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(54) **PURIFICATION OF SULFUR BY MEANS OF CENTRIFUGATION**

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(58) **Field of Search** 423/578.1, 578.2; 210/512.1, 787, 788, 789

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(57) **ABSTRACT**

A sulfur purification process is provided. Ash-containing molten sulfur is fed to a centrifuge and subjected to centrifugation under controlled conditions at G forces at least about 4,000 times that of gravity. The centrifugation generates a purified sulfur product and a high-solids sulfur waste stream. A solid bowl disc centrifuge provided with conical discs is used to effect the centrifugal separation of solids from liquids at G forces of at least about 4,000. The centrifuge and related piping system are equipped with heating means so as to maintain the temperature of the sulfur above about 250° F. If large volumes of sulfur are to be treated, e.g., 40 or more long tons per hour, a pretreatment step, where the molten sulfur is first subjected to centrifugation at G forces at least about 4,000 times that of gravity in one or more nozzle bowl centrifuges, is added in order to obtain satisfactory results. In another aspect of the sulfur purification process, the nozzle bowl centrifuge underflow waste stream is further processed in a cyclone-thickener arrangement to obtain a high-solids sulfur waste stream and a moderate-solids sulfur stream which is then mixed with the low-solids sulfur product stream from the nozzle bowl centrifuge(s), or recycled to the feed of the nozzle bowl centrifuge(s).

17 Claims, 4 Drawing Sheets

