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Feulner

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[54] **ENVIRONMENTAL BOARD GAME APPARATUS**

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[52] **U.S. Cl.**..... **273/134 AD,** 273/134 B, 273/134 C

[51] **Int. Cl.** **A63f 3/00**

[58] **Field of Search** 273/134

[56] **References Cited**

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Primary Examiner—Delbert B. Lowe

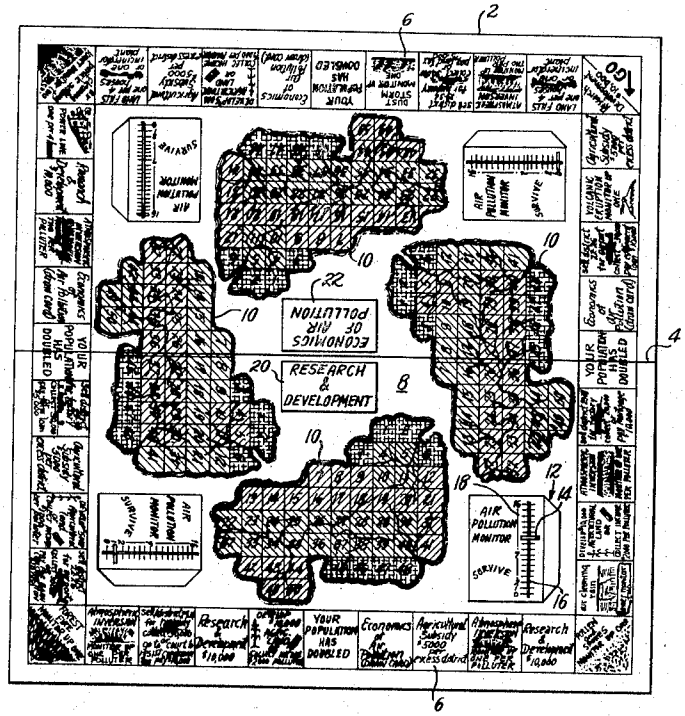
Attorney—Leo A. Rosetta, Francis D. Thomas, Jr., Jesse B. Grove, Jr. and James W. Pike

[57] **ABSTRACT**

A game board has identical land areas depicted thereon and a continuous playing path around its edge. Chance means direct movements of game pieces along the path and indications on the path direct selection of cards relating to land use.

Each player is assigned a land mass or continent to manage by controlling the use to which subdivisions of his land mass are put in accordance with moves directed by the game apparatus during play. A movable pollution indicator for each player monitors the pollution level of each player's land mass as play progresses.

4 Claims, 5 Drawing Figures



SHEET 1 OF 2

Fig. 1.

