CLAIMS

1. A recharging assembly comprising a mobile vehicle and a recharging base (200) of a form complementing the mobile vehicle and capable of receiving the mobile vehicle and intended to recharge a battery of the mobile vehicle comprising at least one wheel (50, 51, 52), the base (200) being able to be connected to an electrical source, characterized in that the base (200) comprises:

- a reception surface (210) and a baseplate plane (220) intended to be placed on a reference plane (230), the reception surface (210) and the baseplate plane (220) of the base (200) forming an acute angle (240),
- a hemispherical cavity (250) hollowed out in the reception surface (210) and intended to receive the at least one wheel (50, 51, 52),
- at least one electrical connector (260) on the reception surface (210) so as to allow the connection of the base (200) with the battery when the at least one wheel (50, 51, 52) is lowered into the hemispherical cavity (250),

in that the reception surface comprises a guideway (290) produced in the reception surface (210) between the intersection of the reception surface (210) and of the baseplate plane (220) and the cavity (250), the guideway (290) being intended to guide the at least one wheel (50, 51, 52) toward the cavity (250).

2. The recharging assembly as claimed in the preceding claim, characterized in that the base further comprises a presence connector (265) of the mobile vehicle on the base (200) so as to be activated after the connection of the electrical connector (260) and of the battery.

3. The recharging assembly as claimed in one of the preceding claims, characterized in that the base comprises a first key form (270) positioned at the intersection between the reception surface (210) and the baseplate plane (220), intended to form an abutment for a second wheel (51, 52) of the vehicle.

4. The recharging assembly as claimed in one of the preceding claims, characterized in that the guideway (290) is configured to ensure a centering of the wheel (50) about a main direction of the guideway (290), and in that the accuracy of the centering increases on approaching the cavity (250).

5. The recharging assembly as claimed in one of the preceding claims, characterized in that the cavity (290) has a center (300) and a pole (310), an axis Z passing through the center (300) and the pole (310) being substantially at right angles to the reference plane (230), and in that the base (200) comprises a void (320) passing through the base (200) from the pole (310) of the cavity (250) and substantially parallel to the axis Z.

6. The recharging assembly as claimed in one of the preceding claims, characterized in that the connector (260) comprises a mobile contact (330) that is mobile in a direction substantially at right angles to the baseplate plane (220).

7. The recharging assembly as claimed in one of the preceding claims, characterized in that the recharging assembly comprises a perimeter (340) capable of closely following the forms of the mobile vehicle.

8. A recharging method implementing a recharging assembly as claimed in one of claims 2 to 7, characterized in that the recharging method comprises the following steps:

- guiding of the at least one wheel (50, 51, 52) toward the cavity (250) by means of the guideway (290),
- translation of the mobile vehicle over the reception surface (210) (step 1010),
- insertion of the at least one wheel (50, 51, 52) into the hemispherical cavity (250) and simultaneous contacting of the electrical connector (260) of the base (200) with the battery of the mobile vehicle (step 1020).

9. The recharging method as claimed in the preceding claim, characterized in that the recharging method further comprises a step of activation of the recharging comprising the following steps:

- verification of the presence of the mobile vehicle on the base (200) by depression by the mobile vehicle of the presence connector (265),
- measurement of the voltage at the terminals of the battery and comparison of the measured voltage to a minimum voltage value and a maximum voltage value,
- measurement of the internal resistance of the battery and comparison of the measured resistance to a minimum resistance value and a maximum resistance value.

10. A recharging method implementing an assembly as claimed in one of claims 3 to 7, characterized in that the recharging method further comprises a step (1030) of abutment of the second wheel (51, 52) against the key form (270).