

(No Model.)

2 Sheets—Sheet 1.

J. E. RUSSELL.

FITTING OR CONNECTION FOR SUPPLY PIPES AND BRANCH PIPES OF
RADIATORS.

No. 483,392.

Patented Sept. 27, 1892.

Fig. 1.

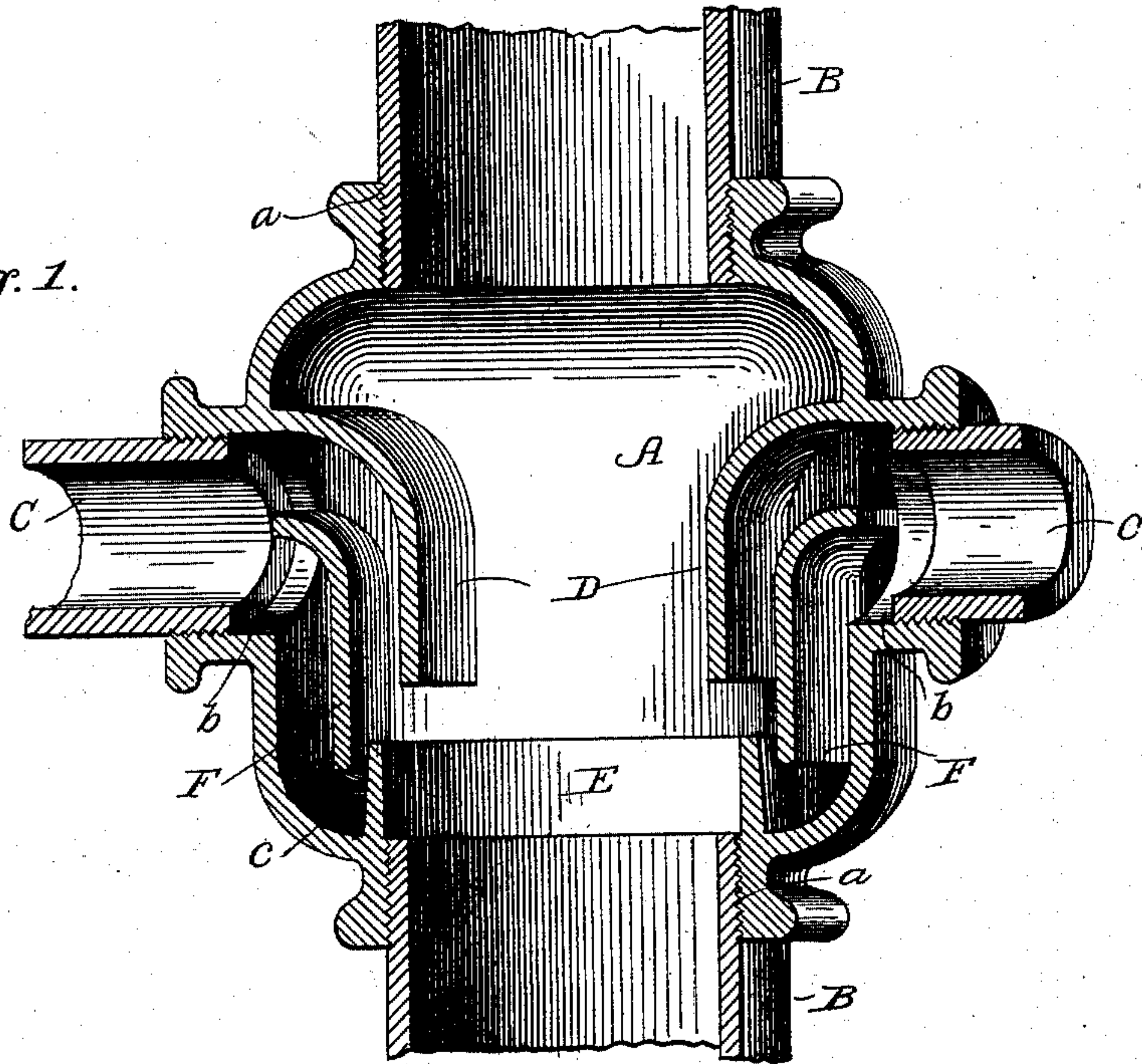
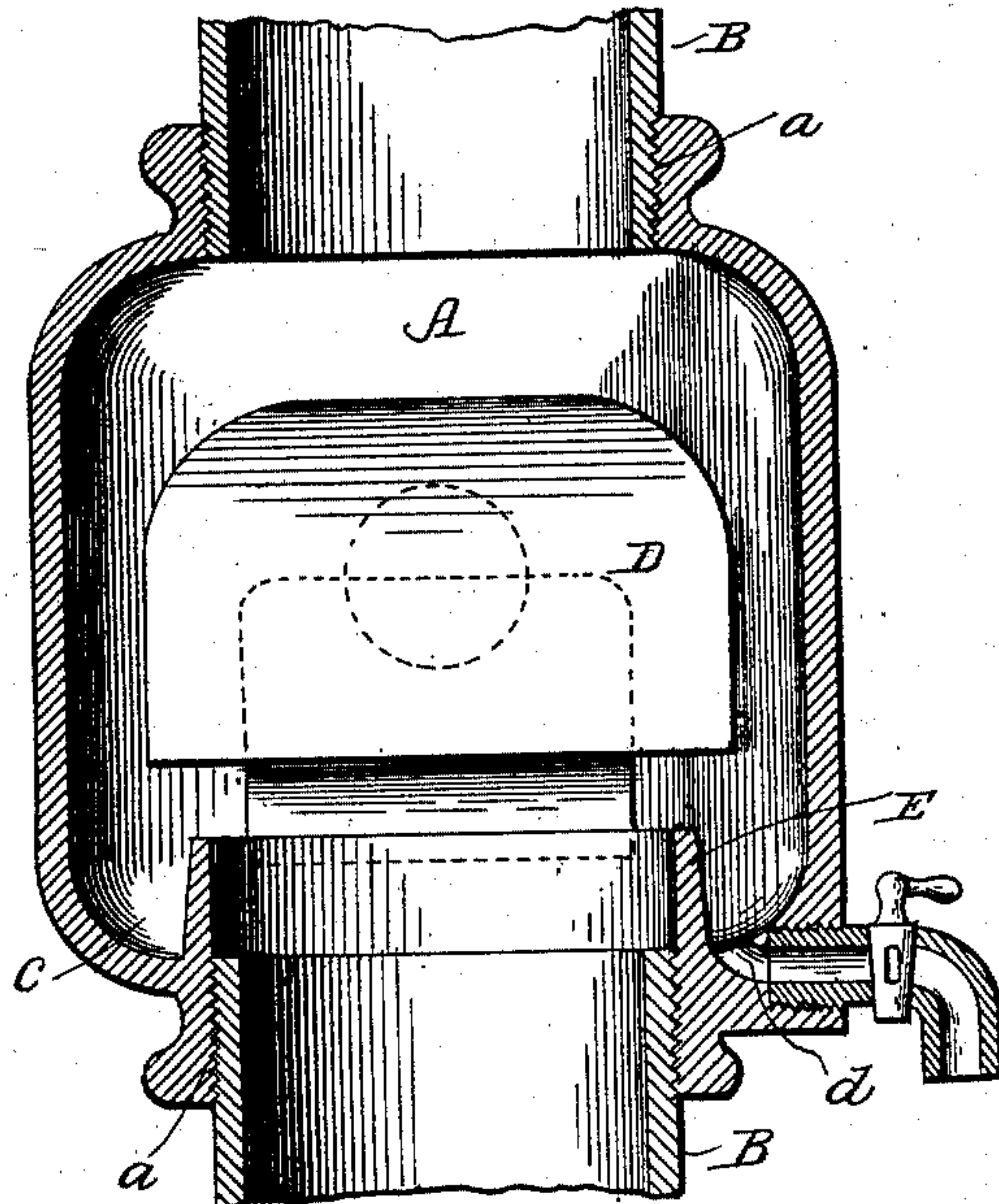


