No. 678,521. Patented July 16, 1901.

F. W. SCHNAUTZ.

ARCH FOR FIRE CHAMBERS.

(Application filed Apr. 15, 1901.)

(No Model.)

FIG. 3.

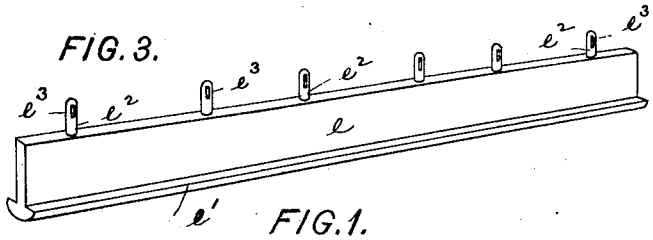


FIG. 1.

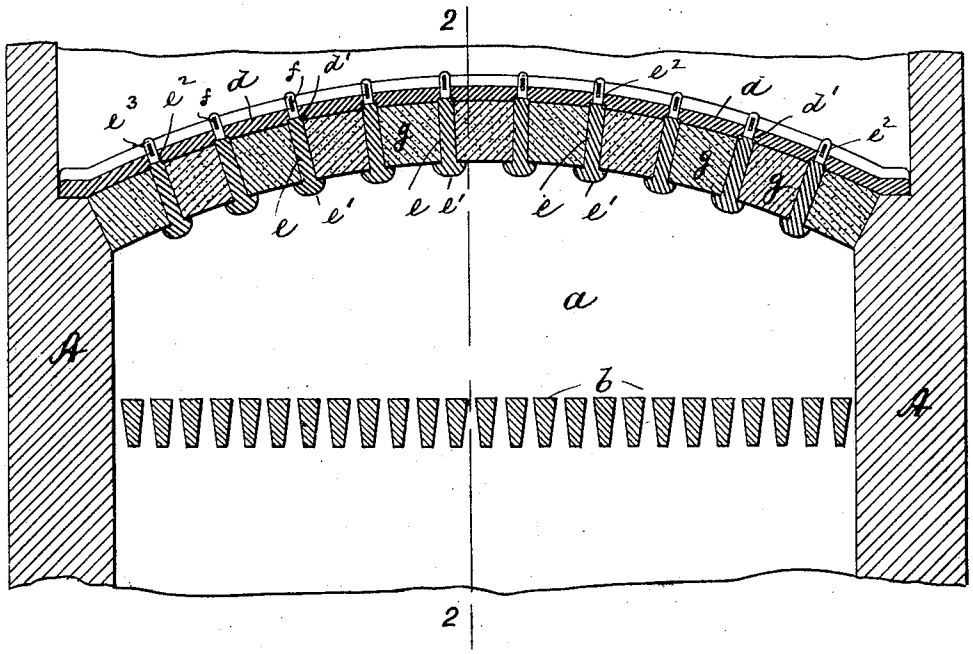
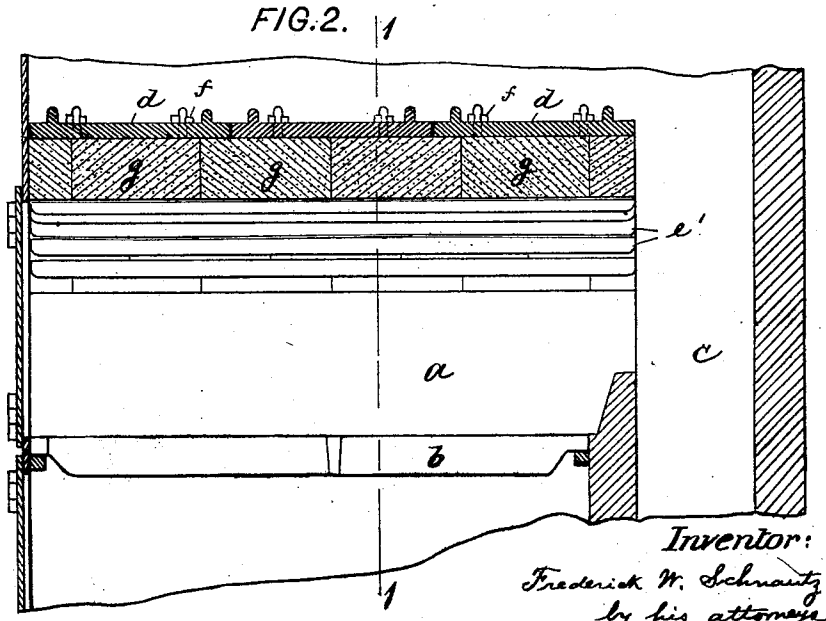


