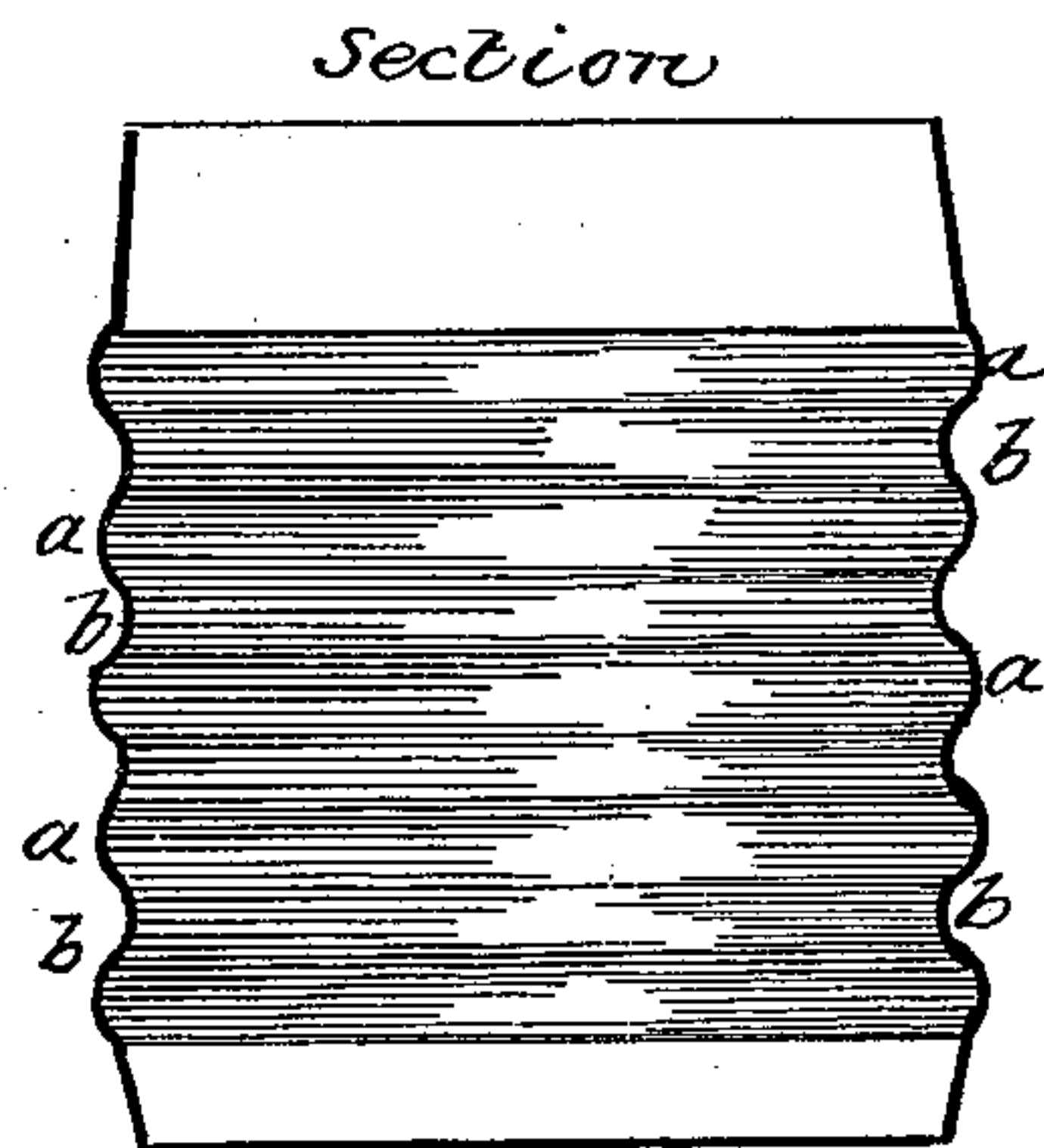
