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(54) **SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS**

(57) The device comprises a surface or sliding board (1) having a motor and a caterpillar or tilting endless belt to be used on snow or similar grounds. Said board has a central longitudinal open space wherein is open space wherein is mounted a tilting structure (6) with rollers (8) by means of a support with axis (4, 13), said rollers supporting and guiding the belt or caterpillar (7). The motor and variator assembly, installed prior to

the support and axis (18), transmits the motion to a tractor roller (9) which causes the rotation of the belt or caterpillar. The tilting system is provided with a shock absorbing device (10) and a system for making inoperative the belt or caterpillar. By means supports with fixing elements for the feet (21) and an acceleration control device, the board can be directed.

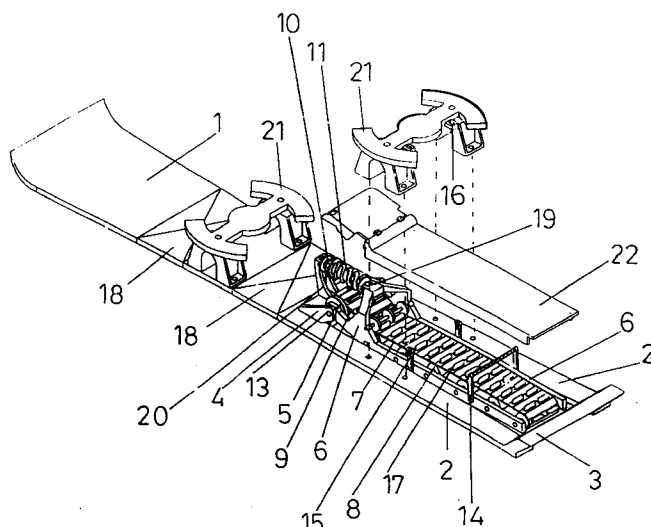


FIG. 1

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Description

The object of this Patent is to warrant the exclusive copyright, throughout all the national territory, of a transport apparatus to be used on snow or similar grounds, which, versus those already known, represents an inventive novelty, the constructive characteristics of which, unknown up to the present, gathers in its design sufficient reason to justify the present declaration of inventive activity, as demonstrated in this specification.

Consequently, for said object, is claimed the privilege of both industrial and commercial exclusive use, in accordance with provisions in the legislation in force as regards matters of Patent Rights, noted in article 4 of Law 11/986 of the 20th March, according to which, new inventions which imply an inventive activity and which are susceptible to industrial application, are capable of being patented.

CURRENT STATE OF THE ART

No background is known in relation to the present invention.

All systems, national or foreign apparatus, with motor device and designed for forward motion or travel on snow or similar grounds, greatly differ in their characteristics and design which is the object of this present invention.

BRIEF DESCRIPTION OF THE INVENTION

It deals with an apparatus unknown up to the present, since it consists of ski-type of board, though with greater width between the side edges. A motor has been installed on the same, which transmits motion by means of a chain or toothed belt and moves a caterpillar or endless belt system equipped with a gripping device on snow, and this belt or caterpillar is supported and guided on rollers which in turn are supported by the ends of their axis to a tilting structure which is provided with a shock absorbing device. The tilting structure-belt is mounted in an open space made on the board, longitudinally centered on the same, placed behind the motor. The tilting structure is provided with a fixing system which prevents the belt, if desired, from touching the snow. Supports permit placement of the feet so as to thus direct the board.

DESCRIPTION OF THE DRAWINGS

Figure 1 represents a perspective view of all the assembly of the apparatus, indicating the coupling of the protection shell and rear fixing support. Marked with an asterisk are the areas on which may be placed the motor, the automatic variator and the fuel tank.

Figure 2 represents an elevational view of the apparatus.

Figure 3 represents a plan view of the apparatus. Marked with an asterisk are the possible areas on which

may be placed the motor, the automatic variator and the fuel tank.

Figure 4 represents a right hand side view.

DETAILED DESCRIPTION OF AN EMBODIMENT OF THE INVENTION

It deals with a board similar to a ski-board (1), though with wider dimensions than conventional ones. An open space has been performed on this board, which is longitudinally centered as regards the board and which starts approximately in the middle of the total length of the board and reaches almost the end of the same, with an approximate width of 3/5 of the total width of the board. Thus achieving a sliding board with front spatula, and as from approximately the middle of which, only two arms of the board continue up to the front part. The two arms (2) rejoin at their end points, though on a higher plane (3) to that of the board, thus offering greater stiffness to the assembly and preventing that the rear union be a hindrance to the advancing motion over the snow.

