

A. J. ANDREWS.

EVAPORATOR

PATENTED JUL 18 1871

117030

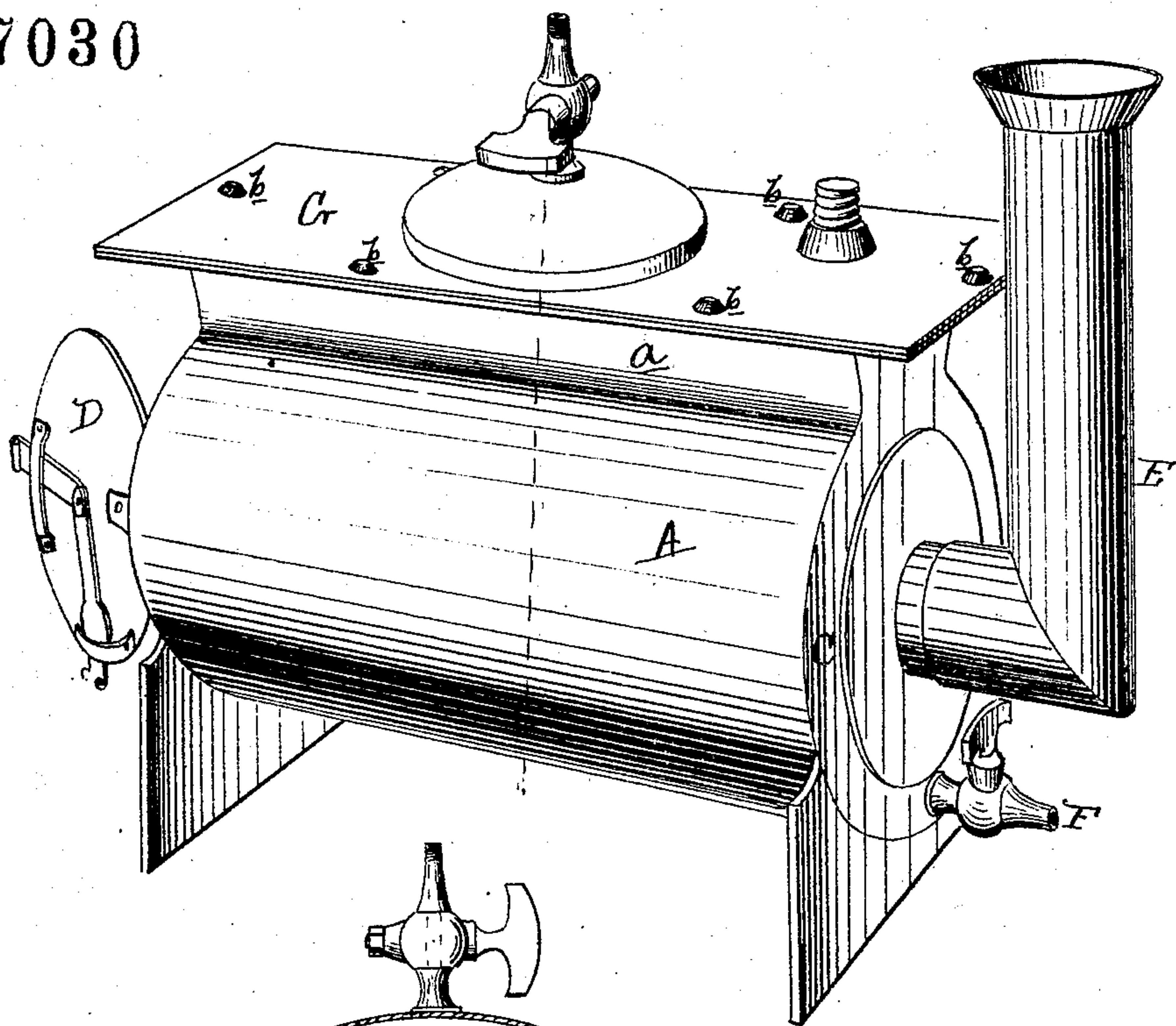


Fig. 1.

