

No. 764,332.

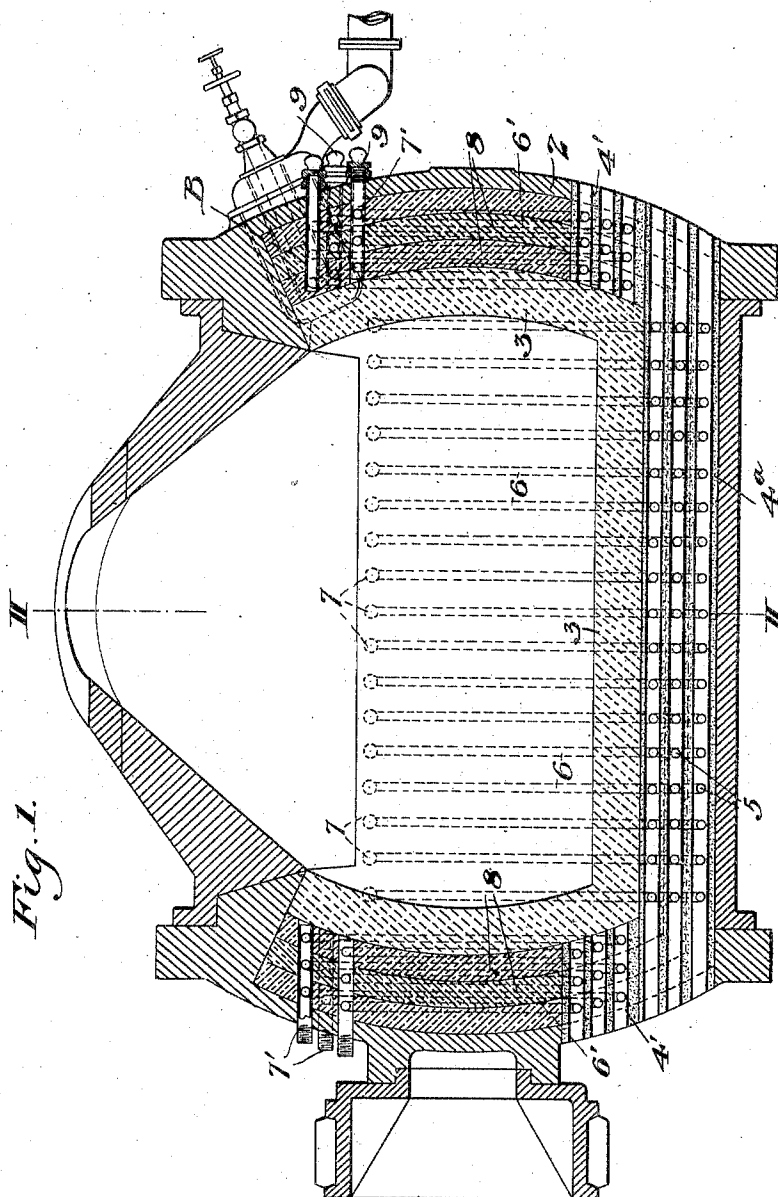
PATENTED JULY 5, 1904.

R. BAGGALEY.
CONVERTER.

APPLICATION FILED APR. 8, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES
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Thomas W. Bawdell

INVENTOR
Ralph Baggage

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2 SHEETS—SHEET 2.

Fig. 2.

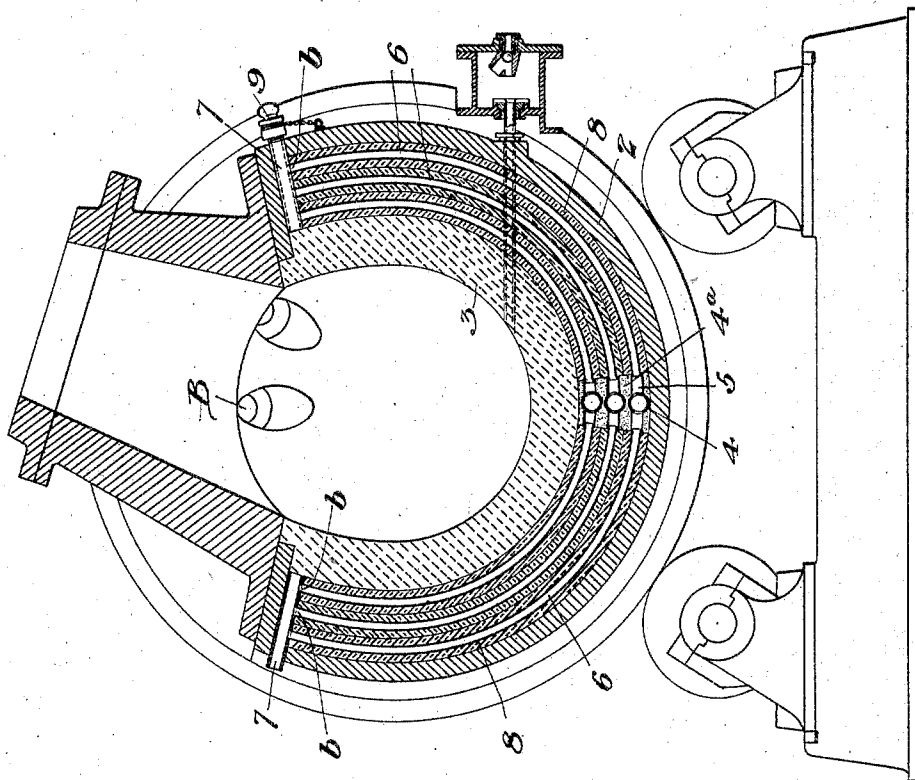
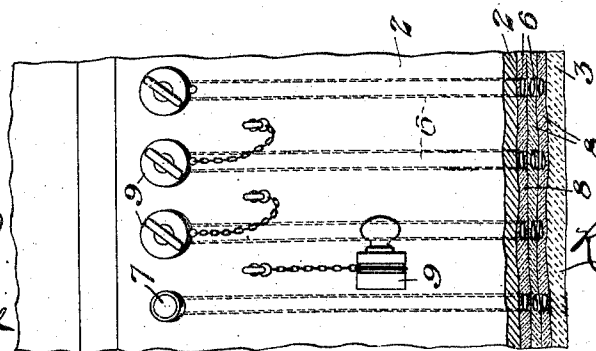


