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54 **Independent water feeding system for heating plants.**

57 A water feeding system comprising a restoration reservoir (1,14) indepent from the public water supply system.

EP 0 278 118 A1

"INDEPENDENT WATER FEEDING SYSTEM FOR HEATING PLANTS"

The present invention relates to a water feeding system, by which it is possible to operate a heating plant in a fully independent way, that is to say without being connected to the public common water piping network, especially useful for one-family houses.

It is well known that all heating plants are connected to the water piping network, in order to charge the pipe loop comprising the boiler the storage and recovery tank and the heating elements or panel radiators.

However this involves a considerable loss of water when a pipe burst occurs, generally in a pipe length which is rather inaccessible or even enclosed in the wall.

As a matter of fact, water comes out from the leak at high pressure determined by the connection to the water network, continuously restoring the amount of water being lost.

The present invention provides for filling the pipe loop by means of an auxiliary pump, whose suction side is connected to a cistern or reservoir of little capacity.

Such a reservoir indeed has essentially the function of restoring the water amount in the event that water pressure is decreased due to little leakages or maintenance works, especially when the plant is put again in service.

Said reservoir may however be used also to charge the plant with the entire amount of water required for its operation. In this case the reservoir must be refilled manually for instance with a jerry can so as to charge the pipe loop with the auxiliary pump. In case of bigger houses with a central heating system, upstream the auxiliary pump there may be a standard union withutoff valve or cock, through which it is possible to charge to loop with any required amount of water, with the addition of an antifreezing fluid by means of a tank truck having a high pressure delivery pump.

Clearly the reservoir has the function of storage and restoration of water also in the latter case.

Water of the heating plant is always containing an antifreezing fluid, previously mixed with water by direct pouring or through an auxiliary container. In this way any risk of pipe burst due to frost is eliminated and the operation of emptying out the plant when not in use is no more required.

It is also clear that in case of a pipe burst or for servicing, only the water contained in the loop has to be discharged and at a low pressure.

Furthermore, the antifreezing fluid blended with water delays considerably the pipe internal oxidative corrosion, consequently with great reduction of costs due to the antioxidative washings generally

effected at the end of every winter service.

Last but certainly not least advantage, with the system of the present invention it is possible to operate heating plants in isolated houses, far from built up areas, where it is difficult or even impossible the connection to a water network.

Therefore the present invention is a safe, economic, independent system with little or no maintenance needs and failure risks, particularly adapted for the modern trend to provide each house or flat, even with a common building, with an independent heating plant.

The independent water feeding system for heating plants may practically assume several forms, always comprised in the scope of the invention, which will be hereinafter described in detail with reference to a non limiting and merely illustrative embodiment of the invention, reference being also had to the single figure of the accompanying drawing, in which a diagrammatic plan of a heating system according to the present invention is shown.

With reference now to said figure of the accompanying drawing, the system according to the present invention comprises a storage or restoration reservoir 1, an auxiliary pump 2 and a check valve 3. These elements form an assembly 4 which has to be connected to the plant loop between the circulation pump 5 and the boiler 6 of a conventional heating plant 7 comprising, as it is well known, also a burner 8 and a piping 9 to which the heating elements or radiators 10 are connected in series.

Downstream the check valve 3 there is a sub pipe 11 with a cutoff valve 12, to which a filling hose 13 of a tank truck 14 may be connected.

Therefore the heating plant may be filled through the storage reservoir 1, pouring in it the liquid contained in jerry cans 15 or by pumping liquid directly from a tank truck 14.

The foregoing clearly shows that the system of the present invention allows to operate heating plants not connected to a water network and with antifreezing additives, so as to avoid the well known problems due to cold season and inoperative plant. It is of course also possible to use other systems known in the art to fill the pipe loop of the plant.

Finally it is to be pointed out that the detailed description of the present embodiment does not limit to it the scope of the invention, but on the contrary it is to be understood that the several modifications, additions, variations and/or substitutions may be resorted to the system of the present invention, without altering however its spirit nor departing from its scope of protection, as it is also

better defined in the appended claims.

Claims

1. Independent water feeding system for heating plants, characterized by the fact of comprising a restoration reservoir independent from the water public network, said reservoir being filled with independent water supply means.

2. System according to Claim 1, characterized in that the charge of the hydraulic pipe loop is effected with a container through an auxiliary pump, from the restoration reservoir or directly by a tank truck.

3. System according to Claim 1, characterized in that the water charge in the hydraulic loop is effected by a suitable connection with the piping of conventional heating plants.

4. System according to Claim 1, characterized in that it allows heating of houses located in isolated areas, where it is not possible a connection with the public water network.

5. System according to Claim 2, characterized by the fact that antifreezing fluid is added to the water of the heating plant, so as to eliminate almost entirely the internal oxidative corrosion of the pipes, with consequent reduction of maintenance costs.

