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(54) STRUCTURE OF MULTIFUNCTIONAL SCOOTER

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(57) **ABSTRACT**

An improved structure of multifunctional scooter mainly comprises of a axle base centered with a long hole and respectively connected with the fastening frames on the two sides, two wheel axles projecting from the outer sides of the fastening frames for pivotally jointing the front sliding wheels, the front ski board or the front ice skating blade, furthermore, a connect link jointed to the said rigid axle to allow the vertical rigid axle on the front end of the footboard to go through the said axle base and connect a drive link to the two bottom ends of the two rigid axles; a rear sliding wheel, a rear ski board or a rear ice skating blade disposed on the posterior aspect of the footboard to allow the player while stepping on the footboard surface and sliding on the ground, the snow or the ice to be able to step on the two sides of the footboard to make the rigid axles to deflect leftward or rightward to achieve the controlling of the travel directions of the scooter.

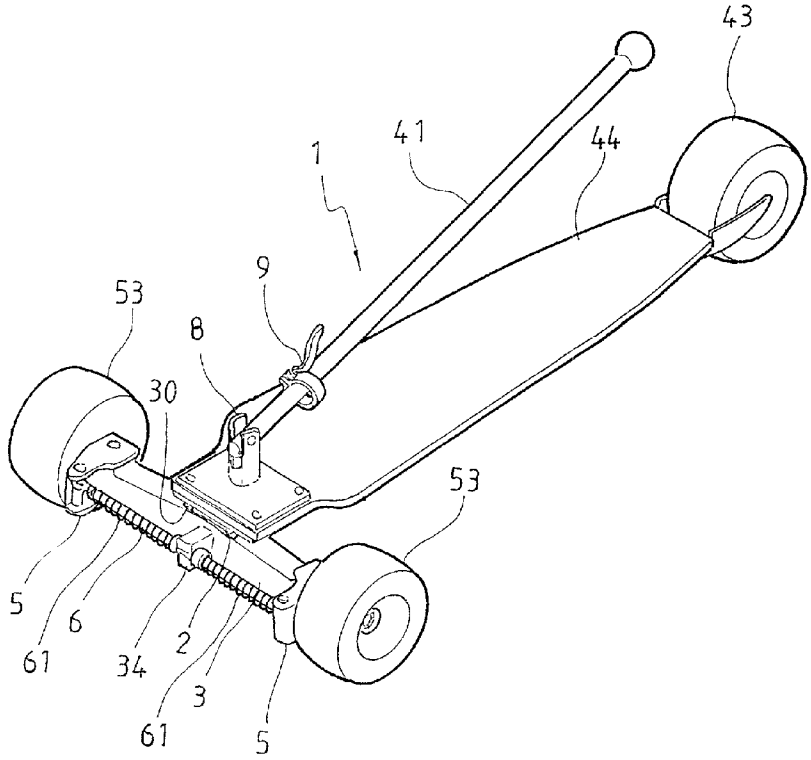


FIG.1
Prior Art

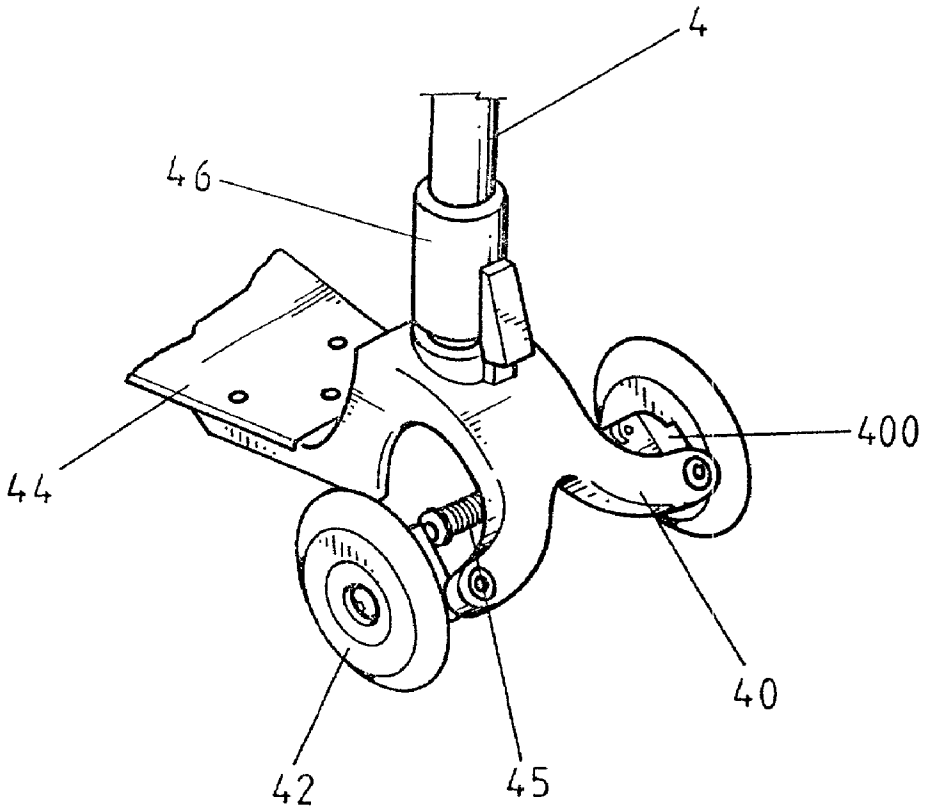


FIG.2
Prior Art

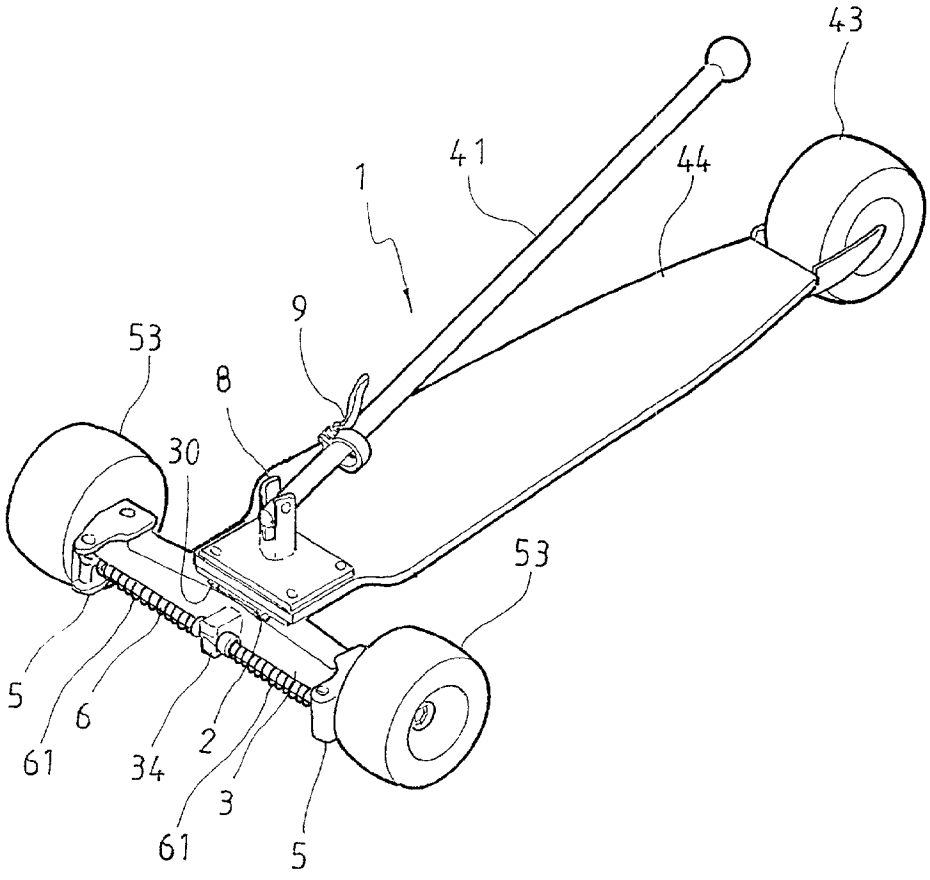


FIG.3

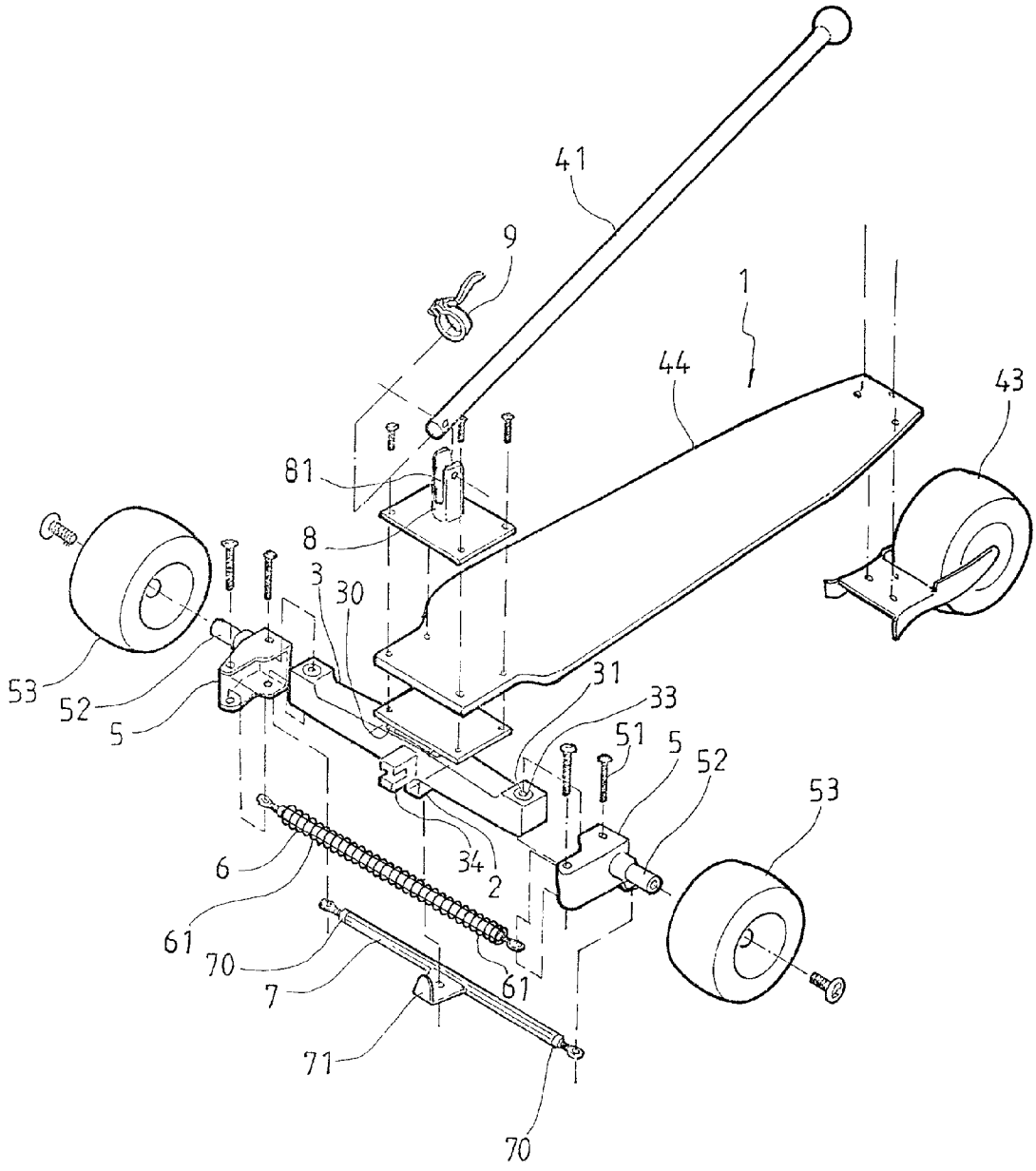
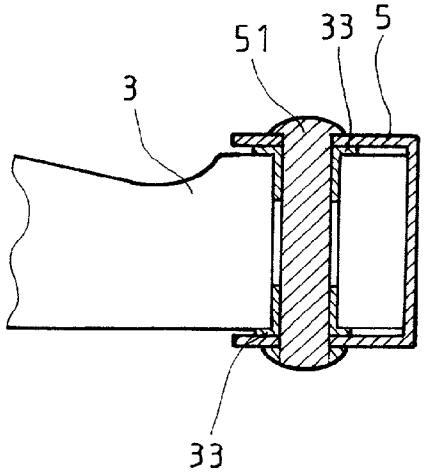