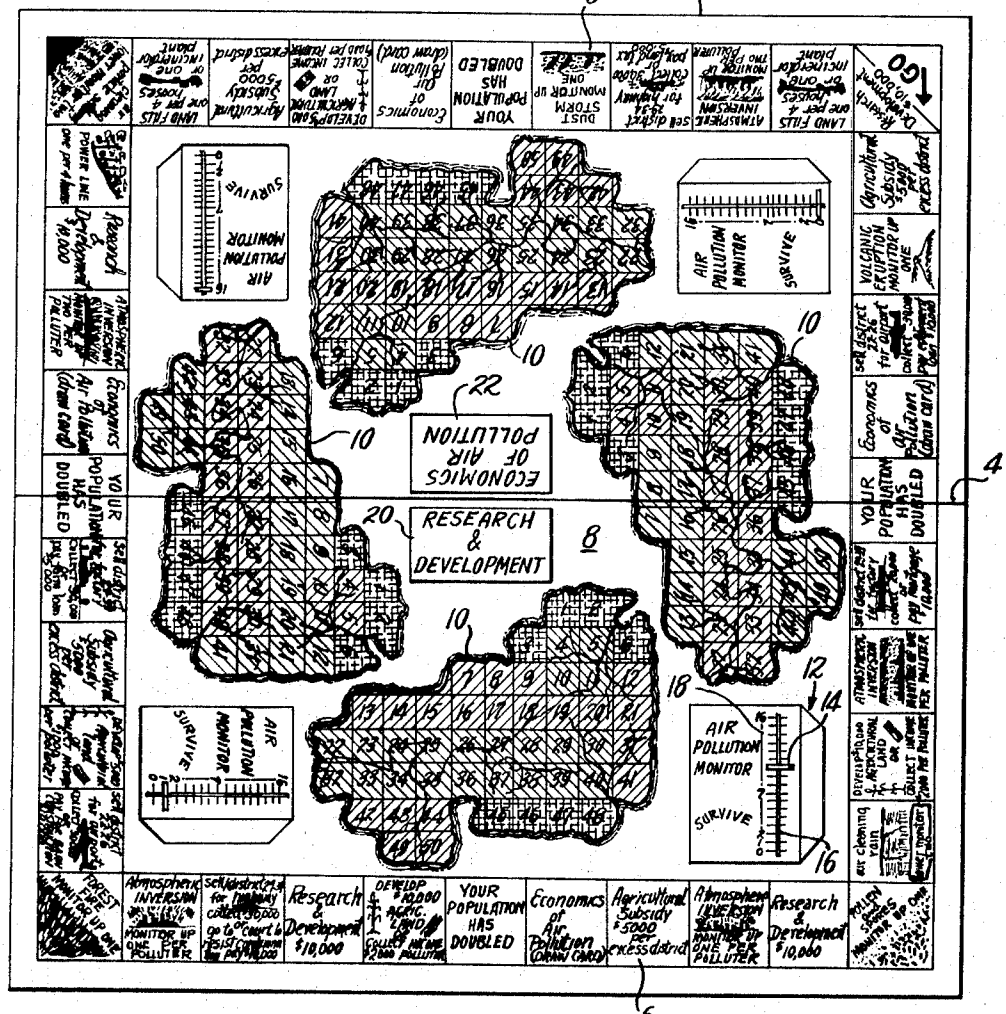


Fig. 2.

ENVIROMENTAL EDUCATION MAY SUCCEED IN CHANGING ATTITUDES OF PEOPLE, THUS MAKING AIR POLLUTION CONTROL POSSIBLE LOWER COUNTER 10 PTS.

LOW POLLUTION ELECTRIC POWER GENERATOR LOWER POLLUTION COUNTER 4 POINTS

MASS TRANSPORTATION USE INCREASED REDUCES THE ONE CAR ONE DRIVER SITUATION LOWER COUNTER 5PTS.

ANTI-POLLUTION SMOKESTACK ATTACHMENT REMOVES BOTH GASSES & PARTICULATES LOWER COUNTER 8 PTS.

THIS RESEARCH PROJECT WAS A FAILURE

LOW POLLUTION AUTOMOBILE HAS BEEN PERFECTED LOWER COUNTER ONE PT. FOR EACH 4 HOUSES ON YOUR CONTINENT

POPULATION CONTROL PROTECTS HOLDER FROM ONE POPULATION DOUBLING

YOUR POPULATION HAS DEVELOPED A NEW LIFE STYLE-CONSERVE NATURAL RESOURCES, GIVE ENVIRONMENT HIGH PRIORITY IN ALL DECISION MAKING LOWER 10 PTS.

IMPROVED MONITORING SYSTEM-ALLOWS FOR INDENTICATION OF INDIVIDUAL INDUSTRIAL POLLUTEERS WHICH CAN THEN BE CONTROLLED LOWER COUNTER 8 PTS.

