What is claimed is:

1. An external device (1, 1a, 1b, 1c) for cleaning a filtration material and adapted for application to a filtration device (100, 200, 300), which filtration device is provided with a filtration container (101, 201, 301) having layers (112) of a filtration material (112a) at the inside and is adapted for filtering a supplied unfiltered liquid by the layers (112) of the filtration material (112a) to remove muddiness in the liquid and discharging the cleaned liquid to the outside, the cleaning device (1, 1a, 1b, 1c) comprising:

i) an upstanding outer tube (2, 2′, 2″, 2X),

ii) a screw conveyor (4, 4′, 4″, 4X) rotatably placed in the outer tube (2, 2′, 2″, 2X) and transferring the filtration material (112a) upward from an inlet (36) at a lower end section of the outer tube (2, 2′, 2″, 2X) to an outlet (48) at an upper end section of the outer tube (2, 2′, 2″, 2X), while rub-washing the filtration material (112a),

iii) a drive section (6) for rotationally driving the screw conveyor (4, 4′, 4″, 4X),

iv) a control section (30) for controlling rotation of the drive section (6),

v) an introduction tube (38), which is connected to the inlet (36) of the outer tube (2, 2′, 2″, 2X) and introduces the filtration material (112a) from the inside of the filtration container (101, 201, 301) into the outer tube (2, 2′, 2″, 2X), and

vi) a discharge tube (50, 50a, 50b, 50c), which is connected to the outlet (48) of the outer tube (2, 2′, 2″, 2X) and discharges the filtration material (112a), having been rub-washed, from the inside of the outer tube (2, 2′, 2″, 2X) into the filtration container (101, 201, 301).

2. An external device (1, 1a, 1b, 1c) for cleaning a filtration material and adapted for application to a filtration device (100, 200, 300) as defined in Claim 1 wherein the screw conveyor (4, 4′, 4″, 4X) is provided with an agitating blade (58) for agitating the introduced filtration material (112a), which agitating blade

is located at a lower end (4a) of the screw conveyor (4, 4′, 4″, 4X).

3. An external device (1, 1a, 1b, 1c) for cleaning a filtration material and adapted for application to a filtration device (100, 200, 300) as defined in Claim 2 wherein the lower end section of the outer tube (2, 2′, 2″, 2X), which lower end section is located at a position corresponding to the position of the agitating blade (58), is constituted as a large diameter section (34).

4. An external device (1, 1a, 1b, 1c) for cleaning a filtration material and adapted for application to a filtration device (100, 200, 300) as defined in Claim 1, 2, or 3 wherein the screw conveyor (4, 4′, 4″, 4X) is provided with a hollow shaft (20) and a spiral blade (18), which is formed in a spiral pattern around the hollow shaft (20), and

the hollow shaft (20) has holes (56) which enable the liquid having been introduced into the outer tube (2, 2′, 2″, 2X) to flow from the outside of the hollow shaft (20) into the inside of the hollow shaft (20).

What is claimed is:

1. An external device for cleaning a filtration material and adapted for application to a filtration device, which filtration device is provided with a filtration container having layers of the filtration material in the interior thereof and is adapted to filter a supplied unfiltered liquid by the layers of the filtration material to remove muddiness from the liquid and to discharge the cleaned liquid to the exterior,

wherein the external device for cleaning the filtration material comprises: an upright outer tube at the exterior of the filtration container; a screw conveyor rotatably placed in the outer tube for transferring the filtration material upward from an inlet at a lower end section of the outer tube to an outlet at an upper end section of the outer tube, while washing the filtration material; a drive section for rotationally driving the screw conveyor; a control section for controlling rotation of the drive section; an introduction tube, which is connected to the inlet of the outer tube so as to introduce the filtration material from the interior of the filtration container into the outer tube; and a discharge tube, which is connected to the outlet of the outer tube and is adapted to discharge the filtration material, having been washed, from the interior of the outer tube into the filtration container; wherein the external device for cleaning a filtration material is configured such that the filtration material is suctioned and introduced into the outer tube by suction force generated only by the rotation of the screw conveyor by the drive section, and the filtration material is pushed and discharged from the discharge tube.

2. An external device for cleaning a filtration material and adapted for application to the filtration device as defined in Claim 1, wherein the screw conveyor is provided with an agitating blade for agitating the introduced filtration material, which agitating blade is located at a lower end of the screw conveyor.

3. An external device for cleaning a filtration material and adapted for application to a filtration device as defined in Claim 2, wherein the lower end section of the outer tube, which lower end section is located at a position corresponding to the position of the agitating blade, is constituted as a large diameter section.

4. An external device for cleaning a filtration material and adapted for application to a filtration device as defined in claim 3, wherein the outer tube is provided with an injection tube at the lower end section of the outer tube, the injection tube enabling water to be injected into the outer tube when the filtration material is

introduced into the outer tube.

5. An external device for cleaning a filtration material and adapted for application to a filtration device as defined in any one of claims 1 through 4, wherein the screw conveyor is provided with a hollow shaft and a spiral blade, which is formed in a spiral pattern around the hollow shaft, and the hollow shaft has holes which enable the liquid having been introduced into the outer tube to flow from the exterior of the hollow shaft into the interior of the hollow shaft.