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(54) An optional device for toys comprising at least a moving element.

(57) An accessory device (1) for toys which include at least one self-propelled element (3) along a path, such as electric toy car-tracks (2) and their toy cars, electric toy trains, and the like, comprises :

a passage sensor (5) placed in the path of the self-propelled element,

an electronic sound and/or noise generator (7) connected after the sensor and operatively linked thereto, and

a sound emitter (9) connected electrically after the generator to produce appropriate loud signals upon passage of the self-propelled element.

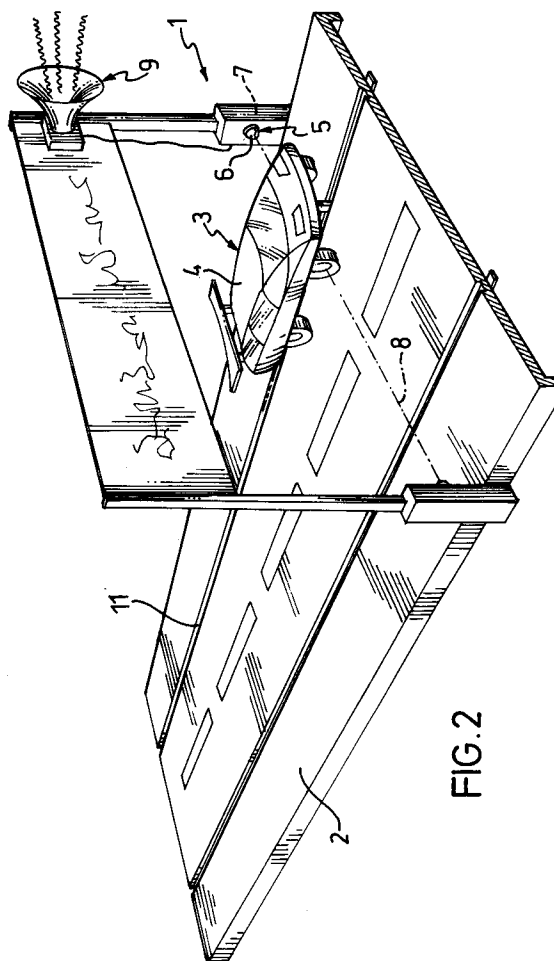


FIG. 2

This invention relates to an accessory device for toys which include at least one self-propelled element along a path, such as electric toy car-tracks and respective toy cars, electric toy trains, and the like.

The invention is also useful with games which include at least one spatially movable element, as may be the ball of a soccer game or miniature billiards.

It is a well recognized fact that toys and games of the above-mentioned kind enjoy special popularity with youngsters on account of the unique way in which they enable the self-propelled element to be controlled, in a direct or indirect fashion.

Such is the case, for instance, with electric toy cartracks wherein a toy car can be run around a closed loop path at controlled speeds, so that the players can simulate full-scale car racing situations, albeit on a reduced scale.

Alive among toy and game manufacturers is a constant interest in new ways of improving both the presentation and the performance of their articles by the addition of accessories which can make them ever more suggestive of the real thing.

Lately, considerable designing effort went into conferring such features on the aforementioned toys and games as could render their use the more attractive and involving.

For instance, control means have been developed to peculiar ergonomic patterns, such as joysticks, handwheels, and the like; additionally, speedometers or lap-counters have been provided so that the players can find reality better reproduced and simulated in the toy or game as a whole.

The prior art is deficient, however, as regards the simulation of characteristic environmental sounds which would be normally present in the full-scale situation that the toys or games are meant to imitate.

The underlying technical problem of this invention is to provide an accessory device for toys which include at least one self-propelled element, said accessory having constructional and functional features whereby the toy will emit peculiar sounds corresponding with those of the real thing.

The technical problem is solved by an accessory device as indicated being characterized in that it comprises:

a passage sensor placed in the travel path of said self-propelled element;

an electronic sound and/or noise generator connected after said sensor and operatively linked thereto; and

a sound emitter connected electrically after the generator and triggered by the self-propelled element moving close by the sensor.

In a preferred embodiment, said passage sensor is a photocell whose optical beam intersects said path. It is understood that the beam may intersect said path either along a horizontal, or vertical, or oblique direction.

The features and advantages of the inventive device will become apparent from the following detailed description of an embodiment thereof, given by way of non-limitative example with reference to the accompanying drawings.

