

J. C. TIFFANY.

Improvement in Gas-Retorts.

No. 130,453.

Patented Aug. 13, 1872.

Fig. 1

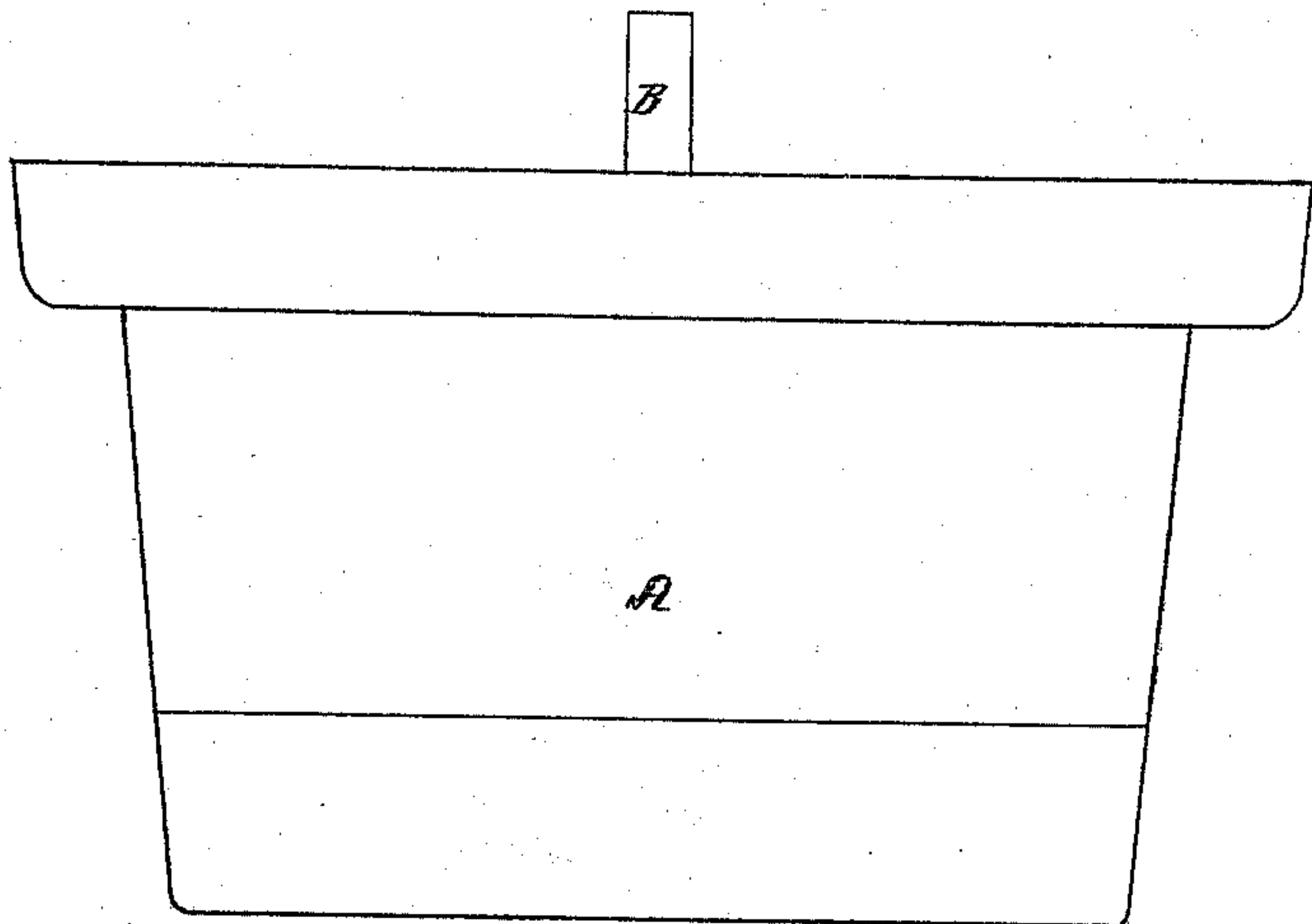
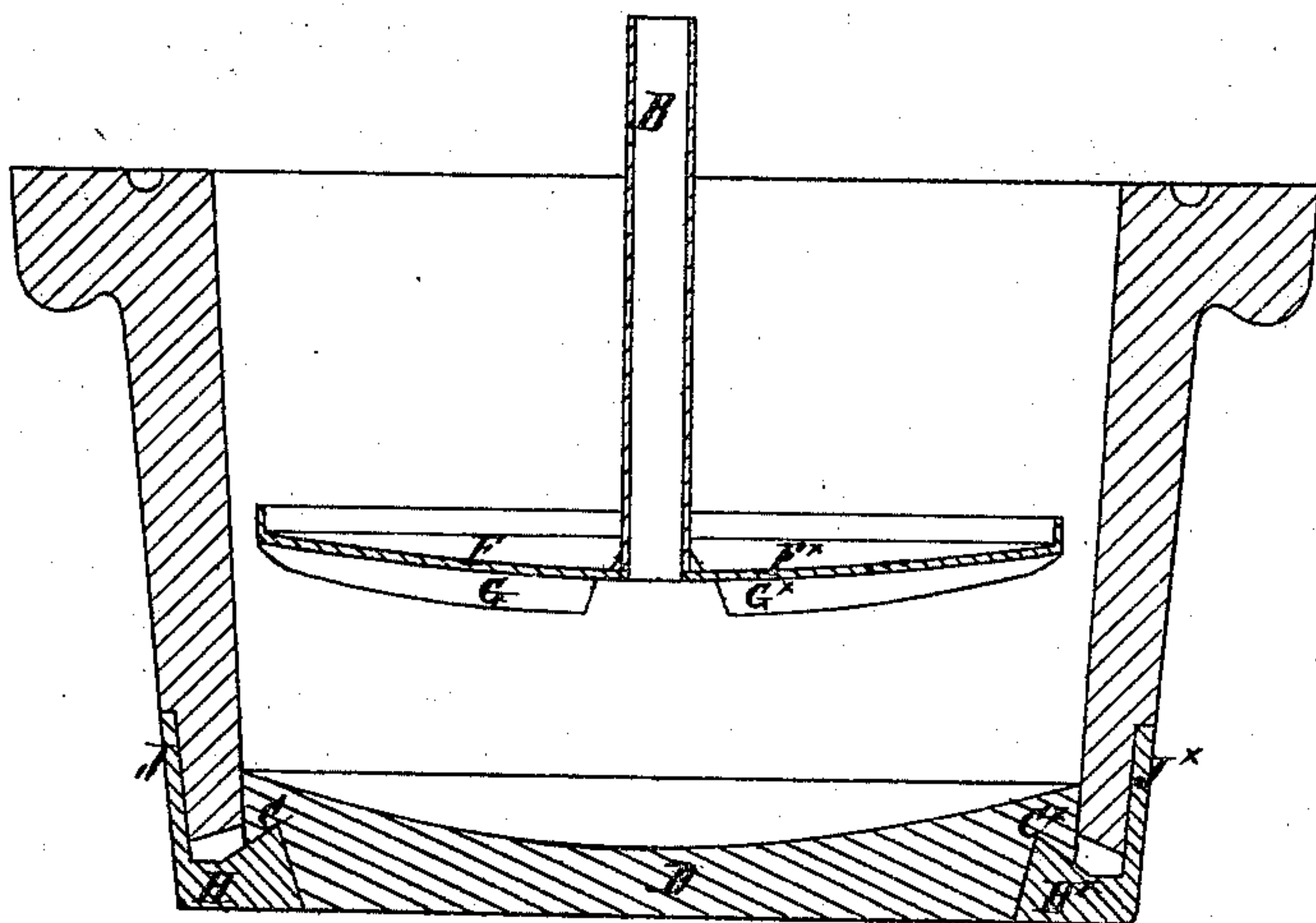


