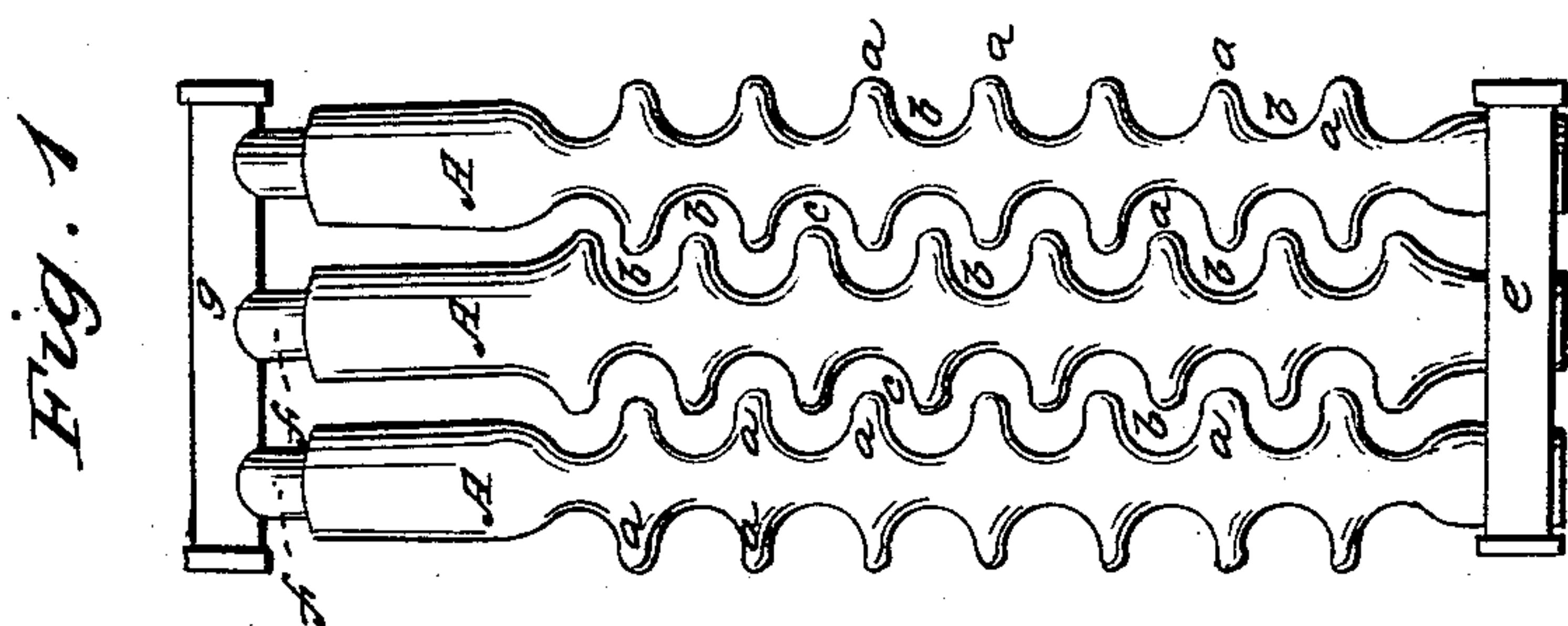
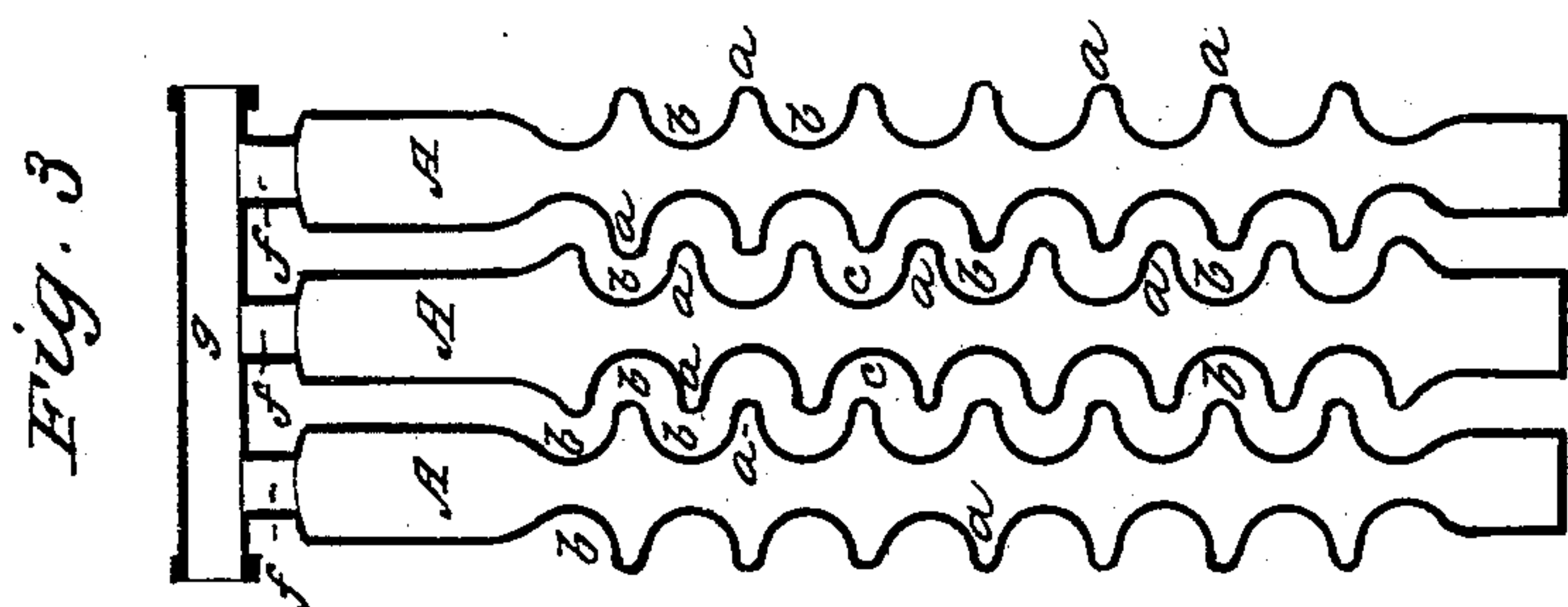