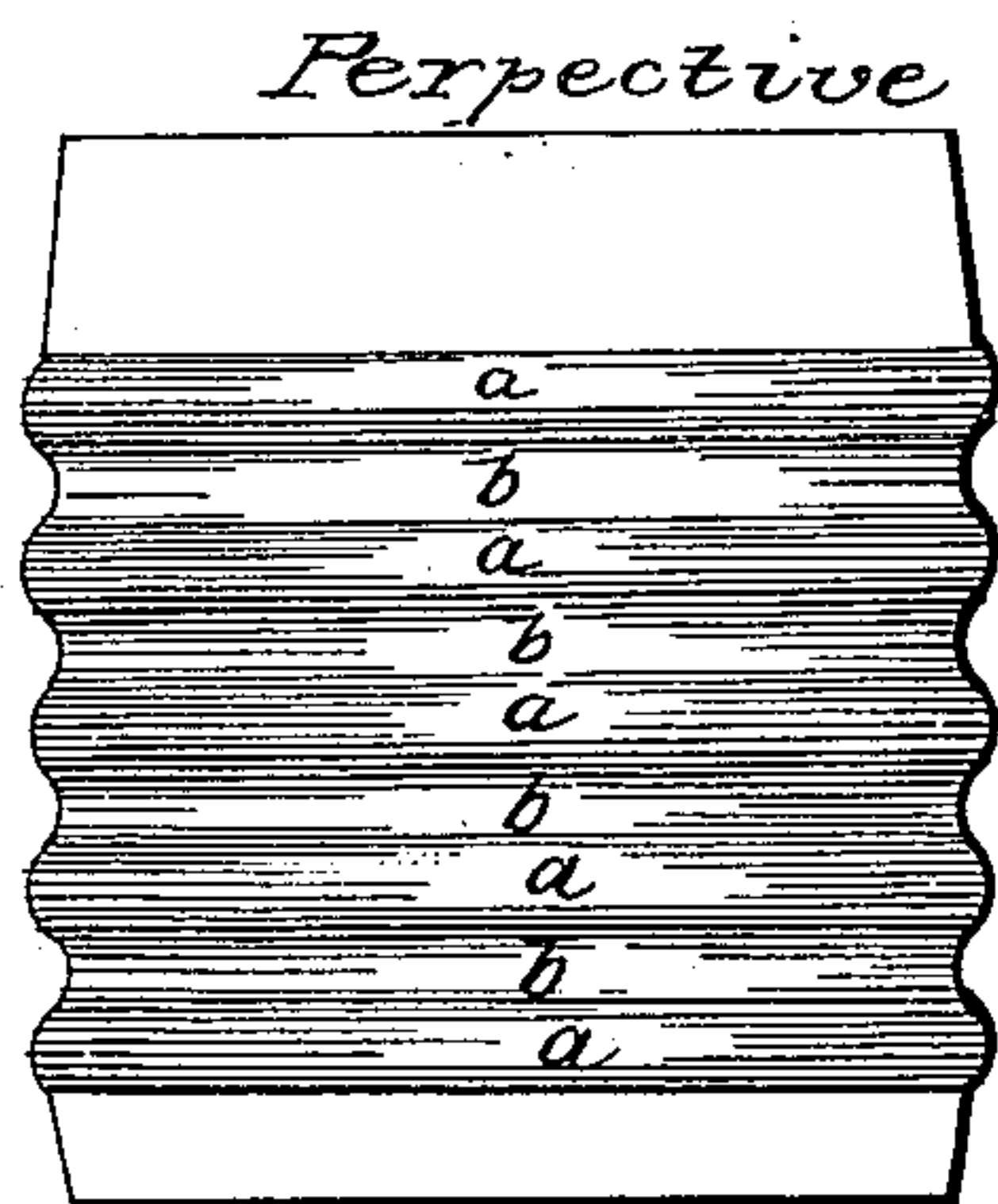


