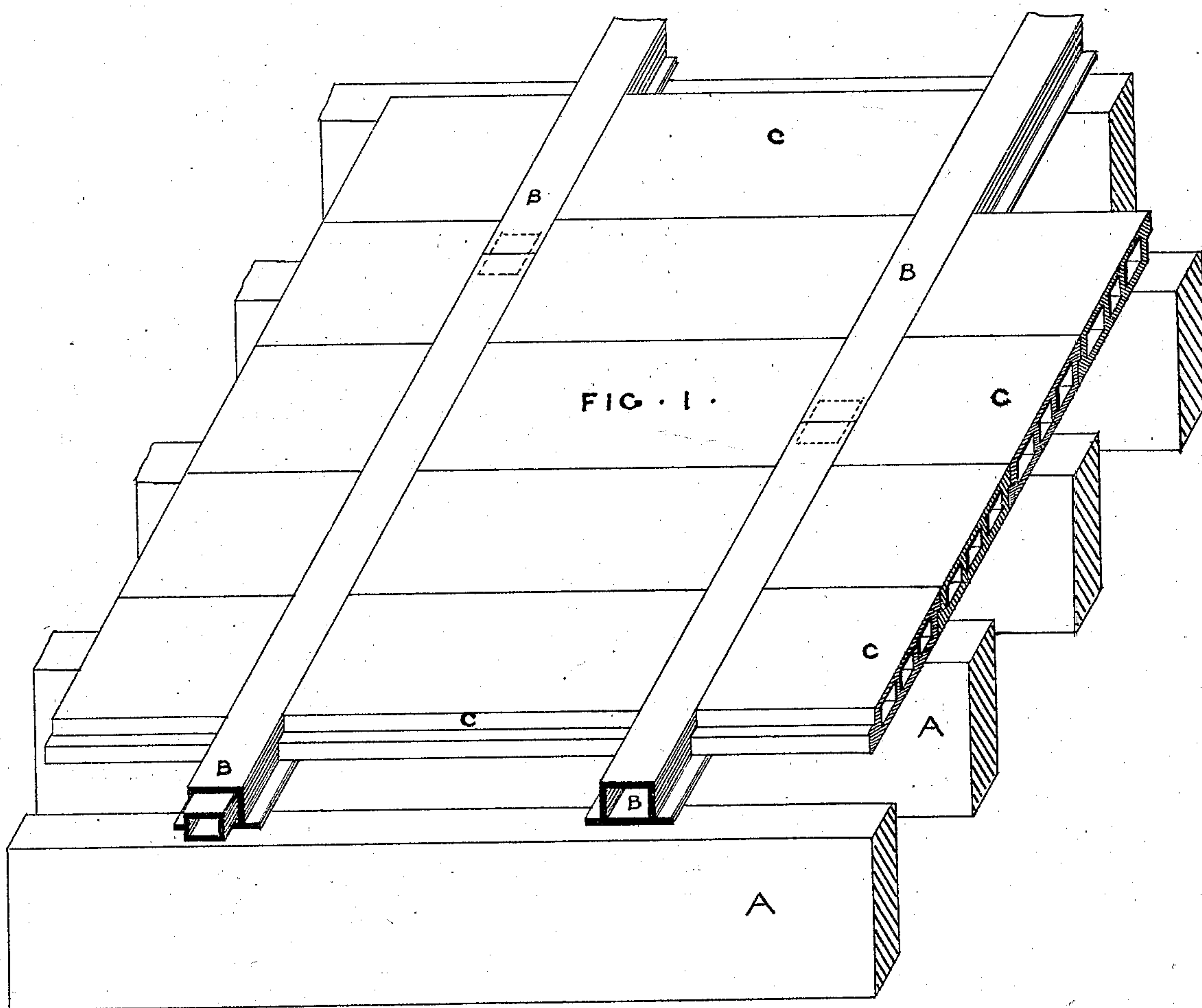


G. H. JOHNSON & W. J. FRYER, Jr.
Fire-Proof Roofs.

No. 143,352.

Patented September 30, 1873.

FIG. II.



WITNESSES
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UNITED STATES PATENT OFFICE.

GEORGE H. JOHNSON AND WILLIAM J. FRYER, JR., OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-PROOF ROOFS.

Specification forming part of Letters Patent No. **143,352**, dated September 30, 1873; application filed August 12, 1873.

To all whom it may concern:

Be it known that we, GEORGE H. JOHNSON and WILLIAM J. FRYER, Jr., both of New York, in the county and State of New York, have invented a new and Improved Fire-Proof Roof; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents an isometrical view of a section of the roof. Fig. 2 is a longitudinal section through the supporting-strip, showing our mode of making the flush butt-joint water-tight.

A A represent the timber roof-joists; B B, the baked clay or metal supporting-strips, which are bedded in cement on top of the wood or iron roof rafters or beams; C C, the hollow baked-clay slabs, bedded in cement, and resting on the flanges of the supporting-strips.

Our invention relates to the construction of roofs of buildings fire-proof by the use of hollow slabs made of baked clay or other non-combustible material. These slabs are rectangular in form, and recessed or rabbeted on the upper and lower edges, so as to form a lap-joint flush on both the top and under sides. The ends of each slab are bedded onto the flanges of the hollow supporting-strips, which run at right angles to the hollow slabs. These strips can be made of baked clay, iron, or other non-combustible material, in lengths suitable to rest on either wood or iron rafters or beams. The ends of the supporting-strips are butted flush together, and held in position by a small block inserted in the hollow of the strip. A perfectly water-tight lap-joint around each hollow slab is produced; and the whole forms a flush smooth roof and ceiling below. Portland cement or other suitable composition is used in putting the work together.

The merit and novelty of our invention in constructing fire-proof roofs consist in the material used, and the manner of constructing the supporting-strips and hollow slabs.

On referring to the drawings it will be seen that a lap or rabbeted joint is produced on all four sides of the hollow slabs, thus securing perfectly water-tight joints. By using the sup-

porting-strips we are able to make our hollow slabs by machinery, which forces the clay through a die continuously, it being cut off, with a wire, to the length required.

Without the supporting-strips it would be necessary to have the hollow slabs recessed or rabbeted on all four sides. This could not be done, except by hand labor, in separate molds; and would cost fully four times as much, and not be equal to the plan shown and described.

Our roof will not be affected by change of temperature, as no perceptible contraction or expansion can occur. Experiment has fully proven that a pine-wood fire, burning for hours on the top surface, will not even blacken or char the supporting wooden joists beneath.

We are now able, after years of study and experiment, to make a roof absolutely fire and leak proof, indestructible against time and the elements, and at a cost much less than iron—without the many well-known disadvantages of iron—and very little in excess of tin, slate, or composition of tar and gravel roofs, all of which are nearly worthless when required to resist fire.

We propose to cover the surface of the roof, slabs, &c., after being laid, with two coats of metallic paint, or a thin coating of Portland cement. This will prevent the possibility of the absorption of moisture through the pores of the hollow baked-clay slabs and supporting-strips.

The slabs, as well as the supporting-strips, can be made solid; but we prefer them hollow, on account of their air-space and lightness of weight.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The slabs C C, made of baked clay or other non-combustible material, and the supporting-strips B B, made of baked clay, metal, or other non-combustible material, resting on wood or metal beams or rafters to carry the same, as shown and described, for the purposes specified.

GEORGE H. JOHNSON.
WM. J. FRYER, JR.

Witnesses:

WM. W. YOUNG,
HARDESTY DE S. JOHNSON.