

## NOZZLE-SHAPED SLOTS IN IMPELLER VANES

### Abstract

A well fluid centrifugal pump has a number of stages, each of the stages having an impeller and a diffuser. The impeller has vanes curving outward from a central intake area to a periphery of the impeller. Each of the vanes has a convex side and a concave side. An upstream slot and a downstream slot extend through the vane from the convex side to the concave side. Each of the slots has an entrance on the convex side and an exit on the concave side, with the entrance being located upstream from the exit. The entrance has a greater cross-sectional area than the exit to divert well fluid flowing along the convex side to the concave side to remove accumulated gas.

### Figure 1