T. SPENCER.

Evaporating Pan.

No. 5,676.

Patented July 25, 1848.

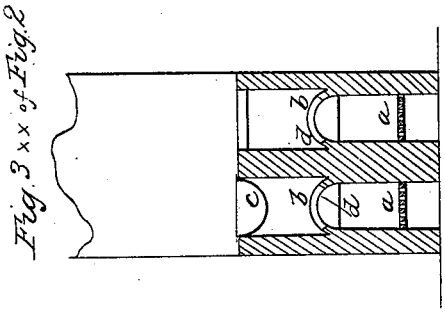

Fig. 3 x x of Fig. 2

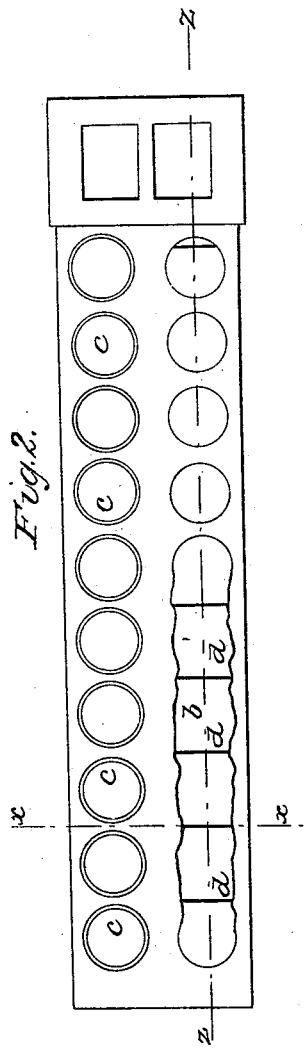

Fig. 2.

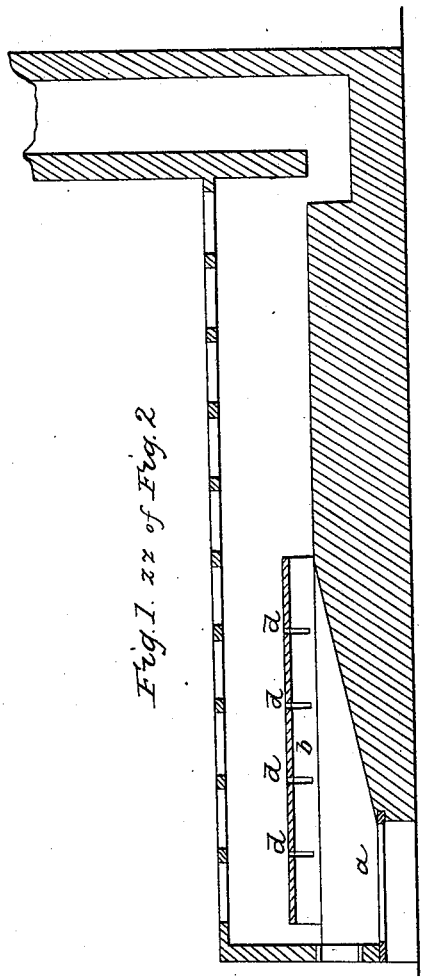

Fig. 1 x x of Fig. 2

UNITED STATES PATENT OFFICE.

THOMAS SPENCER, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN FURNACES FOR EVAPORATING.

Specification forming part of Letters Patent No. **5,676**, dated July 25, 1848.

To all whom it may concern:

Be it known that I, THOMAS SPENCER, of Syracuse, in the county of Onondaga and State of New York, have invented new and useful Improvements in Furnaces for Evaporating Saline and other Liquids; and I do hereby declare that the following is a full, clear, and exact description of the principle or character which distinguishes them from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a longitudinal vertical section through the furnace on the line Z Z of Fig. 2, which is a plan with a portion of the pans and upper work of the furnace removed. Fig. 3 is a vertical cross-section on the line X X of Fig. 2.

The same letters indicate like parts in all the figures.

The nature of my improvement consists in the formation of an arch over the fire, and between it and the pans in the front part of the furnace, to protect them from the too intense action of the heat at that point. Said arch should be carried back far enough to protect all the front kettles, say, forty feet, more or less, in long furnaces of about two hundred feet. One of the greatest annoyances heretofore experienced in salt-making has been the difficulty of protecting the front kettles or pans, in consequence of which they were constantly breaking. In large furnaces this breakage amounts to several thousand dollars per annum, besides the loss of time and material. By my improved plan of construction I have not lost a pan in many months, thus proving, experimentally, the value of my improvement.

The construction is fully illustrated in the several figures of the drawings, and is as follows: I build the foundation and sides of the furnace and the chimney like those of an ordinary furnace for similar purposes; but I prefer to extend the horizontal space for the kettles much farther than has ordinarily been done, and at the entrance of the horizontal flue into the chimney I cause it to dive a little, which I consider advantageous. Over the fire-grate *a* I turn an arch of brick-work, *b*, which I extend back under the kettles or pans *c*, for a distance of forty feet, more or less. In this arch, a little in front of each kettle, I form an oblong or other shaped opening, *d*, through which a portion of the heat from the fire can pass to the kettles. These holes are graduated according to the distance from the fire. The arch thus serves as a shield against the direct action of the heat upon the pans, where it is most intense, and effects a great improvement in the salt or other crystallized substance manufactured. The smoke is more perfectly consumed by not coming directly in contact with the pans when it first escapes, which very much conduces to a saving of fuel.

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

The employment of an arch between the front kettles and the fire, constructed and arranged substantially in the manner and for the purpose set forth.

THOS. SPENCER.

Witnesses:
J. J. GREENOUGH,
A. P. BROWNE.