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Jane's surface skimmers 1982 fifteenth edition Jane's
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(54) Vehicle for playing a game

(57) In a ball game, for example football, the ball 12 is propelled towards flexible goalposts 14, 15 by vehicles 11 whose outer peripheries are cushioned with resilient material. The vehicles are driven by fuel supplied engines with the fuel reservoirs being carried on the vehicles. The pitch may include a mixture of ground and water terrains in which case an amphibious vehicle for example a hovercraft is used. Alternately the game may be played solely on water.

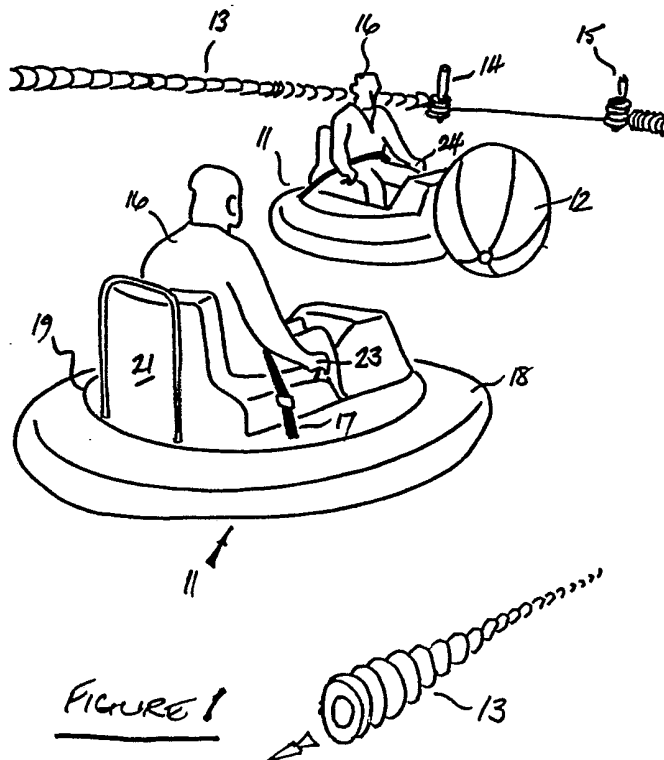


FIGURE 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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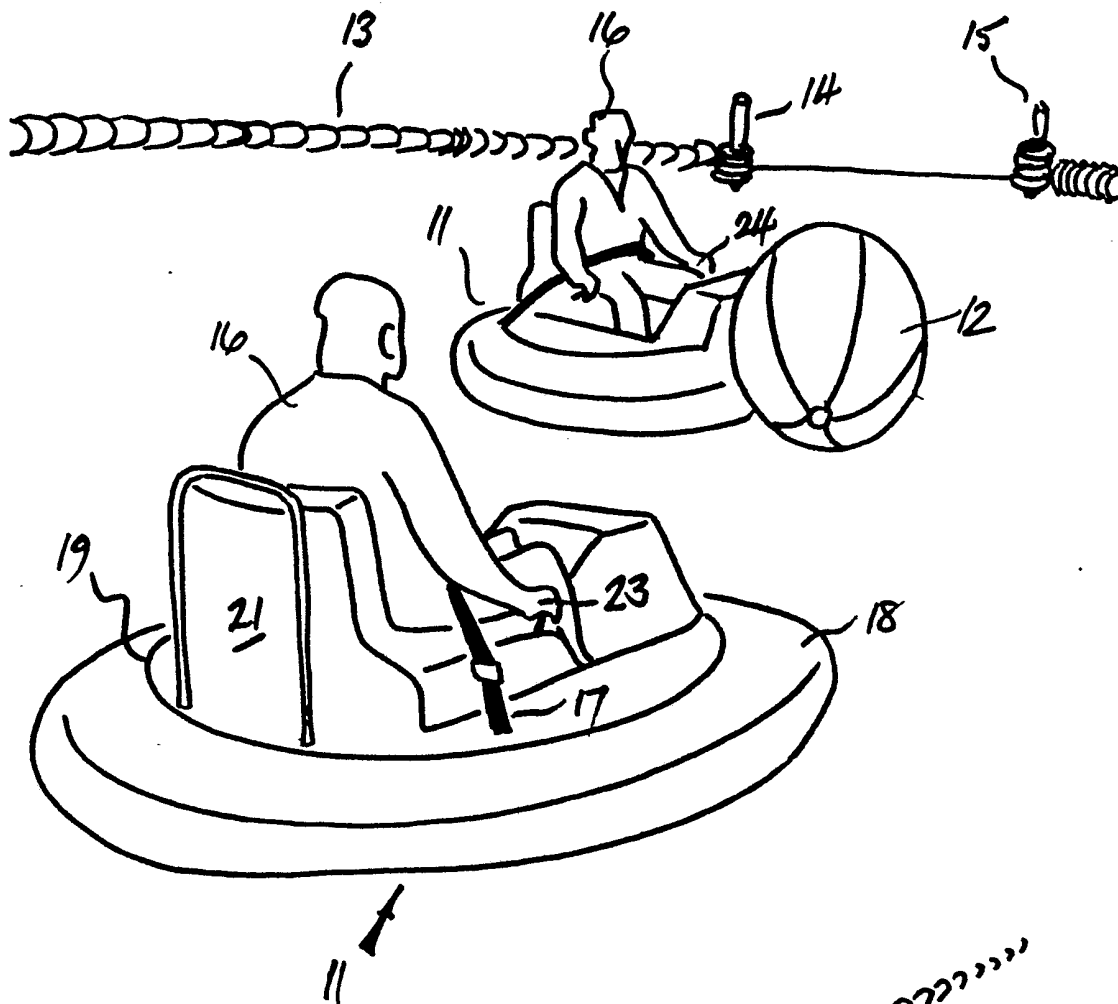
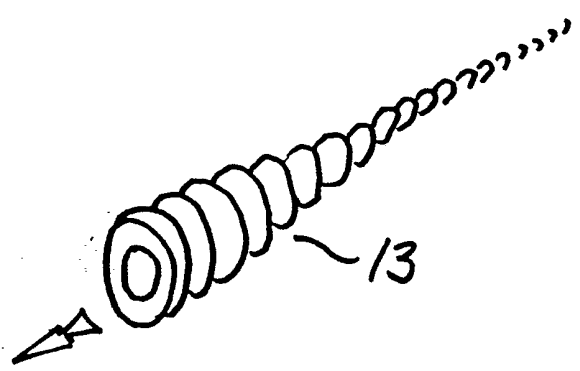


