

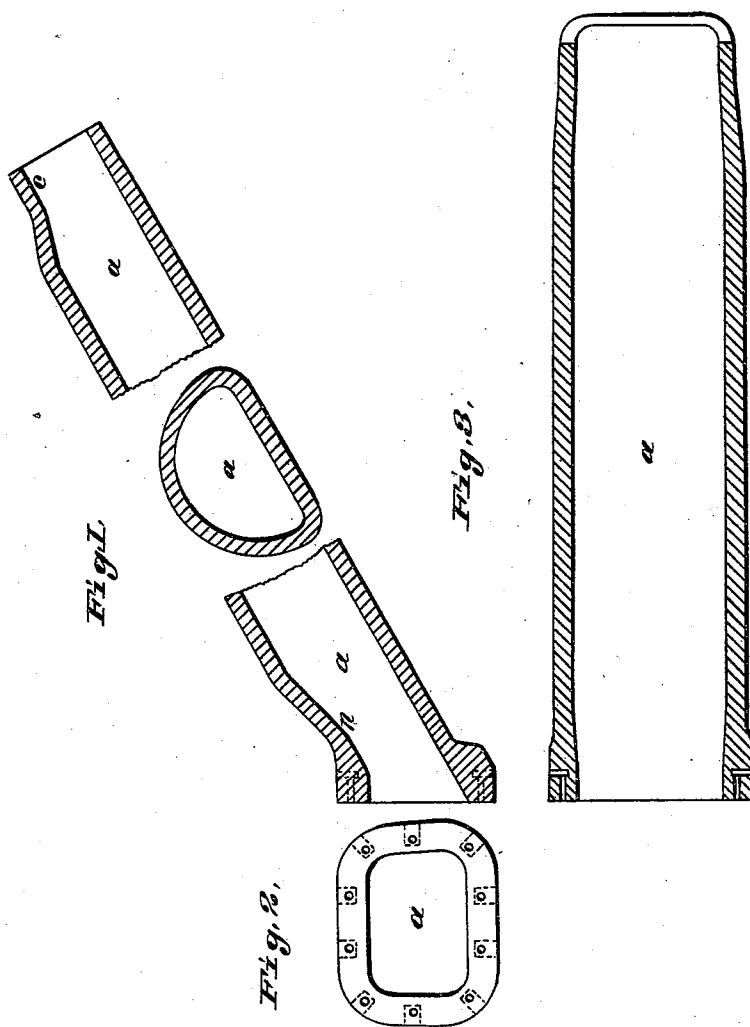
(No Model.)

3 Sheets—Sheet 1.

A. COZE & A. LENCAUCHEZ.
GAS RETORT.

No. 473,145.

Patented Apr. 19, 1892.



Witnesses:
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W. S. Reider.

