



(57) Abrégé(suite)/Abstract(continued):

hollow shaft. An outer passage extends between the inner and outer hollow shafts. The shaft also includes a plurality of blades extending from the outer hollow shaft, for mixing the material. Each of the blades is provided with channels. The inner passage, the channels and the outer passage form a continuous flow path allowing a pressurized fluid to circulate within inner and outer hollow shafts and the blades, for controlling temperature of the shafts and the blades. The channels allow a flow of the fluid in the blades in an opposite direction of a rotational direction of the shaft assembly.