FIGURE 1



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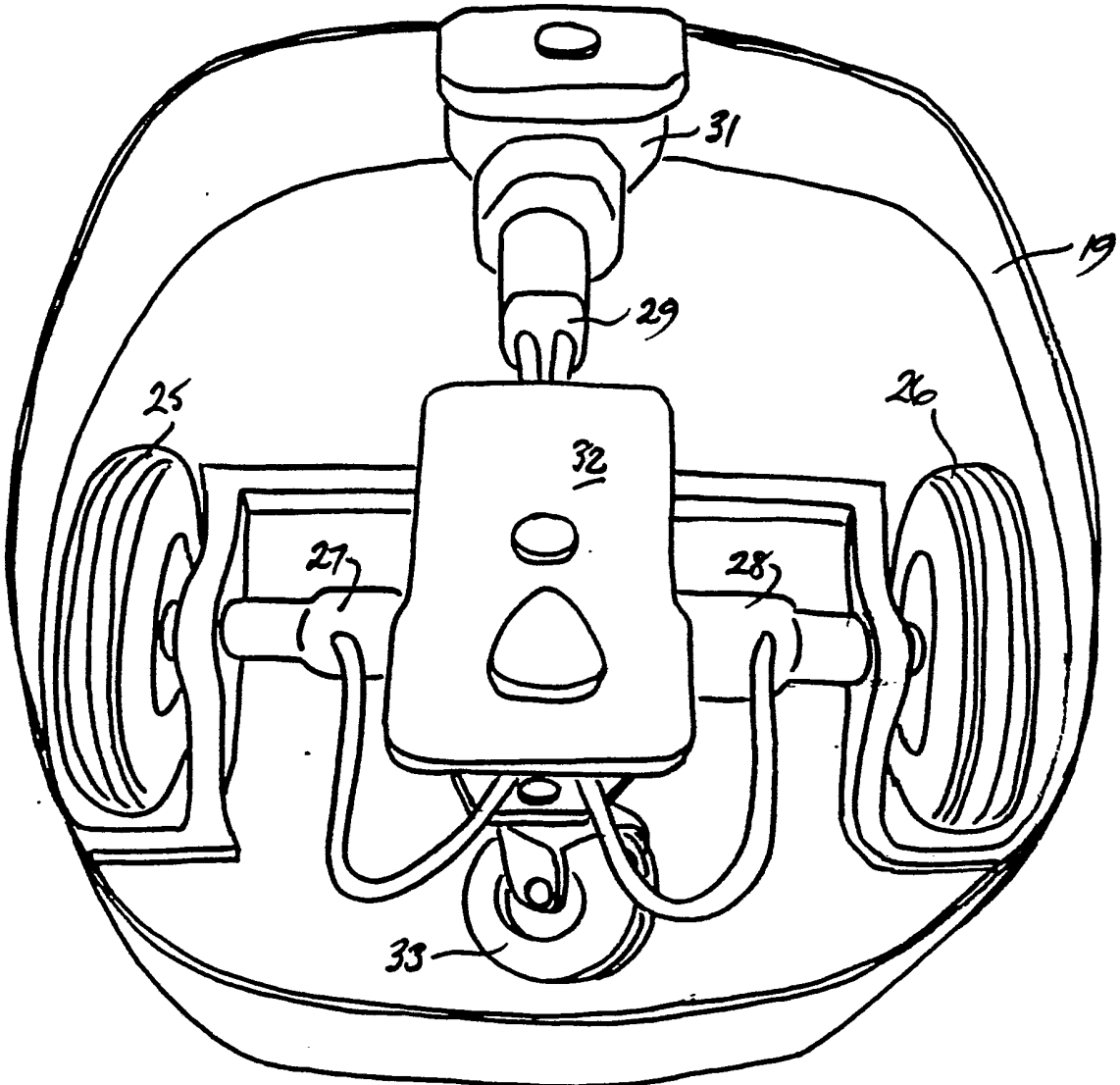


FIGURE 2

APPARATUS FOR PLAYING A GAME

Introduction

The invention relates to apparatus for playing a game and is concerned specifically with apparatus for playing a ball game, for example the game of football.

5 Such a game may be defined as any game whose player or players compete by traversing a pitch in pursuit of a ball during game-play with the common object of scoring by propelling the ball into, through, or beyond a known and game-scoring destination.

10 The game overwhelmingly described as, literally, football is perhaps the best known example of such a game. In that particular game, the limits of the pitch are marked, and so is the destination for the ball. And there are in fact a plurality of such destinations, one at each opposite end of the marked pitch.

15 Other examples of such games are tennis, hockey, polo, basket ball and golf; as well as snooker, billiards, pool and ten pin bowling.

All of these are intended to be embraced by the definition.

In known forms, these games are played by humans who provide their own propulsion - by running or walking or riding a horse

- about the pitch. In the case of such games as snooker and billiards, the pitch traversed by the players extends beyond the confines of the playing surface. In the case of ten pin bowling, it does the same, but in all of them it will now be seen that when they are viewed in the broad all-embracing category set out above, they do indeed involve essentially the pursuit of a ball about an appropriately-defined pitch by one or (more usually) a plurality of players during game-play and with the object of the game being to direct the ball in previously-known and defined scoring mode in order to accumulate - progressively or in one attempt - the score needed to win the game.

The Inventive Concept

The inventive concept is based upon the realization that, if this category of ball-based games is sufficiently widely defined and viewed as set out above, then it can be played with self-propelled power-driven vehicles to advantage. Using such vehicles as means of transport in games-playing surroundings is not unknown, as in the case of power-driven golf buggies, although neither is it commonplace because it is not associated at all with the overwhelmingly popular ball games such as football, tennis, and the like. But the introduction of this vehicular player-transporting concept into ball games which embrace within their scope games based on such games as snooker and billiards, is quite unexpected and totally inventive.

Viewed in this aspect, there is nothing in the known sum of human endeavour and in its centuries-old love of ball games to disclose or to suggest the development that the present invention embodies.