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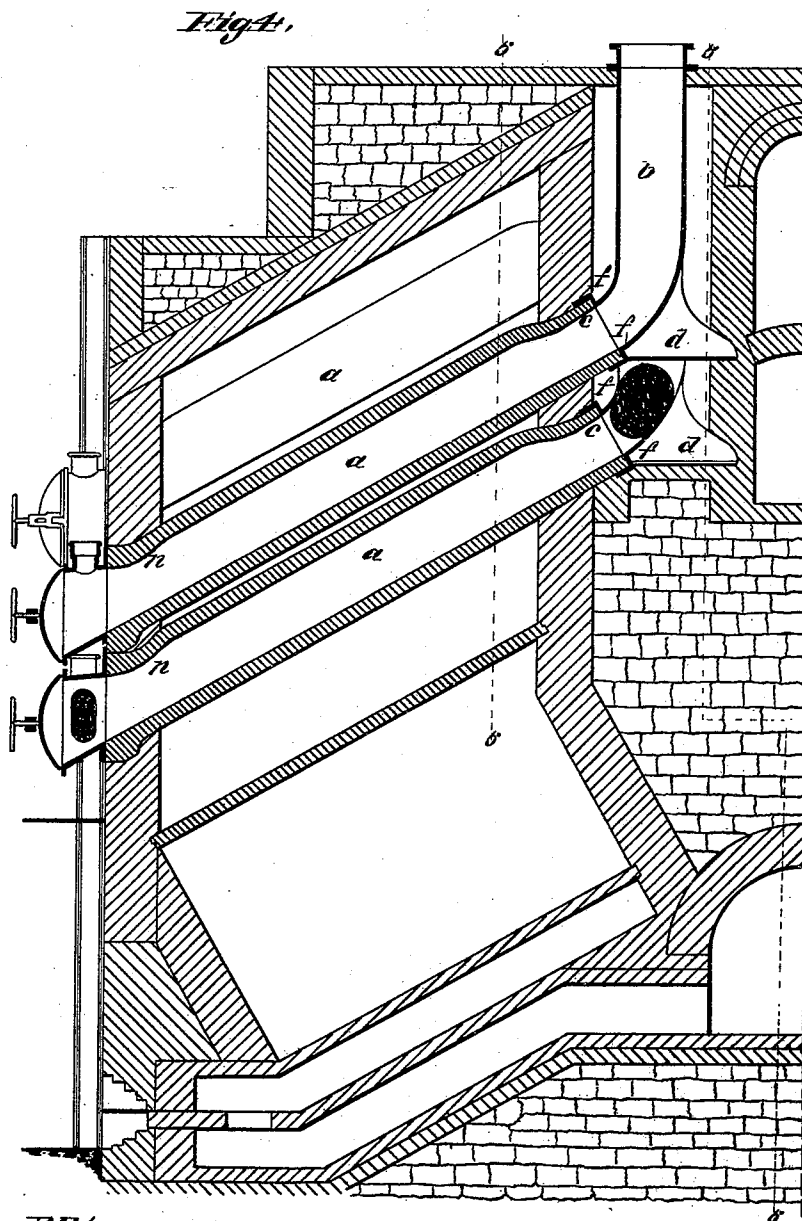
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3 Sheets—Sheet 2.

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GAS RETORT.

No. 473,145.

Patented Apr. 19, 1892.



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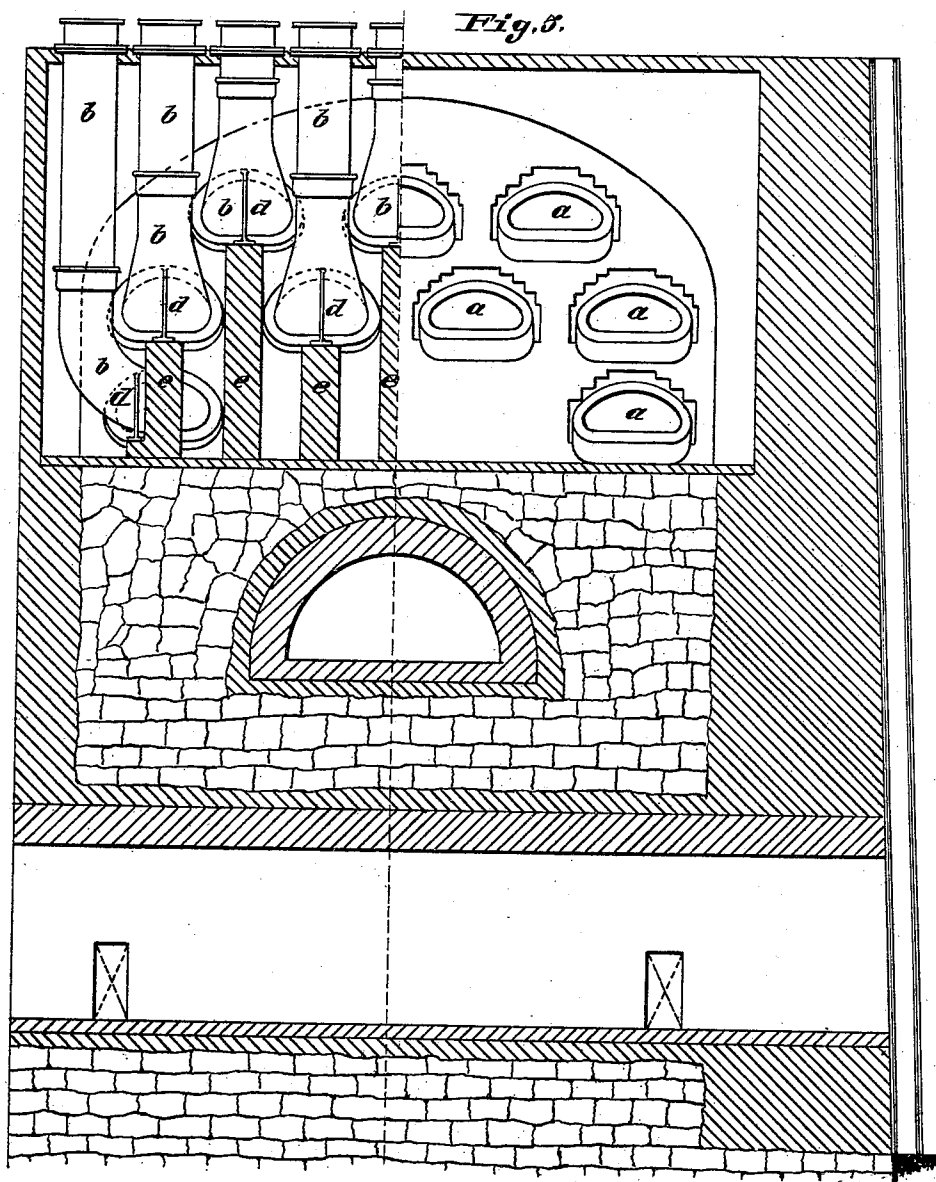
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3 Sheets—Sheet 3.

