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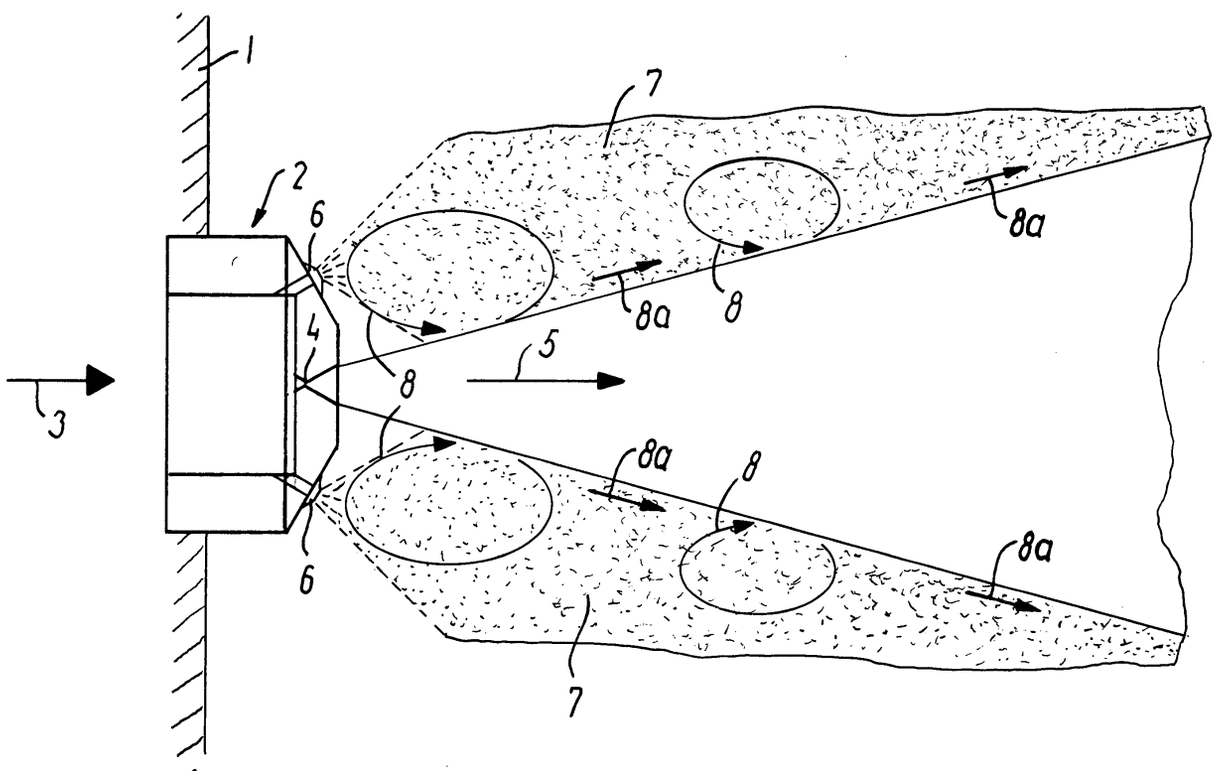
(54) A method and a nozzle for generating a water mist

(57) When constructing a nozzle (2) according to the invention, comprising a water nozzle (4) which discharges a conical water jet (5), and a mist (7) is discharged at the same time from one or more mist nozzles (6) in a direction toward the water jet (5), a very precise spray picture may be achieved, which moreover has a range which is relatively long. The reason is that the mist (7) is "carried" forwards on the water jet (5) and thereby in a length corresponding to that of the water jet.



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Description

The prior art

[0001] The invention relates to a method of generating a water mist in particular for fire extinction by means of permanently installed nozzles as well as a nozzle for performing the method.

[0002] Extinction of fires by means of water droplets, the so-called water mist, is generally known particularly in the form of valves and nozzles which are mounted on fire hoses.

[0003] An example of such a valve and nozzle arrangement is known from US 5 590 719, where the nozzle is configured as a pipe having an adjustable outlet nozzle at one end and a needle valve having a centre hole at the other end.

