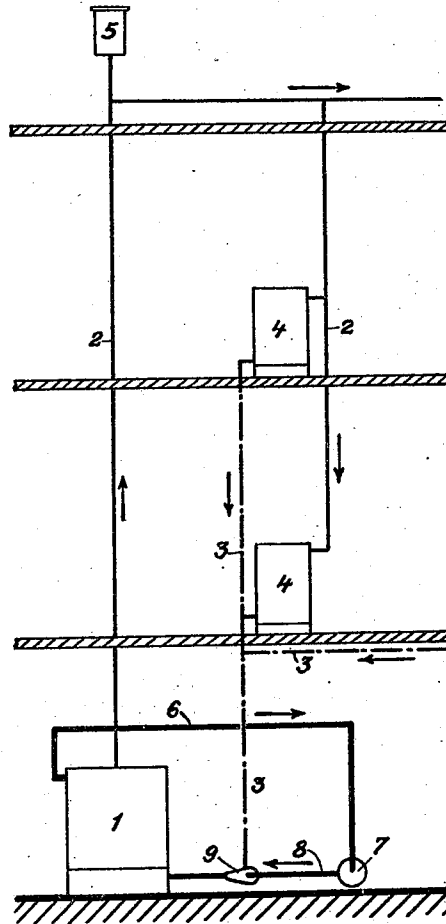


A. R. M. AND O. LINCKE.
HOT WATER HEATING SYSTEM.
APPLICATION FILED MAR. 30, 1921.

1,418,583.

Patented June 6, 1922.



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UNITED STATES PATENT OFFICE.

ALEXANDER RUDOLF MAXIMILIAN LINCKE, OF ZURICH, AND OTTO LINCKE, OF OERLIKON, NEAR ZURICH, SWITZERLAND.

HOT-WATER HEATING SYSTEM.

1,418,583.

Specification of Letters Patent. Patented June 6, 1922.

Application filed March 30, 1921. Serial No. 457,138.

To all whom it may concern:

Be it known that we, ALEXANDER RUDOLF MAXIMILIAN LINCKE, residing at Seewartstrasse 16, Zurich, and OTTO LINCKE, residing at Oerlikon, near Zurich, Naegelistrasse 8, in the Canton of Zurich and Republic of Switzerland, have invented certain new and useful Improvements in Hot-Water Heating Systems, of which the following is a specification.

This invention has for its object to provide an improved hot water heating system, which permits a considerable saving in fuel, requires very little control, and which may operate as a hot water system acting by gravity, or as a heating system for quickly circulating the water without disturbing the gravity action of the heating system.

With the present invention it is not necessary to employ controlling means in the pipes to change the heating system from a normal gravity circulation heating system into a quick circulation system and vice-versa. As no controlling means are necessary in the pipes, the accelerated movement of the water in the heating pipes is solely effected by setting in motion a prime mover, such as an electric motor, which drives the accelerating device, such as a pump. When this device is stopped, the gravity circulation of the heating water automatically begins without any disturbance. When the accelerating device is again put in motion the gravity circulation of the heating system automatically changes to quick circulation.

One embodiment of this invention is diagrammatically shown in the accompanying drawing.

1 is a heating vessel or boiler, 2 is the feed pipe leading to the radiators, 3 is the return pipe, 4 are the radiators and 5 is the expansion vessel of a hot water heating system. In a separate circulation conduit 6, 8 leading from the top of the heating vessel 1 to its lower portion, a motor driven accelerating device 7 such as a centrifugal pump is arranged. In the said conduit, 6 is the suction pipe or branch and 8 is the pressure pipe or branch. The pressure pipe is connected to the return pipe 3 of the heating con-

duit and terminates in an injector 9. Therefore, the pressure water of the pressure pipe 8 produces a suction action on the return water of the pipe 3 by means of the injector 9, whereby the flow of the return water in the pipe 3 is accelerated when desired, and in consequence an accelerated circulation of the heating water is produced without disturbing the gravity action in the heating conduit.

The apparatus normally operates with slow circulation of the water in the pipes, through the pipes 2, radiators 4 and return pipe 3. When rapid circulation however, is desired, the pump 7 is put in motion and this causes the injector 9 to function and produce more rapid circulation through the pipes 2 and 3. It will be noted that when the pump 7 is stopped, the device will function for slow circulation without manipulating any valves, and further the rapid circulation may be secured without the manipulation of any valves. In other words, the system may be automatically converted from a slow feeding to a fast feeding system or vice-versa, by simply starting or stopping the accelerating device 7.

What we claim and desire to secure by Letters-Patent is:—

A hot water heating system, comprising in combination, a heating conduit including radiators and a boiler, a separate conduit having a suction branch and a pressure branch, said suction branch being connected to said boiler, a motor driven accelerating device interposed between the branches of the separate conduit, and an injector connecting the pressure branch of the separate conduit to the heating conduit to accelerate the feed of the heating water without destroying the gravity action of the water in the heating conduit.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

ALEXANDER RUDOLF MAXIMILIAN LINCKE.
OTTO LINCKE.

Witnesses:
CHR. MILLEEN,
HERMANN HUBER.