Fig. 2



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JOSEPH CAPRON TIFFANY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN GAS-RETORTS.

Specification forming part of Letters Patent No. 130,453, dated August 13, 1872.

I, JOSEPH CAPRON TIFFANY, of Boston, Suffolk county, State of Massachusetts, have invented a new and Improved Gas-Retort, of which the following is a description, reference being had to the drawing annexed.

Nature and Object of the Invention.

The nature of my invention is that of a retort for producing combustible gases from oils, hydrocarbons, &c., and more thoroughly than heretofore subjecting the evolved gases to the action of heat, and, further, in a novel arrangement of the bottom of the retort; and the object is to more thoroughly purify the gases and to economize in the consumption of retorts.

Description of the Drawing.

Figure 1 is a side view of my gas-retorts. Fig. 2 is a vertical section of the same.

Description of the Invention.

A, Fig. 1, is the body or containing part of the retort. B is the top of the pipe which conducts the liquid substances to be acted on to the bottom of the retort. In Fig. 2, C C^x are two shoulders, indicating a continuous shoulder round the inside, and on the upper surface of the bottom ring H H^x, which is a thick flat ring, with its inner half horizontally thickened on the upper surface in such manner as that, in vertical section, the addition is triangular in shape and bevels toward the outside of the retort, thus, with the ring J J^x, hereinafter described, making a circular groove on the upper surface of the bottom ring. This ring fits on the bottom of the retort. (Sometimes I make this shoulder on the inside of the retort itself.) At the periphery of this bottom ring it has another ring, J J^x, Fig. 2, called the protector-ring, cast upon it, which latter, proceeding upward, envelops the lower end of the sides of the retort, fitting for that purpose into a recess cut round the lower end of the retort, and on the outside, seen in Fig. 2, to be flush with the outside of the same. I do not confine myself to a circular shape of the protecting wall J J^x, but, when the retort is horizontal, make it of other shapes. I fasten this ring J J^x to the retort in any convenient manner. An important end subserved by this protector J J^x, whether round or of other shape, is that, it being carried up high above the bottom, I protect the retort from damage by overheating of its sides. D, Fig. 2, is the movable

bottom. This is circular, as seen from above, and, as seen in vertical section, is hollowed on its upper surface, and bears at its side a continuous lip, forming its periphery, which lip, when the bottom is to be fixed to the retort, (and is for that purpose passed downward through the mouth of the retort,) projects over the shoulder C C^x and arrests the bottom D and holds it to the retort. I put in the groove, which is formed by the shoulder C C^x being cut away beveling toward the retort sides, (see Fig. 2,) suitable cement, (of silicate of soda or other material,) which, hardening, attaches the bottom D firmly to the shoulder of the retort, and is broken away when the bottom is removed. B, Fig. 2, is a spout which proceeds from the top of the retort perpendicularly downward to a short distance above the bottom D. At its lower end this spout B connects with and is firmly fastened to an aperture in the bottom of a cup or bowl of metal, F F^x, Fig. 2. This bowl, called the "roaster-bowl," lies, when in use, upon the bottom D, and its periphery is a trifle less in diameter than the diameter of the retort at that part. On the bottom of this receiving-bowl I place flanges, which, (in view from above of the receiving-bowl,) when reversed, are seen to radiate from the center to the periphery of the bowl. These flanges (see two of them, marked G G^x, Fig. 2) are deeper nearer the center of the bowl than at the periphery. Sometimes I corrugate the bottom of the roaster-bowl instead of using flanges.

Operation of the Invention.

My retort being duly placed above a fire, with the top luted on, and the ore or other substance in process of being fed in through the spout B, the oil, &c., falls upon the heated bottom D, and, being there decomposed by the heat, the evolved gases ascend. Encountering the bottom of the bowl F F^x in their ascent, they proceed between the flanges G G^x, &c., radiating outward to the periphery of the bowl. There, the channels formed by the respective flanges and the bottom of the bowl becoming shallower, the gases passing upward and outward in the respective channels, go in a thin sheet between the outer portion or side of the bowl F F^x and the intensely-heated sides of the retort, and are thus more thoroughly than otherwise roasted, the result of this action being that all the gases are utilized. When, by

the action of the heat upon the bottom of the retort, the same is burnt and cracked, fused, or otherwise damaged, I do not need to discard the retort, but simply reversing it, and applying percussion to the bottom, the cement is broken and the bottom D leaves the retort through its mouth, and another bottom being placed upon the ring H H^x, the process of the production of gas is continued as theretofore.

I do not confine myself to a circular shape of the bottom D.

Claims.

I claim—

1. In gas-retorts the movable bottom D, in

combination with the shoulder C C^x, when constructed and arranged substantially as described.

2. The roaster-bowl F F^x, channeled radially upon its lower surface, substantially as shown and described.

3. The protector J J^x, in combination with a retort when constructed and arranged relatively with the retort, substantially as shown and described.

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Witnesses:

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