

No. 689,688.

Patented Dec. 24, 1901.

J. NODDER.

CORRUGATED BOILER FURNACE OR FLUE.

(Application filed May 24, 1901.)

(No Model.)

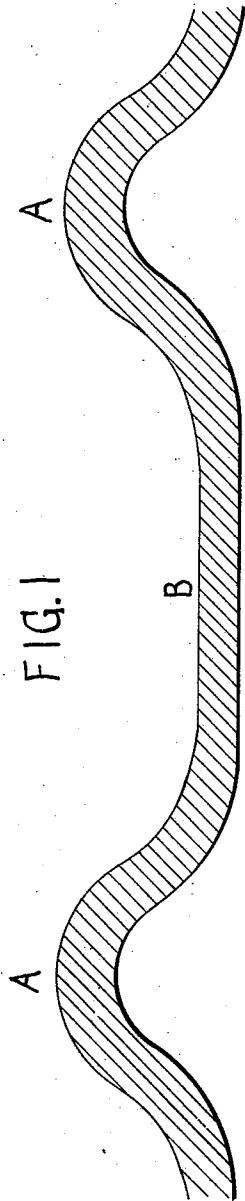


FIG. 3

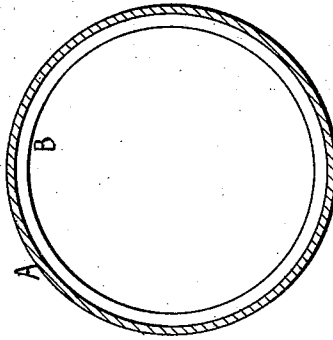
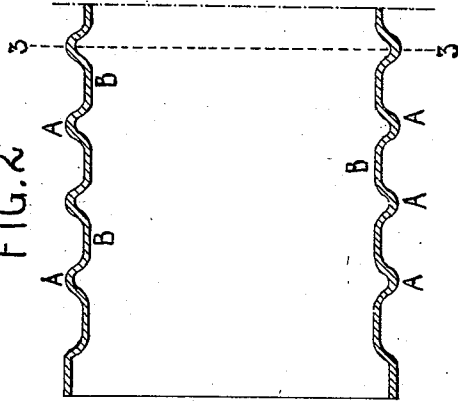


FIG. 2



WITNESSES:

Mattie Abbe
S. C. Connor

INVENTOR

Joseph Nodder
BY
Horsman and Horsman
ATTORNEYS

UNITED STATES PATENT OFFICE.

JOSEPH NODDER, OF SHEFFIELD, ENGLAND, ASSIGNOR TO JOHN BROWN
AND COMPANY, LIMITED, OF SHEFFIELD, ENGLAND.

CORRUGATED BOILER FURNACE OR FLUE.

SPECIFICATION forming part of Letters Patent No. 689,688, dated December 24, 1901.

Application filed May 24, 1901. Serial No. 61,785. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH NODDER, forge manager, a subject of the King of Great Britain and Ireland, residing at Atlas Works, Sheffield, in the county of York, England, have invented certain new and useful Improvements in Corrugated Boiler Furnaces or Flues; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Although in corrugated boiler furnaces and flues the parts of larger diameter should be proportionately thicker than the parts of smaller diameter in order to be capable of withstanding equally well the working pressure in such furnaces and flues as hitherto made by expanding the corrugations from a plain cylinder, they are thinner at their parts of larger diameter than they are at their parts of smaller diameter.

The object of this invention is to overcome this defect.

In the accompanying drawings, Figure 1 represents, in longitudinal section, a part of a plate for a boiler furnace or flue in accordance with this invention. Fig. 2 is a longitudinal section, on a smaller scale, of part of a tube length made from my improved plate. Fig. 3 is a cross-section on the line 3 3, Fig. 2.

The aforesaid defect is overcome according to this invention by rolling a flat plate with alternate corrugations A and flat or approximately flat and thinner parts B, which in the finished flue are parallel with its axis, as shown in the drawings, the thickness gradually increasing from the parts at B to the tops of the corrugations at A, so that in the finished furnaces or flues made from such plates

by forming them into the required cylindrical bodies the parts of larger diameter are thicker than the parts of smaller diameter, the thickness gradually increasing from the parts at B to the tops of the corrugations at A, whereby the strength is made properly proportional to the working pressure throughout, and injurious local expansion and contraction during work are avoided.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is—

1. The herein-described method of manufacturing corrugated boiler furnaces or flues, consisting of rolling a flat plate with corrugations of great thickness and alternating flat portions of less thickness, such thickness gradually decreasing from the corrugations to the flat portions and then forming the plate so rolled into a cylindrical boiler-flue with the flat portions parallel with the axis of the flue, substantially as described.

2. As a new article of manufacture, the herein-described cylindrical corrugated boiler furnaces or flues, consisting of a plate having corrugations and flat portions, parallel with the axis of the flue alternating with the corrugations, the parts of largest diameter being of the greatest thickness and the parts of smallest diameter being of the least thickness, the thickness gradually increasing from the parts of smallest diameter to those of largest diameter, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH NODDER.

Witnesses:

HAROLD P. BURDEKIN,
BENJN. CHEETHAM.