

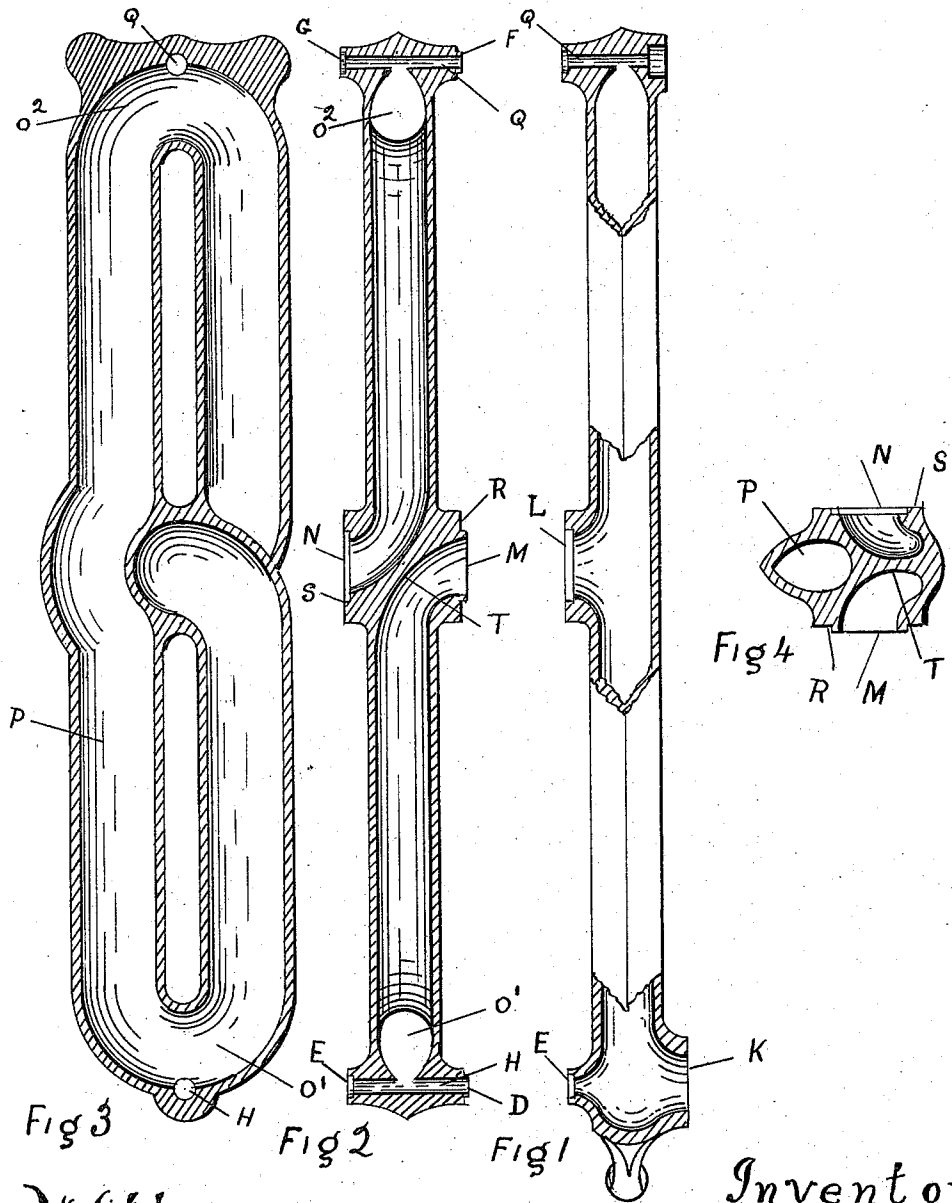
(No Model.)

2 Sheets—Sheet 1.

J. T. JACKSON & F. J. TRAVERS.
RADIATOR.

No. 585,521.

Patented June 29, 1897.



Witnesses.

Mary Jane Travers
Alfred Jackson

Inventors.

John Thomas Jackson
Frederic James Travers.

(No Model.)

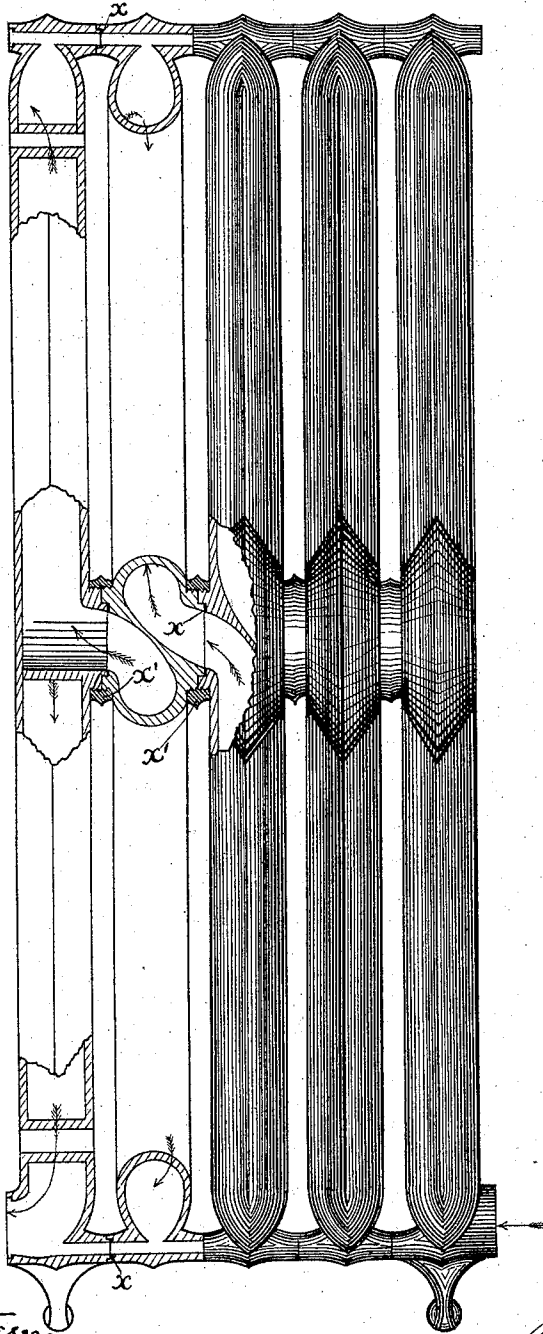
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Fig. 5