On the area immediately in front of the open space, a support (4) is mounted, with axis device (13) in cross direction to the board. This axis supports a toothed roller (9) which couples with the teeth or attachment area inside the belt or caterpillar (7), which is also equipped with attachment devices for the snow on its outside area (17). The roller has a pulley or pinion (5) attached at an end, which receives the movement by means of a toothed belt or chain which comes from the automatic variator system or automatic clutch, moved by the motor. From the ends of the roller (9) and pulley (5) carrier axis (13), two arms, longitudinal to board (6), grow perpendicularly to the axis, arranged consequently, throughout the length of all the open space, between both sides of the board. Said so called arms or tilting structure (6), are joined in cross direction by various rollers (8) and offer the belt or caterpillar the support and correct trajectory to be followed. The tilting arms (6) are joined at their upper and front part, forming an arch (19), housing on its peak, an end of the shock absorbing device (10); the other end of the shock absorbing device is attached to a central support part (20). On the axis of the roller (13), the arms and guide roller structure (6, 8) tilts, which in turn support the endless belt or caterpillar (7).

For placement of the feet on the board, said board carries two supports (21), one for each foot, placed approximately one on the first half and the other on the second half. Each support, is equipped with two support areas, placing a support on the left end and the other on the right end, both supports being joined by a cross-piece, in cross direction to the board, though this cross-piece is raised as regards the plane of the board, due to which, the supports are joined on their upper part. This elevation serves on the rear support, to accomplish the correct operation of the belt-tilting structure assembly. Additionally, by pulling a handle (14) upwards, mounted

onto the tilting structure (6), and simultaneously decompressing the spring of the shock absorbing device, either with a decoupling system of one of its axis or by means of a decompressing screw (11), it achieves that on accomplishment of this simple operation, the belt-tilting structure assembly (6, 7, 8, 9, 14, 15, 22) rises as regards the plane of the board, and remains suspended by hooks, locks or tying devices placed on the tilting structure (15) and support of the foot (16). In this manner, the board is free and without the propulsion effect of the belt or caterpillar.

The assembly of the motor, fuel tank and automatic variator is installed on an area (18) prior to the support axis of the tractor roller. To accelerate the motor, and consequently, to achieve greater speed, there is installed an accelerating device which by means of a flexible small tube with an inside rope joined at one end to the carburettor and at the other end, joined to a trigger system with spring, which the driver of the board grips with his hand and adjusts at will.

To achieve a good use of the board, it shall be necessary to use boots which may be similar to those employed for practicing sports such as skiing or snowboarding. Attachment devices shall also be installed on the supports of the board for the corresponding boots. Both the boots and the attachments are easily commercially acquired. Once the said material is correctly installed, we may make use of the board, tilting to one side or the other so as to perform left or right hand turns. For braking, it is necessary to stop the acceleration, followed by skidding on the edges until the board stops.

The apparatus is equipped with a detachable housing of light and resistant material (22) which is attached onto the tilting structure (6) and under the shock absorbing system (10), covering all the assembly made up of the belt-tilting structure, rollers and pulley, thus the driver is protected in case of a fall, at the same time, preventing the belt or caterpillar from hurling snow or other elements.

After describing and representing the industrial object of this Patent in sufficient fullness and clarity to allow its industrial use, it is declared as new and of own invention, with the exception that its accidental details such as shape, size, materials and manufacturing procedures may be altered as regards that described and represented in this present specification, provided that it remains within the unalterable essentiality which is summed up in the following:

Claims

1. SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, characterized in that it comprises a board or sliding surface (11), with supports for placing feet (21) and equipped with a centered longitudinal open space as regards the sides, on which is mounted a tilting structure system (6, 19) with a shock absorbing

system (10), and carrying roller (8) and caterpillar or endless belt (7) with attachment devices (17) for snow or similar grounds, this belt or caterpillar (7) may be moved by a thermal or electric motor, preventing also by means of a device (14, 15, 16), the effect of the belt on the snow.

2. SLIDING BOARD RITE MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, characterized

according to the previous claim, in that the tilting structure is equipped with a shock absorbing system (10) with the possibility, by means of screwing (11) or decoupling of an axis (20), of permitting the decompression of the spring or elastic element, is so desired.

3. SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, according to

the previous claims, characterized in that the tilting structure is equipped with a handle, which, by pulling the same upwards, and in turn decompressing the spring, allows the elevation of the so-called belt-tilting structure assembly, suspending the same by means of hooks, or tying devices (15, 16) designed to this end.

4. SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, according to

the previous claims, characterized in that the board is equipped with a front spatula joined by means of a raised plane (3) of the rear ends, carrying also supports attached to the left and right hand end of the board joined by a crosspiece which is higher than the plane of the board, allowing the placement of the boot (21) attachments, operating thus the tilting structure without hindrance.

5. SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, according to

the previous claims, characterized in that it is equipped with a protection shell of light and resistant material (22), attached to the tilting system and covering the roller, belt and pulley system.