FIG.4



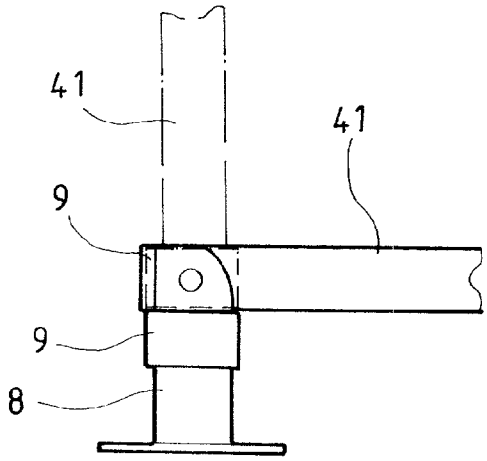
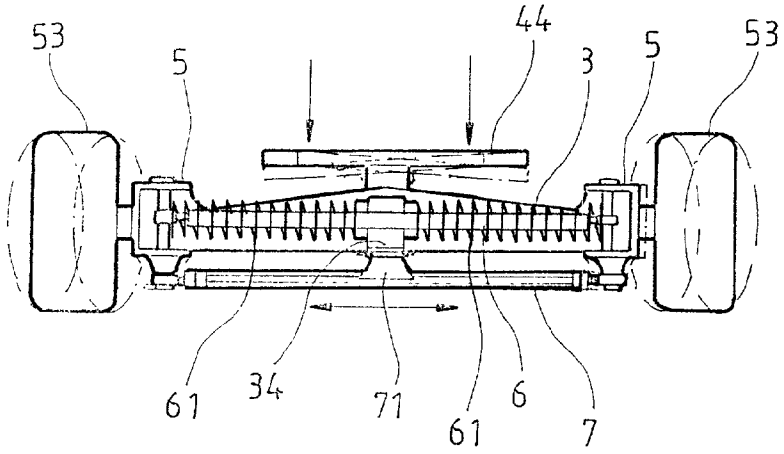