Summary of the Invention

In its broadest aspect, the invention is embodied in apparatus for playing a ball game and comprising a self-propelled ground-

travelling and inherently stable vehicle which can be steered by its occupant and which is sufficiently resiliently cushioned in its travelling mode as to be intended for and capable of traversing such natural terrain as an outdoor football pitch; the vehicle being
5 power-driven by a fuel-supplied engine whose fuel reservoir is carried on the vehicle; and with at least a major part of the vehicle's periphery being so cushioned as to be intended for and capable of resisting repeated and generally unpredictable impacts from other such vehicles as the vehicles traverse the pitch in
10 pursuit of a ball during game-play.

The expression "ground-travelling vehicle" is deliberately not restricted to ground-engaging vehicles. A so-called hovercraft could qualify.

The term "inherently stable" is used to distinguish vehicles which
15 come within the inventive concept from those vehicles - such as bicycles - which can be steered by their occupants and which may well be sufficiently cushioned as well as being power-driven; but which, without their occupant, tend not to stay upright.

The requirements that the vehicle be self-propelled by an engine
20 whose fuel reservoir is carried on the vehicle, and that the vehicle be sufficiently resiliently cushioned as to take such terrain as an outdoor football pitch in its normally intended stride, serve to distinguish vehicles falling within the scope of the invention from those other vehicles - for example dodgem cars - which are
25 cushioned so as to resist the kind of impacts predicted for vehicles during game-play according to the present invention.

Whilst it is appreciated that some outdoor football pitches are laid as asphalt or cement pitches, and will therefore be both flatter and smoother than a grass pitch, nevertheless it is argued that
30 a conventional fairground dodgem car could not possibly be described as "sufficiently resiliently cushioned.... as to be intended for

and capable of" traversing such a pitch. Still less would it be capable of traversing a naturally grown grass football pitch within the terms defined here.

5 Golf buggies, previously referred to, usually have fairly well cushioned tyres and/or mechanical suspension systems to assist them to travel about a golf course without unduly damaging the fairways of the course. But in no way can they be said to be deliberately so peripherally cushioned as to be intended for and capable of resisting repeated and generally unpredictable impacts from other such vehicles during use. Even though they carry their own fuel supply, therefore, as in the universal electric battery, 10 they neither anticipate nor suggest the concept under discussion.

By reverse reasoning, however, the necessary fuel-supplied engine and its fuel reservoir in a vehicle embodying the present invention could certainly be constituted by an electric motor and its 15 power-supplying battery or batteries, respectively.

A vehicle, or a plurality of vehicles, embodying the invention may form part of a larger apparatus in which one or more such vehicles accompanies a set of posts or other markers which define 20 the game-scoring destination of the ball and which are adapted to be fixed in selected positions on or adjacent the pitch for game-play to commence.

Such markers may comprise (in the case of a game based on the game of football) individual uprights each being adapted to be 25 driven into the ground and each being sufficiently inherently resiliently deformable in its above-ground region to allow the game-playing vehicles to be driven into - and even, optionally, over - the upright if needs be.

The arrangement just defined contrasts totally with the traditional 30 football goal posts, where the uprights are connected by a cross-

5 piece; where the posts and cross-piece are so inherently rigid that for a player to collide with them will result usually in serious, if hopefully temporary, concussion; and where there is a net fixed to the posts. Any of these features, especially the last one, could prove disastrous for the kind of ground-travelling power-driven vehicles which will contest a game embodying the present invention.

10 Conventional thinking in this particular contest does not, therefore, anticipate the invention at all and nor does it lead in any way - let alone inevitably and immediately without further inventive thought - to the concept proposed.

15 In another embodiment the markers may comprise strips defining, for example, the lines of a tennis court and being adapted to fix readily to the pitch by such means as spikes, self-adhesive surface, simple inherent weight, or any appropriate combination of these which will cause the "lines" not to shift unacceptably during game-play.

20 Where the game is played using hovercraft, for example, it may only prove necessary to lay the lines accurately in the first place and to give them sufficient inherent weight of their own in order to resist being blown to one side as the vehicles travel over them.

