

Title (en)

METHOD AND DEVICE FOR DAMPENING THE PRESSURE SURGE ON FLAME ARRESTERS DURING DETONATIONS

Title (de)

VERFAHREN UND VORRICHTUNG ZUM DÄMPFEN DES DRUCKSTOSSES AN FLAMMENSPERREN BEI DETONATIONEN

Title (fr)

PROCEDE ET DISPOSITIF POUR AMORTIR LE COUP DE BELIER DANS DES DISPOSITIFS ANTIRETOUR DE FLAMME EN CAS DE DETONATIONS

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Application

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Abstract (en)

[origin: WO0141876A2] The invention relates to a method for dampening the pressure surge on flame arresters, especially strip-shaped safety devices, during detonations of a combustible gas/air and/or vapor/air mixture in installation systems, container systems and pipe systems according to which the approaching detonation front is split up. The invention also relates to a device for carrying out said method. The device comprises housing parts, which are located along the pipe axis and are straight or angular, and comprises a dry flame arrester, which is arranged inside the housing parts in a vertical manner with regard to the pipe axis. Said flame arrester consists of at least one strip-shaped safety device with or without a surge interceptor that is oriented toward the ignition source. The approaching detonation front is split up into and evened out in a multitude of partial reaction fronts that can subsequently diffuse in an unoriented manner and with stochastically distributed flow paths in a medium, which absorbs kinetic and thermal energy, and the partial reaction fronts can run in opposite directions therein. The outflowing partial reaction fronts are subsequently evened out to form an almost laminar reaction front which then flows to the actual strip-shaped safety device in order to extinguish possible flames. The absorbing medium is comprised of a gas-permeable packet with an irregular packaging made of absorbent bodies, for example, spring steel wire spirals, knitted fabrics, or heavy metals.

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