FIG.5



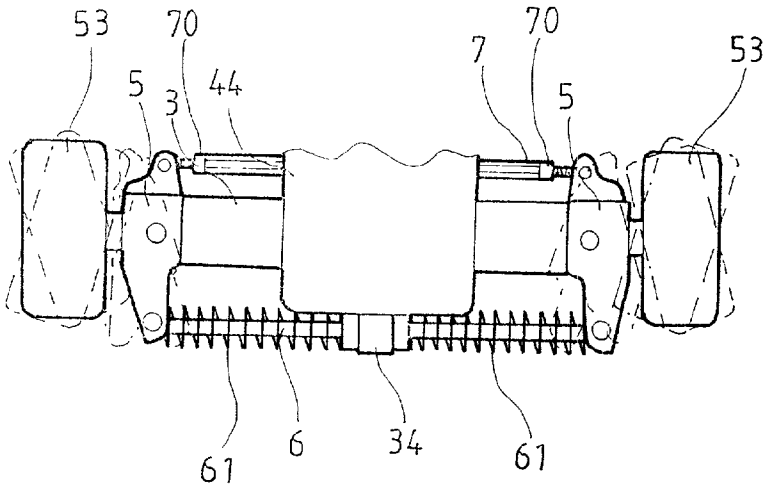


FIG.6

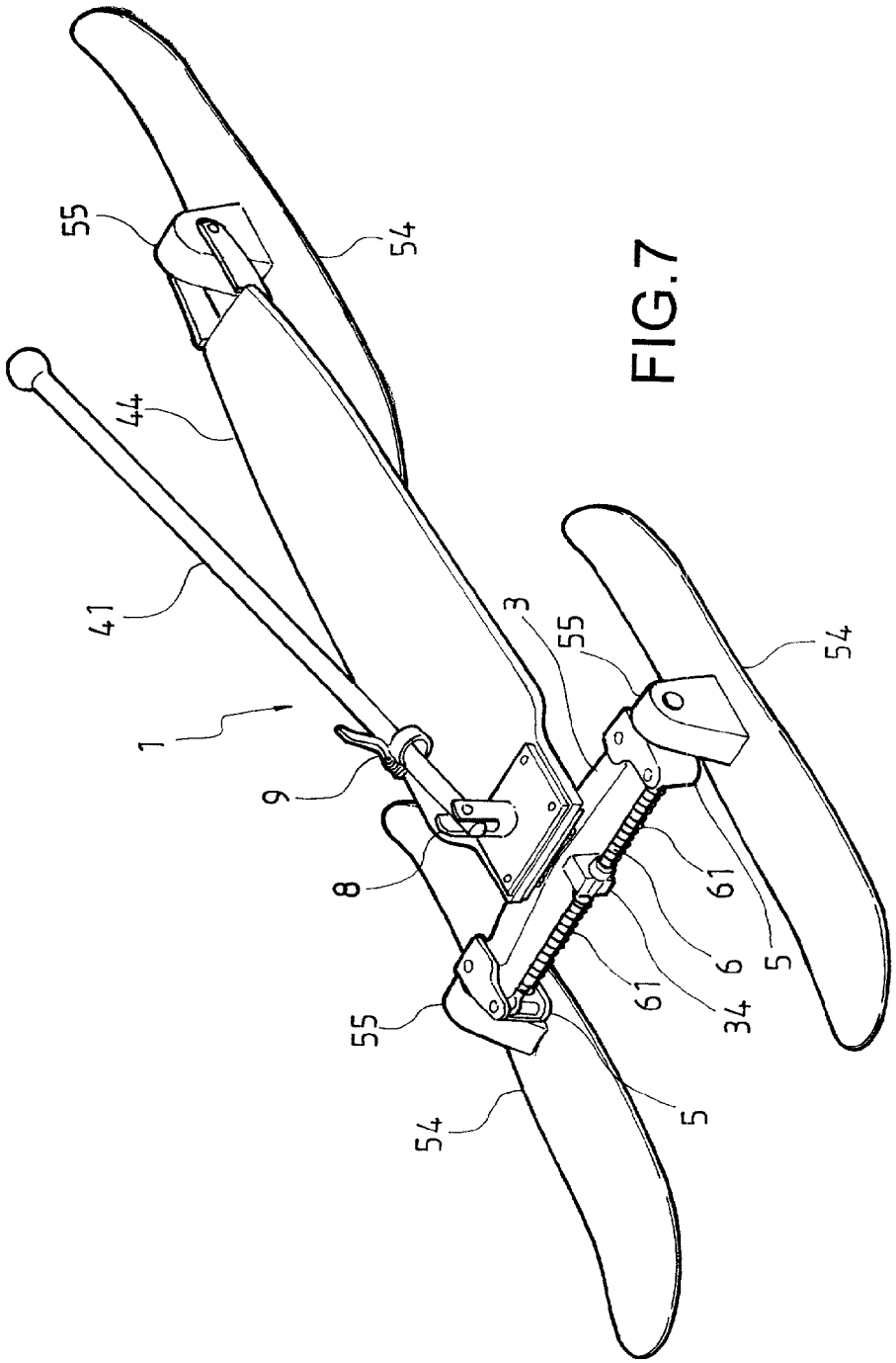


FIG.7

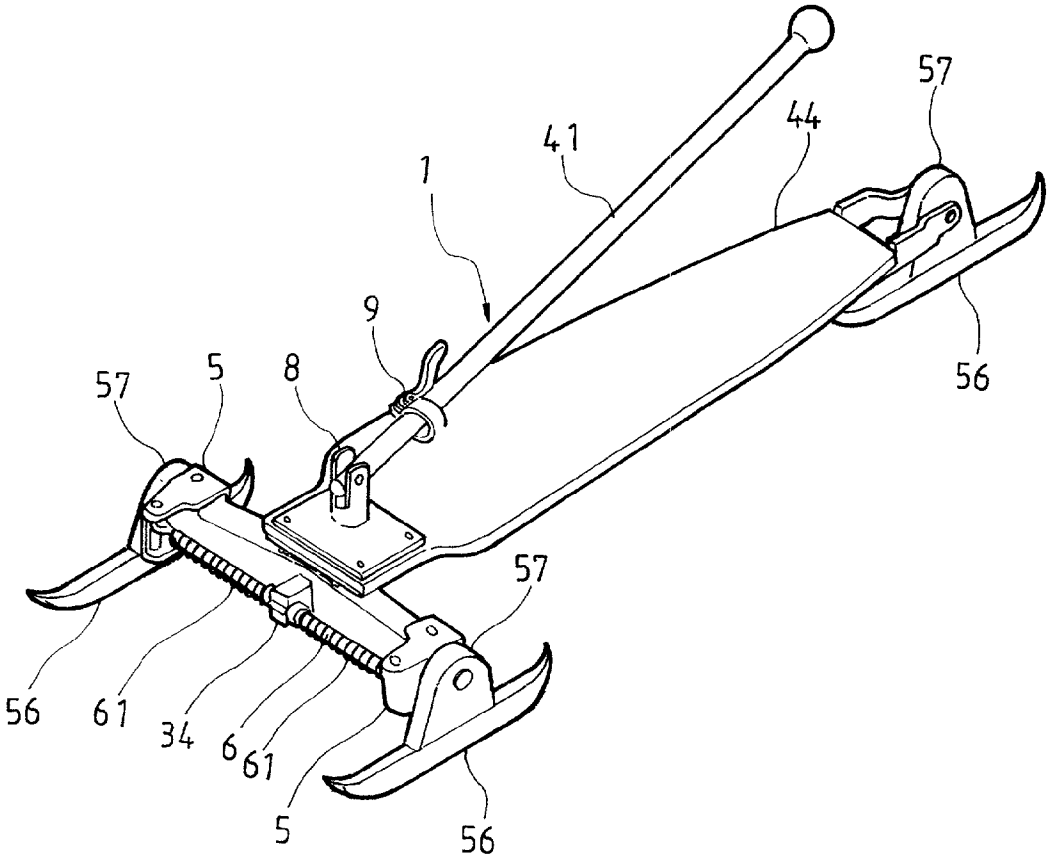


FIG.8

STRUCTURE OF MULTIFUNCTIONAL SCOOTER

BACKGROUND OF THE INVENTION

[0001] 1) Field of the Invention

[0002] The invention herein relates to an improved structure of multifunctional scooter, more specifically, a scooter structure controlling the sliding directions by feet is capable of simple operation and responsive turning.

