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(54) Vehicle and in particular transportation vehicle with emergency central heating plant installed on it.

(57) A complete central heating plant, comprising all the necessary safety systems, is installed on a transportation vehicle.

It has the means necessary for being connected to the plumbing network for distribution of hot water for heating and for sanitary use of a building, replacing in operation the original central heating plant.

The burners (3 fig. 1 -- 4 fig. 2), connected to the boilers (1 fig. 1 -- 2 fig. 2), have connecting means for being supplied by a tank (5) installed on the vehicle itself, or by a tank of the building or by a tank trunk parked nearby.

A television camera transmits to a monitor (8 fig. 1) the images of the elements for measuring pressures and temperatures on premises of the original central heating plant, making possible a continuous and effective checking.

Safety systems (9 fig. 1) stop the central heating plant when preset temperature and pressure values are reached.

If the stacks (6 fig. 1 -- 7 fig. 2) for evacuation of fumes are not correctly positioned and connected, current does not reach the central heating plant, thus preventing its operation.

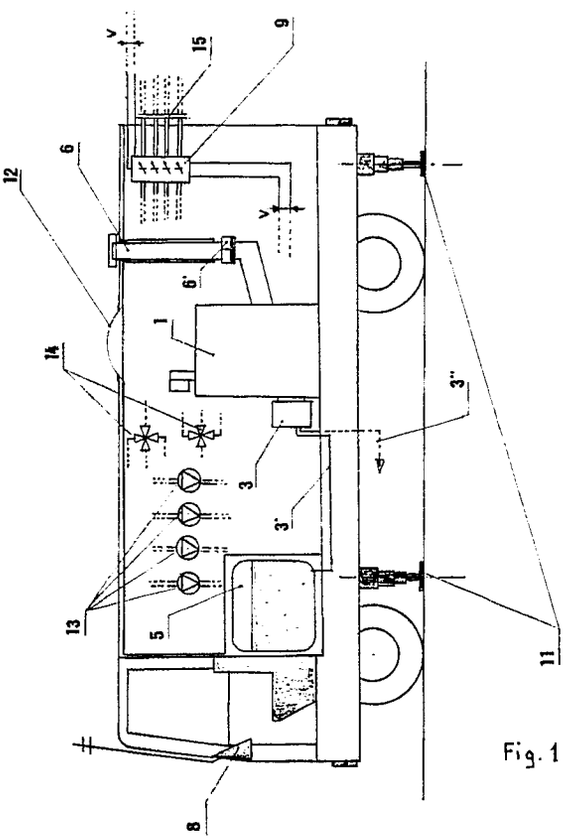

Fig. 1

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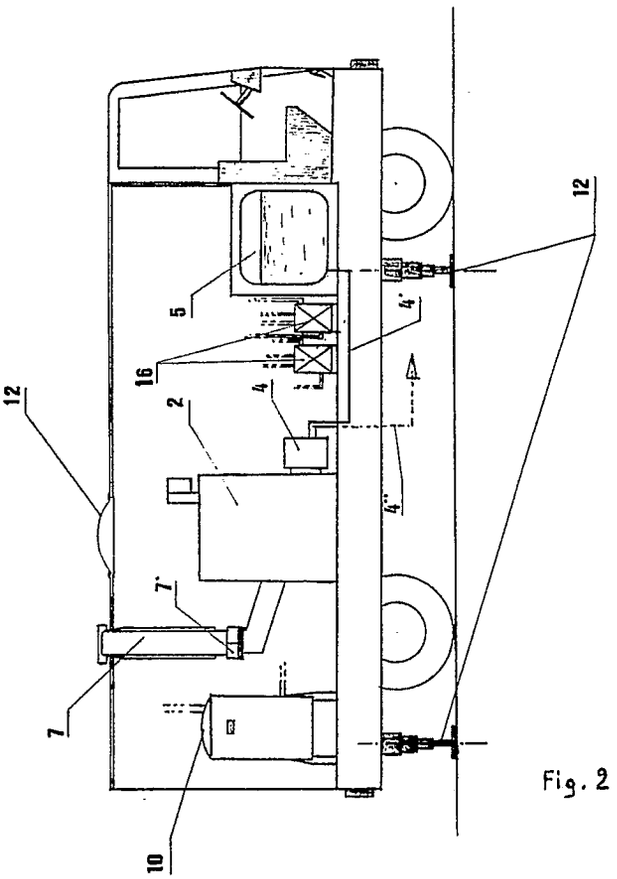

Fig. 2

VEHICLE AND IN PARTICULAR TRANSPORTATION VEHICLE WITH EMERGENCY CENTRAL HEATING PLANT INSTALLED ON IT

When in a building, because of breakdown or an accident or because of the requirement to do repair or restructuring work on the premises of the central heating plant, said plant has to interrupt its operation for a more or less extended period, serious logistic problems occur for all the persons that live in said building. The extended absence of heating of the premises, especially during a cold season, creates notable discomfort, now without real risk to the health of small children, the elderly or feeble, and also the lack of hot water for sanitary use, to whose presence and use modern society in practice is now accustomed, comprises serious discomfort and triggers potential health problems. So far, in the case of nonoperation of the central heating plant, there has not been any alternative solution: it was necessary to wait patiently until the cause was removed, even if this meant long and exasperating waits.

