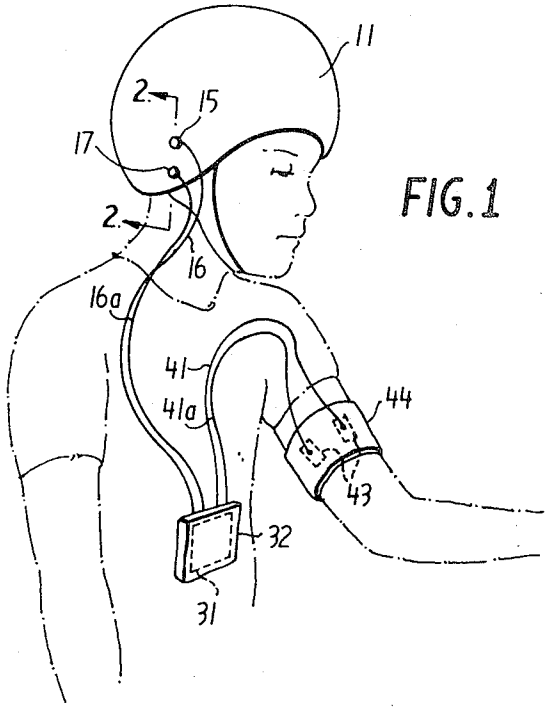


FIG. 1

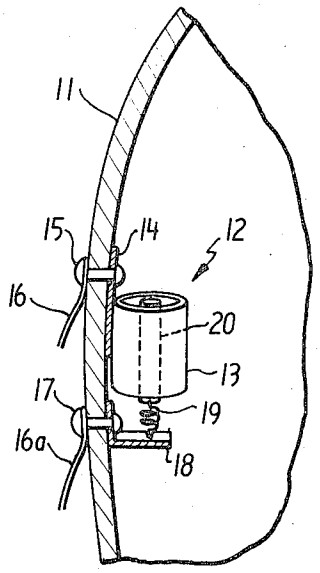


FIG. 2

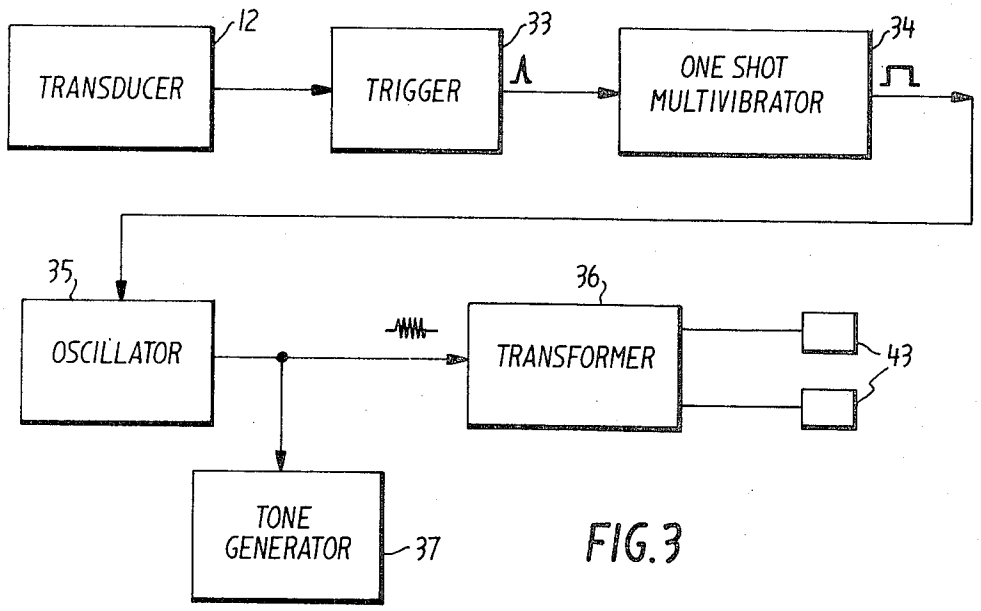


FIG. 3

DETERRENT FOR SELF-DESTRUCTIVE ACTIONS

BACKGROUND AND SUMMARY OF INVENTION

There are many thousands of self-destructive psychotic children, who inflict bodily pain and damage upon themselves. One form of self-destructive activity frequently observed is head banging, where the child inflicts repeated blows on his head, with his fists, arms, knees, or other available objects. The present invention is concerned with deterring these self-destructive activities by the use of electric shock treatments.

In general, the present invention utilizes a protective covering for the portion of the body that the patient subjects to abuse. The protective covering is designed to absorb the energy of a blow. For example, in the case of head banging, a helmet is used, such as a football player's helmet, having a hard and tough exterior shell suspended over padding and straps that engage about the head of the patient, so that the exterior shell is slightly removed from direct contact with the head. In addition, it is the primary purpose of the present invention to condition the patient against continuing to inflict blows upon his body. To that end, the helmet or other protective covering is provided with a transducer adapted to respond to the physical shock of a blow. This transducer is coupled to suitable electric circuitry designed to deliver an electric shock of fixed duration and intensity each time the transducer senses a blow. The discomfort of the electrical shock experienced with each blow soon conditions the patient to stop this self-inflicted punishment. Although the conditioning may not be permanent, and the patient may again start striking himself when the protective covering is removed, experience has indicated that while the protective covering and associated equipment are worn and in operation, the patient's tendency to inflict blows upon himself is greatly reduced, and may be pretty much eliminated.

