E. P. SELDEN.

FURNACE.

APPLICATION FILED APR. 30, 1910.

991,805. Patented May 9, 1911.

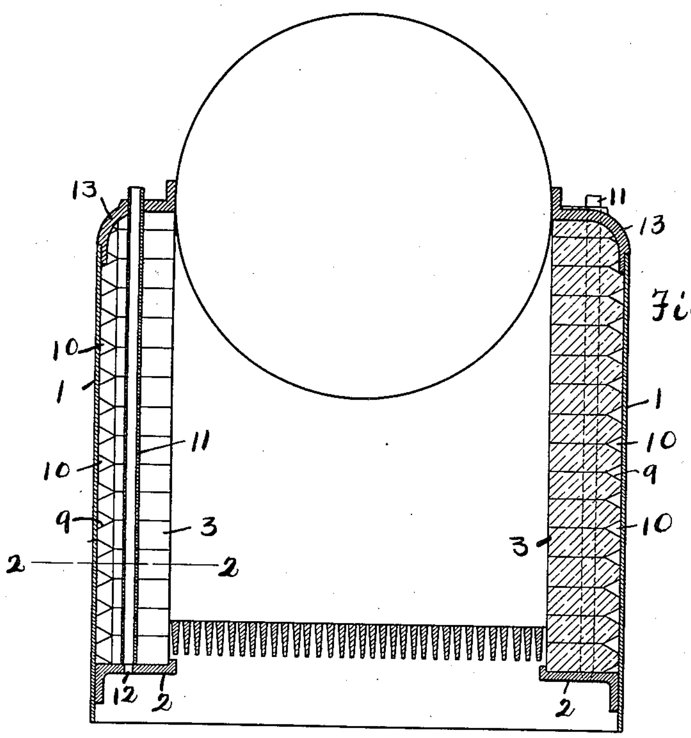


Fig. 1.

Fig. 2.

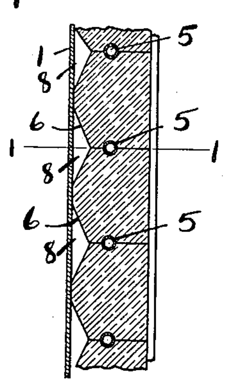
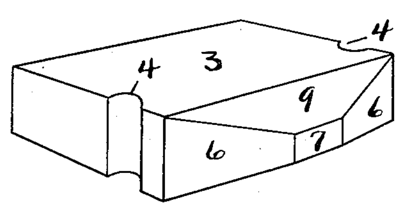


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

EDWARD P. SELDEN, OF ERIE, PENNSYLVANIA, ASSIGNOR TO ERIE CITY IRON WORKS, OF ERIE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

FURNACE.

991,805. Specification of Letters Patent. Patented May 9, 1911.

Application filed April 30, 1910. Serial No. 558,571.

To all whom it may concern:

Be it known that I, EDWARD P. SELDEN, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented new and useful Improvements in Furnaces, of which the following is a specification.

This invention relates to furnaces, and consists in certain improvements in the construction thereof as will be hereinafter fully described and pointed out in the claims.

More particularly, this invention relates to a furnace provided with a metal casing and a brick lining.

The invention is illustrated in the accompanying drawings as follows:

Figure 1 shows a vertical section of the furnace on the line 1—1 in Fig. 2; Fig. 2 a horizontal section of the furnace on the line 2—2 in Fig. 1; Fig. 3 is a perspective view of one of the bricks forming the brick lining.

1 marks the metal casing. This usually surrounds the furnace or at least some sides of it. A bracket 2 is arranged along the bottom of the casing for supporting the brick 3. The brick are provided with the notches 4 at their abutting ends forming when the bricks are in place, the openings 5 extending through the lining. The bricks have the beveled portions 6 extending from the center or central portion 7 toward the ends forming, when the brick are in place, air spaces 8 between the casing and the brick. The bricks are also beveled at 9 from the center or central portion 7 toward the sides, forming passages 10 connecting the spaces 8. Rods, preferably in the form of pipe 11, are arranged in the openings 5. They are in register with the openings 12 in the bottom bracket, and extend through the cap 13 at the top of the casing. This arrangement in connection with the pipe, assures a rapid circulation of air through the pipe, thus cooling it. The problem with these furnace linings is to retain the brick in place, and protect the casing, and where rods are used to protect or prevent the excessive heating of this rod. As before stated, where the pipe is used this is effected to some extent by the circulation of air through the pipe 11. By beveling the bricks from the center or central portion toward the ends, it will be observed that the air spaces at the ends are carried into close proximity with the rods, 11, so that the brick immediately adjacent to the rod are as near the cooling air spaces as it is feasible to get, having consideration for a sufficient body of the material outside of the notches 4 to receive the strain when the bricks are jolted against the rods. It will also be observed that a very small part of the casing 1 is in actual contact with the furnace yet the casing helps support the bricks in position.

What I claim as new is:

1. In a furnace the combination of a metal casing: a brick lining adjacent to the casing composed of brick having notches in their abutting ends, and being beveled from next the casing toward the ends forming air spaces between the ends of the brick and the casing: and retaining rods extending through the openings formed by said notches.

2. In a furnace the combination of a metal casing: a brick lining adjacent to the casing composed of brick having notches in their abutting ends, and being beveled from the central portion next the casing toward the ends forming air spaces between the ends of the brick and the casing, said bricks being beveled also from the central portion next the casing toward the sides forming communicating passages between the spaces formed by the beveled ends of the brick; and retaining rods extending through the openings formed by said notches.

3. In a furnace the combination of a metal casing; a brick lining adjacent to the casing composed of brick, said bricks being beveled next the casing toward the side of the brick forming air spaces between the bricks and the casing; and rods for securing the brick in place, said rods being placed in parts of the bricks opposite said air spaces so that lines at right angles to the casing and extending through said rods extend through said air spaces.

4. In a furnace the combination of a metal casing: a brick lining adjacent to the casing composed of brick beveled from portions next the casing toward their ends forming air spaces between the end portions of the brick and the casing; and rods for securing the bricks in the casing, said rods being placed in parts of the bricks opposite said air spaces so that lines at right angles to the casing and extending through said rods extend through said air spaces.

5. A brick for furnace linings beveled

from an intermediate portion toward its ends, and having notches at its ends.

6. A brick for furnace linings beveled from an intermediate portion toward its ends, and also beveled sidewise on the same edge of the brick, having notches at its ends.

7. In a furnace the combination of a metal casing; a brick lining adjacent to the casing composed of brick having notches in their abutting ends, and being beveled from next the casing toward the ends forming air spaces between the ends of the brick and the casing, said bricks being beveled also from next the casing toward a side forming communicating passages between the spaces formed by the beveled ends of the brick; and retaining rods extending through the openings formed by said notches.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD P. SELDEN.

Witnesses:
MARGARET M. BEIGLE,
J. R. CRAIG.