

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
30 March 2006 (30.03.2006)

PCT

(10) International Publication Number  
**WO 2006/032275 A2**

(51) International Patent Classification:

**B62B 3/12** (2006.01)      **B62D 51/02** (2006.01)  
**B62B 5/00** (2006.01)      **A63B 55/08** (2006.01)  
**B62D 61/08** (2006.01)

(21) International Application Number:

PCT/DK2005/000593

(22) International Filing Date:

21 September 2005 (21.09.2005)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

PA 2004 01453      24 September 2004 (24.09.2004)      DK

(71) Applicants and

(72) Inventors: **IVERSEN, Lorens, Peter** [DK/DK]; Møllebakken, 5, DK-9550 Mariager (DK). **IVERSEN, Helga, Moos** [DK/DK]; Møllebakken, 5, DK-9550 Mariager (DK).

(74) Agent: **PATRADE A/S**; Fredens Torv 3A, 8000 Aarhus C (DK).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

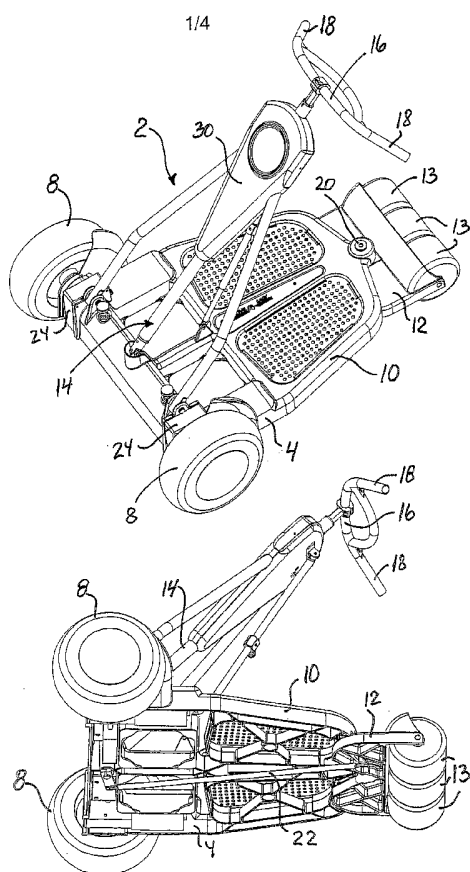
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: TRANSPORTING DEVICE



(57) Abstract: Device (2) for transporting particularly golf equipment, and including a chassis (4) with a support arrangement intended for supporting a golf bag or other objects, a number of manoeuvrable wheels (12, 13), a number of power-driven wheels (8) and a steering unit (14) connected with the manoeuvrable wheels (12, 13), where the transporting device (2) includes a platform (10) disposed behind the power-driven wheels (8), where the platform is provided at the rear with the manoeuvrable wheels (12, 13) and adapted for accommodating a driver of the transporting device (2) standing on the platform so as to transport the driver, the steering unit (14) adapted to be operated either from a position where the driver walks behind the transporting device (2) or from the position where the driver is standing on the platform (10). In a simple way is hereby achieved an improved transporting device or a golf cad which may optionally be used for combined transport of persons and equipment or for transport of golf equipment only, where the driver is walking behind the golf cart, steering it at the same time.



---

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## TRANSPORTING DEVICE

### Field of Invention

The present invention concerns a device for transporting various objects, particularly golf equipment, and of the kind indicated in the preamble of claim 1.

5

### Background of the Invention

Numerous examples of power-driven golf carts are known which are adapted for transporting golf equipment and which may be operated walking behind the cart or from a co-driving position. These prior art golf carts are, however, of complicated construction and have relatively limited application with regard to the fact that golf courses are often placed in hilly terrain. Besides, the prior art golf carts of the kind mentioned are not adapted to be collapsed or to be disassembled for transport, e.g. in a car boot.

10

### Object of the Invention

It is the purpose of the invention to indicate an improved transporting device of the kind mentioned in the introduction, and which by means of simple means may counteract the said drawbacks of corresponding prior art transporting devices.

15

### Brief Description of the Invention

The transporting device according to the invention is characterised in that the transporting device includes a platform disposed behind the power-driven wheels, that the platform is provided at the rear with the manoeuvrable wheels and adapted for accommodating a driver of the transporting device standing on the platform so as to transport the driver, the steering unit adapted to be operated either from a position where the driver walks behind the transporting device or from the position where the driver is standing on the platform. In that connection it is to be mentioned that it is most appropriate and secure that the driver steps up upon the platform from the side.

