CLAIMS

1. A cleaning device for cleaning a surface, the cleaning device comprising:

a first tray having a first side and a second side opposite the first side;

a first roller brush adjacent the first side of the first tray for contacting the surface, the first roller brush configured to rotate in a first direction about its longitudinal axis;

a second roller brush adjacent the second side of the first tray for contacting the surface, the second roller brush configured to rotate in a second direction about its longitudinal axis, the second direction being opposite to the first direction; and

a second tray having a first side and a second side opposite the first side, the second tray being located above the first tray, the second tray having a width smaller than a width of the first tray.

2. The cleaning device according to Claim 1, wherein the first roller brush is located at a front of the cleaning device and the first direction is against a forward direction of motion of the cleaning device.

3. The cleaning device according to any one of the preceding claims, wherein the first side and the second side of the first tray are inwardly inclining.

4. The cleaning device according to any one of the preceding claims, wherein the first side and the second side of the second tray are outwardly inclining.

5. The cleaning device according to any one of the preceding claims, further comprising:

a first flap projecting from a bottom of the first side of the first tray; and

a second flap projecting from a bottom of the second side of the first tray;

wherein the second flap projects further away from the bottom of the first tray than the first flap.

6. The cleaning device according to any one of the preceding claims, further comprising:

a housing for accommodating the first tray, the first roller brush, and the second roller brush therein, the housing having an opening in a bottom thereof for exposing the first roller brush and the second roller brush; and

a third tray located adjacent a side of the second roller brush that is opposite to a side facing the first tray.

7. The cleaning device according to Claim 6, wherein at least one of the first tray, the third tray, the first roller brush and the second roller brush is detachably mounted to the housing.

8. The cleaning device according to Claim 6 or 7, further comprising:

an actuator coupled to the housing for raising the housing to a raised position away from a base of the cleaning device, and lowering the housing to a lowered position that is lower than the base of the cleaning device;

wherein the housing is configured to freely move upwards when in the lowered position without actuation of the actuator.

9. The cleaning device according to Claim 8, further comprising:

a frame having at least one guide rail;

wherein the housing includes at least one guide for allowing the housing to be slidably mounted to the frame via the at least one guide rail; and

wherein the actuator is coupled to the frame.

10. The cleaning device according to Claim 9, wherein the frame includes a plurality of wheels.

11. The cleaning device according to any one of Claims 6 to 10, wherein the housing defines an opening above the first tray; and the cleaning device further comprises:

a suction unit coupled to the opening in the housing.

12. The cleaning device according to Claim 11, wherein the suction unit comprises:

a suction unit housing defining an air inlet and an air outlet;

a filter bag connected to the air inlet; and

at least one exhaust fan located at the air outlet.

13. The cleaning device according to any one of the preceding claims, wherein the first roller brush and the second roller brush comprise chevron brushes.

14. The cleaning device according to any one of the preceding claims, wherein the cleaning device comprises an autonomous cleaning device.

15. A cleaning method comprising:

moving a cleaning device along in a forward direction of movement to clean a surface, the cleaning device including:

a first tray having a first side and a second side opposite the first side;

a first roller brush adjacent the first side of the first tray for contacting the surface;

a second roller brush adjacent the second side of the first tray for contacting the surface; and

a second tray having a first side and a second side opposite the first side, the second tray being located above the first tray, the second tray having a width smaller than a width of the first tray;

rotating the first roller brush in a first direction to sweep debris into the first tray and the second tray as the cleaning device is moved in the forward direction; and

rotating the second roller brush in a second direction opposite to the first direction to sweep debris into the first tray and the second tray as the cleaning device is moved in the forward direction.

16. A cleaning method according to Claim 15, wherein the first direction of the first roller brush is against the forward direction of movement of the cleaning device.