The aim proposed by the author of the invention which will be dealt with better below was to eliminate the above-mentioned risks and discomforts by substitution of the central heating plant temporarily out of service, by another substitute, which is transported on site by a common transportation vehicle equipped with its own engine or towed on a flat bed on which it is permanently installed, and it is connected to the plumbing networks for distribution of hot water for heating and/or for sanitary use of the building for which the intervention is necessary.

The object of this invention is actually a transportation autovehicle characterized in that it transports, installed on it, a central heating plant, complete with all the component parts necessary to produce and deliver the desired volumes of water at desired temperatures, and equipped with means necessary for connecting it to the plumbing distribution networks used for heating and/or supplying hot water of dwelling units to make up for the nonoperation of the central heating plant of the dwelling units themselves.

A preferred embodiment of the invention is represented in the accompanying drawings.

-- In figure 1 is represented the left lateral view of an autovehicle sectioned along the longitudinal median axis.

-- In figure 2 is represented the right lateral view.

In the embodiment represented, the heat is produced by two diesel burners 3 fig. 1 -- 4 fig. 2 connected to two boilers 1 fig.1 -- 2 fig. 2 to be able better to feed the amount of heat provided as a function of the requirements and dimensions of each building.

A system of double two-way hoses 15 fig 1, which are connected respectively to the incoming and outgoing pipes of the building network, and a system of circulation pumps 13 fig 1 and mixing valves 14 fig. 1 conduct the hot water for sanitary use and for heating necessary for the building itself.

The heat produced in the boiler is transferred to the water in circulation by two heat exchangers 16 fig. 2.

For the hot water for sanitary use the adoption is provided of an accumulator 10 fig. 2 of suitable capacity installed in the transported central heating plant.

On the autovehicle itself that transports the central heating plant is installed a diesel fuel tank 5 for supplying burners 3 fig. 1 -- 4 fig. 2, but connecting means 3″ fig.1 -- 4″ fig. 2 exist able to allow suction from the diesel fuel tank of the building or also directly from a supply tank truck that is parked close to the central heating plant.

The autovehicle is equipped with four telescopic legs 11 fig. 1 -- 12 fig. 2 for its anchoring and leveling, with electric power trapdoors 12 on the roof of the central heating plant, and stacks 6 fig. 1 -- 7 fig. 2 for evacuation of the flue gases of the boilers, stacks adjustable in position and connected to the discharge pipes of the boilers.

Inside the central heating plant is installed a monitor 8 fig. 1 connected to a television camera (not shown in the figure), which, if connected inside the central Is heating plant of the building for which the intervention is performed, transmits the image of the various elements for measuring temperatures and pressures of the plumbing network of the building, to be able to perform a continuous and effective checking of the values of said magnitudes.

Various safety systems are provided to avoid risks connected with the operation of the central heating plant under improper conditions, among which certainly to be cited in particular is that which prevents the operation of the central heating plant if the stacks for evacuation of the fumes are not positioned exactly and connected correctly to boiler discharge pipes 6′ fig. 1 -- 7′ fig. 2. Electric power supply to the burners and the central heating plant in general takes place through a plug which conducts current only if precisely the stacks are exactly and properly positioned.

Also the values of pressure and temperature both close to the boilers and inside the plumbing networks are continuously checked with a display

on an electronic synoptic control panel, and, if they should reach preset limiting values, suitable safety switches 9 fig. 1 cut off the current, stopping the operation of the central heating plant.

The potential applications of the invention are numerous: the self-transported central heating plant actually has complete mobility and versatility of use. Besides temporarily replacing in operation the central heating plant out of service of a building, it can, for example, be used to make units operative in which, because of delay in supplies or construction, the central heating plant does not yet exist, and for demonstration and teaching purposes in schools, exhibitions, etc.

The embodiment design represented in the figures and discussed in the description is purely by way of example, and therefore is not binding or limiting in regard to equipping or dimensioning of the unit of the central heating plant, or in regard to the type of vehicle selected for its installation or the arrangement of the various elements.

Claims

1. Vehicle and in particular transportation autovehicle to make up for the nonoperation of central heating plants of dwelling units characterized in that it transports, installed on it, a central heating plant, complete with all the component parts necessary to produce and deliver desired volumes of water at desired temperatures, and equipped with means necessary for connecting it to plumbing distribution networks used for heating and/or supplying hot water to dwelling units.

