

A. BECKWITH.
Fire-Proof Floors.

No. 151,826.

Patented June 9, 1874.

Fig. 1

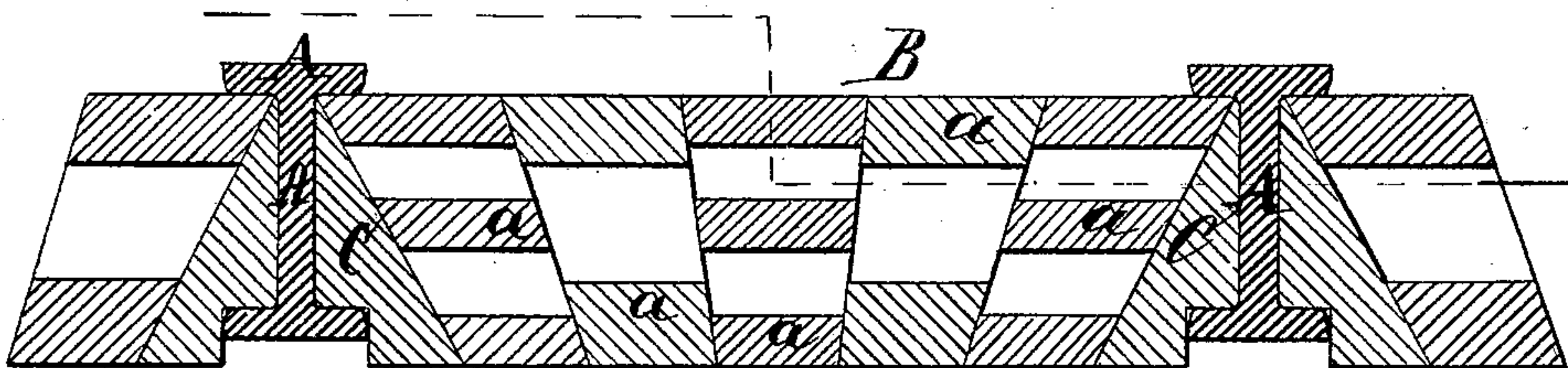
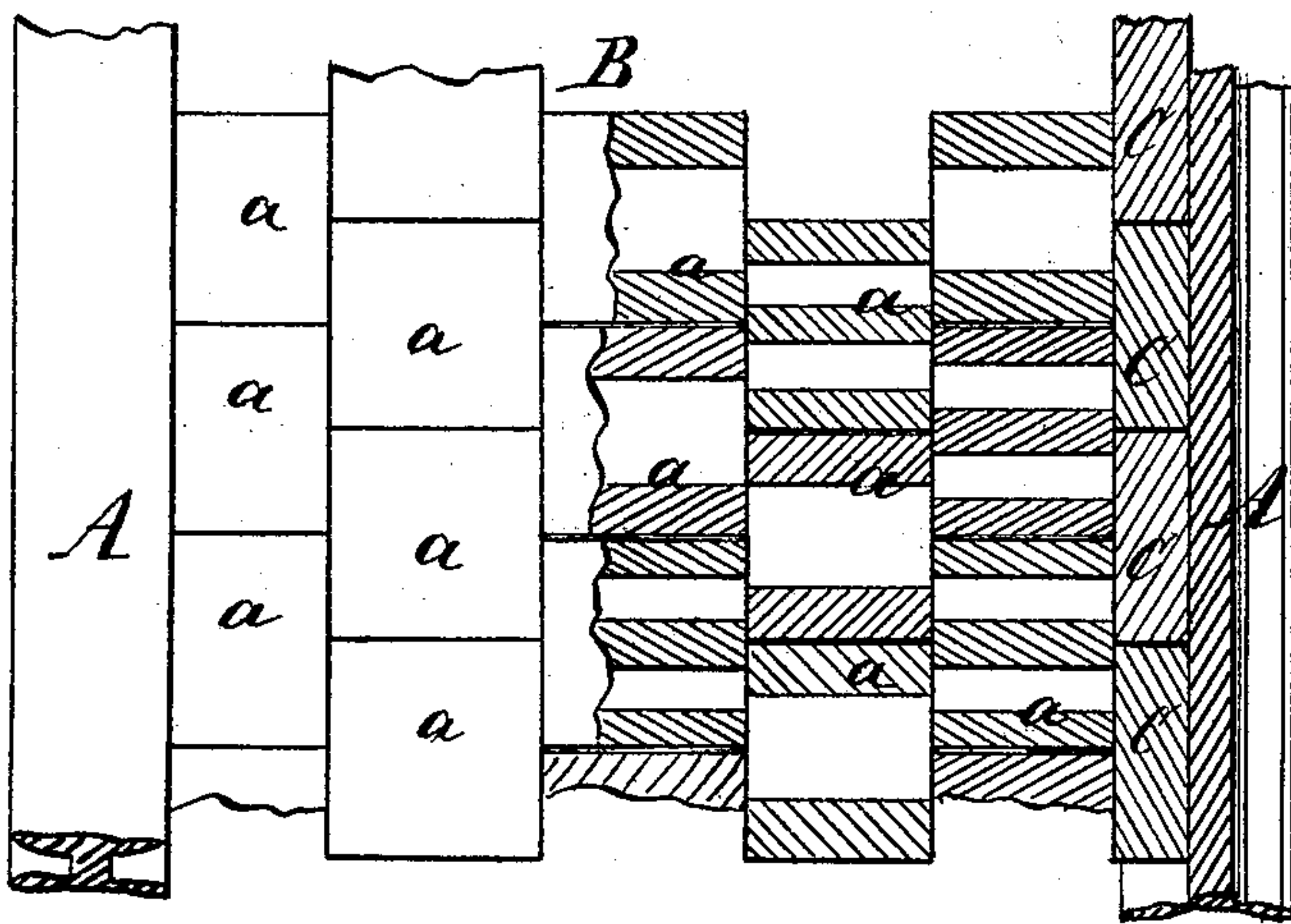


