(No Model.)

M. W. ILES.

BLAST FURNACE.

No. 484,020. Patented Oct. 11, 1892.

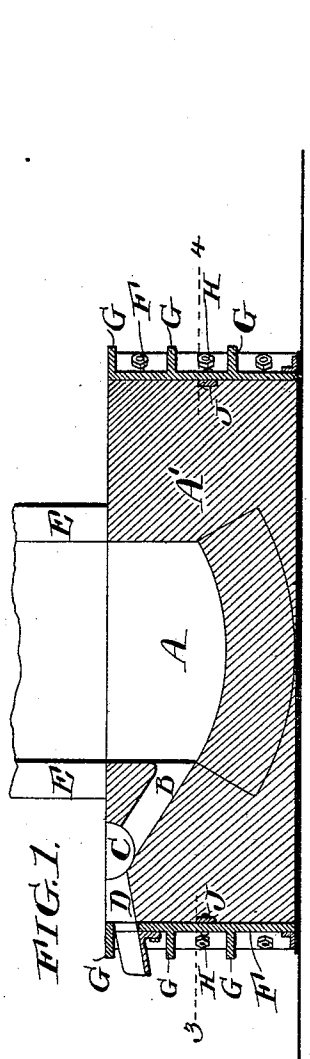


FIG. 1.

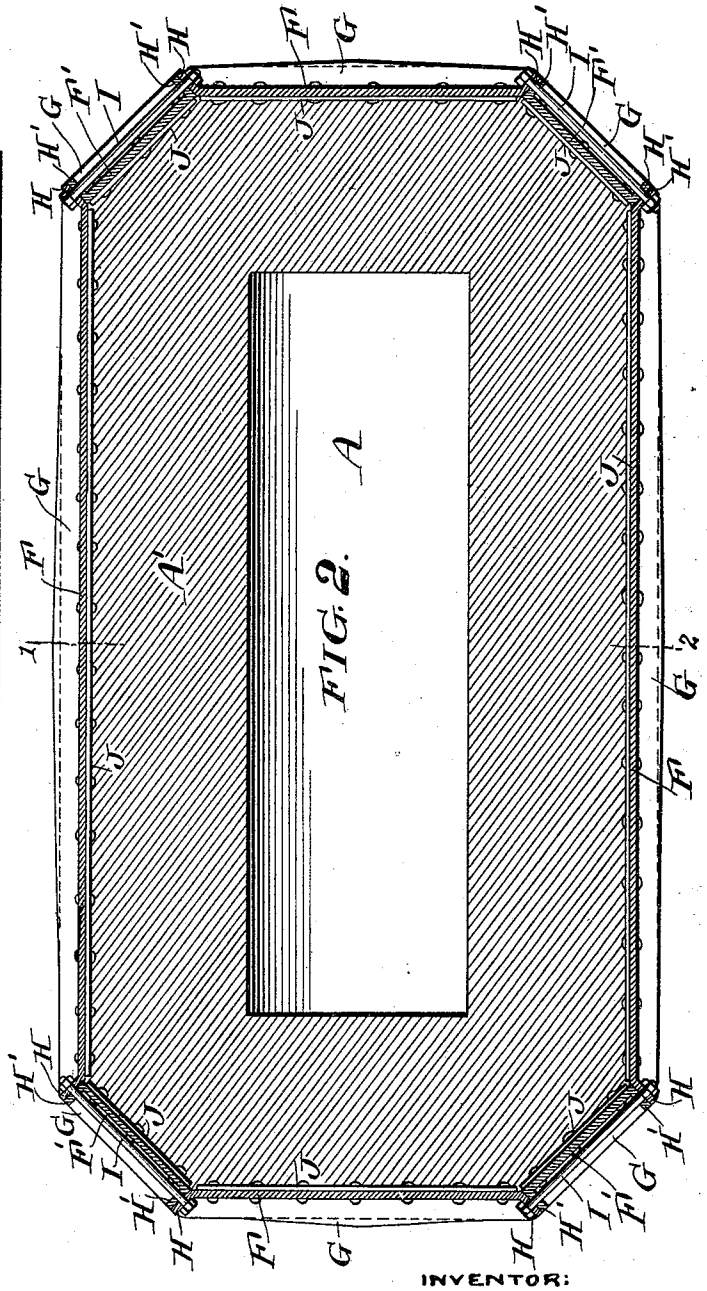


FIG. 2.

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MALVERN W. ILES, OF DENVER, COLORADO.

BLAST-FURNACE.

SPECIFICATION forming part of Letters Patent No. 484,020, dated October 11, 1892.

Application filed June 7, 1892. Serial No. 435,834. (No model.)

To all whom it may concern:

Be it known that I, MALVERN W. ILES, of the city of Denver, county of Arapahoe, State of Colorado, have invented a certain new and useful Improvement in Blast-Furnaces, of which the following is a true and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to blast-furnaces, and particularly to the "crucible-plates," as they are called, which surround the crucible-walls and are used to support them.

The object of my invention is to provide a stronger and more durable plate than is now generally used, and also to construct them so that they can be replaced without in any way disturbing or breaking the crucible-walls.

The nature of my invention will be best understood as described in connection with the drawings in which it is illustrated, and in which—

Figure 1 is a cross-section through the crucible on the line 1 2 of Fig. 2, and Fig. 2 a plan view on the section line 3 4 of Fig. 1.

A is the crucible, the walls of which are indicated by A′.

B is a lead-tap leading from the crucible to a lead-well C, from which leads a conduit D.

E E are water-jackets.

F F are the side and end plates, which are of cast-iron, having heavy strengthening-ribs G on their outer face and a longitudinal strengthening-band of heavy wrought-iron J riveted to their inner faces, the band materially strengthening the plate, and besides holds it together in case of fracture. There may of course be more than one such band used, if desired. At the ends of the plates F are oblique vertical flanges H, extending outward and adapted to fit against flanges of adjoining plates, as shown. They fit against flanges H′ of corner plates F′, which, as shown, are constructed like the plates F, except that their flanges H′ extend out at right angles. This enables the whole series of plates to be fastened together by four sets of bolts G, extending through the flanges of both joints at the furnace corners, as shown, and this is the construction I prefer, though it will be obvious that short bolts connecting each abutting pair of flanges will have some of the same advantage, in that they do not pass through the plates proper and can be moved without disturbing the walls of the crucible.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A crucible-plate for blast-furnaces, made of cast-iron, with longitudinal strengthening-ribs on its outer face and having a wrought-iron band riveted to its inner face.

2. The combination of the side and end crucible-plates F F F F, having strengthening-ribs G and oblique vertical flanges H, with corner plates F′, having rectangular flanges H′, adapted to fit against flanges H, and tie-bolts I, passing through the flanges of both joints at the furnace corners and securing the plates together, as specified.

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Witnesses:

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