

Title (en)

Head for injecting a fluid under pressure from a borehole to disintegrate ground

Title (de)

Kopf zur Einspritzung unter Druck von Flüssigkeiten von einem Bohrloch aus zum Zerkleinern von Erde

Title (fr)

Tête d'injection sous pression d'un fluide pour désagréger le terrain à partir d'un forage

Publication

EP 1396585 B1 20060517 (FR)

Application

EP 03291946 A 20030801

Priority

FR 0210251 A 20020813

Abstract (en)

[origin: EP1396585A1] A pressurized fluid feed line (34) is coaxial with a drill string and is connected via a pipe (50) to a nozzle (42) tangential to the nozzle axis and to the mechanical drilling tool (38) via a controllable valve (58). This pipe has a straight section which steadily reduces in diameter and a middle section which is curved with a continuously varying radius of curvature. A head (30) injects a fluid under pressure to disaggregate soil before drilling, with the head mounted at the end of a drill string or tubes (32). A pressurized feed pipe (34) for the fluid is coaxial with the drill string. The head has a body (40) with an upper end (30a) connecting to the bottom end of the drill string or tubes, a lower wall for mounting a mechanical drilling tool containing a feed line (84) and an external wall. At least one injection nozzle is mounted in the body with an inlet diameter d and an axis xx' and a pipe (50) connecting the feed line to the nozzle inlet. This pipe has a rectilinear section running along the axis of the injection head and extending the feed pipe of the drill string. A second section contains an inflexion point (I) and a third section has a curvature of constant sign. The axis of the nozzle(s) are placed in a plane orthogonal to the longitudinal axis of the head. The injection head can have two feed lines for the mechanical tool, one connected to the first section of the pipe. The internal chamber is placed along the longitudinal axis of the injection head. The controllable valve has a seat and a movable closer whose position is controlled by the flow of liquid circulating in the valve.

IPC 8 full level

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CPC (source: EP US)

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Cited by

EP3489418A1; EP2407598A1; WO2009136237A1; CN107035319A; CN102536121A; ITTO20100613A1; US9115541B2; EP2463443A1; US8573893B2; US8662795B2

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