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

ARTHUR BECKWITH, OF NEW YORK, N. Y.

IMPROVEMENT IN FIRE-PROOF FLOORS.

Specification forming part of Letters Patent No. **151,826**, dated June 9, 1874; application filed May 9, 1874.

To all whom it may concern:

Be it known that I, ARTHUR BECKWITH, of the city, county, and State of New York, have invented a new and useful Improvement in Fire-Proof Buildings; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a transverse vertical section of my invention. Fig. 2 is a horizontal section of the same.

Similar letters indicate corresponding parts.

This invention consists in a flat floor-arch composed of hollow blocks, which are perforated in the direction of the thrust of the arch, in such a manner that the strength of the blocks in the direction of the thrust of the arch is preserved, while at the same time the desired lightness of the material used for the arch is attained.

In various forms of floor-arches forming a flat arch between beams, the method hitherto used to decrease the weight of the material has been to form hollows in the voussoirs or tile-sections, and to place the axis of these hollows in a direction parallel to the beams or skew-backs upon which the arch rests. This position of the hollow in the tile-sections is defective as regards strength, since the thrust of the arch is directed transversely upon the hollow spaces in the material, and the tiles are liable to be crushed in.

This disadvantage I have obviated by my invention, which is represented in the drawing, in which the letters A A designate the beams, which support the floor-arch B. This arch is composed of a series of hollow blocks, *a*, the hollow *b* in said blocks being made to

run in a direction at right angles to the beams, or in the direction of the thrust of the arch.

By this arrangement of the blocks in relation to each other and to the beams, the sides of the hollow space in said blocks are relieved from transverse pressure, each block being exposed to an end pressure, or to a pressure in the direction of the axis of the hollows, and consequently the strength of the arch is not materially impaired, while the desired lightness of the material used for the arch is gained.

It is obvious that the perforations or hollows in the blocks can be made in any desired number, and of any convenient form or shape, large or small, as circumstances may dictate. The flat surfaces of the blocks may be indented to facilitate the addition of cement. The skew-back C may be made solid.

I am aware that hollow-tile arches have heretofore been constructed—such, for instance, as those described in “*Traité d'Architecture*,” par M. Léonce Reynaud, Dunod, Editeur, Paris, 1867, page 552, plate 82, figure 31, or in the “*Rudimentary treatise on the manufacture of bricks and tiles*,” by Edward Dobson, London, Virtue & Co., 26 Ivy Lane, 1868, page 209; and I do not claim, therefore, broadly as my invention a floor-arch made of hollow tiles.

What I claim as new, and desire to secure by Letters Patent, is—

A flat or plate-band floor-arch composed of hollow blocks, the hollows in the blocks running in a direction perpendicular to the beams, or in the direction of the thrust of the arch, substantially as shown and described.

ARTHUR BECKWITH.

Witnesses:

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