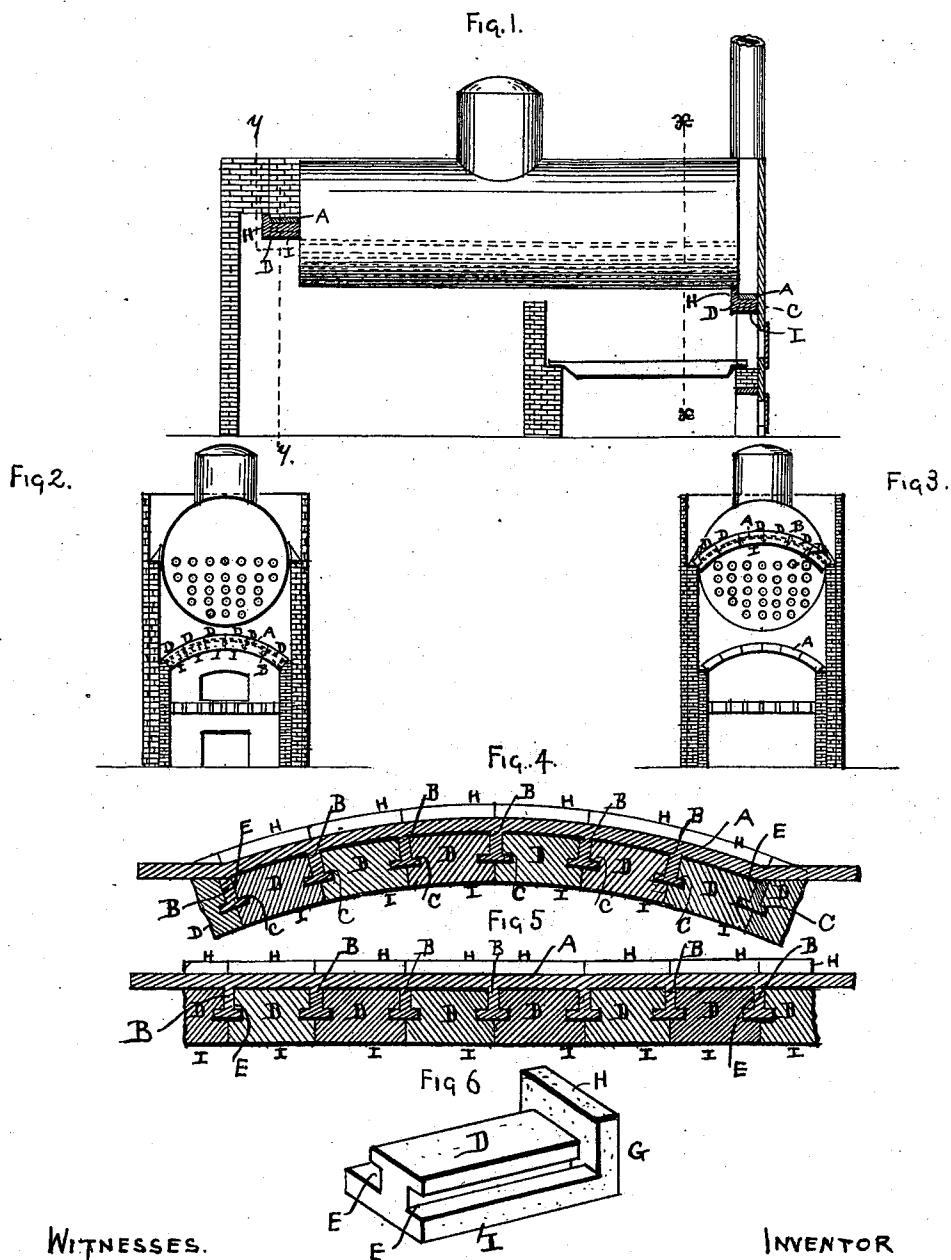


(No Model.)

C. OLSEN.
FIRE BRICK OR SLAB.

No. 510,610.

Patented Dec. 12, 1893.