20

25

In a simple way is hereby achieved an improved transporting device or a golf cart which may optionally be used for combined transport of persons and equipment, or which may be used for transport of golf equipment only where the driver is walking behind the golf cart, steering it at the same time.

30

The transporting device according to the invention is suitably designed so that it is provided with one or more electric motors which are drivingly connected with the power-driven wheels, preferably front wheels.

5 Usually, electric drive motors are self-braking, why it may be particularly suitable in connection with the transport device according to the invention that the driving connection between the electric motors and the power-driven wheels includes coupling means that may disengage the power-driven wheels from the motors.

10 The transport device according to the invention is preferably designed so that it is provided with a number of rechargeable batteries which are preferably disposed between the power-driven wheels. The rechargeable batteries may advantageously be placed in a bag provided with carrying straps or carrying handles, so that it is relatively easy to carry the heavy batteries when the golf cart is e.g. to be collapsed or disassembled for  
15 transport in a car.

The transporting device according to the invention may suitably be designed so that the steering unit includes an upright steering shaft with a handlebar, that the steering shaft is designed with a movable joint, e.g. a universal joint, and with one or more  
20 telescopic members, so that the handlebar can be operated from the driver's position on the platform as well as from the driver's position behind the transporting device.

As mentioned above, the transporting device according to the invention is preferably designed so as to be collapsed and/or disassembled for transport in a usual car boot.

25 With the object of making the transporting device easy to manoeuvre, it may advantageously be designed so that the manoeuvrable wheels are constituted by the rearmost wheels which are swivelling connected to the platform, and that the rearmost wheels are controlled by the steering unit through one or more steering rods.

30 The transport device according to the invention may furthermore advantageously be designed so that the support arrangement is provided with fastening means for fastening a standing golf bag with equipment in the shape of golf clubs etc.

The transporting device according to the invention may furthermore be designed so that the platform is provided at its rear end with a socket for receiving and securing an upright with a seat, thus providing the device with a seat for the driver.

## 5      **Short Description of the Drawing**

The invention is explained in more detail in the following, on which:

- Fig. 1    shows a perspective view of an embodiment of a transporting device or a golf cart according to the invention;
- 10    Fig. 2    shows a perspective view from below of the device or cart in Fig. 1;
- Fig. 3    shows a perspective view of the embodiment in Fig. 1 of a golf cart according to the invention, provided with golf bag and with the handlebar in a rear-wards pivoted position corresponding to the driver walking behind the golf cart;
- Fig. 4    shows a further perspective view of the embodiment in Fig. 1 of a golf cart according to the invention, provided with a golf bag and with the handlebar in upright position corresponding to the driver standing on the platform;
- 15    Fig. 5    shows a further perspective view of the embodiment in Fig. 1 of a golf cart according to the invention, and with the handlebar in upright position as in Fig. 4;
- 20    Fig. 6    shows a further perspective view of the embodiment in Fig. 1, but shown in collapsed state, i.e. where the handlebar is entirely folded down over the platform;
- Fig. 7    shows a side view of a collapsed golf cart, cf. Fig. 6, but with front wheels removed so that the golf cart has minimum height;
- 25    Fig. 8    shows a perspective view of a preferred embodiment of a transport device or golf cart according to the invention;
- Fig. 9    shows the golf cart of Fig. 8 with a golf bag mounted thereon; and
- Fig. 10   shows a perspective view of the golf cart of Fig. 8 seen from behind.

**Detailed Description of the Invention**

The golf cart 2 shown in Figs. 1 – 7 includes a chassis 4, which is adapted at the front for supporting an upright golf bag 6 (Figs. 3 and 4) for golf equipment in the shape of clubs etc. The chassis 4 is designed with relatively wide, not manoeuvrable front wheels 8 and with a platform 10, which at the rear is connected swivelling with a wheel bogie 12 that is also connected to a steering unit 14 with an upper transverse handlebar 16 with handles 18. The rear wheel bogie 12 is provided with several relatively wide rear wheels 13 together almost constituting a rear transverse support roller, and which together with the wide front wheels 8 will form a relatively low wide golf cart 2 which is almost impossible to overturn.

The steering unit 14 is pivotably connected at the bottom with the chassis 4 so that the steering unit 14 may be pivoted as a whole between the shown upright position (Figs. 4 and 5) and a rearwards/downwards pivoted position, where the steering unit 14, see Fig. 3, is swung down over the platform 10 to a position corresponding to the handlebar 16 being operated by a person walking behind the wheel bogie 12, i.e. entirely behind the golf cart 2.