6. SLIDING BOARD WITH MOTOR AND CATERPILLAR OR TILTING ENDLESS BELT TO BE USED ON SNOW OR SIMILAR GROUNDS, according to

the previous claims, characterized in that it is equipped with a motor and automatic variator or automatic clutch, installed (18) prior to the belt, accelerated by means of a control with a trigger system carried in the hand of the driver, being his control joined by means of a flexible small tube with inside rope up to the carburettor, thus accelerating the speed of the motor.

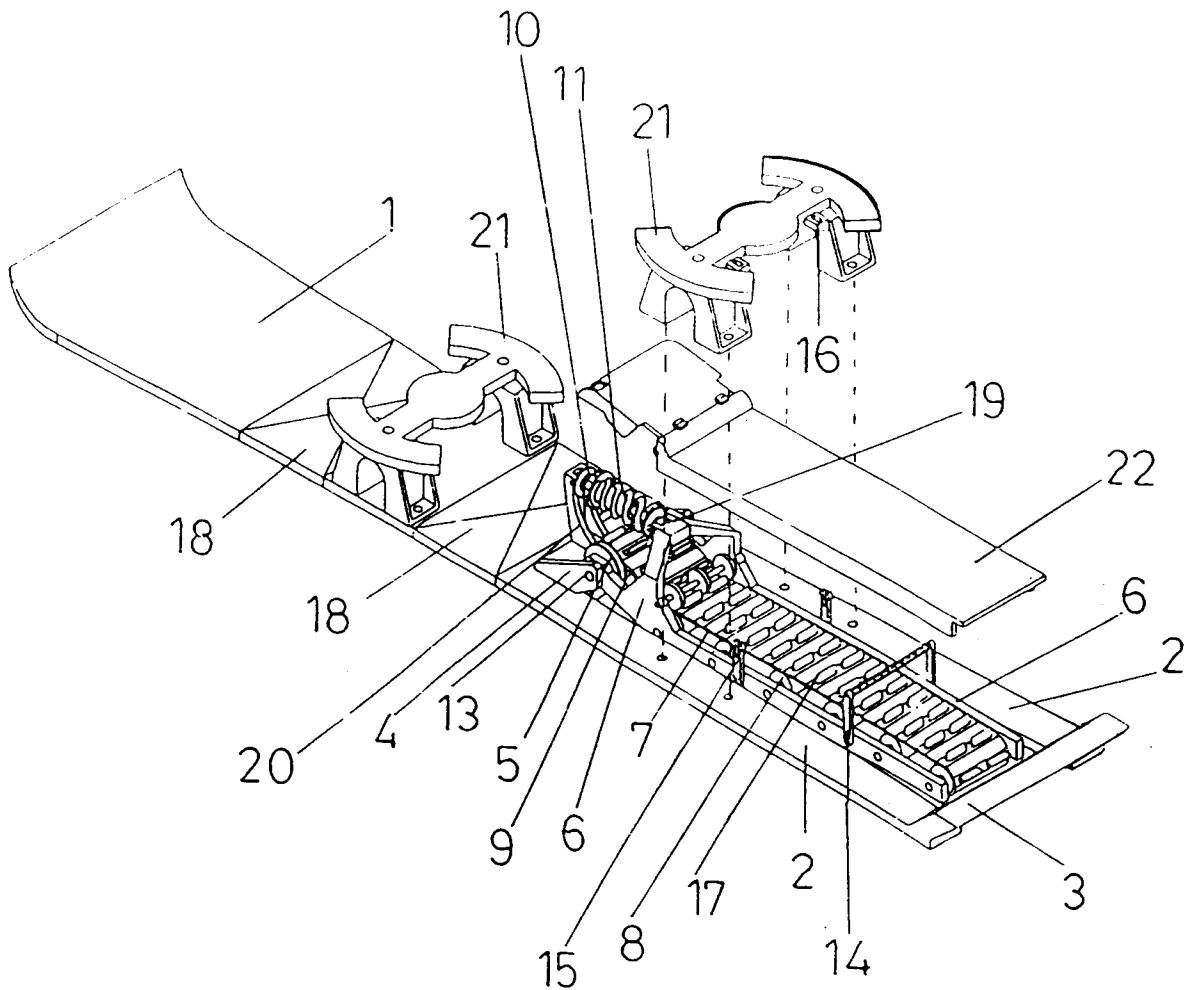
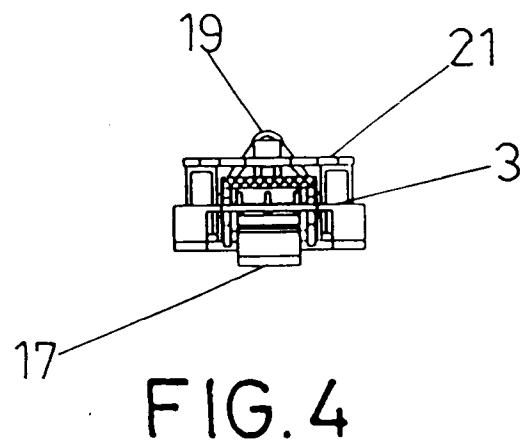
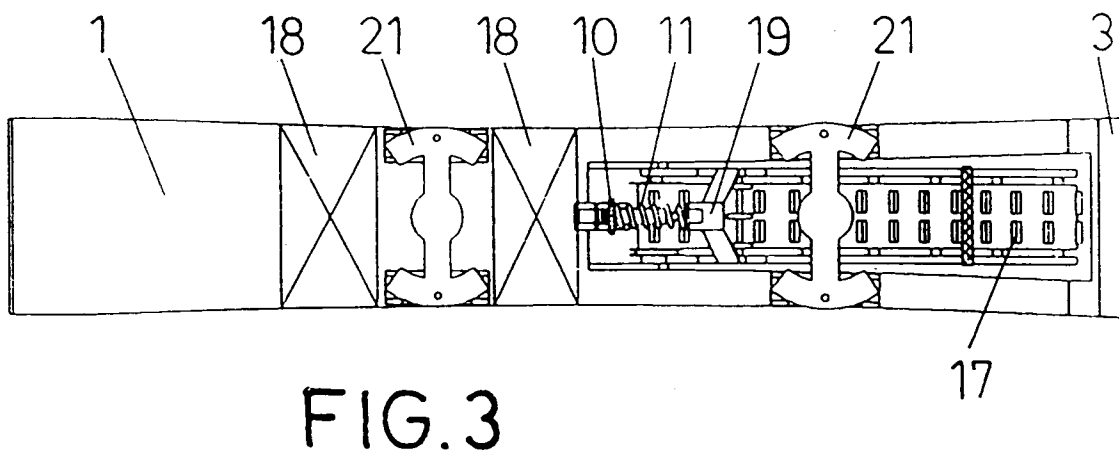
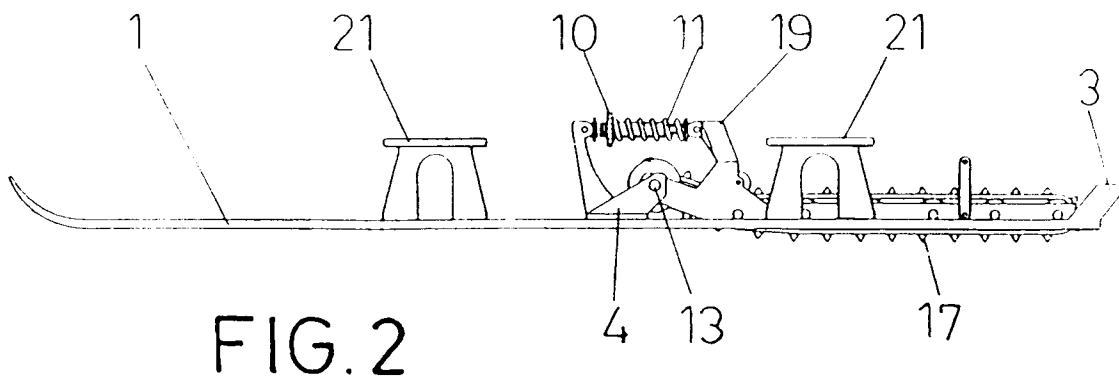


FIG.1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/ES96/00107

A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. ⁶ A63C5/08 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Int. Cl. ⁶ A63C		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
SPTO Small box		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
CIBEPAT, EPODOC, WPIL, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US, A, 2 323 526 (ELIASON) 6 July 1943 see the whole document	1,3-6
Y	---	2
Y	US, A, 3 146 840 (WALSH) 1 September 1964 see column 3, line 4-20; figure 4	2
X	---	1,3
X	US, A, 3 809 173 (MC LEOD) 7 May 1974 see the whole document	1,3
A	---	1,4,5
A	US, A, 4 984 648 (STRZOK) 15 January 1991 see abstract; figures	1,4,5

<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input checked="" type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "T" document published prior to the international filing date but later than the priority date claimed "X" later document published after the international filing date or priority date and not in conflict with the application but cited to underpin the principle or theory underpinning the invention "Y" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is considered with one or more other such documents, such combinations being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search		Date of mailing of the international search report
2 September 1996 (02.09.96)		5 September 1996 (05.09.96)
Name and mailing address of the ISA/ SPTO		Authorized officer
Facsimile No.		Telephone No.