B. F. & J. S. GOLD.

Constructing Fire Chambers for Grates.

No. 1,689.

Patented July 15, 1840.



Witnesses
James Myers Jr
Rouven Smith

Inventors
B F Gold
J S Gold

UNITED STATES PATENT OFFICE.

B. F. GOLD AND J. S. GOLD, OF NEW YORK COUNTY, NEW YORK.

MODE OF CONSTRUCTING FIRE-CHAMBERS FOR STOVES.

Specification of Letters Patent No. 1,689, dated July 15, 1840.

To all whom it may concern:

Be it known that we, B. F. GOLD and J. S. GOLD, of the county and State of New York, have invented a new and Improved Mode of
5 Constructing Cast-Iron Chambers of Combustion for Stoves and other Uses, the object of which is to render them indestructible, besides securing the advantages of all other modes; and we do hereby declare that
10 the following is a full and exact description of the same as applied to a cast-iron cylinder.

Let the pattern of the cylinder be turned or wrought as follows: As it stands on the
15 end, let there be arches or flutes so corresponding inside and out around the cylinder laterally, that it shall be of equal thickness. Equal or nearly equal thickness is important, though not essential. These arches or flutes
20 should measure say one inch across; that is vertically. Scientifically speaking, this measurement is the length of an arch. The sides of the cylinder thus appear to be formed by uniting the bases or ends of
25 arches; presenting alternately a concave and a convex surface. The height of each arch measured horizontally should be one fourth of an inch; so that an arch presenting a convex, and an arch presenting a concave sur-
30 face united, will vary the surface half an inch from a line drawn across the tops of the arches. The sides of the cylinder may be formed entirely of arches convex externally or internally, so united as to present
35 the scallop appearance. Instead of arches, angles may be substituted. The thickness of the cylinder should be about one fourth of an inch, but may be thicker or thinner if desired, or as the arches are enlarged or
40 diminished. This cylinder is cast after the manner of hollow-ware. The top and bottom of the cylinder, and the tops of the arches that are convex inward, should be in a line, and the cylinder should be a little
45 larger at the bottom than the top, say one inch in twelve; so as to let the coal descend without obstruction.

The chamber of combustion may be either round, oval, or many sided; as it is not
50 necessary to have a perfect cylinder in order to give effect to the principle in preventing fracture. But if square or any other form, it will be greatly improved by the arches. Small flutings or carvings may be added ex-
55 ternally, to increase the radiation.

A cast iron chamber of combustion constructed in the above mode has essential advantages over any other without inferiority

in any respect. Its appearance is equal or better; and it will be seen from the nature
60 of the arches, that the combustion will be as good, as there is no passage for the draft or air, except through the fuel. The chamber is then improved, by the addi-
65 tional radiance upon the floor for warming the feet. At the same time the superficies of the chamber or extent given for the trans-
mission of caloric will be about one third more than in the common form, consequently
70 the same caloric can be transmitted, by heating the chamber to two thirds the intensity; therefore the burning of the iron is pre-
vented. By arches or flutes up and down, there may be the same extent of surface for
75 the transmission of caloric,—which mode has been in use—but the fuel will not burn as well, especially anthracite coal, and the chamber would still be nearly as liable to fracture from expansion as without the
80 arches or flutes. But in this improvement the advantage is that the chamber will bear the expansion owing to the arches which will spring without liability to fracture.

By the yielding nature of the arches, and the transmission of the same caloric through
85 the sides of the chamber with diminished intensity of heat, owing to the additional extent for this transmission—without injury to the draft, the iron will be rendered far
90 more indestructible, effecting an improvement which can not be attained by any other mode.

In the above description we mean to be understood to embrace, not only the place
95 for the fuel, but any inclosure of cast iron, that is used to generate or convey heat; where this improvement is applicable and effective.

Our improvement will be recognized in cast iron chambers constructed with small
100 arches transverse a large arch or transverse the course of the draft or current of heat.

What we claim as new, and wish to secure by Letters Patent as an improvement is—

The construction of cast iron chambers of
105 combustion substantially, as above described, on the principle, and for the purposes therein mentioned. We claim this improvement, whether applied to all sides, or to any part of the sides of the chamber.

BENJ. F. GOLD.
JOB S. GOLD.

Witnesses:

JAMES MYERS, Jr.,
ROMEYN SMITH.