As it appears most clearly from Figs. 1 and 2, the rear wheel bogie 12 is rotatably connected with a rearwards projecting connecting part 20 of the platform 10, and where a steering rod 22 is pivotably connected with the rear wheel bogie 12 at a point laterally spaced apart from the pivot between the wheel bogie 12 and the rear end of the platform 10.

At the underside of the golf cart 2, a front end of the steering rod 22 interacts with lower end parts of the steering unit 14, as some kind of gear may be inserted between the steering rod 22 and the steering unit 14.

It appears clearly on the golf cart 2 that each front wheel 8 is directly drivingly connected with an electric gear motor 24 which is provided with electric power for driving from two rechargeable batteries 26 with associated not shown control units that are incorporated in the back side of a central housing 30 of the steering unit 14 and which are control connected with not shown speed regulators.

Normally, it would not be required to provide the golf cart 2 with actual parking brakes, since the geared electric motors 24 are usually self-braking. The golf cart 2 may anyway be provided with a parking brake so that the golf cart may be safely parked also on sloping ground.

5

The golf cart 2 may be provided with an actual motor brake. The motor control includes a so-called ramp function with the purpose of ensuring an even and soft start and with a spring-biased throttle control, i.e. automatic return of the throttle control to neutral position when releasing. The golf cart 2 may be provided with towing hook so that the golf cart 2 may also be used as work vehicle for maintaining golf courses and for use in gardens and parks.

10

15

With the intention of towing or pushing the golf cart 2, there will preferably be inserted suitable coupling means between the front wheels 8 and the drive shafts of the geared electric motors.

20

The golf cart 2 will be made of lightweight materials to the greatest possible extent, so that its individual parts become as light as possible. The platform 10 will e.g. be made of a supporting frame of aluminium sections and of an upper carrier surface in the form of a shell structure of reinforced plastic, e.g. glass fibre-reinforced thermosetting plastic.

25

In hilly terrain it has appeared disadvantageous with a rear wheel bogie 12, because the relatively wide drum-like rear wheels 13 demand increased motor power. Therefore, the golf cart 32 shown in Figs. 8-10 represents a preferred embodiment of a golf cart according to the invention.

30

It has appeared very advantageous that the rearmost common wheel bogie 12 has been substituted by separate steering rear wheels 34 which may be turned in a simple way by means of two steering rods extending between laterally projecting arms at the lower end of the handlebar 16 and pivoting arms for each their rear wheel 34.

Finally, it is to be mentioned that it will be within the scope of the invention that the disclosed golf cart 2, 32 may find application in other areas, by way of example for

local transport of person on hospitals, in airports, in shopping malls, in warehouses etc.