Witnesses
Mary Caroline Macdonell
Ella Gleason

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John Thomas Jackson
Fred James Travers

UNITED STATES PATENT OFFICE.

JOHN THOMAS JACKSON AND FERGUS JAMES TRAVERS, OF TORONTO,
CANADA.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 585,521, dated June 29, 1897.

Application filed December 29, 1896. Serial No. 617,423. (No model.)

To all whom it may concern:

Be it known that we, JOHN THOMAS JACKSON, mechanical engineer, and FERGUS JAMES TRAVERS, residing at the city of Toronto, in the county of York, Province of Ontario, Canada, citizens of the Dominion of Canada, have invented certain new and useful Improvements in Steam and Hot-Water Heating Radiators, in which a positive and constant circulation of steam or hot water is sustained, of which the following is a specification.

The objects sought for in our improvements are as follows: first, to provide a radiator with a constant circulation, so that the steam or hot water will always be flowing onward and thereby cause a uniform heat throughout the entire radiator and preventing unequal expansion and contraction; second, to provide a radiator having its main coupling central and with its inlet and outlet also central, thus expediting circulation while at the same time increasing the strength and rigidity of the radiator. We attain these objects by means of mechanism illustrated in the accompanying drawings, in which—

Figure 1 shows an edge sectional view of the outer end loop or column. Fig. 2 shows an edge sectional view of circulating loop or column. Fig. 3 shows a face sectional view of circulating loop or column. Fig. 4 shows a central cross-sectional view of circulating loop or column; and Fig. 5 is an elevation, partly in section, of a complete radiator.

Similar letters of reference in the several figures refer to the same parts.

K, Fig. 1, represents an inlet by which steam or hot water is conducted into the outer end loop of the radiator, and the steam or hot water then passes up the said loop to outlet L, through which it passes into the coil-loop at the hub M, Fig. 2, which said coil-loop is so constructed that the steam or hot water upon entering it will take a downward course to the lower end of the loop, then around the same in the return-bend at O' into the up pipe

P, Figs. 2 and 3, rising to the upper return-bend O², Figs. 2 and 3, and then down to the outlet at the hub or boss N, being at the opposite center of the said loop from the inlet M, where the steam or hot water entered. This course of the water or steam is caused by means of right-angle bends or elbows cast integral within the center of the circulating-coil loop, as shown by T, Fig. 2, and T', Fig. 4.

An opening or drainage-passage H, cast into the lower end of the loops, as shown in Figs. 2 and 3, allows drainage of water caused by the condensation of steam or otherwise to pass to the outer end loops, and from thence to the flow or return risers, and by the same means the radiator may be emptied of water when not in use. A small opening Q, as shown in Figs. 1, 2, and 3, is cast at the extreme top of the loops and forms, when the loops are connected, an opening for the escape of air, the said opening Q having male and female connections, as shown by G and F in Fig. 2, in which connections a compressible ring or gasket α is placed to prevent leakage. The hubs M and outlet N in Figs. 2 and 4 are also provided with male and female connections, (shown on said figures by R and S,) in which a compressible ring or gasket α is placed for jointing, and the said hubs are threaded externally with right and left threads, and when brought together are connected by a nut or ring α' . The opening or passage H at the bottom of the said loops has also male and female connections in which a compression ring or gasket α is likewise placed for the purpose of jointing.

What we claim as our invention, and desire to secure by Letters Patent, is as follows:

1. A vertical radiator loop or section provided on opposite sides at a point central of its length with threaded projecting hubs or bosses, one of which is formed with a socket and the other with a projection, and having a diaphragm formed integrally within the center of the loop, and a horizontal passageway at both top and bottom.

2. The combination in a vertical radiator,
of a plurality of loops or sections communi-
cating centrally by means of hubs or bosses
divided by a central diaphragm, and each
5 provided at both top and bottom with a pas-
sage having a socket at one end and a projec-
tion at the opposite end to constitute continu-
ous air and drain passages.

Dated at Toronto this 23d day of Decem-
ber, 1896.

JOHN THOMAS JACKSON.
FERGUS JAMES TRAVERS.

Witnesses:

MARY CAROLINE MACDONELL,
ELLA GLEASON.