In the drawings:

Figure 1 is a perspective view showing schematically a toy which incorporates the device of this invention;

Figure 2 is a perspective view of the toy shown in Figure 1 in another condition of its operation;

Figure 3 is a diagrammatic representation of the inventive device;

Figure 4 is a perspective view illustrating a different application of the device of this invention; and Figure 5 shows a further embodiment of the device of this invention.

With reference to the drawing views, generally and schematically shown at 1 is an accessory device embodying this invention and intended for toys or games which include at least one self-propelled element 3.

An example of toys/games of this type is shown in Figure 1 where a section 2 of an electric car-track is depicted which defines on the whole a closed loop path along which a toy car 4 can be run in a controllable fashion.

It should be appreciated, however, that the field of application of the inventive accessory would also encompass other toys and games including moving elements or parts, such as electric toy trains, and any scale models or toys which be either powered by a small electric motor, or spring- or push-operated.

This device 1 provides for the emission of a peculiar loud signal upon the self-propelled element 3 moving past a predetermined point in its travel path 11.

For the purpose, a passage sensor or detector 5 is disposed in the path of the self-propelled element 3.

This sensor may be, for example, an optical type, such as a photocell 6 whose optical beam 8 intersects, or otherwise interferes with, said travel path along a horizontal direction, as shown, or a vertical or oblique one.

In quite an equivalent manner, the sensor 5 could be a microswitch or a reed contact adapted to be intercepted by the self-propelled element 3.

In a further embodiment, the sensor 5 is a Hall-effect electromagnetic type, and generates a magnetic field whose flux lines extend at least partway around said path.

Advantageously, an electronic generator 7 of sound and/or noise is connected after the sensor 5, and is linked operatively to the sensor.

The sensor 5 and sound generator 7 are powered

from a common electric power supply 10, which may be a DC battery supply or a power supply connected to AC mains.

A sound emitter 9 is connected electrically after the sound generator 7.

With this arrangement of the inventive device 1, it would be triggered by the passage of element 3 close by the sensor 5 and produce a loud modulated sound which can be made to resemble that from a racing car crossing the finish line, or squeaking brakes, or a shouting mob, or the hiss of a train, or a syren, or a whistle, etc.

The device 1 of this invention can also be applied to toys or games wherein the element 3 is propelled by other than motive means of its own, or wherein the element 3 is to move through a predetermined point in space while not being tied to cyclically or periodically travel any predetermined path in one and the same closed loop.

Such is the case, for instance, with games like the aforementioned soccer game, partially depicted in Figure 3, wherein a ball 12 is shot, using some striker means, toward a goalpost 13 guarded by the opponent.

In that application, the sensor 5 of device 1 would be positioned at the location of said goalpost 13 to enable emission of a loud signal, e.g. the uproar of a mob upon a goal being scored, that is as the ball 12 shoots through the goalpost.

The device of this invention solves the technical problem and affords a number of advantages, outstanding among which is that playing with toys/games that incorporate it can be more enthralling.

Another advantage is that the invention allows for the driving in parallel of such other devices as lap-counters, timers, or score markers.

Claims

1. An accessory device (1) for toys which include at least one self-propelled element (3), such as electric toy car-tracks (2) and respective toy cars, electric toy trains, and the like, characterized in that it comprises:
 - a passage sensor (5) placed in the travel path of said self-propelled element;
 - an electronic sound and/or noise generator (7) connected after said sensor and operatively linked thereto; and
 - a sound emitter (9) connected electrically after the generator and triggered by the self-propelled element (3) moving close by the sensor.
2. A device according to Claim 1, characterized in that said passage sensor is a photocell whose optical beam intersects said path.

3. A device according to Claim 1, characterized in that said passage sensor is either a microswitch or a reed contact adapted to be intercepted by the self-propelled element.

4. A device according to Claim 1, characterized in that said passage sensor is a Hall-effect electromagnetic type and generates a magnetic field whose flux lines extend at least partway around said path.

5. A device according to Claim 1, characterized in that both the sensor and sound generator are powered in parallel from a common power supply.

6. An accessory device for toys or games which include at least one spatially movable element, such as the ball of a soccer game or miniature billiards, characterized in that it comprises:

a passage sensor placed proximate to a passage point of the spatially movable element;

an electronic sound and/or noise generator connected after said sensor and operatively linked thereto; and

a sound emitter connected electrically after the generator and triggered by the spatially movable element moving close by the sensor.