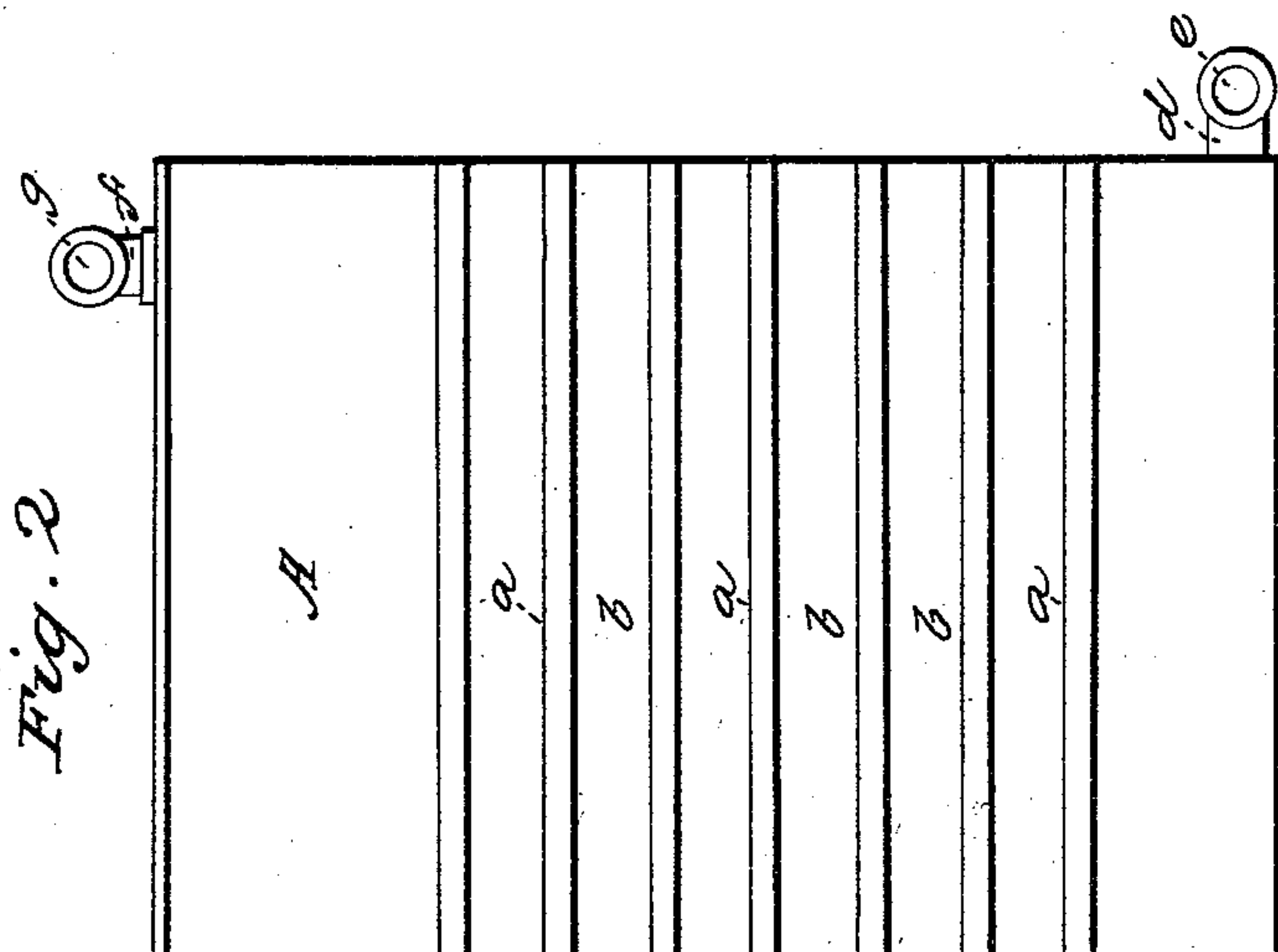


