

(No Model.)

E. GURNEY & C. SELLERS.

FURNACE.

No. 324,315.

Patented Aug. 11, 1885.

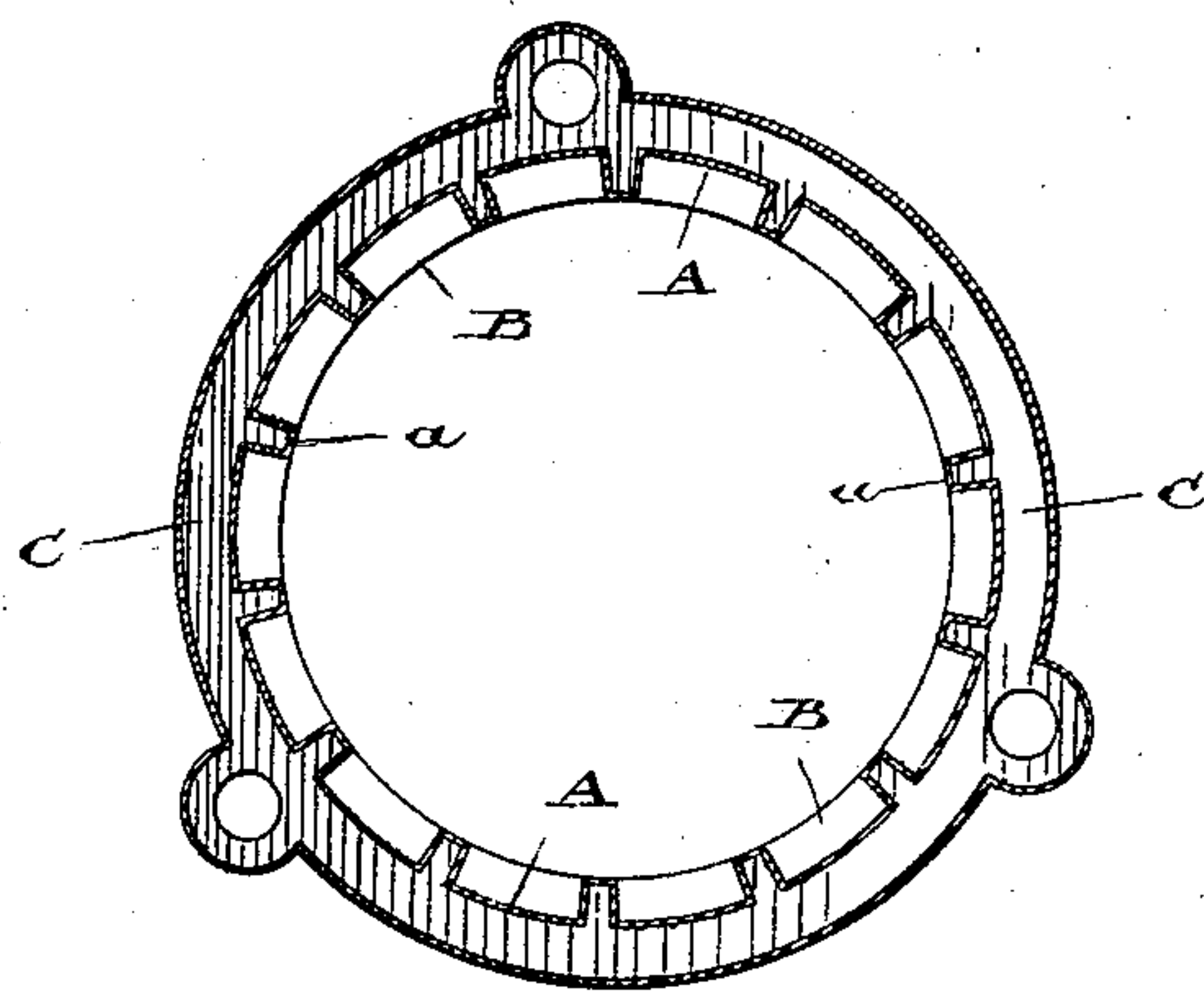
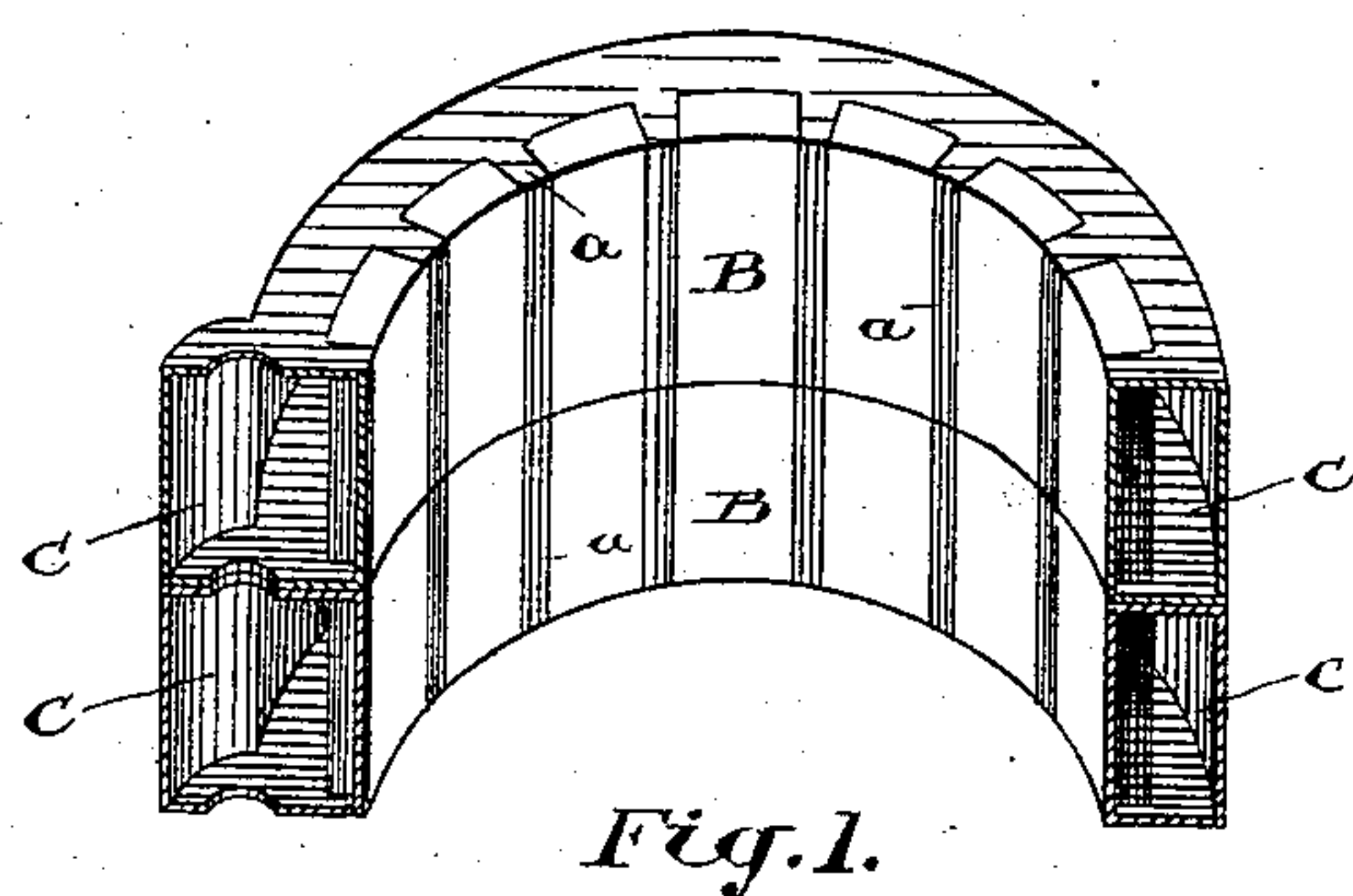


Fig. 2.