7. A device according to Claim 6, characterized in that said passage sensor is a photocell whose optical beam extends through said passage point.

8. A device according to Claim 6, characterized in that said passage sensor is either a microswitch or a reed contact adapted to be intercepted by the spatially movable element.

9. A device according to Claim 6, characterized in that said passage sensor is a Hall-effect electromagnetic type and generates a magnetic field whose flux lines extend at least in part through said passage point.

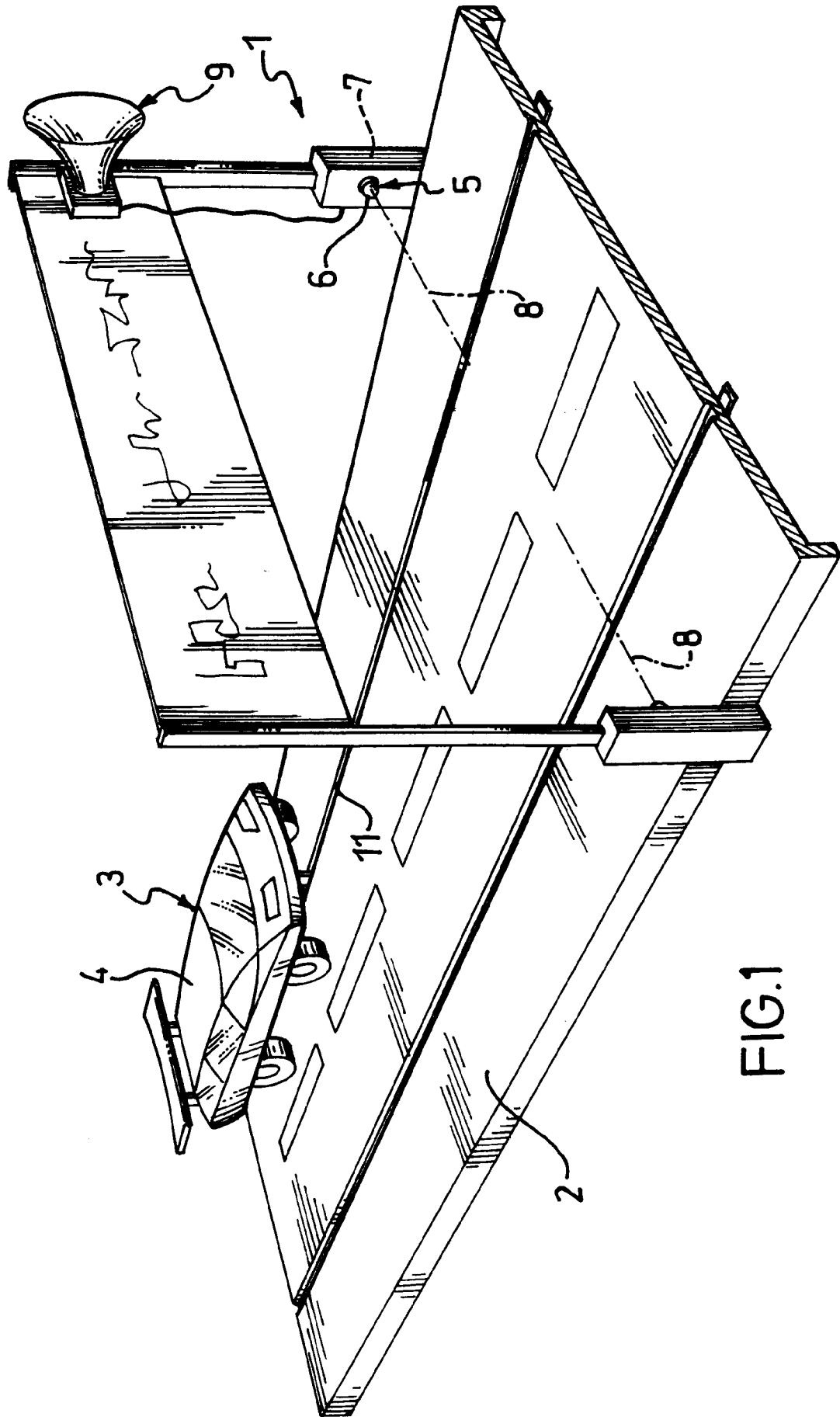


FIG.1

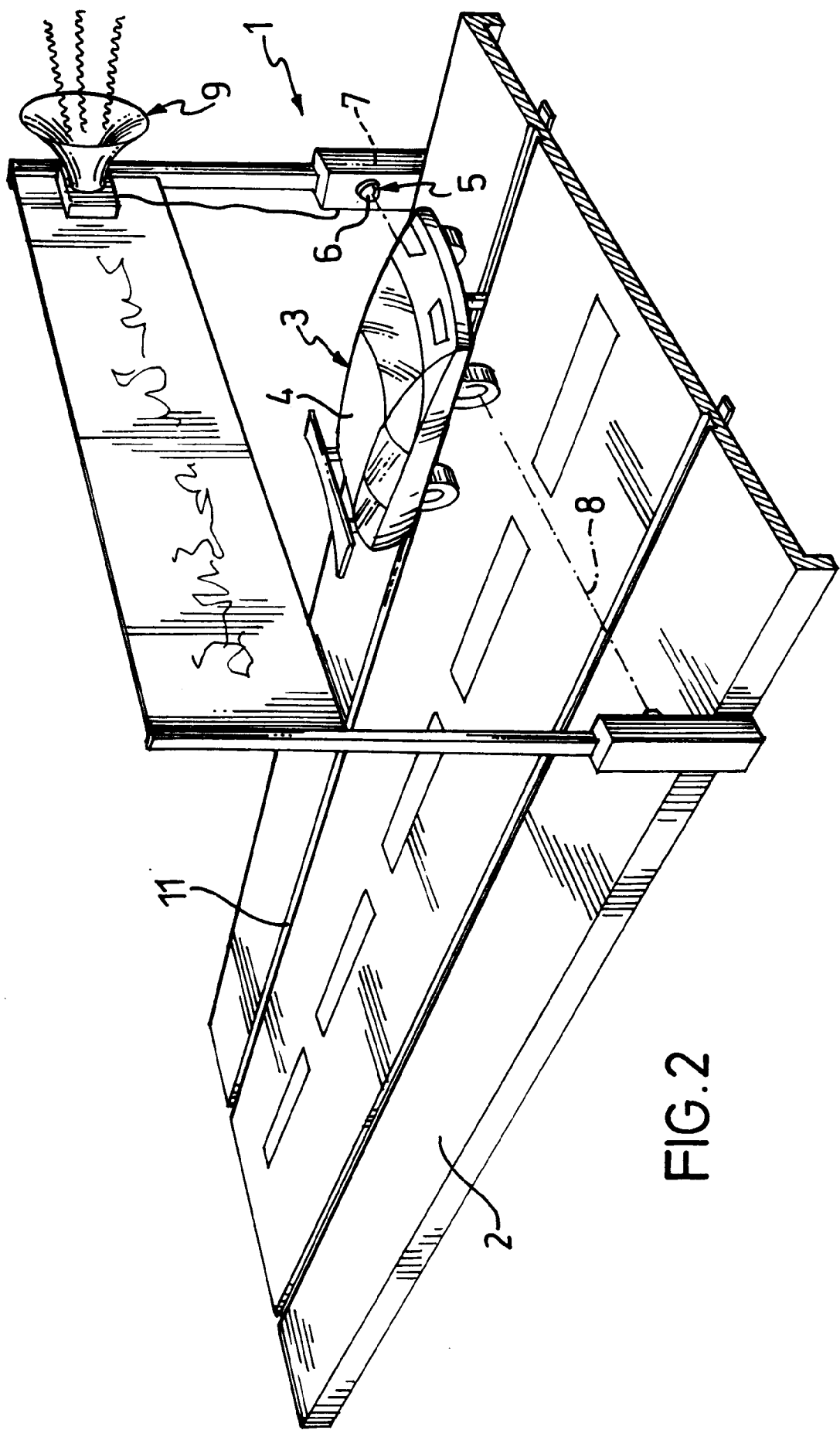
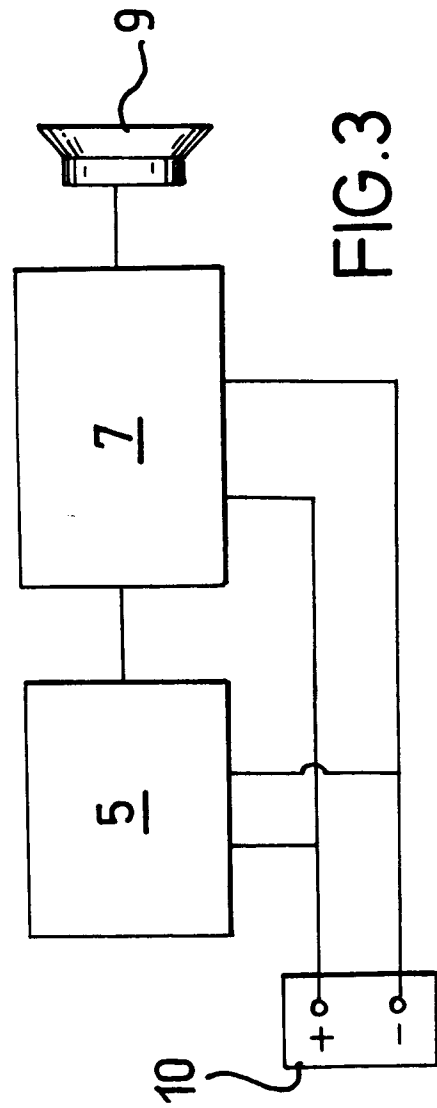
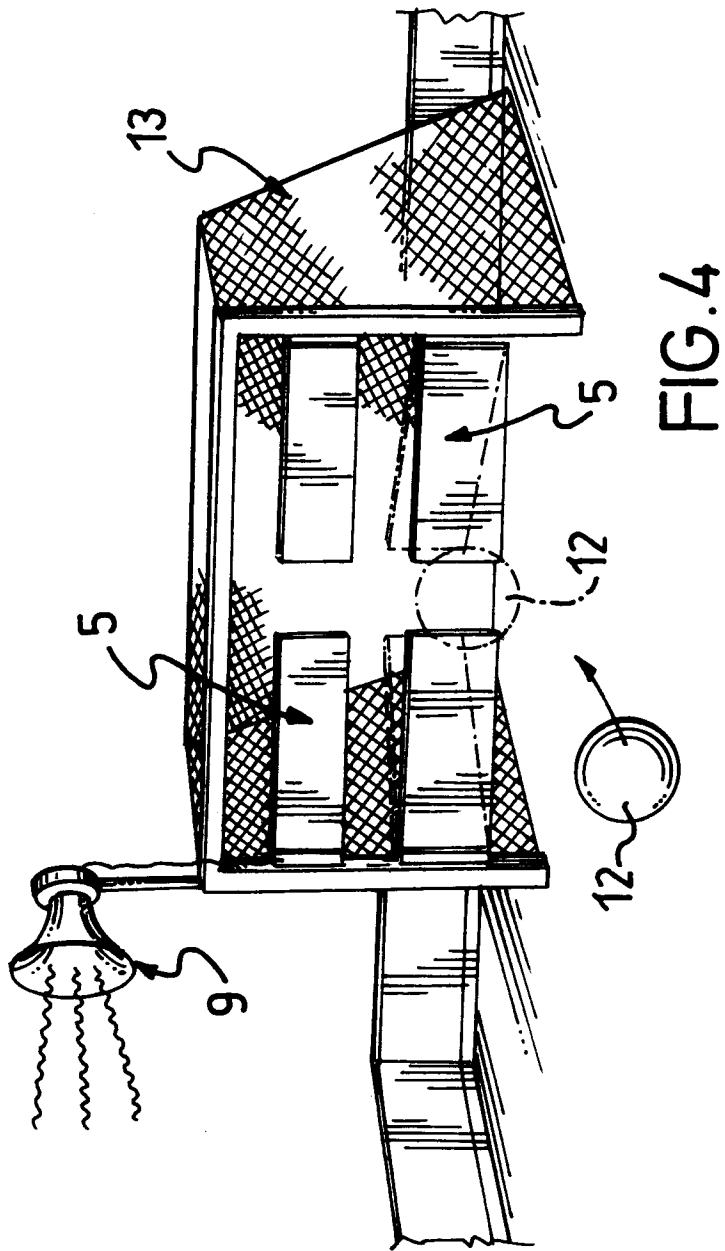