[0003] 2) Description of the Prior Art

[0004] As widely known, the conventional scooter shown in **FIGS. 1 and 2**, as the isometric drawings of the embodiment during utilization and of partial structure, mainly comprises of a spherical handle **41**, a topside stem **4**, a mounting device **46**, a splayed forward frame **40**, front wheels **42**, a footboard **44**, a rear wheel **43**, and springs **45**, of which the splayed forward frame **40** is disposed at the anterior aspect of the footboard **44** and mounted to each of its two sides is a wheel block **400** that provides for the installation of the front wheels **42**, and situated in the center area of the splayed frame **40** are compression springs **45**, each positioned against the interior sides of a wheel block **400**; the topside stem **4** is disposed at the upper extent of the splayed forward frame **40** and a spherical handle **41** for manual grasping positioned at the upper end of the topside stem **4**, and a mounting device **46** is situated between the splayed forward frame **40** and the topside stem **4**; and a single rear wheel **43** is installed in the center posterior aspect of the footboard **44**; since the structural design of the conventional product is not sound, its operation involves the manual grasping of the spherical handle **41** of the topside stem **4** to control the scooter to turn left or right, as such, when the topside stem **4** is leaned to one side, this results in the application of pressure against the wheel at one side of the front wheels **42** which causes the springs **45** on one side to compress and alter direction, but since the wheel on the other side of the front wheels **42** continues in a straight line, both of the two front wheels **42** are incapable of effectively deflecting synchronously, resulting not only in rough and unresponsive operating control but also diminishes the usable service life.

SUMMARY OF THE INVENTION

[0005] Therefore, the primary objective of the invention herein is to provide an improved structure of a multifunctional scooter capable of allowing the user, while stepping on the surface of the footboard to slide, to control the travel direction of the scooter by stepping on both sides of the footboard to make the front wheels deflect towards the same direction in smooth turning and responsive operation.

[0006] Another objective of the invention herein is to provide wheel axles of the front and rear wheels of the scooter capable of pivotally jointing the ski board or the ice skating blade to enable the scooter to slide on the snow or the ice thus to increase its practical value.

[0007] To enable a further understanding of the main features and the innovative aspects of the invention herein, the brief description of the drawings below is followed by the detailed description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] **FIG. 1** is an isometric drawing of a conventional scooter during utilization.

[0009] **FIG. 2** is an isometric drawing of the partial structure of a conventional scooter.

[0010] **FIG. 3** is a pictorial and isometric drawing of the invention herein.

[0011] **FIG. 4** is a pictorial and exploded drawing of the invention herein.

[0012] **FIG. 5** is an isometric drawing of the connection between the axle base and the fastening frame of the invention herein.

[0013] **FIG. 6** is an isometric drawing of the front wheels in action of the invention herein.

[0014] **FIG. 7** is an isometric drawing of another assembly of the invention herein in embodiment.

[0015] **FIG. 8** is another isometric drawing of another assembly of the invention herein in embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0016] Referring to **FIGS. 3 and 4**, as the pictorial, exploded and isometric drawings of the invention herein, the invention herein, like the conventional scooter **(1)**, mainly comprises a handle bar **(41)**, a footboard **(44)** and a rear wheel **(43)**, wherein a rigid axle **(2)** is disposed at the front end of the footboard **(44)** and inserted to the long hole **(30)** situated at the center of the axle base **(3)** positioned at the lower edge of the front end of the footboard **(44)**; both ends of the axle base **(3)** deflect and extend with sleeve holes **(31)** disposed respectively on the end heads for framing the two fastening frames **(5)** shown in **FIG. 5** as the isometric drawing of the connection between the axle base and the fastening frame of the invention herein. First, the two sliding sleeves **(33)** will be sleeved into the top and bottom ends on the sleeve holes **(31)**, then the fastening frames **(5)** will be framed to insert the fastening screws **(51)** into the sliding sleeves **(33)** and the sleeve holes **(31)** to fasten the fastening frames **(5)** and the axle base **(3)** reciprocally.

[0017] The wheel axles **(52)** protrude from the outer sides of the two fastening frames **(5)** for pivotally jointing two front wheels **(53)**, while two block bodies **(34)** project from the front end at the center of the axle base **(3)** for telescoping a connect link **(6)** and two springs **(61)** on the connect link **(6)** to link its both ends respectively to the front ends of the fastening frames **(5)** and to take the two block bodies **(34)** as the positioning support points.

[0018] After being inserted into the long hole **(30)** of the axle base **(3)**, the two rigid axles **(2)** are pivotally jointed to the fastening panel **(71)** centered on the drive link **(7)** with nuts **(70)** on both ends and link the tow ends of the drive link **(7)** with the bottom ends of the two fastening frames **(5)**.