Fig. 2.



Witnesses.

Victor J. Evans.
J. F. Beale

Inventor.

Justin E. Russell

By W. A. Redmond
Atty.

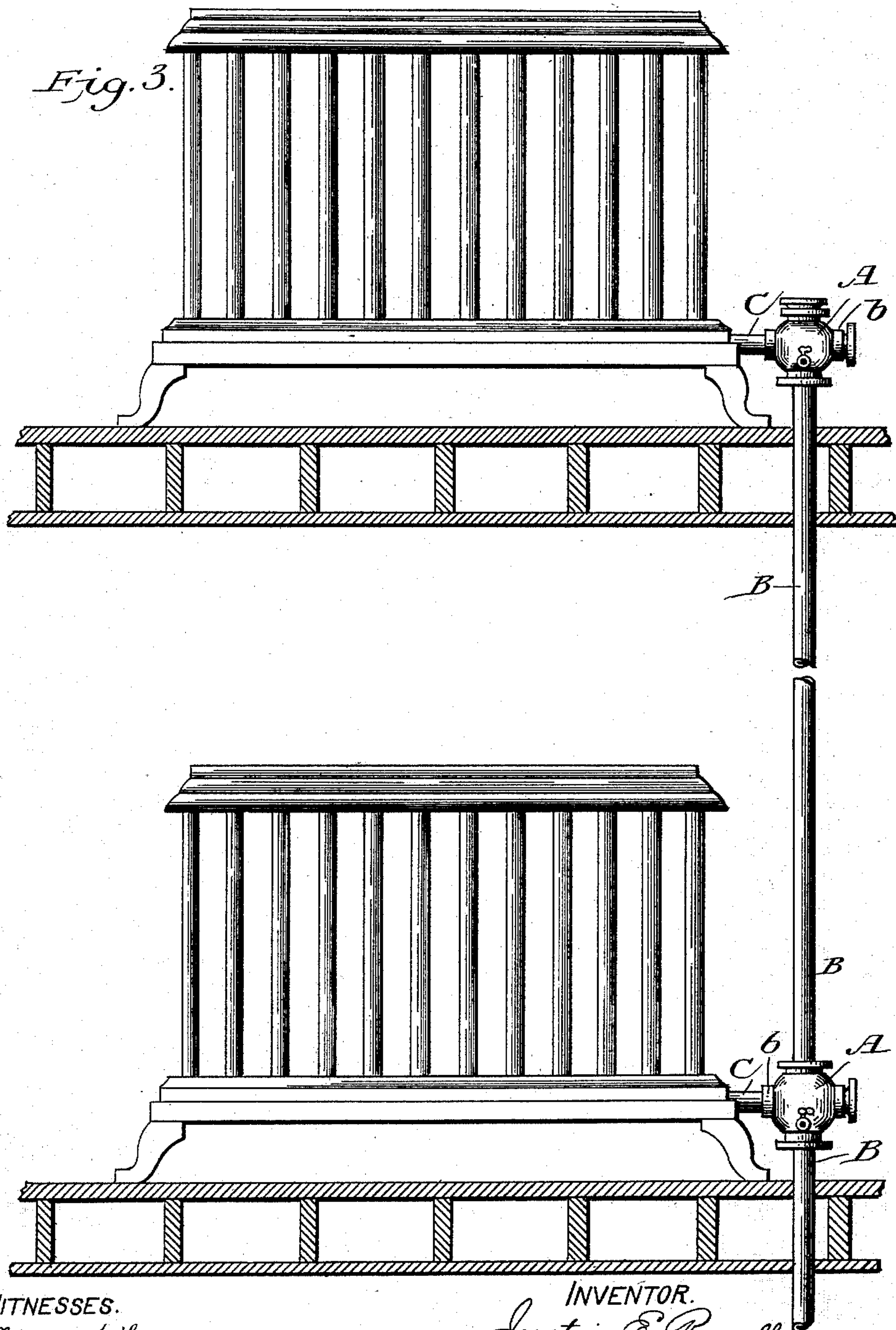
(No Model.)

2 Sheets—Sheet 2.

J. E. RUSSELL.
FITTING OR CONNECTION FOR SUPPLY PIPES AND BRANCH PIPES OF
RADIATORS.

No. 483,392.

Patented Sept. 27, 1892.



WITNESSES.

Victor J. Evans.

Chas. H. Baker.

INVENTOR.

Justin E. Russell

By W. A. Redmond
Attorney.

UNITED STATES PATENT OFFICE.

JUSTIN E. RUSSELL, OF CHICAGO, ILLINOIS.

FITTING OR CONNECTION FOR SUPPLY-PIPES AND BRANCH PIPES OF RADIATORS.

SPECIFICATION forming part of Letters Patent No. 483,392, dated September 27, 1892.

Application filed May 11, 1892. Serial No. 432,590. (No model.)

To all whom it may concern:

Be it known that I, JUSTIN E. RUSSELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fittings or Connections for the Supply-Pipes and Branch Pipes of Radiators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

As is well known in the one-pipe system of steam-heating the water of condensation escapes from the radiators into and is conducted back to the boiler through the steam-supply pipe, and if the system comprehends the feeding of the steam to the radiator direct—that is, on the ascending line—the radiator branch pipes are connected directly to the main supply-pipe, and if a return-pipe is employed and the steam fed to the radiators on the descending line the connection is made with the return-pipe, and in either event there is an objectionable mingling of the entering steam and escaping water at the point of connection or fitting of the supply or return pipe with the radiator branch pipe; also this system, with the ordinary fittings or connections, is objectionable, because the water of condensation on its passage from the upper radiators of the system to the boiler is drawn into the lower or intermediate radiators by the steam when entering the same. Now it is the object of my invention to obviate these objectionable features in the one-pipe system of steam-heating by providing a fitting or connection adapted to prevent the water of condensation of the upper radiators on its passage to the boiler from being drawn into the lower radiators, and to provide, also, means for directing the inlet of the steam to and exit of the water of condensation from the radiator in different channels.