Witnesses.

F. B. Fetherstonhaugh
 Jas. T. May be

Inventor:

Edward Gurney Jr
Charles Sellers
by Donald C. Ridout & Co
Attys

UNITED STATES PATENT OFFICE.

EDWARD GURNEY AND CHARLES SELLERS, OF TORONTO, ONTARIO,
CANADA.

FURNACE.

SPECIFICATION forming part of Letters Patent No. 324,315, dated August 11, 1885.

Application filed May 14, 1885. (No model.)

To all whom it may concern:

Be it known that we, EDWARD GURNEY and CHARLES SELLERS, both of the city of Toronto, in the county of York, in the Province of Ontario, Canada, have jointly invented certain new and useful Improvements in Furnaces; and we do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to that class of furnaces in which a water-jacket is formed around the fire-pot; and the object of the invention is to so construct the interior wall of the water-jacket that it may be lined with fire-brick, and at the same time present a heating-surface of metal in direct contact with the fire within the pot; and it consists, essentially, in forming the interior wall of the jacket with inwardly-projecting hollow ribs, so constructed that segments of fire-brick may be fitted between the ribs so as to form a complete wall of fire brick and metal, the hollow metal ribs which form part of the interior wall of the water-jacket being located between each segment of fire-brick, substantially as and for the purpose hereinafter more particularly explained.

Figure 1 is a perspective sectional view, exhibiting a portion of a water-jacket made in accordance with our invention. Fig. 2 is a sectional plan of the same.

In the class of furnaces in which the water-jacket is formed around the fire-pot and the metal inner wall of the pot arranged to come in contact with the fire it is found in practice that the water within the jacket has the effect of cooling the hot coals immediately in contact with it, and unless the fire be constantly forced the body of coals is reduced in temperature to a considerable extent, and in some cases this cooling-off process has the effect of putting out the fire.

In our improved fire-pot we form the interior walls, A, of the jacket with a series of inwardly-projecting hollow ribs, *a*, which ribs communicate with the water-space and form part of the interior wall, A. It will be noticed that these ribs *a* are arranged to

form a series of spaces around the fire-pot, and that their sides converge toward the center so as to form a dovetail to retain the segments of fire-brick B in position, thus constituting a continuous wall of fire-brick and metal around the fire-pot, the hollow metal ribs *a* separating each pair of fire-bricks B. As the larger mass of the inner wall of the fire-pot is composed of fire-bricks the fire within the pot is protected from the cooling effect of the water within the water-space C, while at the same time the series of hollow ribs *a* bring a sufficient amount of the inner wall, A, in direct contact with the fire to derive a large benefit from the said direct contact.

Another advantage of the series of hollow ribs *a* being located between each pair of fire-bricks B is that the edges of the fire-bricks are to a certain extent kept cool, and the edges of the fire-bricks not being in contact with each other the fire-brick will not solidify, but each section may be removed and replaced without interfering with the others.

We are aware of the Patent No. 100,566 and make no claim to anything shown therein as forming part of our invention.

What we claim as our invention is—

1. In a furnace having a fire-pot surrounded by a metal water-jacket, the interior wall, A, having a series of inwardly-projecting hollow metal ribs, *a*, arranged to form retaining-spaces for the bricks B, substantially as and for the purpose specified.

2. In a furnace having a fire-pot surrounded by a metal water-jacket, a metal wall, A, made with a series of inwardly-projecting hollow metal ribs, *a*, having sides converging toward the center of the pot so as to form dovetail recesses to receive the fire-bricks B, substantially as and for the purpose specified.

Toronto, April 22, 1885.

E. GURNEY.
CHAS. SELLERS.

In presence of—

JAMES TILT,
CHARLES C. BALDWIN.