SOLID WASTE RECYCLED PROTECTS HOLDER FROM ONE LANDING ON LANDFILL ADDING SPACE

UNDERGROUND POWER TRANSMISSION PROTECTS HOLDER FROM ONE POWER LINE ADDITION

POPULATION CONTROL PROTECTS HOLDER FROM ONE POPULATION DOUBLING

24

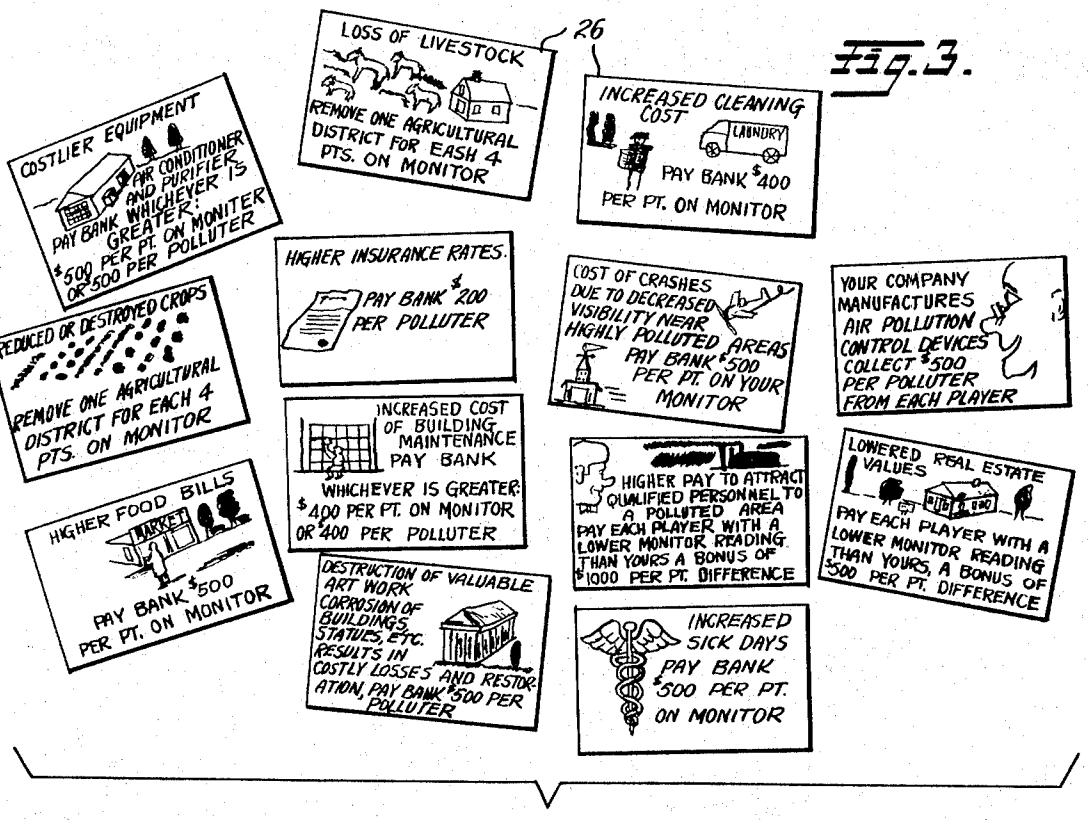


Fig. 3.

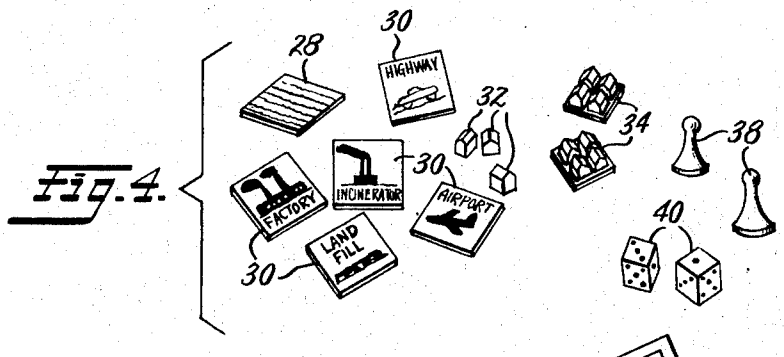


Fig. 4.

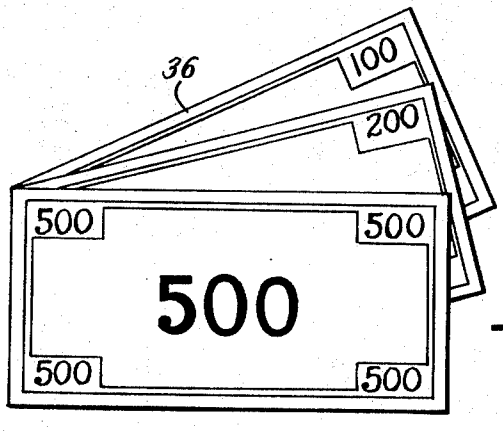


Fig. 5.

ENVIRONMENTAL BOARD GAME APPARATUS

BACKGROUND OF THE INVENTION

This invention relates to board games and particularly to board games involving land management for pollution control.