25 The ball used during game-play need not form an essential feature of the apparatus in terms of defining those integers which must be present in order for any given apparatus to fall within the scope of the invention. It is clearly an inherently essential feature of game-play once the game starts, though, and whilst it could be drawn from conventional sources it is nevertheless preferably provided by a relatively large and inflated ball of material which is sufficiently tough to resist the repeated impacts from the vehicles pursuing it.

5 A ball of, for example, approximately one metre in diameter and
inflated to a not unduly high pressure might well suit the case
admirably when playing a football-based game. Such a ball, if
over-inflated, would tend to fly much too far forward when bumped
by the chasing vehicles. If under-inflated then it will tend to
be trapped underneath and squashed by the vehicles rather than
bounce away from them. The reader can be left to determine by
trial and error the optimum inflation pressure. But the concept
10 of combining relatively large size (ie large when contrasted with
the teachings of the conventional football) and relatively low
pressure (low when, again, compared with the way the normal
football flies forward when struck) is believed to be novel and,
if so, must be inventive.

15 Such a ball may, in this developed version of the apparatus which
embodies the invention, join the markers and the or each vehicle
in the apparatus "package" which may be sold, leased, hired or
otherwise made available to the public.

Practical Embodiments of the Invention

20 Whilst the underlying concept and scope of the invention has been
discussed above, it will be appreciated that at the moment, the
applicants envisage the invention being put into practice in a form
which draws as closely as possible on existing and
known-to-be-enjoyable games. One such game is the game of football
and an outdoor ball game, based on that game, will now be
25 described.

A suitable number of vehicles, for example five vehicles for each
of two opposing teams of players, is provided in conjunction with
an outdoor grass pitch which is marked - not necessarily using
removable lines - so as to be approximately half the size of a
30 conventional football pitch.

Goals are defined one at each opposite end of this pitch by driving
respective posts into the ground on which the pitch is marked.
Each of these posts is made of plastics material, and is so
corrugated in form as to be resiliently flexible. That is, if the
5 post is held upright by its base region being driven into the
ground, any one of the vehicles can drive over the post and will
deform it; but when the vehicle has gone away, and the post is
released, the post will automatically spring upright again.

To help the post drive firmly into the ground, its ground-engaging
10 end is reinforced with a steel spike. The spike is firmly anchored
to the plastics material of the rest of the post but it does not
extend more than a short distance above the region of anchorage.
Each post is painted or self-coloured white, orange, yellow, or
another easily-distinguished colour in contrast with the background
15 pitch colouring and any other predominant surrounding colour. The
pitches may for example be striped, and several sleeves could
be made available each of which can be slipped over a post to
change the nature of the game being played without having to remove
and/or reposition the posts.

20 The posts may for example be coloured wholly or partly
fluorescently - for example by incorporating reflective elements
into them at one or more points along their length - so that the
game can be played under floodlight at night - or even in the
semi-darkness or darkness.

25 The design of the vehicles themselves will be described in some
detail. Normally the game is intended to be played outdoors in
good light without the need for artificial light of any kind. But
following on from the mention of playing the game in failing or
in ended daylight, the vehicle could be equipped with lights which
30 illuminate at least the region of the pitch currently being traversed
by the vehicle and which enable the posts to be picked out.

Power-driven vehicles have for long carried their own lighting systems and this unobvious use, to advantage, of such a well known feature to dramatically extend the range of uses to which the game-playing apparatus might be put, is yet another example of the validity of the inventive concept. It would not have been apparent, nor would there have been any reason to think in these terms, without the underlying invention having been proposed and defined.

Further inventive feature of the design of the vehicle as such will become apparent. It is clear enough that for best inherent stability, particularly in the rough-and-tumble of such a fast-moving and essentially competitive game as the one proposed, the vehicle should have a low centre of gravity. It should also have a wide track. But these conflict with the also desirable features of a narrow track (for ease of manoeuvrability in quick turns) and a relatively high horse riding style of position so as to give the occupant maximum view of the field of play and particularly of the strategic positioning of the ball in relation to the rest of the players at any one time.

In a further development of the invention, therefore, the vehicle is a three-wheeled vehicle of "trike" style, ie with a relatively high seat.