FIG. 2



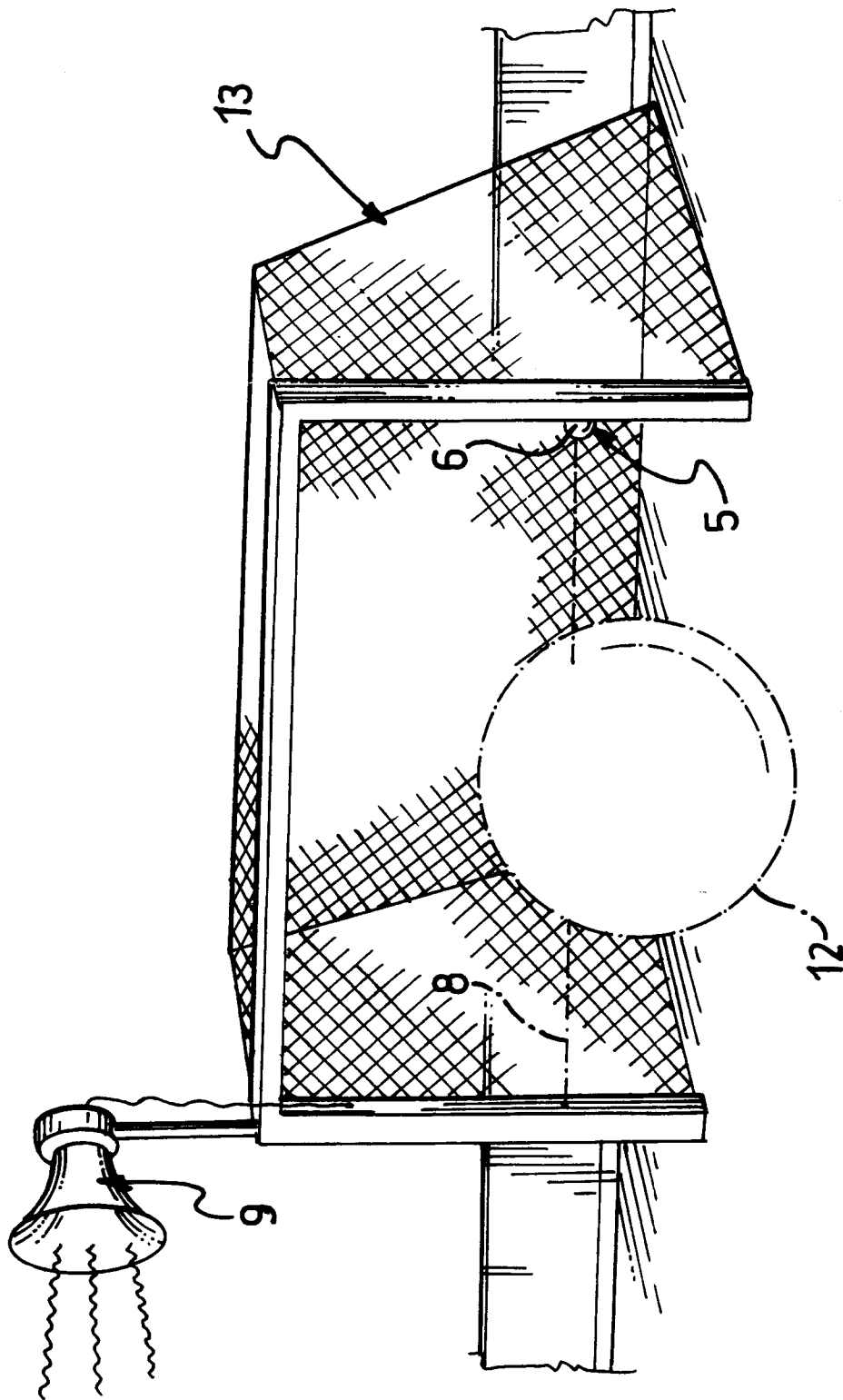


FIG. 5



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 11 1367

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
X Y	US-A-4 613 103 (WARANOWITZ) * claims 1,2; figures 1,2 * ---	1,2,5-7 3,4,8,9	A63H19/34 A63F7/30
X	US-A-4 173 338 (BARNETT) * column 3, line 57 - line 60; figures 2,3,5 * * column 4, line 9 - line 13 * ---	1,2,5-7	
Y	US-A-4 180 267 (HARROP) * figures 1-3 * * column 2, line 15 - line 21 * ---	3,8	
Y	US-A-4 429 876 (HALLIBURTON ET AL.) * figures 1,3 * * column 4, line 18 - column 21 * -----	4,9	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			A63H A63F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 11 DECEMBER 1992	Examiner papa
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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