There is need for a board game which deals with several major environmental concepts including: the mathematical nature of population growth; the need for land use planning; and air pollution, its causes and effects.

As the player becomes competitively involved in the game he must make many decisions concerning the welfare of his environment. "Environmental trade offs," or the decisions to pollute because it represents the lesser of two evils, have to be made by each player, in a never ending struggle to survive in a rapidly changing game environment.

Population growth is a concept infrequently understood. It is usually thought of as a steady, but gradual, increase, and seldom recognized as the explosive, exponential growth that it is.

The fact that the world's human population is doubling in less than 40 years has little impact on many who have not experienced and are not experiencing its consequences. Applicant's game provides a simplified but accurate picture of the mathematical nature of population growth and gives the player an opportunity to feel some of the pressures brought to bear as a continent becomes overcrowded.

One of the most important natural resources that an area can have is agriculturally viable land. Potentially good agricultural land is defined by such characteristics as being: naturally fertile, topographically flat or gently rolling, and well drained. Most of these characteristics make the land economically desirable for, and place it in competition with, other usages including: highway and airport construction, housing development, landfill development, and power line construction.

Historically, resource studies and planning programs have seldom been undertaken until extensive misuse has produced discomfort for a majority of the inhabitants. Applicant's game on the other hand provides the player with a complete, color coded survey of the agricultural resource potential of his continent. What he does in terms of using this information to guide the development of his continent will depend on his strategy and skill.

Lack of research, and problems in developing the necessary technology to identify and measure air contaminants, and their effects on human life, have resulted in air pollution being one of the most difficult forms of pollution to control.

The effects of air pollution are nebulous and difficult to measure, however, awareness of their widespread occurrence is becoming more evident. The destruction of agricultural crops, etching away of priceless art works, rapid deterioration of paint and human deaths have placed the combined costs of air pollution in billions of dollars per year, to say nothing of aesthetics.

SUMMARY OF THE INVENTION

Applicant chooses to call his game "SURVIVE." SURVIVE is a board game for two, three, or four players, designed to provide each player with an opportunity to use skill and chance in guiding the development of an imaginary continent as it progresses from a virtually uninhabited natural condition to an overpopulated, industrialized area.

The imaginary continent is subdivided into **50** undeveloped wilderness districts with soil potentials varying from good (green), to medium (brown), to poor (yellow). The player should imagine himself in the position of an autocratic ruler or owner of the continent, with the responsibility of guiding its development.

Each player begins the game with a sum of play currency, small population and a pure environment. As the game progresses these conditions usually worsen, and in order to "SURVIVE" and win, the player must avoid the following pitfalls, any one of which will result in his losing the game.

1. Running out of space for an expanding population.
2. Failure to provide adequate agricultural development to feed his population.
3. Experiencing financial failures due to air pollution penalties.

The last player to "SURVIVE" after all others have lost is the game winner.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a plan view of a game board according to the present invention;

FIG. **2** is a bracketed view of a representative set of cards to be placed on the place marked "RESEARCH & DEVELOPMENT" in FIG. **1**;

FIG. **3** is a bracketed view of a plurality of cards constituting a set of cards to be placed on the area marked "ECONOMICS OF AIR POLLUTION" in FIG. **1**;

FIG. **4** is a bracketed view of a plurality of different game pieces employed in playing the present game; and

FIG. **5** represents a quantity of play money employed in playing the game.

DESCRIPTION OF A PREFERRED EMBODIMENT

The game board **2** is preferably foldable along a transverse line **4**, when the game is not in use, for convenient storage. The game board **2** has delineated thereon an outer play path **6** divided into a multiplicity of sequential areas, each containing directions for a player's next step in playing the game, as will be described in more detail later. The central area **8** of the game board **2** has delineated thereon a plurality of identical land masses or continents **10**. Each continent **10** is divided into the 50 numbered districts shown and groups of the districts are differently colored. For example, the different districts are hatched for the coloring of green, brown and yellow as shown. The green districts have high agricultural potential and their development cost is listed at $5,000 per district. The brown districts are of only medium agricultural potential and their development cost is $10,000 per district. The yellow districts are of low agricultural potential and their development cost is set at $15,000 per district. The development costs referred to above are the costs incurred in developing the land to economically productive agricultural land. According to the game rules, when a player's game piece lands on a square in the playing path **6** permitting, for example, $15,000 development, the player may choose any combination of districts whose development costs total $15,000.

