

# RIG FOR PREVENTING METHANE ACCUMULATION FROM DRAINAGE BOREHOLES INSIDE COAL MINES

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## DESCRIPTION

The invention belongs to the mining field and refers to an installation for the prevention of methane accumulation originating from drainage boreholes inside coal mines. The presented rig consists of the drainage probe from the core of the mining operation connected through the probe head (1), the hose (2), the spigot (3) to the collecting pipe (4) of the water and methane. Drainage probe from the ceiling of the mining spot is connected through the probe head (5), the hose (6), the spigot (7) to the collector pipe (8) which is connected to the pipe (4) before its connection to the gas separator (10). The pipe (8) is connected to the ceiling of the mine, for support, by a metal element (9). A pipe (13) for transporting methane to the chamber for diluting the methane concentration, (14), is connected to the upper part of the gas separator (10). From the gas separator (10), through the pipe (25), the water is directed into an intermediate tank (26) and later from it through the absorption pipe (27) into a main tank (31) with the help of the pump (29) equipped with automation.

## ADVANTAGES

- a simple construction for capturing the waters from the drainage wells installed in the hearth and the ceiling of the mining spots thus preventing the accumulation of methane from the aquifer layers subject to drying;

- directing water through pipes to the intermediate tank and from there with the help of automatic pumps to the main tank. We propose the automation of the pumps to avoid possible human errors of not evacuating the water from the intermediate tank when it is full and the waters will spill onto the gallery, causing inconvenience.

## APPLICATION

The rig, according to the invention, essentially solves the prevention of methane accumulations from drainage boreholes installed in the core and gallery ceiling of coal mines and subsequently directing the water through pipes to a tank proposed and from there to a proposed main tank, thus avoiding the contact of the rocks with the water preventing the swelling of the hearth of the mining spots;

