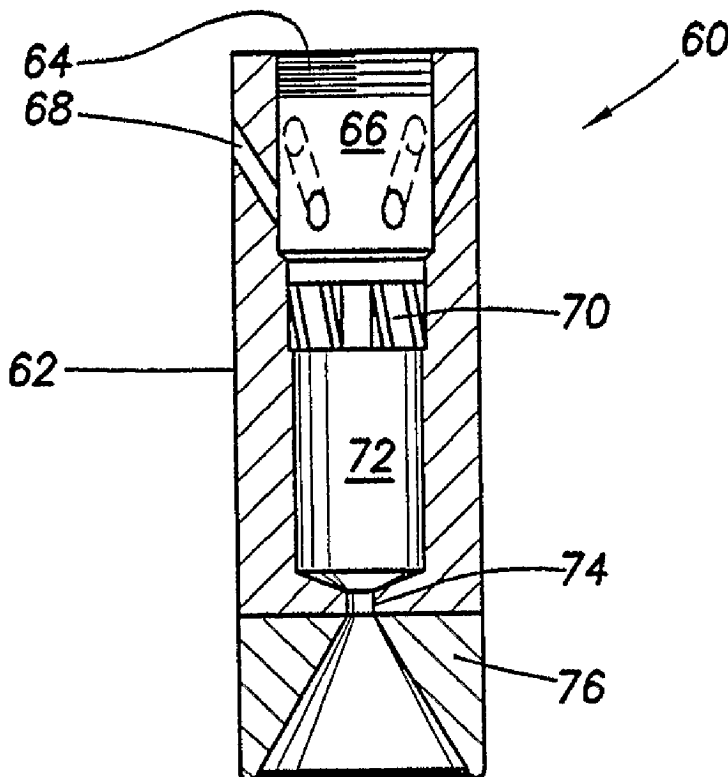




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(57) Abrégé/Abstract:

A jet nozzle (60) is provided for drilling holes through the earth. The nozzle (60) may include orifices (68) for discharging fluid to drive the nozzle forward and includes a disk (70) or other device having orifices (80) to produce a swirling motion to fluid in the body of the nozzle. Swirling fluid is discharged from a front orifice (74) and an extension (76) is placed forward of the front orifice to confine the swirling fluid in a radial direction.