G. W. PERRY.

Steam Heater.

No. 61,564.

Patented Jan. 29, 1867.



Witnesses:
Samuel W. Piper
George Andrews.

Inventor:
George W. Perry.
By his attorney
R. H. Eddy.

United States Patent Office.

GEORGE W. PERRY, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO A.
J. PERRY & COMPANY, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 61,564, dated January 29, 1867.

STEAM GENERATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL PERSONS TO WHOM THESE PRESENTS SHALL COME:

Be it known that I, GEORGE W. PERRY, of the city and county of Providence, and State of Rhode Island, have invented a new and useful or improved Steam Generator, or Heat Radiator; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is an end elevation.

Figure 2, a side elevation; and

Figure 3, a vertical section of it.

The said steam-generator or boiler is constructed of a series of separate vessels connected by conduits, and having the two opposite sides of each formed with concavities and convexities, as represented; also having with the concavities and convexities of such vessels arranged so as to form serpentine flues or channels running between the vessels and open at their ends, the whole being as hereinafter described and as exhibited in the accompanying figures.

In the drawings, A A A are three of such vessels arranged side by side, and at a short distance apart from each other. Each has what may be termed a corrugated side, forming parallel convexities *a a a* and cavities *b b b*. The serpentine passage or flue made between each two next adjacent vessels by their convexities and concavities or corrugations is shown at *c*. By means of branch-pipes *d d d* leading from the lower parts of the vessels and entering a cross-pipe, *e*, they may be connected together. There should also be a similar connection at the tops of the vessels, such being shown at *f f f* and *g*. It is intended for each of such vessels to be cast in one piece of metal, and that a series of them, made and arranged as specified, shall be placed directly over a fire-place, so that the smoke and heat from fuel when in combustion in such fire-place may circulate through the various serpentine flues between the several vessels of the series. The curves of the flues will aid in retaining the smoke and gases in contact with the sides of the vessels, and increase the area of the heat-absorbing surfaces much beyond what it would be were they plane surfaces.

The invention may be used also as a radiator for warming air.

I am aware of the improved condenser described in Letters Patent No. 55,149, granted to Joseph Nason, May 29, 1866. I make no claim to such, as it differs very materially from my invention; for such condenser is composed of a series of separate corrugated plates, each provided with a flange projecting from one side of it, also a socket or groove in its other side for receiving the flange of another plate; and, furthermore, it has one or more holes through it—a series of these plates, when put together, having the projections of the corrugations of one to enter the concavities of the corrugations of the other, so as to form serpentine channels between the several plates, such channels being all closed at their ends—whereas my radiator is composed of separate, narrow, hollow vessels having corrugated opposite sides, and arranged so that the corrugations of one shall form with those of the next adjacent vessel or vessels' tortuous passages, open at opposite ends, so that smoke or air may pass through such channels, and between each two of the vessels, and while such vessels may contain water or steam, the several vessels being connected both at their upper and lower parts by pipes having branches of communication.

What I claim is the improved boiler or generator as composed of a series of vessels constructed, arranged, and connected in manner as hereinbefore explained, and as represented in the accompanying drawings.

I also claim each section or vessel, A, made with the convexities of the corrugations of its opposite sides to project in opposite directions with respect to each other, and with the ends and top and bottom of such vessel closed, in manner as above set forth and as exhibited in the said drawings.

GEO. W. PERRY.

Witnesses:

SAMUEL N. PIPER,

F. P. HALE, Jr.