6. System according to Claim 2, characterized by the fact that the addition of antifreezing fluid to the water of the heating plant, allows to deactivate the heating plant even in the cold season without emptying the water piping and therefore without risk of pipe burst due to frost.

7. Independent water feeding system for heating plants, as hereinbefore described and as illustrated in the accompanying drawings, for the above mentioned objects.

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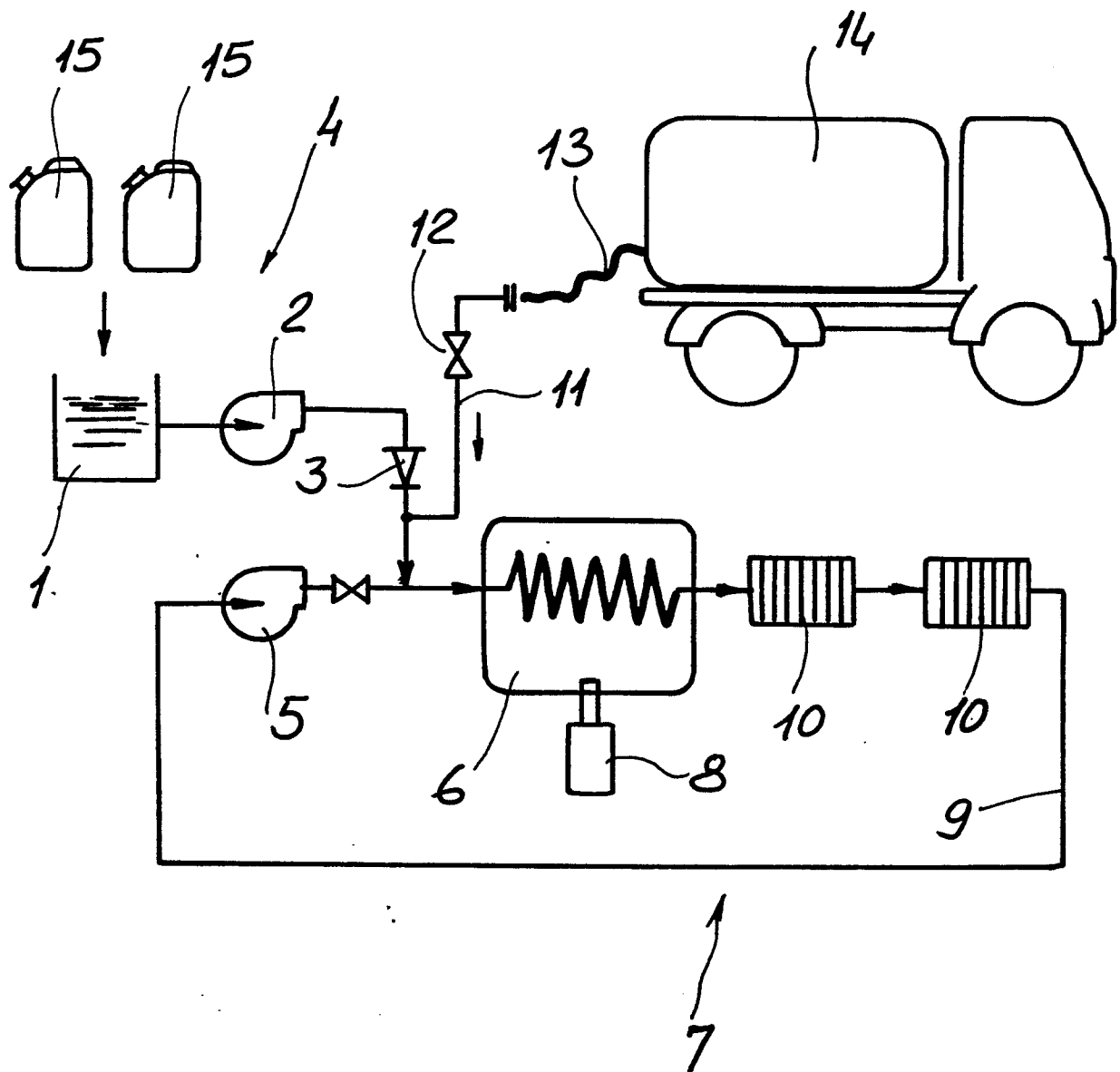
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EP 87 20 0178

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	DE-A-2 905 504 (GEFAS GESELLSCHAFT FÜR ANGEWANDTE SOLARTECHNIK) * Whole document *	1-7	F 24 D 3/10
X	CH-A- 506 756 (TACO HEIZUNGEN) * Whole document * -----	1,2	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			F 24 D
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 02-10-1987	Examiner VAN GESTEL H.M.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	