Claims

1. A filtration apparatus (10) for filtrating particles from a liquid, the filtration apparatus (10) comprising:

   - a filtration vessel (12);

   - at least one filtering element (14) for removing particles from liquid passing therethrough, the at least one filtering element (14) being arranged to move along a path (20) into the filtration vessel (12) and out from the filtration vessel (12);

   - a filtration inlet (16) arranged to convey a mixture of particles and liquid to the at least one filtering element (14) within the filtration vessel (12); and

   - a filtration outlet (18) arranged to convey liquid, filtrated by the at least one filtering element (14), out from the filtration vessel (12);

   characterized in that the filtration apparatus (10) further comprises:

   - a collection volume (32) for receiving filtrated liquid from the filtration outlet (18); and

   - a collection volume outlet (36) arranged to convey filtrated liquid out from the collection volume (32);

   wherein the collection volume (32) is configured such that a weight of a liquid column of filtrated liquid accommodated inside the collection volume (32) generates an underpressure downstream of the at least one filtering element (14) to establish a differential pressure over the at least one filtering element (14) inside the filtration vessel (12); and

   wherein the filtration apparatus (10) further comprises a pressure device (40) arranged to control the differential pressure over the filtering element (14) within the filtration vessel (12).

2. The filtration apparatus (10) according to claim 1, wherein the at least one filtering element (14) comprises an endless filtering element (14) arranged to move along the path (20).

3. The filtration apparatus (10) according to any of the preceding claims, wherein the path (20) comprises two geodetically high sections (24) and a geodetically low section (26) between the two high sections (24), and wherein the low section (26) is arranged inside the filtration vessel (12).

4. The filtration apparatus (10) according to any of the preceding claims, wherein the at least one filtering element (14) is configured to remove particles of a size of less than 100 µm, such as less than 50 µm.

5. The filtration apparatus (10) according to any of the preceding claims, wherein the at least one filtering element (14) comprises a wire cloth having a three-dimensional pore geometry.

6. The filtration apparatus (10) according to any of the preceding claims, further comprising at least one cleaning device (28) outside the filtration vessel (12), and wherein the at least one filtering element (14) is arranged to move along the path (20) past the cleaning

device (28) for cleaning of the at least one filtering element (14) by the cleaning device (28).

7. The filtration apparatus (10) according to any of the preceding claims, further comprising at least one drying device (30) outside the filtration vessel (12), and wherein the at least one filtering element (14) is arranged to move along the path (20) past the drying device (30) for drying particles removed from the at least one filtering element (14).
8. The filtration apparatus (10) according to any of the preceding claims, wherein the pressure device (40) comprises a valve (42) arranged to control a flow through the collection volume outlet (36).
9. The filtration apparatus (10) according claim 8, wherein the filtration apparatus (10) is configured to control operation of the valve (42) based on a liquid level in the filtration vessel (12).
10. The filtration apparatus (10) according to claim 8 or 9, wherein the filtration apparatus (10) is configured to control operation of the valve (42) based on a liquid level in the collection volume (32).
11. The filtration apparatus (10) according to any of claims 8 to 10, wherein the filtration apparatus (10) is configured to control operation of the valve (42) based on a pressure in the collection volume (32).
12. The filtration apparatus (10) according to any of the preceding claims, wherein the filtration apparatus (10) has a modular construction.