Fig. 3.



WITNESSES

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RALPH BAGGALEY, OF PITTSBURG, PENNSYLVANIA.

CONVERTER.

SPECIFICATION forming part of Letters Patent No. 764,332, dated July 5, 1904.

Application filed April 8, 1904. Serial No. 202,194. (No model.)

To all whom it may concern:

Be it known that I, RALPH BAGGALEY, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Converter, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of the converter. Fig. 2 is a vertical cross-section on the line II II of Fig. 1. Fig. 3 is a detail view on a larger scale.

My invention provides means by which a Bessemer converter used for treating copper matte can be cooled with air and the extent of the cooling and the place of its application regulated as desired.

In the drawings, 2 represents the exterior metal shell of a converter, having an interior brick lining 3, back of which is the air-cooling device which forms the subject of the present invention. A series of horizontal pipes 4 extend from end to end of the converter within the shell, and these pipes, of which I show three, are open at the ends, and they supply the air for the cooling-channels, which extend transversely around the sides of the converter. For that reason they should be made as large as convenient. They are covered with blocks 4^a, of brick, tile, or metal, having a series of lateral holes 5 5, communicating with holes in the pipes 4, adapted to receive the ends of other metal pipes, 6, which extend upward along the sides of the converter and terminate at short tubes 7, open at the end outside the shell and having lateral holes 6 6, which register with the pipes. In like manner at the ends of the converter are blocks 4^b, extending through the converter-shell into the lining and having lateral holes, into which are fitted pipes 6^b, which extend up to tubes 7^b. The pipes 6^b are embedded in hollow bricks, tiles, or metal blocks 8 8, which are strung upon the pipes and are thus built into a compact structure on the interior of the metal shell, and within this structure is the lining 3, preferably of magnesite brick. The invention thus affords within the metal converter-shell a large number of vertical air-passages communicating at the bottom with the external air through the horizontal passages 4 4, and at the top through the tubes 7,

so that there will be a natural circulation of air, which will cool the pipes and thus cool the converter-lining, to which the pipes present a large area of contact. If it is desired to localize the cooling action, the tubes 7 7' at the places not needed to be cooled may be closed with screw caps or plugs 9, which will at once stop the circulation of air there-through, or the circulation may be established in all the pipes or closed in all of them. In like manner it may be found that a circulating air-current through the outer pipes may be sufficient to accomplish the result, and this can be effected by capping the two inner pipes 4 4 at each end of the converter, which will have the effect of preventing any air-circulation through the entire series of pipes connected therewith. The hotter the converter-shell and lining become the more rapid will be the air-circulation and the more efficient the cooling action. This is accomplished automatically and without the expense and inconvenience of using water or forced air. The degree of the cooling action over the entire area can be regulated at will and without expense by the three complete systems of pipes, and the cooling may be localized at any portion of the shell or heads, as described above.

The converter may be provided with burners B, supplying flame from the jets of oil or gas above the bath.

The employment of the upright metal pipes on which the hollow bricks are strung is important, because if they were not employed the air-passages would become clogged in use or in the operation of laying the blocks with mortar, clay, or cement. This will not occur with the metal pipes.

Within the scope of my invention as defined in the claims the parts may be modified, since

What I claim is—

1. A converter having ventilated passages open to the air at the bottom, and other passages leading therefrom upward along the shell; substantially as described.
2. A converter having a series of ventilating air-passages open to the atmosphere above and below, the inlet being lower than the outlet; substantially as described.
3. A converter having ventilated passages

open to the air at the bottom, and other passages leading therefrom upward along the shell, said passages being constituted by pipes incased in bricks, tiles or metal blocks; substantially as described.

4. A converter having a series of ventilating air-passages open to the atmosphere above and below, the inlet being lower than the outlet, and means for closing said passages; substantially as described.

5. A converter having ventilated passages

open to the air at the bottom, and other passages leading therefrom along the shell, said converter having a burner for supplying auxiliary heat within the same; substantially as described.

In testimony whereof I have hereunto set my hand.

RALPH BAGGALEY.

Witnesses:

J. H. REED,

THOMAS W. BAKEWELL.