In order to combine this high seating position with the desired low centre of gravity, preferably the engine of the vehicle is mounted low in the vehicle's chassis; but drives the single, steerable, wheel rather than more conventionally driving the spaced-apart wheels of the pair of wheels.

Vehicles with one single steerable wheel are known. Almost universally, it is the spaced-apart non-steering wheels that are driven, and from an engine mounted at or near the front end of the vehicle. This particular feature of the inventive concept breaks

totally with conventional teaching. Mounting the vehicle engine low down is obvious enough if the optimally low centre of gravity is the only consideration being pursued. Mounting the engine and using it, for example via a shaft drive or hydrostatic drive, to transmit
5 the drive to the relatively remote single steerable wheel, flies in the face of all current practice. But it brings with it the further advantage that, because the rear wheels are not being driven, they can be mounted on individual stub axles and the engine can be mounted literally between them. This approaches even more closely
10 the optimal weight distribution and low centre of gravity.

The decision to use a trike style of vehicle design would normally imply handle-bar steering. Yet again, however, the invention breaks with convention in that such a vehicle is preferably steered by
15 a steering wheel. A human footballer is valued, in certain positions on the field of play, by his ability to turn quickly, especially if he is a striker (ie charged with primary responsibility for scoring goals). If the vehicles are to simulate the actual patterns of ebb and flow of game-play in a football-based game, they to
20 must be able to be thrown about by their occupants, and to twirl a steering wheel is far quicker than to wrench round a pair of handle-bars under such conditions. It is also much less likely to injure the occupant because there are no protruding handle-bar ends to wind him or cause even more serious damage.

The vehicles will normally have balloon-style tyres, ie tyres which
25 are relatively wide and inflated to relatively low pressures. These may constitute the entire resilient cushioning means which equip the vehicle to traverse the pitch repeatedly without undue damage, especially vibrational damage. But they may be combined with or replaced by a mechanical suspension and, in such a case, the
30 suspension is preferably what is known as a long-travel suspension. This could be achieved by such means as hydraulic or pneumatic damping in conjunction with, or instead of, coiled compression

springs. Alternatively or additionally, flexible leaf springs could be used and this in particular, once again, reverses currently accepted preferences for vehicle suspensions.

5 The necessary peripheral cushioning enabling the vehicle to impact against others of its kind may be provided by modern forms of plastics-based bodywork. Alternatively or additionally, fenders in the form of inflated rubber cushioning strips might play their part. Or yet again, as an alternative or additional measure, resilient strips - whether of metal, plastics-based synthetics, or metal
10 and plastics sandwiches, can be used.

These cushioning means may or may not shroud the vehicle wheels where ground-engaging wheeled vehicles are used to play the game. But in some aspects it would be preferable if they did shroud the wheels because there is nothing more dangerous - as formula
15 one motor racing has too often shown during the last couple of seasons - than interlocking wheels at high speed.

The actual rules which govern game-play can be selected by the skilled addressee of this specification to give a thoroughly entertaining game of "five a side" football using vehicles of the
20 kind described and a large low-pressure ball. The referee may or may not be provided with his own vehicle with which to traverse the pitch during game-play. If he is provided with such a vehicle then it will preferably be so colour-finished as to contrast immediately with those of every other player. But he
25 may well be left to run about the pitch in just the same way as a conventional football referee does.

The size and power of the engine will of course be selected appropriately, but in one vehicle which is believed to be both novel and inventive, four stroke air cooled lawn-mower engines
30 are used. Four stroke engines are noticeably quieter and smoother running than two stroke engines and, for a game where there is a referee directing play, relative quietness of running is important.

5 One particularly advantageous modification of the apparatus described
above consists in having each of the two spaced-apart wheels
independently driven, and controlling the respective drives by
right-hand and left-hand operated forward-and-reverse levers instead
10 of a steering wheel or handle-bars. This sort of control, relying
effectively on the appropriately differentiated and balanced use
of the levers to manoeuvre the vehicle in much the same way as
(for example) a tracked vehicle is manoeuvred, would give these
ball-pursuing vehicles a very tight turning circle. The actual ways
15 in which such forward-reverse drives and their controls could
be achieved can be selected if necessary from known alternatives.