FIG. 2.



Witnesses:
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E. J. Ray.

Inventor:
Frederick W. Schnautz
by his attorneys
Roeder & Briesen

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK W. SCHNAUTZ, OF NEW YORK, N. Y.

ARCH FOR FIRE-CHAMBERS.

SPECIFICATION forming part of Letters Patent No. 678,521, dated July 16, 1901.

Application filed April 15, 1901. Serial No. 55,855. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. SCHNAUTZ, a citizen of the United States, and a resident of New York city, county and State of New York, have invented certain new and useful Improvements in Arches for Fire-Chambers, of which the following is a specification.

This invention relates to an improved arch for fire-chambers which is so constructed that it may be readily taken apart for the purposes of repair and in which when assembled all the parts are connected in a firm and reliable manner.

In the accompanying drawings, Figure 1 is a vertical transverse section of a fire-chamber provided with my improved arch on line 1 1, Fig. 2. Fig. 2 is a vertical longitudinal section on line 2 2, Fig. 1; and Fig. 3, a perspective view of one of the beams *e*.

The letter *a* represents the fire-chamber of a boiler or other heat-generator, *b* being the grate and *c* the flue, all of suitable construction.

The arch is composed of a curved plate *d*, supported upon the walls A. From the lower face of the plate *d* depend a series of parallel longitudinally-arranged T-beams *e*, flanged at their lower ends *e'*, while fitting with their upper ends into longitudinal grooves *d'* of plate *d*. The plate *d* is perforated at suitable intervals above each groove for the passage of upwardly-extending pins or projections e^2, formed on the upper ends of the beams.

To fasten the beams to the plate *d*, the webs of the beams are fitted into the grooves *d'*, so that the pins e^2 pass through the perforations of the plate. The beams are then locked in position by suitable means, such as cotters *f*, introduced into eyes e^3 of pins e^2 or by nuts or similar devices.

The beams *e* sustain the lining-blocks *g*, which are set into the longitudinal channels formed between the beams. The blocks rest upon the flanges *e'*, which serve mainly to protect the edges of the blocks from direct heat.

When it is desired to remove or replace burned-out beams, the cotters *f* are withdrawn to unfasten the beams and cause their detachment. The blocks may be removed and replaced either from the flue *c* or by first detaching the beams in the manner described.

It will be seen that in my improved arch the parts are all securely connected and that at the same time any part may be readily removed for the purpose of repair or replacement.

What I claim is—

1. An arch for fire-chambers composed of a curved perforated plate, a series of beams having pins that project through said plate, means for removably securing said pins to the plates, and blocks fitted between the beams, substantially as specified.

2. An arch for fire-chambers composed of a curved and grooved plate, T-beams fitted within the grooves, means for removably fastening the beams to the plate, and blocks fitted between the beams, substantially as specified.

3. An arch for fire-chambers composed of a curved and grooved plate perforated above each groove, beams adapted to engage the grooves and having projections that pass through the perforations in the plate, fasteners engaging the projections, and blocks fitted between the beams, substantially as specified.

Signed by me at New York city, county and State of New York, this 13th day of April, 1901.

FREDERICK W. SCHNAUTZ.

Witnesses:
F. v. BRIESEN,
E. J. RAY.