WITNESSES.

Edward Wallace
Cliff J. Brown

INVENTOR

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UNITED STATES PATENT OFFICE.

CHARLES OLSEN, OF NEW YORK, N. Y.

FIRE BRICK OR SLAB.

SPECIFICATION forming part of Letters Patent No. 510,610, dated December 12, 1893.

Application filed November 3, 1892. Serial No. 450,823. (No model.)

To all whom it may concern:

Be it known that I, CHARLES OLSEN, a citizen of the United States, residing in the city, county, and State of New York, have invented
5 a new and useful Improvement in Fire Bricks or Slabs, of which the following is a specification.

My invention relates to a covering for the metallic arches or bridges in the furnaces
10 of steam boilers. Heretofore these metallic arches have been partially exposed on their under faces or edges to the direct action of heat and consequently they have been burned and warped to a considerable extent.

15 The object of my invention is to protect the entire surfaces of the metallic arches and so prolong their durability. This I accomplish by a series of fire brick slabs of peculiar construction adapted, when in position, to entirely cover and protect the exposed portions
20 of the metallic arches or bridges.

In the drawings Figure 1 is a longitudinal sectional view of a steam boiler, showing the arches and my improved slabs placed thereon.
25 Fig. 2 is a cross sectional view on line *x x*, Fig. 1. Fig. 3 is a cross sectional view on line *y y* Fig. 1. Fig. 4 is an enlarged detached cross sectional view of one of the arches. Fig. 5 is an enlarged detached cross sectional
30 view of a straight arch. Fig. 6 is a perspective view of one of the slabs.

A represents the metallic boiler arch or bridge bar provided with downwardly projecting ribs B having shoulders C on opposite
35 sides, said ribs and shoulders constituting inverted T pieces upon the under sides of such bars, the opposite shoulders C of each two ribs B forming slide ways.

D represents the slabs or blocks formed
40 from refractory material such as fire clay or the like and adapted to withstand high heat. These slabs D are each composed of a body portion and an upturned end or flange G at right angles to and extending above the body
45 of the slab, the ends G having an upper edge H. Parallel grooves E E extend along the sides of the body portion from the ends G backward to the rear edge so that in central cross section the slabs are of flattened I form,
50 with the portion above the base I narrower than said base. The length of each slab ex-

clusive of the flange G is equal to the width of the metallic arch or beam; the width is equal in one part to the distance between the ribs B and is equal in the lower part to the
55 distance from center to center of the ribs B, and the end or flange G extends up sufficiently to cover the top edge of the metallic beam or boiler arch, and the upper edge H of the flange may come up against the under
60 surface of the boiler or receive the brick-work. In cross section these slabs conform in part to the opening between the inverted T pieces and they are adapted to be slid from within backwardly into place, the shoulders
65 being received in the grooves E. The bases I come beneath the inverted T pieces with their meeting edges beneath the centers of the ribs B and their ends G covering up the edges of the metallic arches. It is thus seen that the
70 metallic boiler arch or bridge is completely protected from the action of the fire and that these fire bricks or slabs are adapted for use in arches or bridges at either end of the boiler as illustrated in Figs. 1, 2 and 3. Should any
75 one or more of these slabs become injured by the fire, it is only necessary to push them out and insert new ones in place and this can be accomplished without interfering with the continuity of the arch.
80

A straight bridge such as shown in Fig. 5 may be used instead of the arch shown in the other figures of the drawings and it can be covered in the same manner.

A saving of time and expense is effected by
85 the use of my improved fire brick slab.

I claim as my invention—

A fire brick adapted to the protection of metal arches or beams, the said brick having a body grooved on its edges and adapted to
90 set between the T headed flanges of the beam, and an upward projecting flange at the end of the brick for covering and protecting the edge of such beam substantially as specified.

In testimony that I claim the foregoing I
95 have hereunto set my hand this 28th day of October, 1892.

CHARLES OLSEN.

Witnesses:

JOHN DILLON,
EDWARD WALLACE.