2. Vehicle and in particular transportation autovehicle as claimed in claim 1, wherein the central heating plant transported by it is permanently fixed on its flat bed and comprises at least two boilers (1 fig.1, 2 fig. 2) to be able better to supply the production of heat as a function of the needs of the plumbing networks to which the central heating plant itself is temporarily connected.

3. Vehicle and in particular transportation autovehicle as claimed in claims 1 and 2, wherein the burners (3 fig. 1, 4 fig. 2) connected to the boilers of the central heating plant transported by it are equipped with connecting means (3′, 3″ fig. 1 -- 4′, 4″ fig. 2) by which they can be fed liquid fuel coming from a tank (5) installed on the autovehicle itself, or from tanks outside the vehicle.

4. Vehicle and in particular transportation autovehicle as claimed in claims 1, 2 and 3, wherein the boilers of the central heating plant transported by it are equipped with stacks (6 fig. 1 -- 7 fig. 2) for evacuation of the flue gases with insertion of a safety system (6′ fig. 1 -- 7′ fig. 2) that prevents the operation of the central heating plant in case said stacks are not positioned exactly and connected correctly to the boiler discharge pipes.

5. Vehicle and in particular transportation autovehicle as claimed in claims 1, 2, 3 and 4, wherein the central heating plant transported by it has a monitor (8 fig. 1) and a television camera connected to it, which can be placed in the central heating plant of the building for which the intervention is performed to transmit the image of the various elements for measuring pressures and temperatures.

6. Vehicle and in particular transportation autovehicle as claimed in the preceding claims, wherein in the central heating plant transported by it there is a safety device (9 fig. 1) that interrupts the operation of the central heating plant itself when the temperature and pressure values in the plumbing network of the building, to which the central heating plant is temporarily connected, reach preset limiting values.

