A. MONNIER.

Gas Retort Preserver.

No. 17,011. Patented April 7, 1857.

*Fig. 1.*

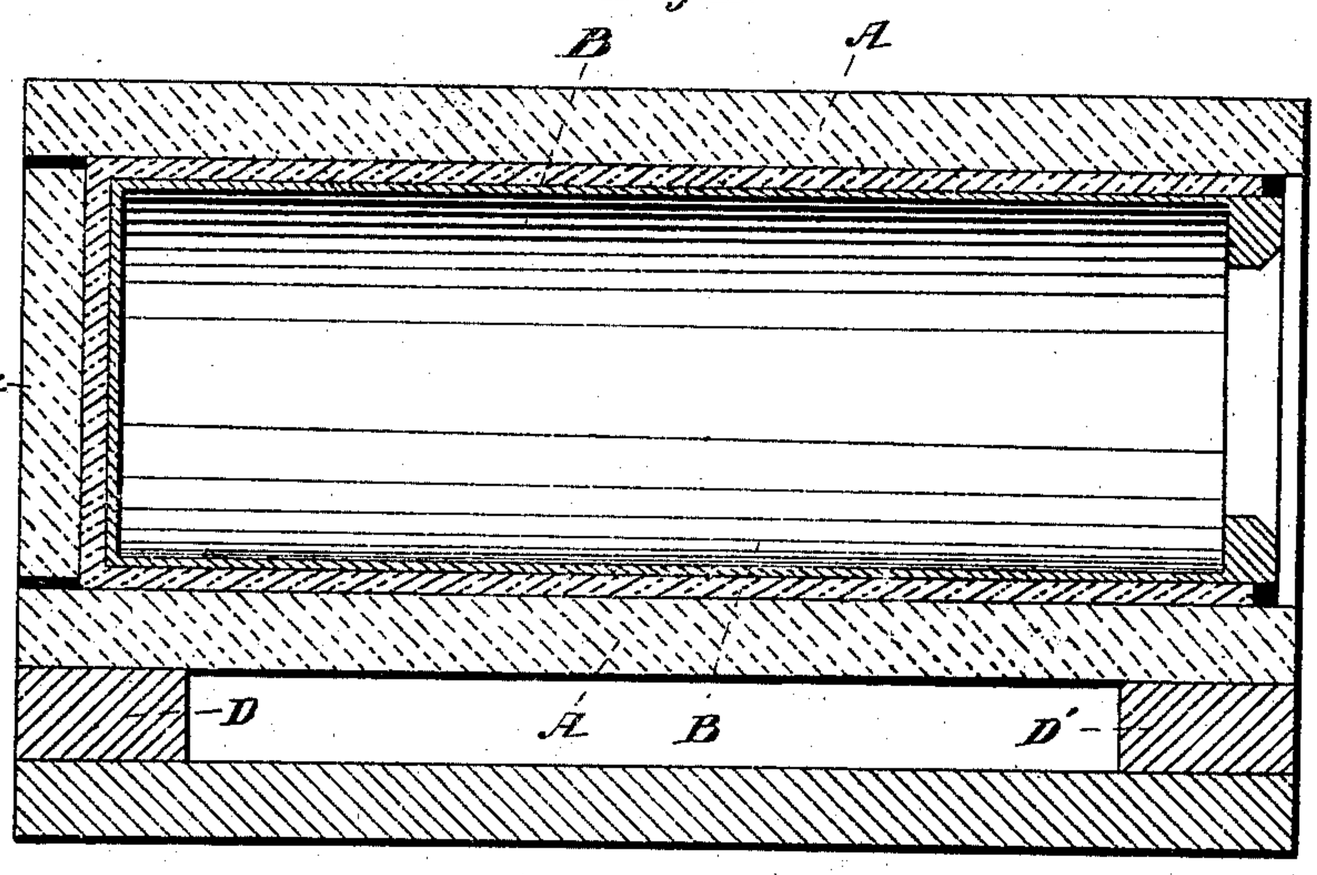
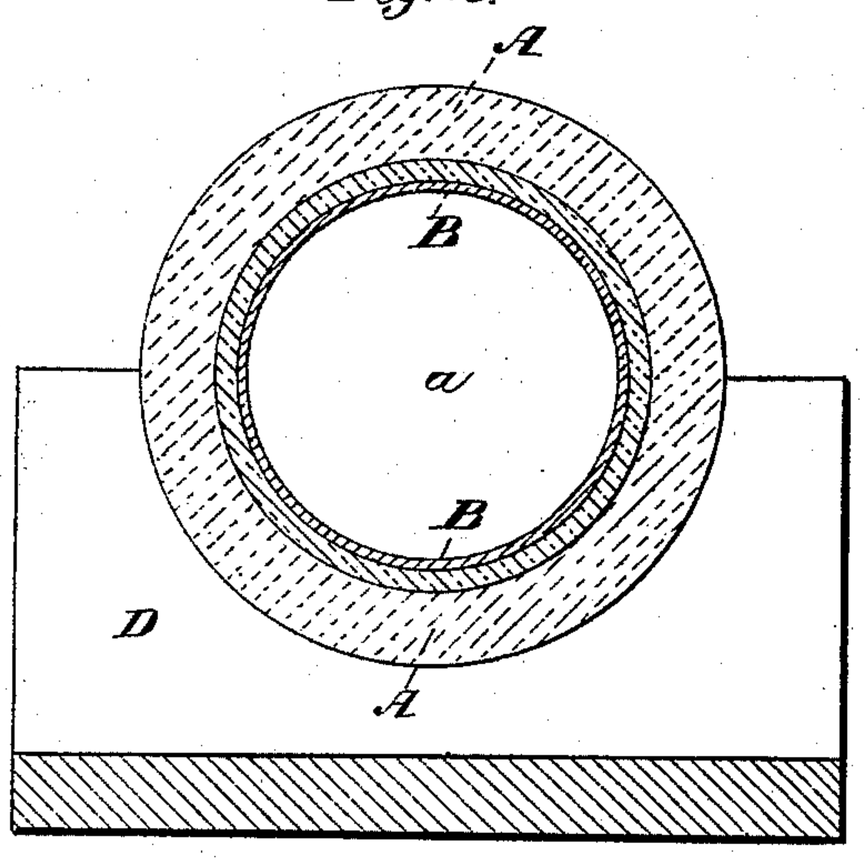