Adjacent each continent or land mass **10** on the board **2** is an indicator **12** comprising a movable pointer **14** movable along a guideway **16** and along a scale **18** representing different levels of pollution.

The central area of the game board **2** also includes delineated areas **20** and **22,** upon which the decks of cards shown in FIGS. **2** and **3,** respectively, are placed. As a player moves his game piece along the path **6** in a manner to be described, he may land on a square directing him to select a card from one or the other of these decks. If his game piece lands on a square labelled RESEARCH & DEVELOPMENT, he has the option to deposit $10,000 in the bank and draw a card from the deck, or he may purchase one of the cards from another player having one. Once obtained, a card may be held for future use and then returned to the deck. A player may accumulate any number of these cards.

The RESEARCH & DEVELOPMENT cards shown in FIG. **2** comprise a plurality of individual cards **24,** each of which bears instructions and most of which direct the reduction of the pollution reading on that player's indictor **12.**

The deck of cards shown in FIG. **3** comprises individual cards **26** designed to teach the economics of air pollution, that is, the economic costs attributable to the situations depicted on the individual cards. A card from this stack is selected when a player's movable playing piece stops on a square of path **6** directing such selection, the directions on the card are to be followed immediately and the card returned to the bottom of the deck.

Other squares of the path **6** direct the placement of facilities on the player's continent. For example, in FIG. **4, 28** indicates a playing piece representing agricultural development and a player must maintain at least one per each four-house group. These pieces may also be purchased from the bank. Playing pieces **30** indicate land occupied by the depicted facilities, numeral **32** indicates playing pieces representing single or rural residence units or houses, indicative of sparse population and playing pieces **34** represent groups of urban houses, indicative of high population density. FIG. **5** merely illustrates samples of play money **36** used with the game, as will be described.

Each player is provided with a movable playing piece **38** (FIG. **4**) which may be individually identified by color or other indicia. The game equipment also includes a pair of dice **40** to be used in determining the extent of advance of each player's piece **38** along the path **6.**

PLAY OF THE GAME

The game board should be positioned so that each player faces his continent and air pollution monitor, located to the right of the continent. Each monitor should read zero at the beginning of the game. Both the RESEARCH & DEVELOPMENT and ECONOMICS OF AIR POLLUTION cards should be shuffled and placed in the appropriate rectangles near the center of the game board. One of the players or an additional person should be elected banker. The banker then distributes $45,000 in play currency to each player, divided as follows, 2–$10,000, 4–$5,000, 4–$1,000, 1–$500, and $5–100. The banker also assumes responsibility for collection of penalties, payment of rewards and distribution of all game pieces such as houses, land fills, agricultural land, etc. Each player should choose a token or game piece **38** to represent him as he moves around the game board. Each token should be placed on the square labeled "Go" at the beginning of the game. Each player should be provided with one house representing the original population of his continent. The house must be positioned in one of the 50 districts on the continent. The decision where to place it will depend on the player's strategy for future land use. However, once positioned the house cannot be moved throughout the remainder of the game.

Each player rolls the dice once, and the player with the highest total begins the game by rolling the dice again and moving his token the number of spaces indicated by the dice. After he has completed his turn, play then proceeds to the next player to the left and play continues around the board. When play returns to the original player, he again rolls the dice and moves his token from the square where he landed to the square indicated by the latest roll of the dice. Two or more tokens may rest on the same square at the same time.

Player doubles number of houses on his continent when he lands on square labeled "YOUR POPULATION HAS DOUBLED," unless he holds an appropriate RESEARCH & DEVELOPMENT card. Houses may be placed on continent in two ways:

1. URBAN DEVELOPMENT — four houses per district placed on any district regardless of potential. Must complete one set before beginning another. Each completed urban district must be accompanied by an agricultural district or the player will lose the game.
2. RURAL DEVELOPMENT — one house per GREEN district (restricted to high agricultural potential districts). All urban (non-green) districts in progress must be completed before rural development is started. Once developed, rural districts cannot be used again, except for continued development into an urban development. If this is done, conversion of one district must be complete before another is begun.