**CLAIMS**

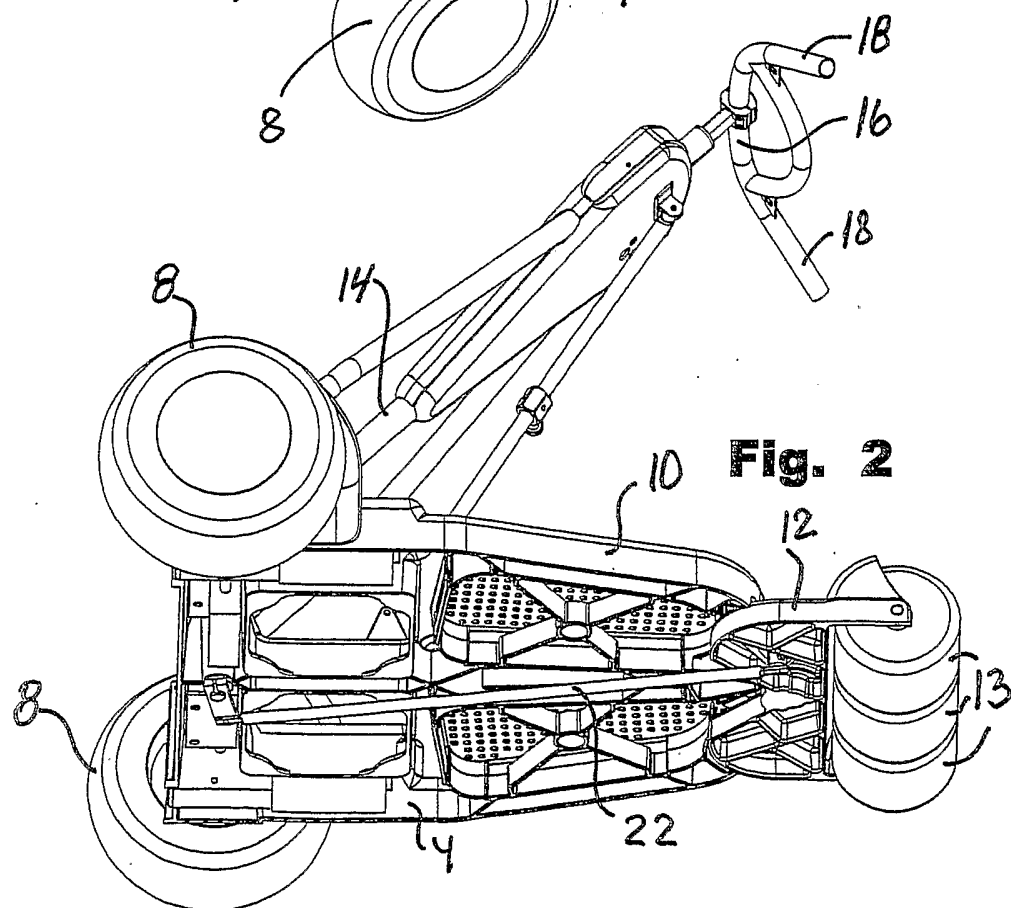
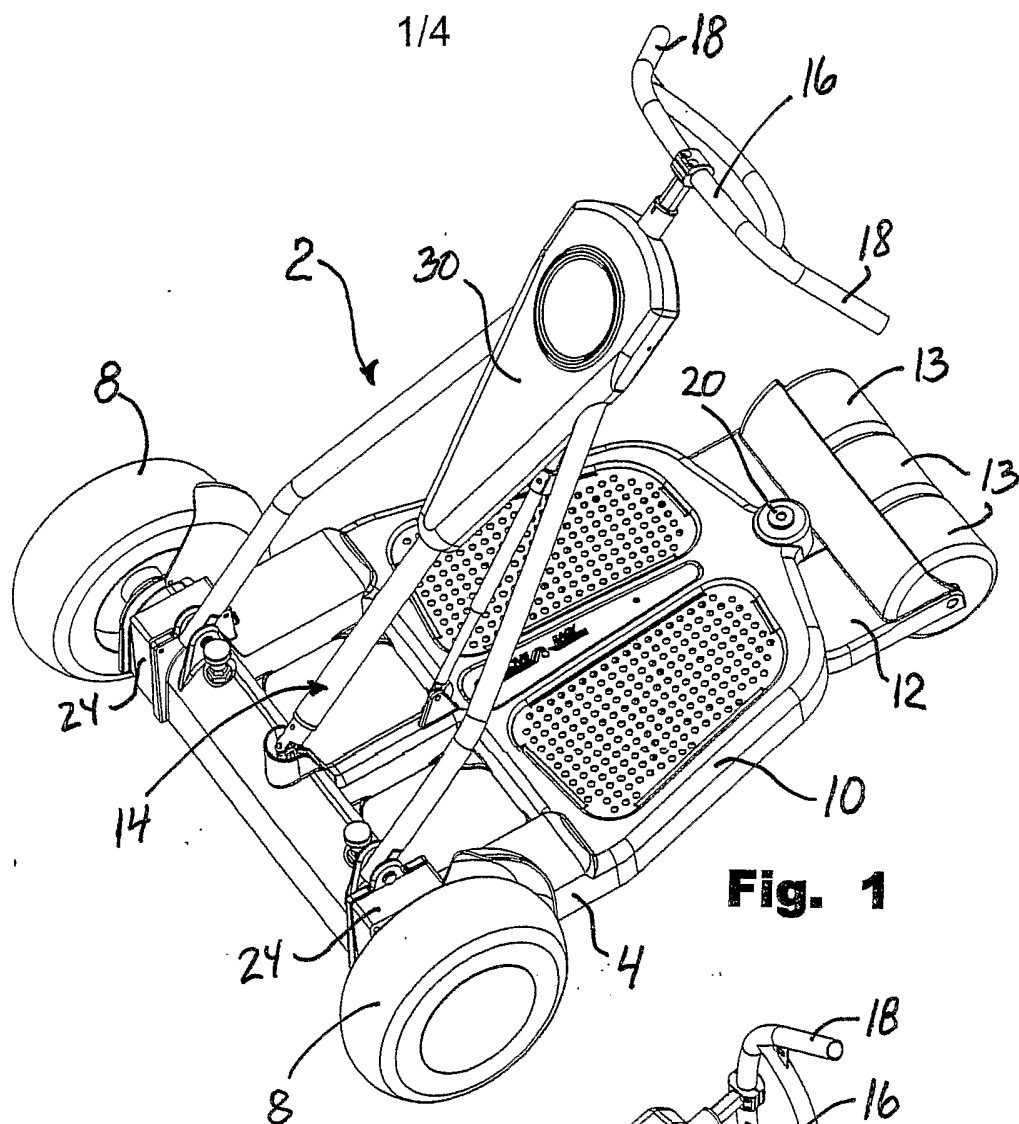
1. Device for transporting, particularly for golf equipment, and including a chassis (4) with a support arrangement intended for supporting a golf bag or other objects, a number of manoeuvrable wheels (13), a number of power-driven wheels (8) and a steering unit (14) connected with the manoeuvrable wheels (13), **characterised in that** the transporting device (2) includes a platform (10) disposed behind the power-driven wheels (8), that the platform is provided at the rear with the manoeuvrable wheels (13) and adapted for accommodating a driver of the transporting device (2) standing on the platform so as to transport the driver, the steering unit (14) adapted to be operated either from a position where the driver walks behind the transporting device (2) or from the position where the driver is standing on the platform (10).
2. Device according to claim 1, **characterised in that** it is provided with one or more electric motors which are drivingly connected with the power-driven wheels, preferably front wheels.
3. Device according to claim 1 and 2, **characterised in that** the driving connection between the electric motors and the power-driven wheels includes coupling means that may disengage the power-driven wheels from the motors.
4. Device according to claim 1 and 2, **characterised in** being provided with a number of rechargeable batteries which are preferably disposed between the power-driven wheels.
5. Device according to claim 4, **characterised in that** the rechargeable batteries are placed in a bag provided with carrying straps or carrying handles.
6. Device according to claim 1, **characterised in that** the steering unit includes an upright steering shaft with a handlebar, that the steering shaft is designed with a movable joint, e.g. a universal joint, and with one or more telescopic members, so that the handlebar can be operated from the driver's position on the platform as well as from the driver's position behind the transporting device.