*Fig. 2.*



# UNITED STATES PATENT OFFICE.

ALFRED MONNIER, OF CAMDEN, NEW JERSEY, ASSIGNOR TO HIMSELF AND ISAAC GATTMAN.

## CONSTRUCTION OF RETORTS.

Specification of Letters Patent No. 17,011, dated April 7, 1857.

*To all whom it may concern:*

Be it known that I, ALFRED MONNIER, of the city of Camden, county of Camden, and State of New Jersey, have invented a new and Improved Mode of Preventing the Rapid Destruction of Retorts; and I do hereby declare that the following is a full, clear, and accurate description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention consists in placing retorts within a casing of baked fire-clay between which and the metal, intervenes a space which I pack with any substance or combination of substances which will not when heated combine with either the iron or the clay.

My invention has for its object the prevention of the rapid destruction of retorts resulting from the ordinary mode of exposing them in an inefficiently protected state to the action of the fire. The packing in the intervening space has the further advantage of allowing the metal and clay to expand and contract independently of each other, thereby avoiding the cracking of the clay, which is the certain result when the retorts are covered with a clay luting in the usual manner.

In order to enable others skilled in the art to make and use my invention I will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification, Figure 1, is a longitudinal view showing my improved mode of protecting retorts. Fig. 2, is a transverse section of the same.

A is a cylinder of well baked fire-clay resting on the back wall D and front wall D′ of an ordinary furnace, and exposed to the action of the fire within the same. A circular plate *a* of fire clay is cemented into the end of the cylinder A so as to be readily removed when required.

B is a cylindrical retort made of wrought iron such as I employ for the manufacture of sodium.

Between the retort and clay cylinder is an annular space of about three eighths of an inch. There is also a space of the same size between the back end of the retort and the plate *a* the front end of the retort being exposed to receive any attachment that may be required. In the space between the external casing of fire clay and the retort I pack either asbestos, plumbago, baryta, alumina, magnesia or any other substance that will not combine with, or in any way effect the integrity of the clay or iron when heated. The above substances or their equivalents may be used either alone or two or more of them may be mixed together and packed into the space, in the state of dry or slightly moistened powder.

By the above arrangement the retort is effectually protected from the action of the fire, and its rapid destruction from the effects of the same prevented.

Retorts are frequently covered with a luting of fire-clay previous to being exposed to the fire. This affords but little protection however, inasmuch as the different expanding and contracting qualities of the iron and clay, cause the whole to soon crack. By employing a yielding intermediate substance the retort and clay cylinder are allowed to expand and contract independent of each other, and thus the integrity of the whole is preserved.

Although I have shown and described the protected retort, as made of wrought iron, and adapted to the manufacture of sodium it is evident that my mode of preventing the rapid destruction of retorts is equally applicable to such as are made of cast iron or other material, as well as such as are used for other purposes besides the manufacture of sodium.

What I claim and desire to secure by Letters Patent is—

The method herein described of preventing the rapid destruction of retorts by placing the same within a fireclay casing and packing the space intervening between the retort and said casing with any substance or mixture of substances, incapable of combining when heated either with clay of metal retorts as set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

ALFRED MONNIER.

Witnesses:

HENRY HOWSON,

WILLIAM E. WALTON.