[0011] The solutions of the prior art are not suitable for the formation of mists with droplets of very small dimensions, which have a high flame-extinguishing efficiency.

[0012] Prior art patent FR2376384 produces, for example, artificial snow formed by frozen flakes of large dimensions, several millimeters or even one or more centimeters, which is absolutely not suitable for extinguishing a fire.

[0013] The solutions of the prior art are notably sensitive to the flow rate ratio of the gas phase/flow rate of the liquid phase, and when the ratio drifts relative to the optimal value, the droplets are not correctly micronized. It is therefore not possible to modulate the flow rate and the dilution rate without losing efficiency. Furthermore, the solutions of the prior art generally require a high pressure and therefore a high flow rate for the gas phase, which limits the possibilities of use for a portable equipment, making it impossible to transport a reserve of gas that is too bulky and heavy.

SUMMARY

[0014] According to an example of the present disclosure, there is provided a device for generating a jet of two-phase fluid comprising a nozzle having a main duct supplied with a pressurized gaseous fluid and opening into a mixing chamber and a plurality of secondary ducts distributed at the periphery of said main duct, the plurality of secondary ducts converging towards said mixing chamber and being supplied with at least one pressurized liquid fluid opening into said mixing chamber in a direction forming a non-zero angle with the axis of said main duct wherein

- said mixing chamber has a convergent-divergent cylindrical wall having a constriction defining a disc opening in the plane perpendicular to the axis of said main duct,

● the convergent part of said wall has a frustoconical region in the continuation of the axis of the at least one secondary duct so as to form a fragmentation chamber for the liquid phase.

DETAILED DESCRIPTION OF NON-LIMITING EMBODIMENTS

[0015] The present invention will be better understood from reading the following description, which refers to non-limiting exemplary embodiments illustrated by the appended drawings, in which

[0016] [FIGURE 1] Figure 1 shows a view along a first longitudinal sectional plane of a nozzle according to the invention

[0017] [FIGURE 2] Figure 2 shows a view along a second longitudinal sectional plane, perpendicular to the previous one, of a nozzle according to the invention

Claims

1. A device for generating a jet of two-phase fluid comprising a nozzle having a main duct supplied with a pressurized gaseous fluid and opening into a mixing chamber and a plurality of secondary ducts distributed at the periphery of said main duct, the plurality of secondary ducts converging towards said mixing chamber and being supplied with at least one pressurized liquid fluid opening into said mixing chamber in a direction forming a non-zero angle with the axis of said main duct, wherein

- said mixing chamber has a convergent-divergent cylindrical wall having a constriction defining a disc opening in the plane perpendicular to the axis of said main duct,
- the convergent part of said wall has a frustoconical region in the continuation of the axis of the at least one secondary duct so as to form a fragmentation chamber for the liquid phase.

2. The device for generating a jet of two-phase fluid according to claim 1, wherein said axis of said at least one secondary duct forms with the axis of said main duct an angle of between 2° and 20°.

3. The device for generating a jet of two-phase fluid according to claim 1, wherein the axes of the secondary ducts define with the generator of the cone of the convergent part an angle of between 0° and 60° and preferably of 45° ± 10°.

4. The device for generating a jet of two-phase fluid according to claim 1, wherein the diameter of said opening of the constriction is between 0.8 and 1.2 times the diameter of said main duct.

5. The device for generating a jet of two-phase fluid according to claim 1, wherein the ejection channel of said nozzle, located in the divergent part, has a truncated bullet shape.

6. The device for generating a jet of two-phase fluid according to claim 1, wherein the ejection channel of said nozzle is extended by a deformable ejection tip.

7. The device for generating a jet of two-phase fluid according to claim 6, wherein said deformable ejection tip consists of a deformable sleeve arranged between two movable jaws articulated between a position where they ensure the pinching of the front portion of said deformable sleeve and a spaced position where the sleeve has a nominal section.

8. The device for generating a jet of two-phase fluid according to claim 7, wherein said movable jaws have a ramp against which the connecting rods are supported in order to control the tightening of the front end of said movable jaws.

9. The device for generating a jet of two-phase fluid according to claim 1, wherein the device is integrated into a body having a fixed rear handle and a front tilting handle controlling the variation of the jet parameters.

10. The device for generating a jet of two-phase fluid according to claim 9, wherein said body has a fitting for connecting a supply pipe of an air mask.