[0004] The adjustable needle valve ensures that the liquid flow through the nozzle pipe may be adjusted, which, together with the position of the outlet nozzle, makes it possible to adjust the water distribution of the nozzle and thereby the ability of the outlet nozzle to split the periphery of the liquid flow into water droplets.

[0005] The liquid mist from the nozzle is distributed hereby, which is expedient in connection with fire fighting by means of hoses having such a nozzle and valve arrangement.

[0006] This arrangement, however, is not suitable for use in fixed installations where a very precise spray picture is needed.

The object of the invention

[0007] The object of the invention is to provide a method of permanently installing nozzles for fire fighting, and this is achieved according to the invention by a method wherein a conical water jet is discharged from a nozzle at the same time as a mist is discharged from one or more nozzles in a direction toward the exterior of the water jet to entrain the mist with the water jet.

[0008] This provides a very precise mist generation in a surprisingly simple manner, which, together with the water jet, is conveyed forwards in the desired direction and with the correct composition of the water mist.

[0009] To this should be added that the water mist may be extended over relatively long distances, since the drops are relatively large while their velocity is supported by the velocity of the water jet.

[0010] Thus, entrainment of the mist will take place, which will ensure in connection with the "breaking" of the air by the water jet that the velocity of the generated mist may be maintained over relatively long distances.

[0011] When, as stated in claim 2, the nozzles are provided in a nozzle holder, a compact and reliable structure is ensured.

[0012] Finally, it is expedient, as stated in claim 3, to allow the mist nozzles to discharge mist in a direction toward the periphery of the water jet in order to thereby utilize the ability of the water to carry the mist forwards.

The drawing

[0013] An example of a nozzle according to the invention will be described more fully below with reference to the drawing, which shows a permanently mounted nozzle and its spray picture.

Description of an exemplary embodiment

[0014] An example of the nozzle according to the invention for performing the method will be described first.

[0015] As shown in the drawing, the nozzle 2 is mounted in a vertically extending wall 1 such that a horizontal water mist may be spread from the nozzle 2.

[0016] Pressurized water 3 is fed to the nozzle 2 in a generally known manner and such that water is conveyed to a centrally positioned water nozzle 4 for spreading a water jet 5, which has a conical shape, as shown.

[0017] Further, two mist nozzles 6 are shown in the nozzle 2, positioned at an inclined angle relative to the horizontal plane such that a water mist 7 is spread from the nozzles 6 which has a direction essentially in parallel with outer rim of the water jet 5.

[0018] Hereby, when contacting the exterior of the water jet 5, the mist 7 will be given a turbulent movement 8 as well as a laminar movement 8a, as indicated by arrows.

[0019] This pattern of movement has the advantage that the small and thereby light drops, which constitute the mist 7, will be "carried" forwards by the water jet 5 and may thereby be advanced over a relatively great distance.

[0020] This is expedient in particular in case of a horizontal spreading of the water mist.

[0021] The example shown includes two mist nozzles 6, but it is within the scope to have e.g. just an overlying mist nozzle 6 or to arrange more than two around the water nozzle 4.

[0022] The nozzle may hereby be dimensioned according to the mist mixture proportion, while ensuring the desired direction and distance.

