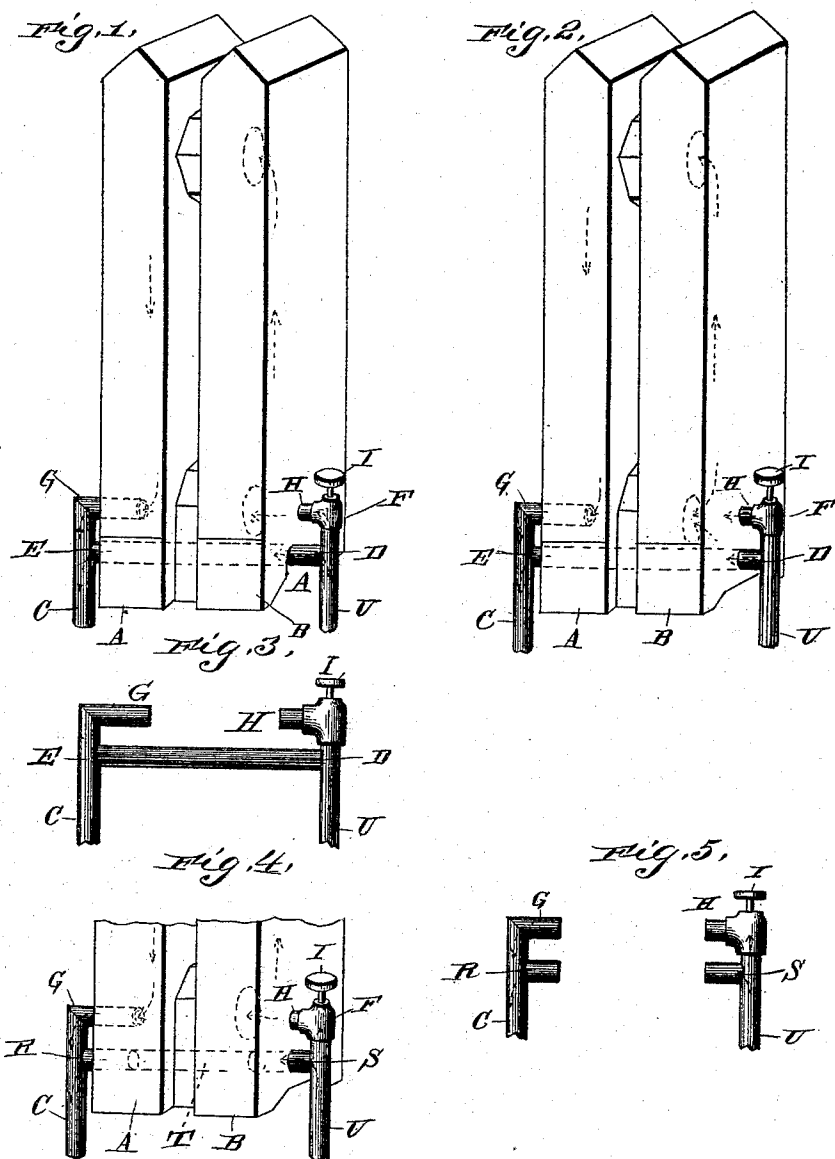


(No Model.)

G. W. HAWES.
HOT WATER HEAT RADIATOR.

No. 498,849.

Patented June 6, 1893.



Witnesses:
Emma D. Hawes
Charles B. Keith,

Inventor:
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UNITED STATES PATENT OFFICE.

GEORGE W. HAWES, OF ORTONVILLE, ASSIGNOR TO EMMA D. HAWES, OF
BIG STONE COUNTY, MINNESOTA.

HOT-WATER HEAT-RADIATOR.

SPECIFICATION forming part of Letters Patent No. 498,849, dated June 6, 1893.

Application filed May 7, 1892. Serial No. 432,218. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HAWES, of
Ortonville, in the county of Big Stone and
State of Minnesota, have invented new and
useful Improvements in Hot-Water Heat-Ra-
diators, of which the following is a full, clear,
and exact description.

This invention relates to what are termed
hot water radiators and to the pipes and valves
through which the hot water is conveyed to
and from the radiators and consists in certain
novel constructions and combinations of parts
in such radiators and the piping connected
therewith substantially as hereinafter de-
scribed and more particularly pointed out in
the claims.

Reference is to be had to the accompanying
drawings forming a part of this specification
in which similar letters of reference indicate
corresponding parts in all the views.

Figures 1 and 2 represent views of a hot
water radiator having two loops or sections,
"A" and "B," with a feed pipe "U" and an
exit pipe "C" connected therewith: also show-
ing a by-pass pipe "D" "E" extending from
the feed pipe to the exit pipe and in contact
with the radiator. Fig. "1" shows the by-pass
pipe "D" "E" passing under the radiator while
Fig. "2" represents the by-pass pipe extend-
ing through the base of the radiator. Fig.
"2" further shows the radiator as having a
hollow base so constructed as to inclose the
by-pass pipe "D" "E." Fig. 3 is a side view
of the combination of pipes "U" "C" "D" "
"E" "G" "H" to be attached to the radiator,
as shown in Figs. "1" and "2." Fig. "4" rep-
resents a view in perspective of the lower por-
tion of a radiator in all respects the same as
Fig. "2" excepting that the pipes "R" and
"S" are short pipes attached to the radiator
and that between the two pipes "R" and "S"
is a duct "T" through the radiator by which
they are connected. That portion of the ra-

diator below the line "F" is solid except an
opening or hollow space through which the
pipe "D" "E" may extend, as in Fig. "2," or
as represented in Fig. "4" by the duct "T."
Fig. "5" represents a side view of the com-
bination of pipes "U" "C" "R" "S" "G"
"H" to be attached to the radiator as in
Fig. "4."

In operation the hot water will circulate up-
ward through the feed pipe "U" "H" into
the radiator and return through the exit pipe
"G" "C" and will also circulate through the
by-pass pipe "D" "E" but when the valve "I"
is closed the circulation will continue through
the feed pipe, the by-pass pipe and the exit
pipe "U" "D" "E" "C" but not through the
upper portion of the radiator and the water
in the upper portion of the radiator will re-
main still and become cool while the contin-
ued circulation through the by-pass pipe "D"
"E" will prevent freezing in the radiator, and
when the valve "I" is again opened a much
less time will be required to heat the radiator.

Having fully described my invention, what
I claim as new, and desire to secure by Letters
Patent, is—

1. The combination of a radiator, a feed pipe
and an exit pipe therefor and a by-pass pipe
or duct extending from the feed pipe to the
exit pipe and in contact with the radiator sub-
stantially as described and for the purposes
specified.

2. The combination in a radiator of a base
of such shape as to allow a by-pass pipe to ex-
tend through and be inclosed therein, a feed
pipe, an exit pipe and a by-pass pipe or duct
extending through the base from the feed pipe
to the exit pipe substantially as described.

GEORGE W. HAWES.

Witnesses:

A. B. KAERCHER,
FRED. F. GORDON.