7. Device according to any of the preceding claims, **characterised in that** it is adapted to be collapsed and/or disassembled for being transported in a usual car boot.

5      8. Device according to claim 1, **characterised in that** the manoeuvrable wheels are constituted by the rearmost wheels which are swivelling connected to the platform, and that the rearmost wheels are controlled by the steering unit through one or more steering rods.

10     9. Device according to claim 1, **characterised in that** support arrangement is designed with fastening means for fastening an upright golf bag with equipment in the form of golf clubs etc.

15     10. Device according to claim 1, **characterised in that** the platform is provided at its rear end with a socket for receiving and securing an upright with a seat.



2/4

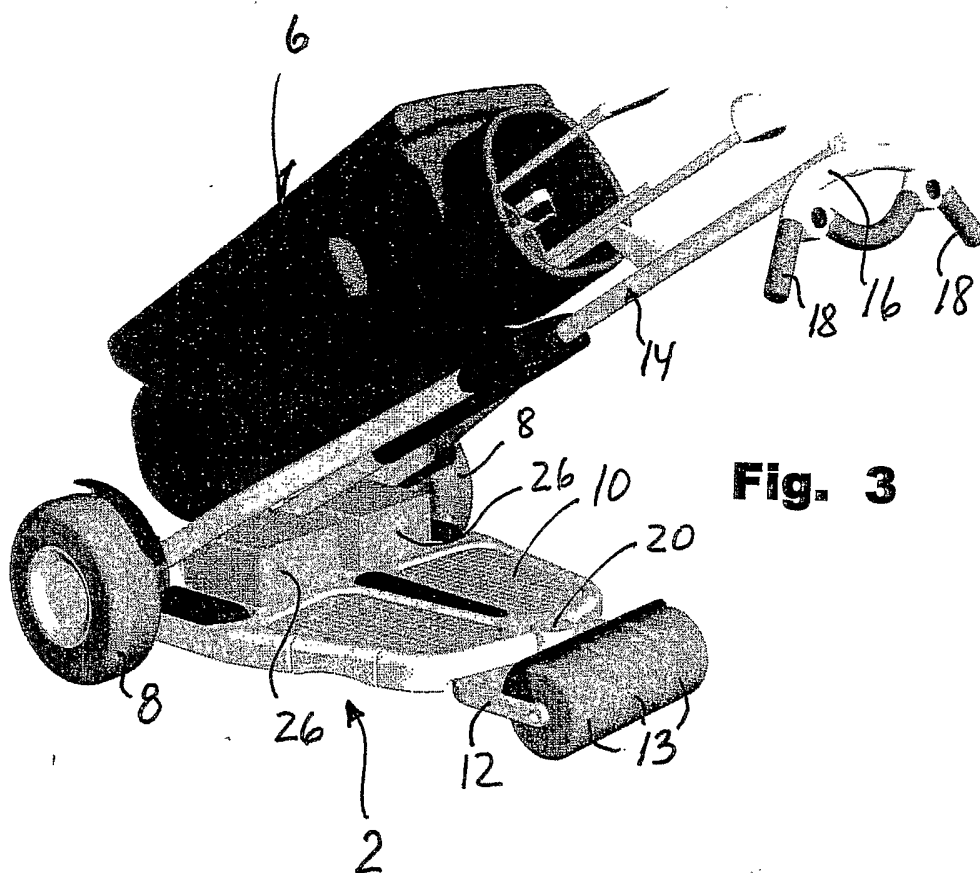


**Fig. 3**

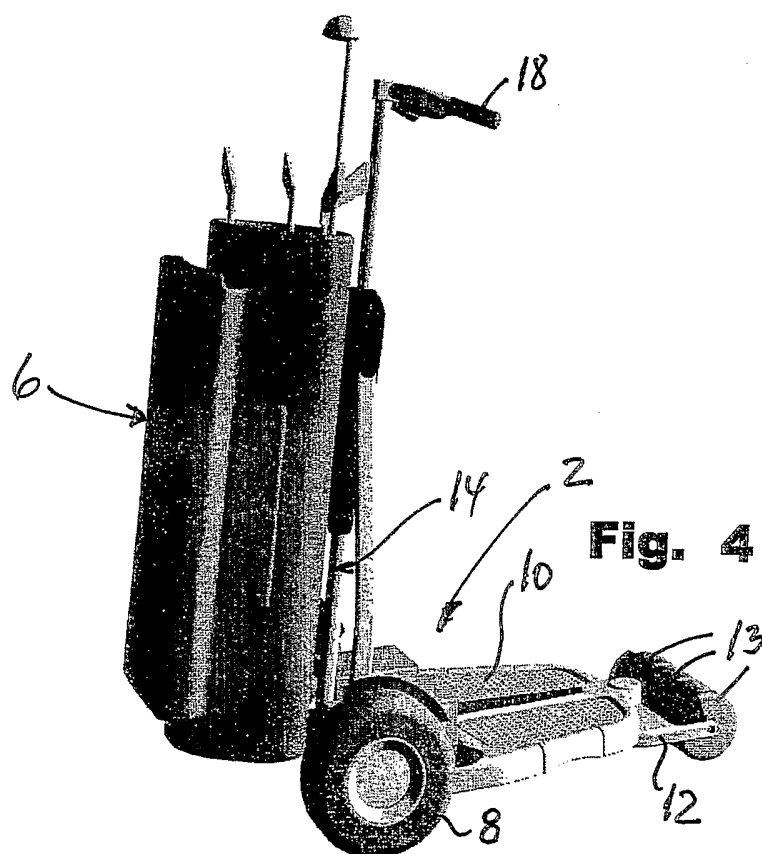
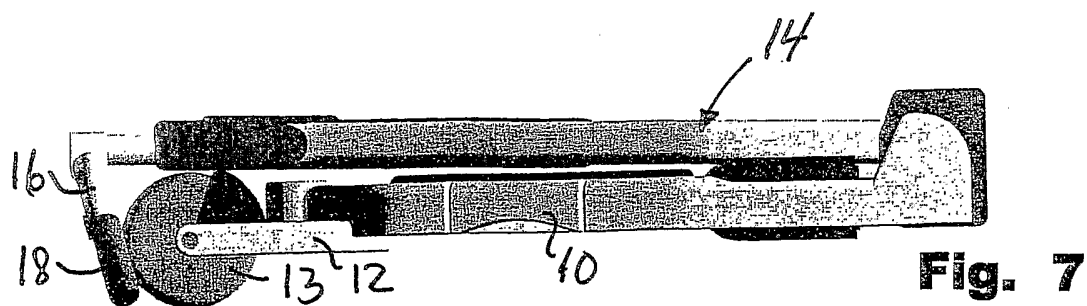
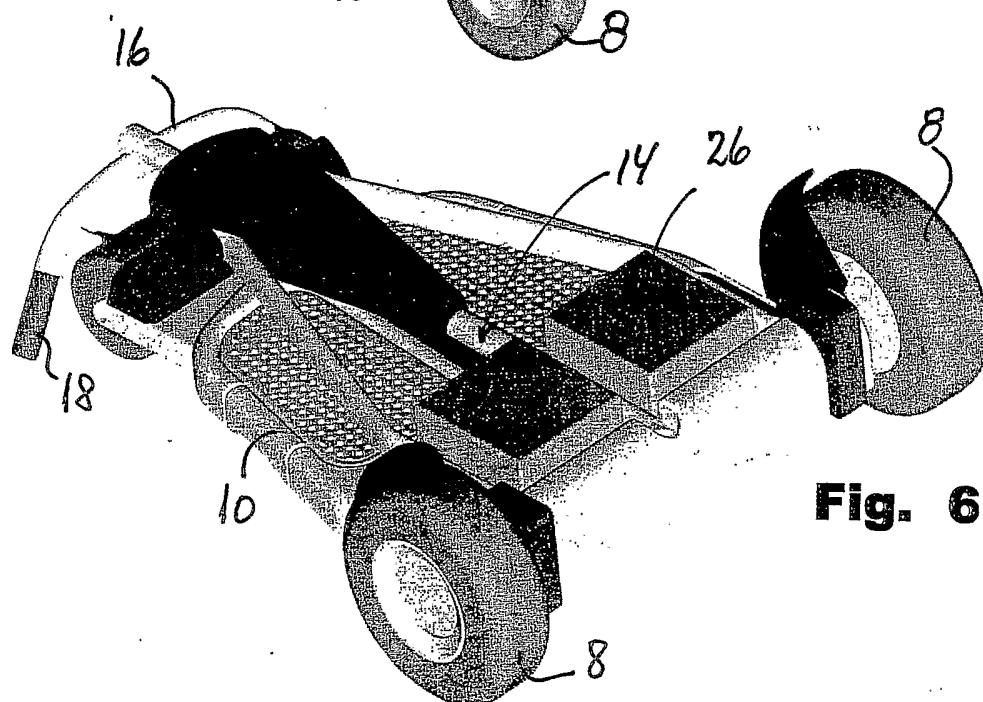
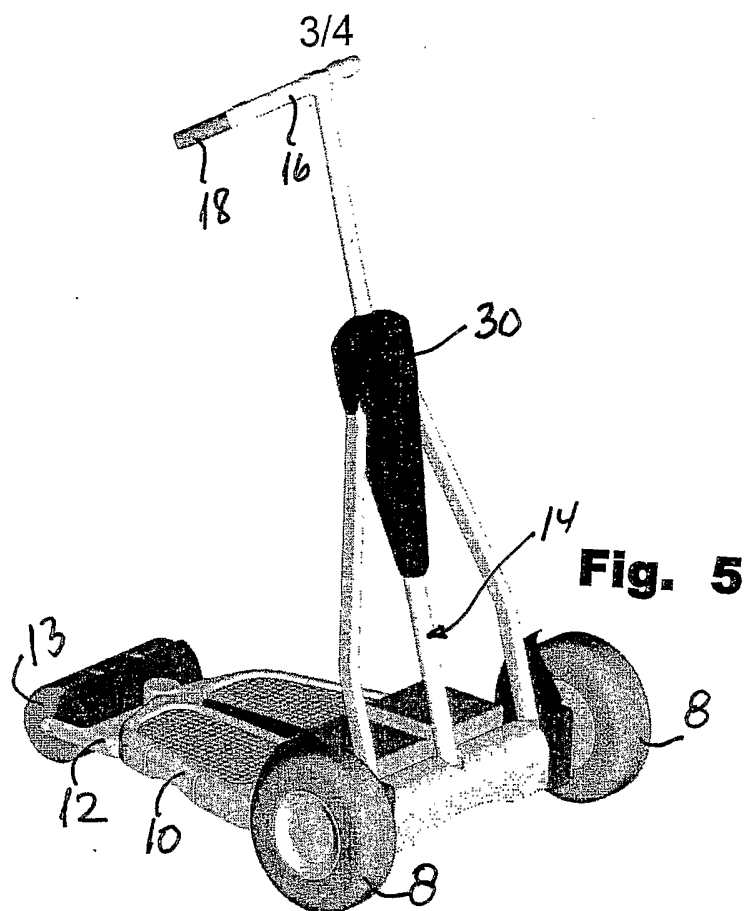