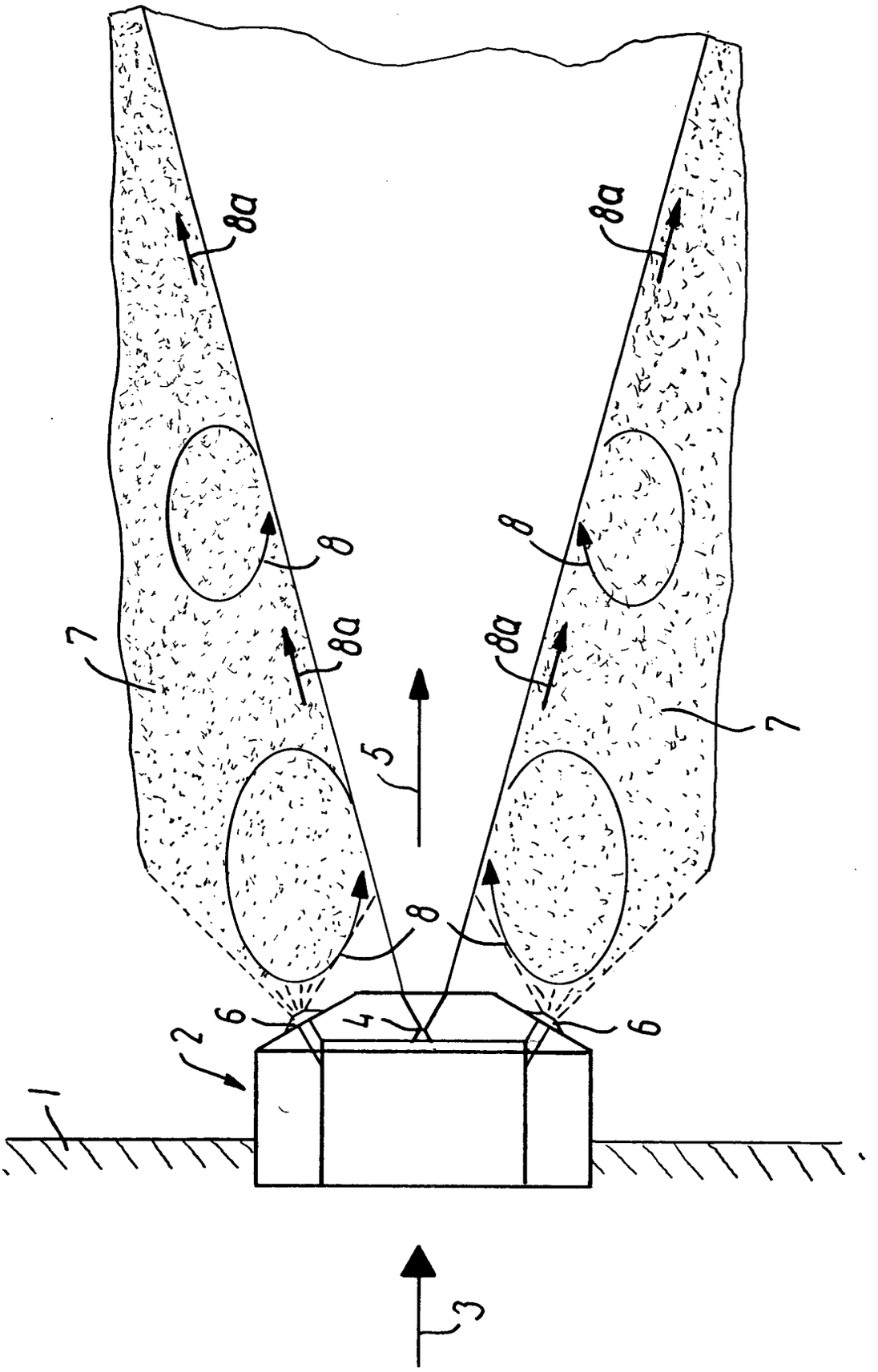
[0023] This precise spray picture is important particularly in permanently installed mist nozzle systems.

Claims

1. A method of generating a water mist in particular for fire extinction by means of permanently installed nozzles, **characterized in that** a conical water jet (5) is discharged from a nozzle (4) at the same time as mist (7) is discharged from one or more nozzles (6) in a direction toward the exterior of the water jet (5) to entrain the mist (7) with the water jet (5).

2. A nozzle for performing the method according to claim 1, **characterized in that** the nozzles (4, 6) are provided in a nozzle holder (2), where the water nozzle (4) is surrounded by one or more mist nozzles (6).

3. A nozzle according to claim 2, **characterized in that** the direction of the mist nozzle (6) is essentially in parallel with the exterior direction of the water jet (5).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