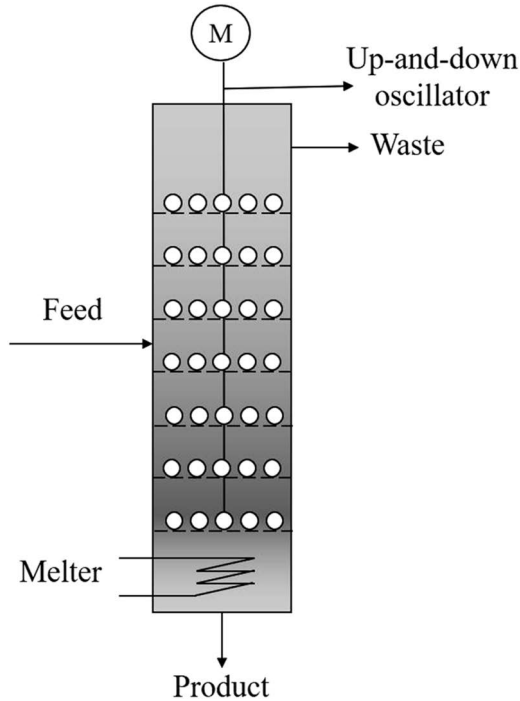

Figure 11.8 TNO purifier.

11.4.1.8 Kureha Crystal Purifier (KCP)

The Kureha crystal purifier[3,28,33,35] (KCP, shown in Figure 11.9) was developed in Japan in the 1960s. The crude crystals are formed in a subcooled crystallizer and filtered to be transported into the KCP Purifier from the bottom. There is a double screw with intermeshing blades in the column to force the crystals move upwards and prevent the crystal caking problem. In this purifier, the melter is on the top of the column and part of the molten crystals flow downwards counter currently through the rising crystals to finish the washing process. Crystal breakage and recrystallization processes could happen because of the double screw structure during crystal transportation, which could promote the purification efficiency. The waste melt comes out from the bottom while the purified product is harvested from the top of the column. Although a good separation effect is reported for organic systems, the complicated structure and difficult operation prevent its wide application.

11.4.1.9 Brennan–Koppers Purifier

The Brennan–Koppers purifier (Figure 11.10)[33] employs top melting like the KCP and wall filters like the Philips. The slurry is produced in a separate crystallizer and transported into the purifier from the bottom. Then, the