[0019] A fastening pole **(8)** with notches **(81)** on both front and rear edges is situated on the upper aspect of the front end of the footboard **(44)** to allow the handle bar **(41)** after going through a lock ring **(9)** to be locked to the fastening pole **(8)** and positioned by the upper and lower locks of the lock ring **(9)** to stay vertically or horizontally for the player to manually control the scooter **(1)** or to ship by carrying it.

[0020] By utilizing the assembly of the foregoing structure, the player can manually hold the handle bar **(41)** and step the foot on the footboard **(44)** to constitute the sliding

movement; while stepping the foot on the two sides of the footboard (**44**), due to the left and the right deflections caused by the rigid axle (**2**), the drive link (**7**) and the connect link (**6**) will relatively deflect to the same direction to achieve the function of controlling the direction turning of the scooter (**1**) and correcting the positioning of the front wheels (**53**) through the adjusting rotation of the nuts (**70**) on the drive link (**7**).

[**0021**] Referring to **FIG. 6**, as an isometric drawing of the front wheel in action of the invention herein, to turn left or right of the invention herein while the left or the right sides of the footboard (**44**) being stepped on is controlled by the left or right deflection caused by the rigid axle (**2**) connected at the lower aspect of the footboard (**44**), which relatively makes the drive link (**7**) pull the fastening frames (**5**) to deflect to the same direction and takes the connect link (**6**) as the support point to deflect the front wheels (**53**) to the direction of being stepped, therefore, the whole scooter (**1**) achieve the objective of turning along the same direction; however, when the footboard (**44**) is in stable condition, the axle base (**3**) will resume to the original position due to the elasticity of the springs (**61**), so the front wheels (**53**) will be straightened and move in straight lines retentively.

[**0022**] Referring to **FIG. 7**, an isometric drawing of another assembly of the invention herein in embodiment, the front and rear wheels (**53**, **43**) can be disassembled to pivotally mount the triangular fastening block (**55**) of the ski board (**54**) to enable the scooter (**1**) to slide on the snow; referring to **FIG. 8**, another isometric drawing of another assembly of the invention herein in embodiment, the triangular fastening block (**57**) of the ice skating blade (**56**) can also be pivotally mounted to the positions of the front and rear wheels (**53**, **43**) to enable the scooter (**1**) to slide on the ice, so that the scooter (**1**) can also move in the winter thus to enhance its practical value.

[**0023**] In summation of the foregoing section, the invention herein fully complies with new patent requirements and is hereby submitted to the patent bureau for review and the granting of the commensurate patent rights.

1. An improved structure of multifunctional scooter mainly comprises of:

A rigid axle disposed at the lower edge of the front end on the footboard for connecting with a drive link; a axle base, situated at the lower aspect of the front end on the footboard, with a long hole at the center, two ends deflecting in proper angles and sleeve holes set respectively on the end heads for telescoping the two sliding sleeves to frame and lock the fastening frames; a fastening pole positioned at the front aspect of the front end on the footboard with notches on both the front and rear edges for locking and fastening the handle bar; two fastening frames situated at the two ends of the axle base with wheel axles protruding from the outer sides for pivotally jointing the front wheels and connecting with a drive link at the front end; by utilizing the foregoing structure, when the footboard is stepped on the left or the right sides, the said rigid axle will deflect leftward or rightward to articulate the fastening frames using the drive link as the support point to lean to the same direction to achieve the objective of controlling the direction turning of the front wheels.

2. As mentioned in claim 1 of the improved structure of the multifunctional scooter, wherein the connect link pivotally jointed at the wheel axle is telescoped by two springs to enable the footboard while not being stepped on either the left or the right side to resume to the horizontal position.

3. As mentioned in claim 1 of the improved structure of the multifunctional scooter, wherein the wheel axle is capable of providing the pivotal joint for a triangular block body to be connected with a ski board or a ice skating blade for sliding on the snow or on the ice.

4. As mentioned in claim 1 of the improved structure of the multifunctional scooter, wherein two block bodies protrude from the front end of the wheel base for telescoping the connect link to constitute the function of positioning.

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