

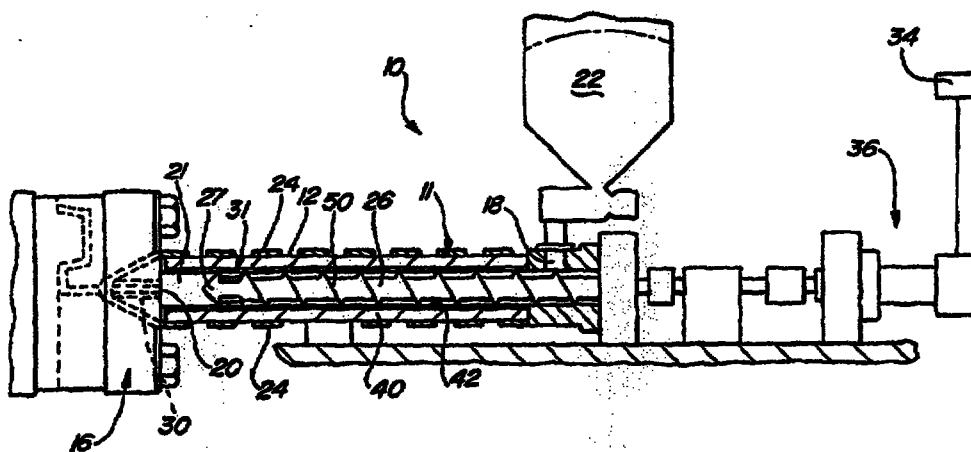
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(54) Title: APPARATUS FOR PROCESSING CORROSIVE MOLTEN METALS



(57) Abstract

An apparatus for processing materials which are highly corrosive while in a thixotropic state, for example aluminum. The apparatus includes a barrel which is adapted to receive the material through an inlet. In the barrel, the material is heated and subjected to shearing, forming a highly corrosive, semi-solid slurry which is discharged from the barrel through a nozzle. The barrel is constructed with an outer layer of a first material and an inner layer of an Nb-based alloy which is bonded to the outer layer. Positioned within the passageway of the barrel is a screw, the rotation of which operates to subject the material to shearing and move the material through the barrel. The screw is constructed with an outer layer of the Nb-based alloy that is molecularly bonded to an inner core of a different material. The Nb-based alloy is resistant to the corrosive effects of the material being processed.