   Rural developments are self-supporting and need no supporting agricultural lands.

A player may alternate between the two options (urban and rural) as the game progresses. Once placed on a district, houses cannot be removed, however, more can be added.

Example: player has two urban developments completed, and three agricultural land districts, when he lands on "YOUR POPULATION HAS DOUBLED." He may decide to add one more urban development (since he has enough agricultural land to support it) plus four rural developments, which needs no additional agricultural support. This would satisfy his population doubling and save him having to immediately develop more agricultural land. Later he may wish to return to more urban development.

Each player has an air pollution monitor consisting of a sliding pointer and a scale marked from **0** to **16.** Sixteen represents the highest concentration of air pollutants possible, in the air over the player's continent.

The monitor will increase as player lands on various air pollution penalty squares.

Pollutors are defined as groups of four houses per district, airports, highways, factories, and incinerators.

The monitor will decrease when player:

1. lands on appropriate air cleaning square
2. pays bank $2,000 per point lowered
3. holds appropriate RESEARCH & DEVELOPMENT card

When a player's indicator shows air pollution in excess of **16** he must:

pay bank $2,000 per point in excess of **16.**

Example: player incurs a penalty of **7** points while monitor reads **13.** He increases monitor to **16** and pays four point penalty at $2,000 per point or $8,000.

Player remains vulnerable to penalty throughout game.

ADDING LAND FILLS

Players with four or more houses, landing on square labeled "LAND FILLS OR INCINERATOR" must add one land fill per four houses or one incinerator. With fewer than four houses penalty is ignored.

ADDING POWER LINES

Player landing on square labeled "POWER LINES" must add one per four houses on his continent. With fewer than four houses penalty is ignored.

Land Fills and Power Lines are not pollutors but are considered penalties since they permanently occupy districts which may be needed later.

SELLING DISTRICTS

Player landing on square providing him with an option of selling one of a group of specified districts, may do so at a substantial profit, received from bank. In return place appropriately labeled cardboard square on the district chosen.

A decision not to sell, or lack of available space, results in payment of penalty to bank as instructed.

AGRICULTURAL SUBSIDY

Collect from bank $5,000 per excess agricultural land district (see AGRICULTURAL LAND). Excess land districts are those beyond number needed to support urban populations.

Example: player with five urban developments and eight agricultural land districts would receive subsidy for three districts ($15,000) Rural developments need no agricultural support.

MONEY BORROWING

Money may be borrowed from fellow player on terms agreeable to both but may not be borrowed from bank.

PLAYER LOSES GAME

Player must retire from further play when he experiences one of the three pitfalls described under "GAME DESCRIPTION."

SHORTER GAME VERSION

Players may shorten playing time by beginning game with:

1. More than one house population
2. One or more polluters added to each player's continent.
3. One or more points on their air pollution monitors.

The foregoing are merely illustrative of preferred methods of playing the game and preferred specific moves. It is to be understood, however, that the rules and/or specific content of any direction square on path **6** or on cards **24** or **26** may be changed without departing from the scope of the appended claims.

I claim:

1. Game apparatus comprising a playing board having a continuous playing path therearound and a central area; means in said central area defining representations of a plurality of identical land areas; means similarly dividing each of said land areas into a plurality of districts; a movable indicator means adjacent each land area cooperating with indicia indicating pollution levels in its associated land area; at least two sets of cards respectively identifying game moves dependent on the indicated pollution in a player's land area or to decrease said pollution; a plurality of game pieces dimensioned to fit within the outline of a district, some representing houses and others representing a plurality of different land uses, including agriculture, affecting environment; said playing path being divided into sequential areas each having directions for a player and some directing placement of a game piece on a land area, selection of a card from one of said sets of cards, or directing movement of a player's indicator means, playing pieces for placement along said path and; means for determining the extent of movement of playing pieces along said path.

2. Game apparatus as defined in claim **1** including means differently identifying different groups of said districts of each land area.

3. Game apparatus as defined in claim **1** wherein at least some of the cards of at least one of said sets of cards are provided with means directing specific movements of a player's pollution indicator.

4. Game apparatus as defined in claim **1** wherein the cards of at least one of said sets of cards are provided with means directing a bonus or penalty the size of which is dependent on the position of a player's pollution indicator.

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