A. COZE & A. LENCAUCHEZ.
GAS RETORT.

No. 473,145.

Patented Apr. 19, 1892.



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UNITED STATES PATENT OFFICE.

ANDRÉ COZE AND ALEXANDRE LENCAUCHEZ, OF PARIS, FRANCE, ASSIGNORS,
BY DIRECT AND MESNE ASSIGNMENTS, TO SOCRATES NEWMAN AND
JAMES GREEN, OF ST. LOUIS, MISSOURI.

GAS-RETORT.

SPECIFICATION forming part of Letters Patent No. 473,145, dated April 19, 1892.

Application filed November 28, 1890. Serial No. 372,762. (No model.) Patented in France August 30, 1889, No. 200,501, and in England October 18, 1889, No. 16,486.

To all whom it may concern:

Be it known that we, ANDRÉ COZE and ALEXANDRE LENCAUCHEZ, citizens of the Republic of France, and residents of Paris, in said country, have invented certain new and useful Improvements in Inclined Gas-Retorts, (for which we have obtained Letters Patent in France of fifteen (15) years' duration, dated August 30, 1889, No. 200,501, and a British patent, No. 16,486, dated October 18, 1889, for fourteen (14) years,) of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

The objects of our invention are to insure a regular distribution of coal along the bottom of an inclined gas-retort and to facilitate the disengagement of gases from the coal, and also to improve the construction of gas-retorts and the setting of the charging-chutes for the same.

The invention will be best understood by referring to the accompanying drawings, in which—

Figure 1 shows a vertical longitudinal section and a transverse section at right angles to the axis of an inclined gas-retort made in accordance with our invention. Fig. 2 is a front end elevation of said retort. Fig. 3 is a longitudinal section of the same through the axis of the retort taken on a plane at right angles to a plane perpendicular to the axis. Fig. 4 is a vertical section of a gas-retort bench provided with our improvements, taken on a plane through the axis of the retorts. Fig. 5 is a transverse section of the latter on the lines 5 5 of Fig. 4, one-half thereof being on one of the lines 5 5 of Fig. 4 and the other half on the other line 5 5 of said figure.

The same letters of reference indicate the same parts throughout the several views.