**Fig. 4**



4/4

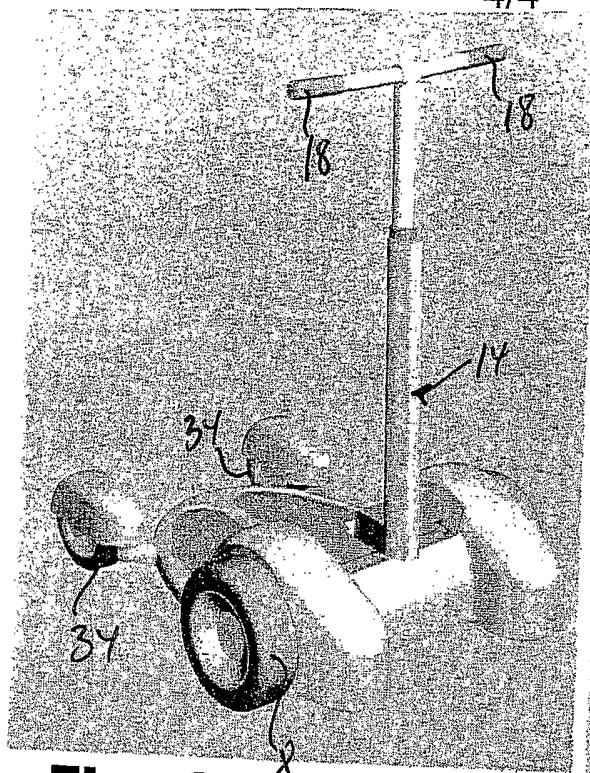


**Fig. 8**

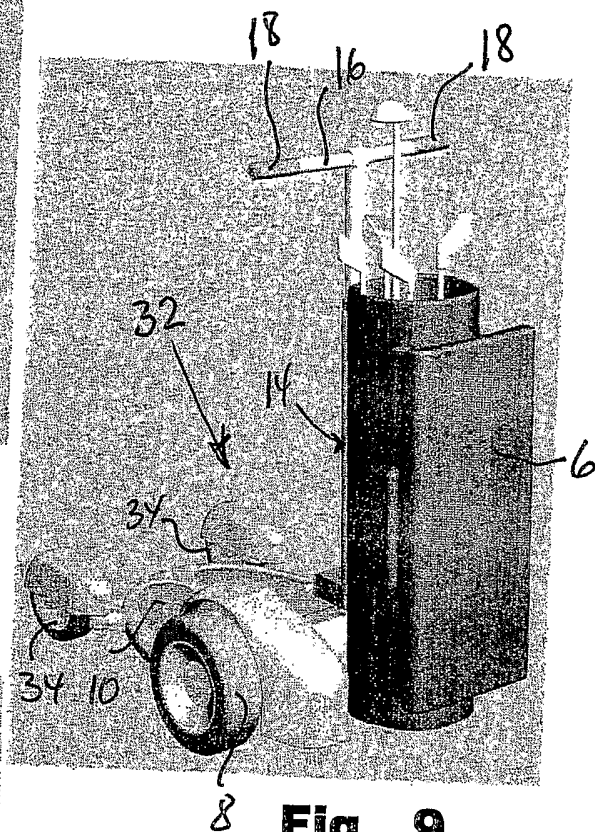


**Fig. 9**

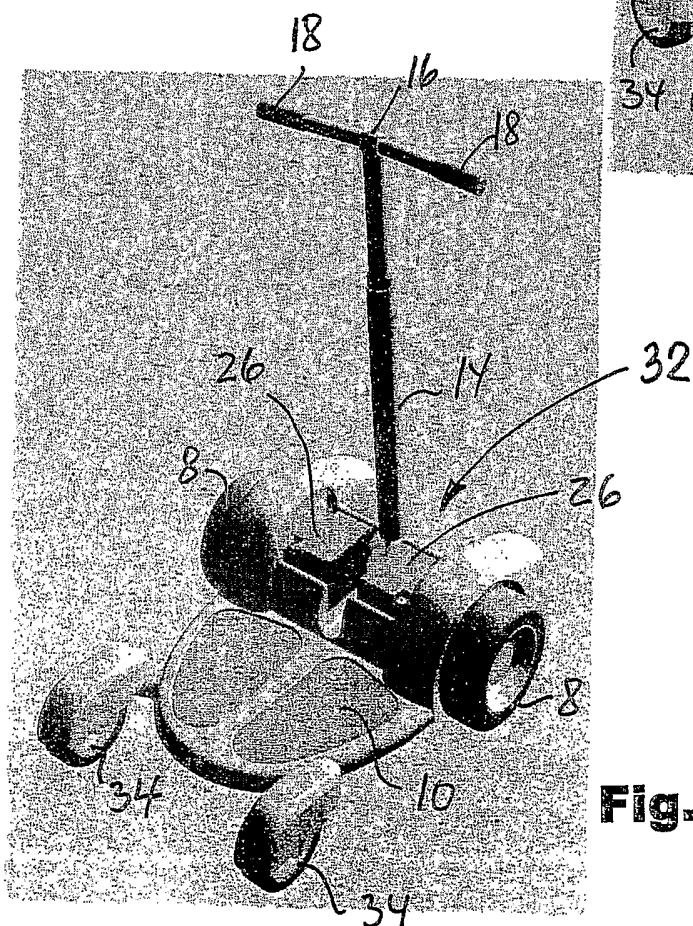


**Fig. 10**