It is therefore one object of the present invention to provide for the conditioning of psychotic self-destructive patients against inflicting blows upon their bodies.

Another object of the present invention is to provide for such conditioning by the use of electric shock techniques.

Other objects and advantages of the present invention will become apparent from a consideration of the following illustrative detailed description of one specific embodiment of the invention, had in conjunction with accompanying drawings in which like reference characters refer to like or corresponding parts, and wherein:

DESCRIPTION OF DRAWINGS

FIG. 1 shows one embodiment of the present invention as worm by a patient;

FIG. 2 is an enlarged fragmentary and cross sectional view taken along the line 2—2 of FIG. 1; and

FIG. 3 is the functional block diagram of the electrical circuitry utilized in the present invention.

DETAILED DESCRIPTION

Referring particularly to FIG. 1, the present invention is illustrated as applied to a patient for the purpose of conditioning the patient to refrain from applying blows to the head. A helmet 11 is placed on the head of the patient. The helmet in its basic construction may

be quite similar to a football helmet, the structure of which is quite well known, and is therefore not shown in detail. Suffice it to state that the helmet comprises a hard and tough outer shell having inside padding and head straps that mount on the head and hold the outer shell a small distance away from the wearer's head. With this conventional structure, any blows applied to the head are largely absorbed by the helmet. However, the purpose of the present invention is to discourage the patient from applying continuing blows to himself, because if he continues, even with a helmet he will sooner or later inflict substantial injury upon himself.

Therefore, the helmet 11 is modified by the inclusion of a physical shock transducer 12 mounted thereon. Conveniently, the transducer is mounted on the inside surface of the exterior shell, on one side, between the inside of the shell and the interior head straps. Obviously, if desired, the transducer 12 can be contained in a housing and mounted on the exterior of the helmet 11. The physical shock transducer 12 may have any of a wide variety of forms. As shown in FIG. 2, it comprises a small metalic cylinder 13, having a tab 14 through which the cylinder is affixed to the helmet shell by the rivet 15. An electrical lead 16 is affixed to the exterior head of rivet 15 and is in electrical circuit with the cylinder 13 through rivet 15 and tab 14. A second rivet 17 affixes a bracket 18 to the inside of the helmet shell, and the bracket supports a helical spring 19 carrying a contact pin 20. An electrical lead 16*a* is connected to the exterior head of rivet 17 and is in electrical circuit with the contact pin 20 through the rivet 17, bracket 18 and spring 19. It will be readily appreciated that a blow applied to helmet 11 causes pin 20 to make momentary contact with cylinder 13, thus acting as a momentary switch closure between leads 16 and 16*a*.

Leads 16 and 16*a* connect with an electronic circuitry package 31 contained within a pocket 32 in the patient's clothing. Leads 41 and 41*a* in turn connect the circuitry package 31 with a pair of body contact electrodes 43 in arm band 44. Thus, by means of circuitry to be hereinafter described, should the patient strike the helmet 11, transducer switch 13 is momentarily closed, which actuates the electronic circuitry 31, causing an electrical shock to be applied to the arm of the patient through body contact electrodes 43.

The circuitry contained in package 31 is indicated in FIG. 3. Momentary closure of the transducer switch 12 activates a trigger circuit 33, which in turn actuates a one shot multivibrator 34. The multivibrator converts the pulse output of trigger circuit 33 to square wave of a desired duration determined by the parameters of the circuit. The square wave output of multivibrator 34 turns on oscillator 35 for the duration of the multivibrator output, and the oscillator output is converted to a high voltage by transformer 36, whose output is applied across the body electrodes 43. The output of oscillator 35 is also coupled to a tone generator 37. Each time the patient is shocked by this equipment, the tone generator 37 produces an audible beep. A visual signal may also be produced through a light bulb, if desired. The purpose of the tone generator or indicator 37 is simply to inform an overseer or attendant that the shock system is functioning each time the helmet is struck, and further that the patient is not being subjected to a continuous shock through some malfunction in the system. For illustrative purposes, it has been found that an electrical output across the electrodes 43 of between one

and two thousand volts and five to ten milliamps, for a duration of one second, is effective in discouraging the patient from continuing to inflict blows upon himself. Obviously, it is preferred that the circuit be powered by a battery.

It is understood that the foregoing embodiment of the invention is presented as illustrative only, and that various modifications and variations will be apparent to those skilled in the art. For example, the invention could be applied to protect and discourage blows to other parts of the body beside the head, and the body electrodes **43** may be applied to other parts of the patient's body than an arm. Accordingly, such variations and modifications as are embraced by the spirit and scope of the appended claims are contemplated as within the purview of the present invention.

I claim:

1. A system for deterring the inflicting of self-destructive blows, comprising rigid energy absorbing protective means, means for mounting said protective means upon the head of a patient for shielding a portion of the head from blows, transducer switch means mounted on said protective means responsive to the application of a physical blow to said protective means, electrical circuit means for generating an electrical current of predetermined duration and magnitude in response to momentary closure of said transducer switch means, electrode means coupled to said circuit means for application to the patient's body, whereby the application of a blow to said protective means causes the application of an electrical shock to the body of the patient through said electrode means.

2. A system as set forth in claim **1,** wherein said protective means is a helmet.

3. A system as set forth in claim **2,** including an arm band having said electrode means incorporated therein for application to the patient's arm.

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