The retort *a* is set at such inclination—that is, at the angle of repose, which in the example shown is represented as twenty-nine degrees, but which may vary according to the nature and smoothness of the retort, the size of the lumps of coal, &c.—and is made of such

form in cross-section as will insure a regular distribution of the coal throughout its length and is contracted in depth on top and in breadth at its mouth *c*, where it passes through the brick-work setting and fits in the bend of the charging-mouth *b*, of which it forms a prolongation. The retort is preferably also slightly contracted in a similar way at the discharging end at *n*. The part of the retort intermediate of its ends and comprised between the front and back walls of the oven is thus of larger cross-sectional area than its upper end, by which means the disengagement of the gases is greatly facilitated, while the coal, by gravitating downward toward the mouth of the chute, is distributed in a regular manner throughout the length of the retort and choking of the retort at the upper end is prevented.

The contraction of the lower end of the retort is produced by giving to the upper retort-wall a substantially horizontal bend at the place where it passes through the brick-work of the front wall of the oven. Upon the horizontal support thus afforded rests the corresponding projection *m* from the lower wall of the upper retorts. By this arrangement the lower ends of the retorts receive firm support, one from the other, and the lowermost retorts being provided with like projections *m* the weight of the superposed retorts is transmitted in substantially a vertical direction through the front wall of the oven, thereby relieving the very considerable strain that would otherwise be exerted to force said wall outwardly. It will be noted, moreover, that this result is attained without increasing the distances between the retorts or the retort-mouths.

Figs. 4 and 5 show the improved method of constructing the charging mouths or chutes *b*. Each of these chutes *b* is provided with a socket *f*, fitted, as shown, over the mouth of the retorts *a*, which can thus terminate in a plane perpendicular to the axis of the retorts. The joint between the sockets of the chutes and the retorts is provided with suitable packing, preferably of sand, to make the same tight. The advantage of such an arrangement as the foregoing, both in respect to the

manufacture of the retorts, as well as to the preservation of the joint, will be evident, if it be considered that were the cast-iron bend bolted to the flange of the retort the latter being inclined would necessarily present an oblique angle. According to this improved arrangement, each bend is formed with a rib or flange *d*, as shown, forming a sole-piece, which is supported upon piers *e* in the setting or otherwise, so that all strain upon the joint is prevented, and the joints are consequently more easily made and kept in good condition. The charging-mouths *b*, as also the retorts *a* themselves, are suitably isolated from the setting, in order to avoid the effects of expansion and contraction.

Having fully described our improvements and explained their advantages, what we desire to claim and secure by Letters Patent of the United States as our invention is—

1. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated, said inclined retorts being contracted at their ends, substantially as and for the purpose described.

2. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated, said inclined retorts being substantially semicircular in cross-section and contracted at their ends, substantially as and for the purpose described.

3. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated, said inclined retorts being substantially semicircular in cross-section and contracted at their upper ends for the purpose described, in combination with charging-chutes, the charging-mouths of the chutes being constructed to fit upon the contracted mouths of the retorts outside of the setting.

4. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated, said inclined retorts being

contracted at their upper ends for the purpose described, in combination with charging-chutes, said chutes having their mouths constructed to fit upon the contracted ends of said retorts and provided with sole-pieces and supports for said sole-pieces.

5. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated, said inclined retorts being contracted at their upper ends for the purpose described, in combination with charging-chutes, said chutes having their mouths provided with sockets constructed to fit over the ends of the retorts, and a suitable packing (preferably of sand) between the sockets and retort ends.

6. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the materials treated, said inclined retorts being contracted at their upper ends, in combination with charging-chutes constructed to fit upon the contracted ends of the inclined retorts, the planes of the joints being at right angles to the longitudinal axes of the retorts, substantially as described.

7. A gas-retort bench provided with gas-retorts arranged at the angle of repose for the material treated and contracted at their upper charging ends, whereby the entering coal will arrange itself in layers parallel to the floors of the retorts, but separated from the tops of the retorts by an increased gas-space, and whereby clogging is prevented, substantially as described.

In testimony whereof we have hereunto set our hands and affixed our seals, this 5th day of November, 1890, in the presence of the two subscribing witnesses.

ANDRÉ COZE.

ALEXANDRE LENCAUCHEZ.

[L. S.]

[L. S.]

Witnesses:

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