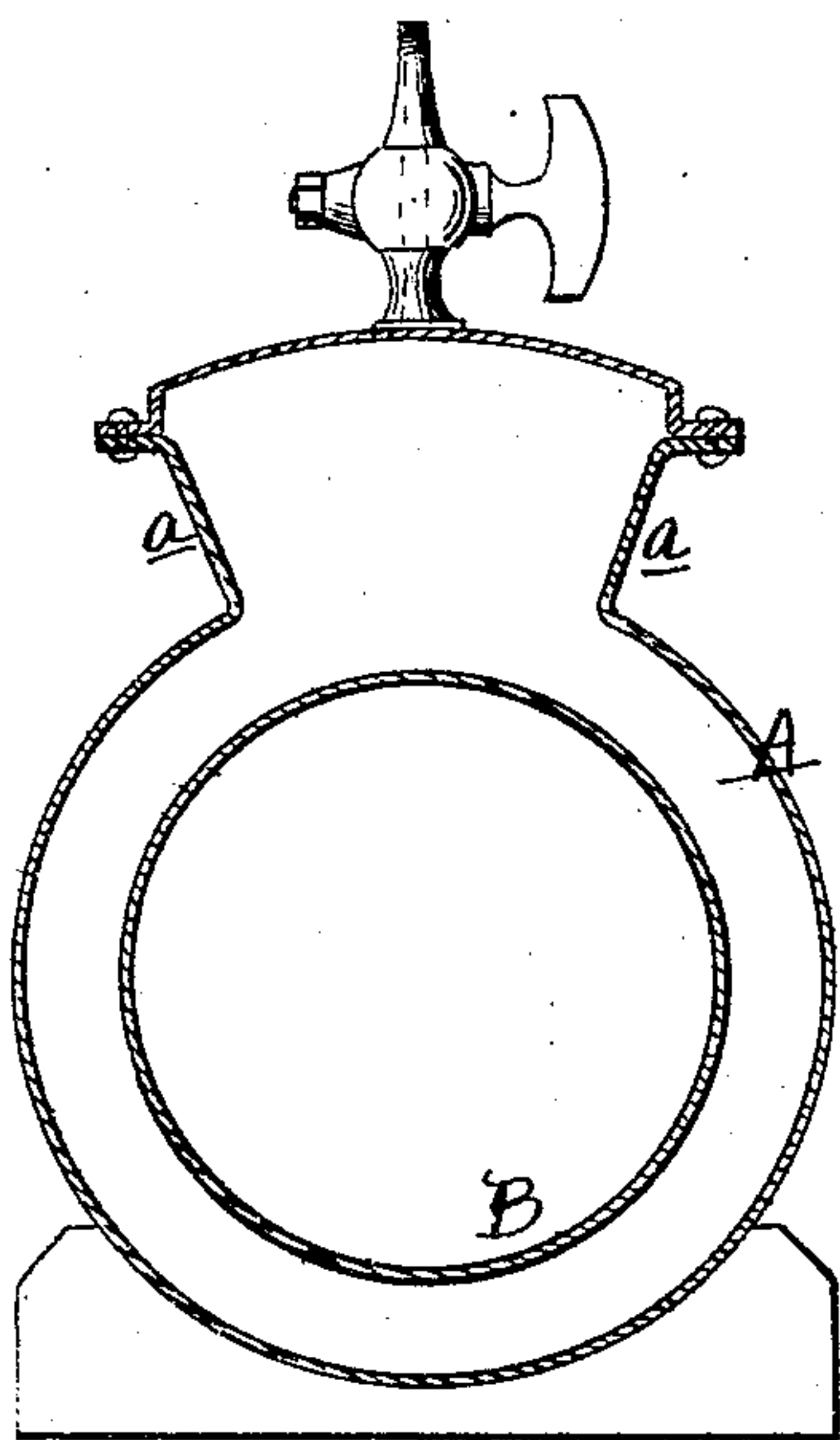


Fig. 2.

ATTEST

Myrow & Co. Church  
Franklin

INVENTOR

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per Atty  
Thos. S. Maynes

# UNITED STATES PATENT OFFICE.

ALBERT J. ANDREWS, OF LINDEN, MICHIGAN.

## IMPROVEMENT IN EVAPORATORS FOR CONCENTRATING LIQUIDS AND BOILING FOOD FOR STOCK &c.

Specification forming part of Letters Patent No. 117,030, dated July 18, 1871.

*To all whom it may concern:*

Be it known that I, ALBERT J. ANDREWS, of Linden, in the county of Genesee and State of Michigan, have invented a new and useful Improvement in Evaporators; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of my improvement, and Fig. 2 is a cross-section of the same.

Like letters indicate like parts in each figure.

The nature of this invention relates to the construction of an evaporator, more especially designed for boiling down the sap of the sugar-maple tree, but also capable of being used for steaming food for stock, heating water, &c., by the addition of a suitable cover provided with the necessary connections; and it consists in the peculiar construction of the device and the arrangement of its various parts.

In the drawing, A is the outer shell of the boiler, in the form of a segment of a cylinder, with the longitudinal edges turned up to form the pan-sides *a*. B is a cylindrical flue within the outer shell, and both are covered by the heads C. The front head has an opening, full size, over which is hung a fire-door, D, provided with a suitable draught-damper. The back head has an opening surrounded by a collar to receive the smoke-pipe E. F is a cock in one of the heads, at the lower part thereof, through which the contents of the vessel may be drawn off.

With the above-described parts the device is

ready and complete for boiling down sap with rapidity and economy of fuel; but for steaming food for stock it requires the covering-plate G, secured to flanges turned at the edges of the pan-sides and tops of heads by the bolts *b*, with any suitable gasket or packing interposed between said plate and flanges. The top plate is provided with a suitable cock or valve, to which connection is made by a pipe or tubing leading to the steaming-caldron; also, with a proper opening and cap for filling it when necessary.

The shells, heads, and covering-plate I make of galvanized iron, in order that they may be secured at the joints with solder. The thinness of the metal and facility of working it reduce the cost of the device, while the evaporative power is increased from the use of thin metal and the arrangement of the internal flue.

The evaporator should be mounted on suitable saddle-legs broad enough in the saddles to prevent the shell from buckling, or in a cradle of wood properly framed together.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The construction and arrangement of the shell A, internal flue B, heads C, fire-door D, and smoke-pipe E, in the manner and for the purpose herein set forth.

2. The combination, with the above-described evaporator, of the covering-plate G secured thereto, as and for the purpose specified.

ALBERT J. ANDREWS.

Witnesses:

FREDERICK EBERTS,  
MYRON H. CHURCH.