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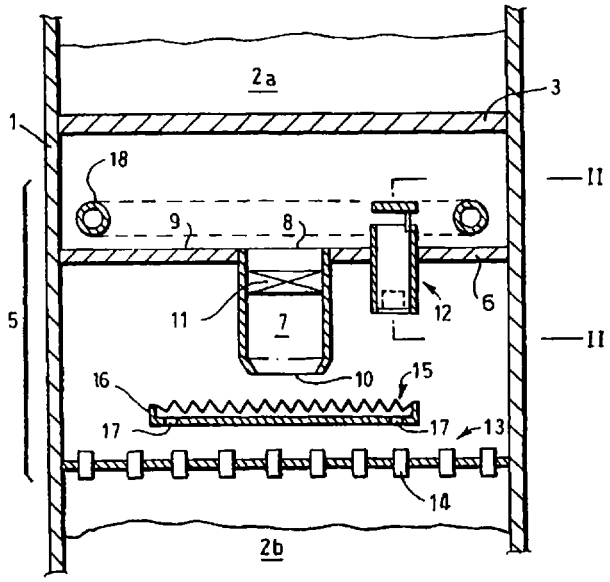
(54) Title: MIXING DEVICE COMPRISING A SWIRL CHAMBER FOR MIXING LIQUID



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(57) Abstract: The invention relates to a mixing device (5) for mixing fluids in a multiple bed downflow reactor comprising: (i) a substantially horizontal collection tray (6); (ii) a swirl chamber (7) for mixing liquid arranged below the collection tray (6), having an upper end part that is in direct fluid communication with the upper surface (9) of the collection tray (6) and an outlet opening (10) at its lower end, wherein the swirl chamber (7) has a length that is at least 0.35 times its inner diameter; and (iii) a substantially horizontal distribution tray (13) located below the swirl chamber (7), which distribution tray (13) is provided with a plurality of openings or downcomers (14) for downward flow of liquid and gas. The invention further relates to a multiple bed downflow reactor comprising such a mixing device and to the use of such a reactor in hydrocarbon processing.

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