It was made clear that the expression "ground-travelling vehicle"
was not restricted to ground-engaging vehicles (although it clearly
includes such vehicles).

15 An amphibious vehicle, therefore, is included within the scope
of the application's disclosure; and it might be a hovercraft
(specifically instanced) or a ground-engaging wheeled amphibious
vehicle.

20 Whatever vehicle is used, the expression "natural terrain" (which
was exemplified, but not restricted, in Application No 90 25764.3)
includes within its scope such naturally occurring terrain as a
stretch of water.

25 The disclosure of the original invention therefore extends, without
any addition of the words used therein, to the concept of a game
played by amphibious vehicles and where the pitch includes a
mixture of ground and water terrain.

It also extends to a game played by vehicles which traverse water
only, because it is perfectly natural and well accepted

to talk of water-borne vehicles "covering the ground" from one point to another; especially relatively fast water-borne vehicles (speedboats, wet bikes, and the like) with highly manoeuvrable hull and/or rudder features.

5 In one embodiment of the invention, for example, a plurality of wheeled amphibious vehicles of currently known kind pursue a ball about a pitch which is generally a rough-terrain pitch but which includes such stretches of water as small lakes, ditches, canals and so on; and the ball is inherently capable of floating
10 on those water-covered stretches of the pitch as well as bouncing about the non-water-covered stretches.

In such a case, the ball may deliberately be so constituted that it bounces on the surface of the water when impacted by the vehicles instead of just rolling or floating relatively sluggishly
15 on the water surface.

In another embodiment of the invention, a plurality of water-borne vehicles which are not amphibious pursue the ball about a pitch consisting wholly or in the majority of a stretch of water. Such obstacles as islands, pontoons, and the like could
20 be positioned on the course in this embodiment of the invention and the ball could be designed to bounce as just outlined.

In this wholly water-borne version of the game, the vehicles may comprise "ski-boats" of the kind generally exemplified by published UK Patent Specification No 2 172 866 (Herridge & Penn
25 Limited).

The Drawings

Solely by way of example, the accompanying drawings illustrate one embodiment of the invention. In these drawings, Figure 1 shows the apparatus in use during game-play; whilst Figure 2, drawn to an enlarged scale, shows one of the vehicles viewed from above and with its bodywork removed in order to illustrate its working mechanisms.

The Specific Embodiment

As illustrated, individual vehicles 11 pursue a relatively large-diameter and low-inflation-pressure ball 12 about a pitch whose boundaries, in this particular instance, are marked out by motor vehicle tyres stacked in parallel and upright and enclosed by tubular plastics sheeting. One run of such boundary marking is indicated by reference numeral 13 and it will be appreciated that the boundary could be replaced - or reinforced - with, for example, an inflatable tubular peripheral boundary running (eg) peripherally inside the boundary of tyres illustrated.

Goal posts 14 and 15 are formed as previously indicated, ie by driving the spiked end (not illustrated) of each post into the ground and having the ground-adjacent base region of each post sufficiently corrugated and inherently flexible that the posts can be deflected by the vehicles during play but will spring back automatically into their basically upright positions once the deflecting force is removed.

Each individual vehicle exhibits the high-level upright seating position previously talked about. Thus the occupant 16 sits with his legs extending in front of him but very much below the level of his upper body and in a normal comfortable domestic-style seating position. He is strapped in by suitable safety harness 17 and the periphery of his vehicle is cushioned by resilient, and preferably inflatable, material 18.

This cushioning material 18 extends around the outside of a tubular framework 19 which supports a preformed reinforced fibreglass body shell 21. With the shell 21 removed, as in Figure 2, together with the peripheral cushion 18, it will be seen that the framework 19 is basically oval - almost circular - in plan. Figure 2 will now be described in more detail, but before going on to do this it will be remarked that the operator 16 uses both his hands to steer the vehicle with push-pull levers 23, 24 which protrude through the bodywork.

The steering mechanism is effected, as previously discussed, by powering each of the spaced-apart main driving wheels 25, 26 through a respective hydraulic motor-in-wheel unit and using the individual hand levers 23, 24 as straightforward "push-for-forward; pull-for-reverse" motor rotation controls. The almost-circular vehicles 11 can thus be swivelled round, in much the same manner as a tracked vehicle is steered, virtually within their own length and without the need for any articulated steering mounting of the driving wheels 25 and 26.