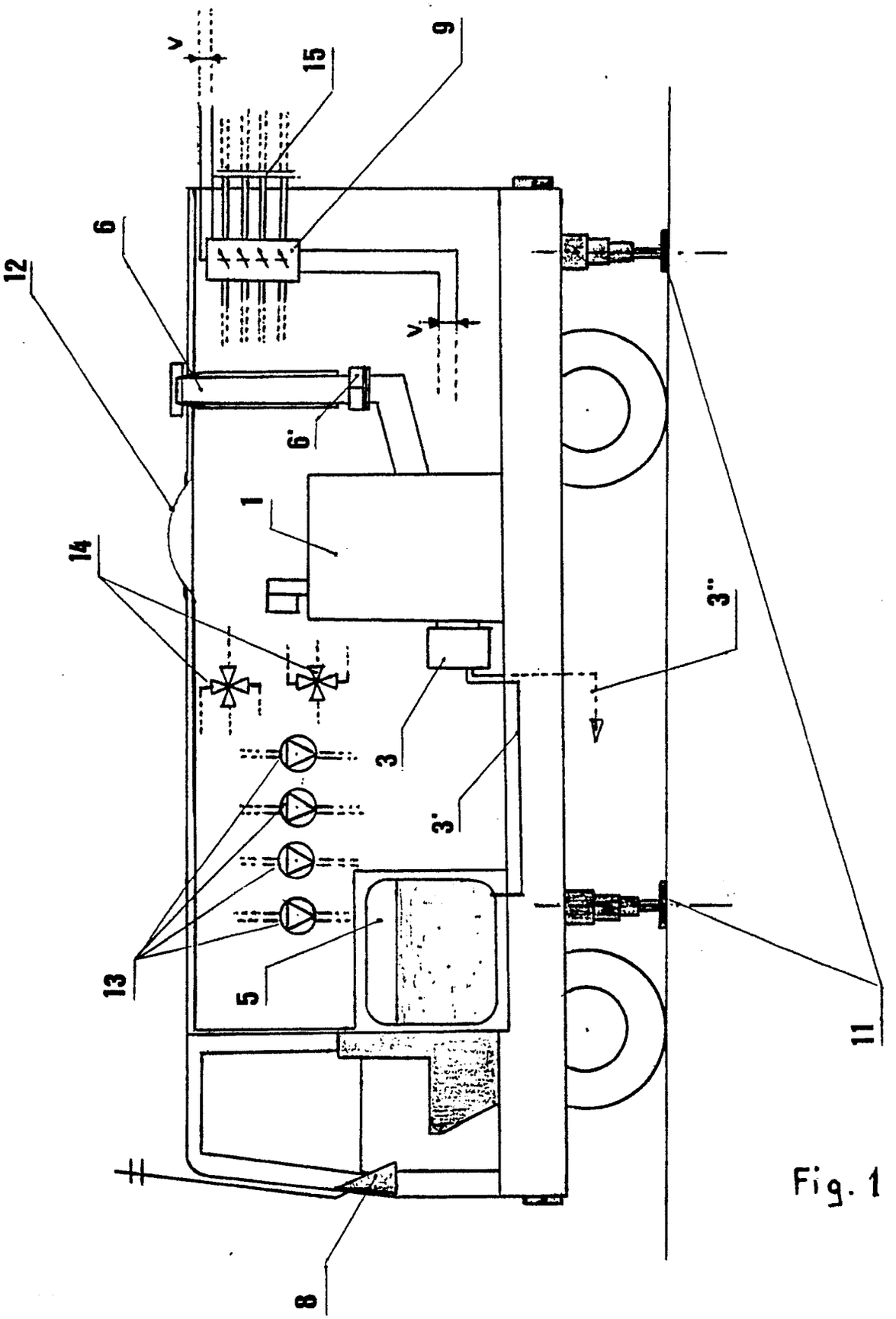

Fig. 1

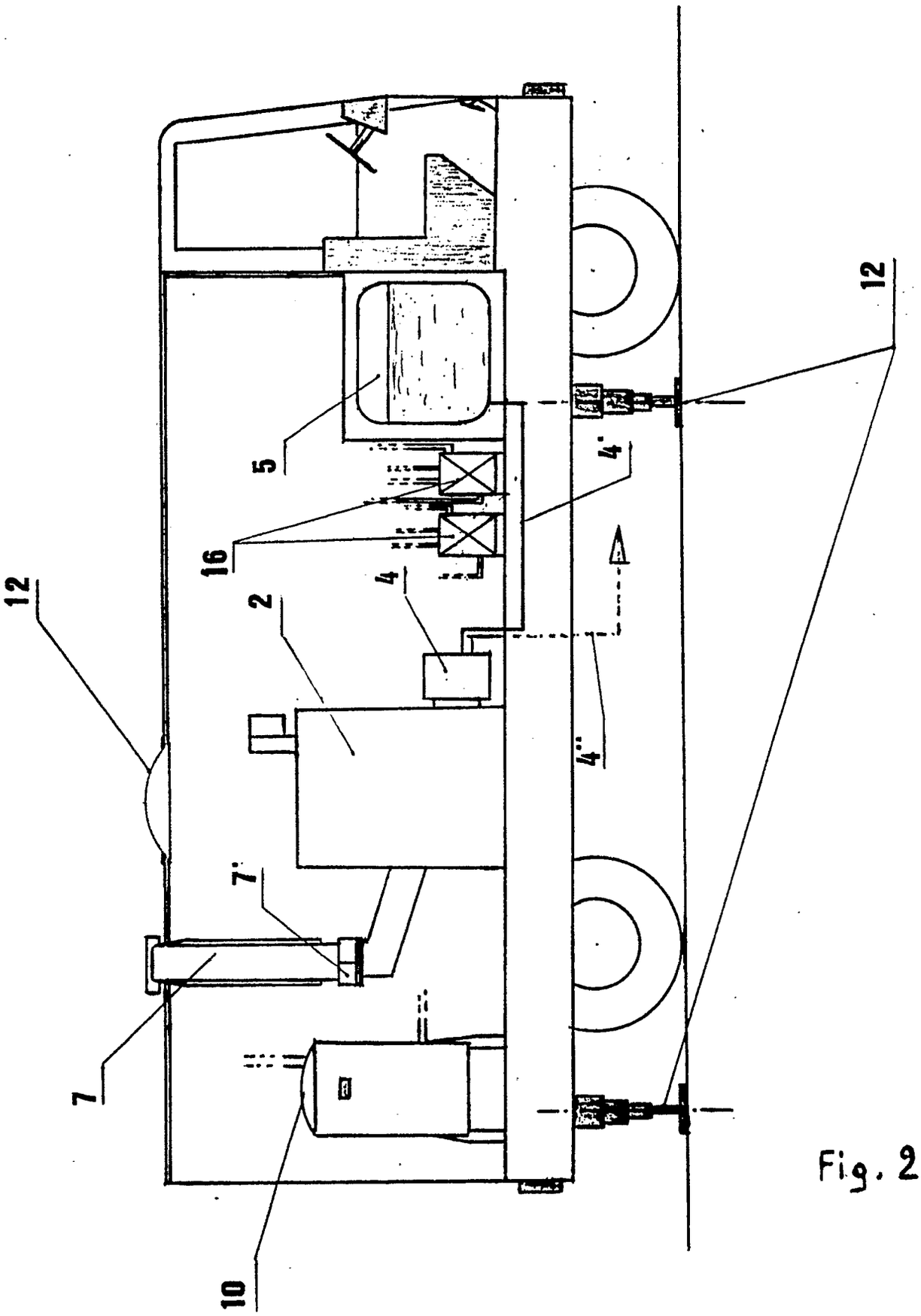

Fig. 2