With these ends in view my invention consists, first, in providing a fitting having a vertical flange formed therein, which, in connection with a downwardly-extending partition, forms a hydraulic or water seal to direct the steam into the upper half of the branch pipe, and, secondly, in providing a shield within the fitting arranged to project over the upper half of the branch-pipe opening and, in con-

nection with the partition, form a channel for the entering steam.

In the accompanying drawings, forming a part of this specification, Figure 1 is a central vertical section of my improved fitting in perspective; Fig. 2, a vertical central section taken on a line at right angles to Fig. 1, and Fig. 3 a view showing my couplings in connection with two radiators on different floors.

Referring to the drawings, A represents the fitting, which may be cylindrical or of any other preferred or suitable shape, having the large screw-threaded cylindrical openings *a* at its top and bottom to receive the steam-supply pipe B and the smaller lateral screw-threaded openings *b* to receive the branch pipes C of the radiators. In this instance I have shown the fitting as formed with two lateral openings *b* diametrically opposite each other, thus adapting the same for a double connection; but one of them may be plugged or omitted altogether where the fitting is only intended for a single connection.

Immediately over the inner ends of the lateral openings *b* and projecting in a curved line inwardly and downwardly in the fitting is cast a shield D, the lower end of which extends below the lower surface of said openings and terminates above the upper edge of a vertical flange E, surrounding the inner edge of the bottom opening *a* of the fitting, said vertical flange E forming, in connection with the wall of the fitting, a channel *c* for the water of condensation, said channel being tapped, as at *d*, to receive a plug or, as shown, a cock for drawing off the water when desired.

F represents a partition which extends from about the center of height of the inner ends of the lateral openings intermediate the shield D and the wall of the fitting and curves inwardly and downwardly therein and terminates at a point below the upper edge of the flange E. The shield D and partition F are both cast with the fitting and extend across the same, their side edges being integral with the wall of the fitting, forming hood-shaped coverings for the upper and lower halves of the openings *b*, respectively, as best shown in Fig. 1, and said partition F extending, as described, below the upper edge of flange E, but not to the bottom of channel *c*, and centrally

between the flange and the wall of the fitting forms a hydraulic seal in the fitting.

From the above description of the construction and arrangement of the parts of my improved fitting it will be understood that the steam from the boiler under pressure will pass up through the supply-pipe and, if connection is made directly therewith from the radiators through the branch pipes, enter the upper halves of said branch pipes through the channel formed by the shield D and the partition F, thus permitting the water of condensation to escape or flow back from the radiators on the lower half of the branch pipes unimpeded by either the entering steam or the water seal formed in the channel *c* and under the partition F into the channel *c*, from whence it may be drawn off at intervals through the opening *b* or flow over the upper edge of the flange E into the main supply-pipe or the return-pipe, whichever system is employed, and back to the boiler without any liability of being drawn into the radiators on lower levels by the steam entering the same, owing to the shield D covering the openings of the fittings through which connection is made with the radiators.

The water seal formed as described prevents the ascending or descending steam from entering the branch pipes other than through the channel between the shield and the partition, which leads it directly into the upper half of the branch pipe, thus effectually separating the steam from the escaping water of condensation and permitting each to follow its own course without interfering with or impeding the passage of the other in the slightest degree.

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

1. A fitting or coupling for the supply and branch pipes of radiators, having a steam passage or channel formed in said coupling, which communicates with the upper portion of the branch-pipe opening or socket, and a

channel for the escape of the water of condensation leading from the lower portion of said opening, substantially as described.

2. A fitting or coupling for the supply and branch pipes of radiators, having a steam passage or channel communicating with the upper portion of the branch-pipe opening and a passage or channel for the escape of the water of condensation from said branch into the coupling independent of said steam-passage, substantially as described.

3. A coupling for the supply and branch pipes of radiators, having a lateral opening for the branch pipe, a steam passage or channel communicating with the upper portion of said opening, a passage or channel communicating with the lower portion of said opening, and a channel forming a water seal in said coupling, into which said last-named passage discharges, substantially as described.

4. A fitting or connection for the supply-pipe and the branch pipes of radiators, having an opening for the supply-pipe and a lateral opening for the branch pipe, a partition covering one-half of said last-named opening, and a vertical flange projecting from the inner edge of said supply-pipe opening, substantially as described.

5. A steam fitting or connection having supply-pipe openings, a vertical flange surrounding the interior end or edge of one of said openings, a lateral opening for a branch pipe, a downwardly-projecting shield covering said opening, and a downwardly-projecting partition covering the lower half of said lateral opening, said partition extending downwardly intermediate said shield and the wall of the fitting and terminating below the upper edge of said flange, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JUSTIN E. RUSSELL.

Witnesses:

T. C. DELANY,
GEO. D. HOFFMAN.