CLAIMS

1. A precipitation plate, used for lateral-flow horizontal precipitation, and comprising:

a flat plate (101);

a plurality of first rib plates (102), arranged at intervals, parallel to each other, and perpendicular to a first surface (1011) of the flat plate (101); and

a plurality of second rib plates (103), arranged at intervals, parallel to each other, and perpendicular to a second surface (1012) of the flat plate (101);

wherein, each first rib plate (102) is perpendicular to each second rib plate (103); a water flow channel (104) is formed between each two adjacent first rib plates (102); and a mud guide channel (105) is formed between each two adjacent second rib plates (103);

wherein a height ratio of the first rib plate (102) to the second rib plate (103) is 1.5-5; an interval between each two adjacent first rib plates (102) is smaller than an interval between each two adjacent second rib plates (103); and the second surface (1012) further protrudes to form a reinforcing rib (106) that extends parallel to the second rib plate (103); and a height of the reinforcing rib (106) is less than a height of the second rib plate (103).

2. The precipitation plate according to claim 1, wherein the precipitation plate (10) is made of polyolefin.

3. A precipitation unit, comprising a box-type frame (11) defined by a plurality of side beams (111) and a plurality of precipitation plates (10) obliquely standing inside the box-type frame (11), wherein the precipitation plate (10) is the precipitation plate (10) according to any one of claims 1 to 2; and

the first surface (1011) faces obliquely downward, and the second surface (1012) faces obliquely upward; and for each two adjacent precipitation plates (10), the first rib plate (102) of one precipitation plate abuts against the second rib plate (103) of the other precipitation plate.

4. The precipitation unit according to claim 3, wherein an angle between the flat plate (101)

and a bottom surface of the box-type frame (11) is 60°.

5. The precipitation unit according to claim 3, wherein at least one of the side beams (111) is provided with a groove with an opening inclined to a bottom surface of the box-type frame (11); and the precipitation plate (10) is tightly inserted into the groove.

6. The precipitation unit according to claim 3, wherein the side beams (111) are detachably connected by threaded fasteners.

7. The precipitation unit according to any one of claims 3 to 6, wherein the precipitation unit (1) further comprises a flushing mechanism (12) for injecting a flushing liquid into the mud guide channel (105); the flushing mechanism (12) comprises a bracket (121) fixed above the side beams (111) and a plurality of first flushing pipes (122) installed on the bracket (121); and the first flushing pipes (122) are horizontally arranged and provided with first water spray ports (123) opening downward;

preferably, the flushing mechanism (12) further comprises a plurality of second flushing pipes (124) communicated with the first flushing pipes (122); and the plurality of second flushing pipes (124) are erected on a side of the box-type frame (11) and provided with second water spray ports (125) facing the precipitation plate (10); and

preferably, the second flushing pipes (124) are erected on the side of the box-type frame (11) adjacent to an upper end of the precipitation plate (10).

8. A precipitation module, comprising:

a housing (2), provided with a water inlet (21), a water outlet (22), and a mud outlet (23);

a precipitation unit (1), constructed as the precipitation unit (1) according to any one of claims 3 to 7, and provided inside the housing (2); and

a sediment handling mechanism (3), provided below the precipitation unit (1) to discharge settled sediment through the mud outlet (23).

9. The precipitation module according to claim 9, wherein the precipitation module further comprises a water distribution mechanism (4), wherein the water distribution mechanism (4) comprises a first water distribution plate (41) provided between a water input side of the precipitation unit (1) and the water inlet (21) and a second water distribution plate (42) provided between a water output side of the precipitation unit (1) and the water outlet (22);

the first water distribution plate (41) and the second water distribution plate (42) divide the housing (2) into a water input chamber (201), a precipitation chamber (202) accommodating the precipitation unit (1), and a water output chamber (203); and water distribution pipes (43) are uniformly distributed on the first water distribution plate (41) and the second water distribution plate (42) in a penetrating manner to connect two adjacent chambers; and

preferably, each of the first water distribution plate (41) and the second water distribution plate

(42) is a hollow plate with a cavity; a surface of each of the first water distribution plate (41) and the second water distribution plate (42) facing the water flow channel (104) is provided with a plurality of nozzles (44) communicated with the cavity; positions of the nozzles (44) correspond to a position of the water flow channel (104); and the first water distribution plate (41) and the second water distribution plate (42) are connected to a water supply pipe (45) for supplying water to the cavity.