A first hydraulic motor 27 is linked hydraulically to the motorized hub of the wheel 25 and a corresponding motor 28 is similarly linked to the identical hub of wheel 26. Both these motors 27, 28 are supplied with fluid under pressure from a pump 29 driven in turn by a small internal combustion engine 31; and a hydraulic fluid reservoir 32 completes the necessary power unit combination.

As will be seen from Figure 2, particularly, all the components are so mounted as to bring the centre of gravity of the body-less vehicle 11 as low as possible. The body shell 21 itself is lightweight, again deliberately, and this combined with the wide track between wheels 25 and 26 makes the vehicle virtually impossible to overturn in even the most rough-and-tumble contest.

A castor wheel 33 is mounted at one end of the vehicle 11 and this is the end where, in use, the weight of the occupant 16 is also concentrated. The vehicle is thus a "trike". A fourth wheel is unnecessary although one could of course be fitted if desired.

CLAIMS

1. Apparatus for playing a ball game and comprising a self propelled ground-travelling and inherently stable vehicle which can be steered by its occupant and which is sufficiently resiliently cushioned
5 in its travelling mode as to be intended for and capable of traversing such natural terrain as an outdoor football pitch; the vehicle being power-driven by a fuel-supplied engine whose fuel reservoir is carried on the vehicle; and with at least a major part of the vehicle's periphery being so cushioned as to be intended for and capable of
10 resisting repeated and generally unpredictable impacts from other such vehicles as the vehicles traverse the pitch in pursuit of a ball during game-play.

2. Apparatus according to Claim 1 and in which one or more such vehicles combine with posts or other markers, with or without a
15 ball, to define the constituents necessary for game-play using a plurality of vehicles to pursue the ball about the pitch with the object of game-scoring.

3. Apparatus substantially as described herein with reference to the specific embodiment of the invention outlined.

- 20 4. Apparatus according to Claim 1 or Claim 2 and in which the vehicle is a water-borne vehicle.

5. Apparatus according to Claim 4 and in which the vehicle is an amphibious vehicle.

5 6. Apparatus according to Claim 2, or to either of Claims 4 and 5 when appendant to Claim 2, and in which the markers are water-borne markers.

7. Apparatus according to Claim 4, or to Claim 6 when appendant to Claim 4, and in which the vehicle is a ski-boat or similarly relatively high-speed and quickly-manoevred vehicle (for example, a so-called wet-bike).

10 8. Apparatus according to Claim 1 or Claim 3 and in which the vehicle is steered in the manner of a tracked vehicle, ie by means enabling one of two opposite-side power-driven vehicle-propelling units to transmit its power, preferably relatively instantaneously, in either direction at the will of the vehicle operator, independently of the
15 other-side unit.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

9124993.8

Relevant Technical fields

- (i) UK CI (Edition K) B7B (BSES, BSEB, BSEA);
B7H (HC);
- (ii) Int CI (Edition 5) B60R, B62D

Search Examiner

PHIL THORPE

Databases (see over)

(i) UK Patent Office

(ii)

ONLINE DATABASE: WPI

Date of Search

24 FEBRUARY 1992

Documents considered relevant following a search in respect of claims

1-8

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 446428 (STEWART ST GEORGE) see whole document	1, 8
X	EP 0089706 (PROGENE) see page 5 lines 1-9	1, 4, 5
X	US 4838592 (SOBODOS) see whole documents	1
X	US 3820790 (PETERSON) see column 2 lines 35-37	1, 2, 8
A	US 4387898 (MANGUM) see column 3 lines 26-34, lines 56-61	-
X	JANE'S SURFACE SKIMMERS 1982 FIFTEENTH EDITION JANE'S PUBLISHING LTD LONDON SEE PAGES 8, 30-32	1, 4, 5



Category	Identity of document and relevant passages	Relevant to claim(s)

Categories of documents

- X:** Document indicating lack of novelty or of inventive step.
- Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.
- A:** Document indicating technological background and/or state of the art.

- P:** Document published on or after the declared priority date but before the filing date of the present application.
- E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.
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