

No. 719,378.

PATENTED JAN. 27, 1903.

J. SCHRATWIESER.
FLOOR AND CEILING CONSTRUCTION.

APPLICATION FILED FEB. 4, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

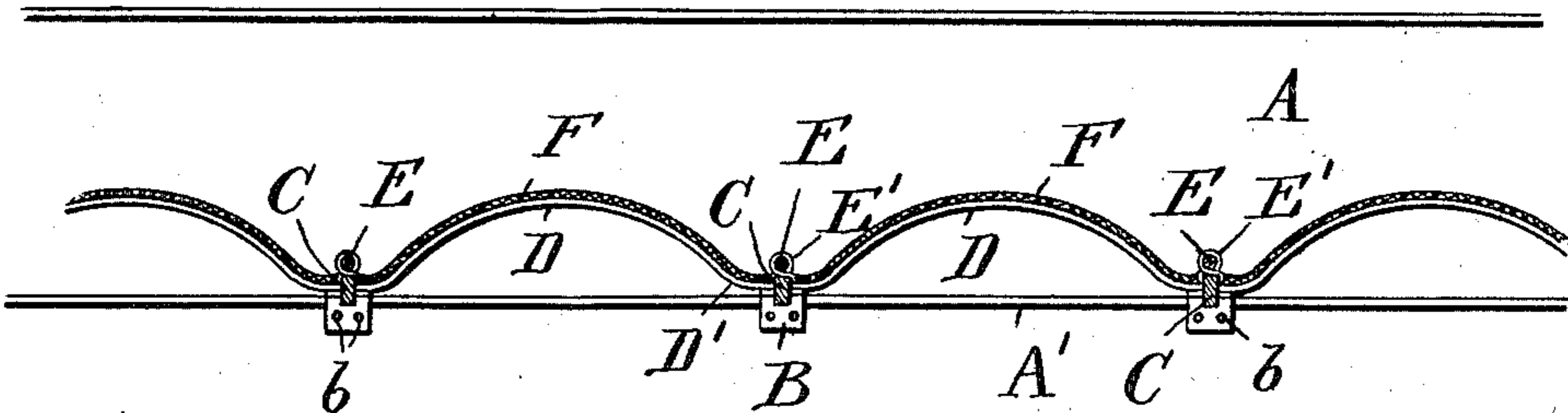


Fig. 2.

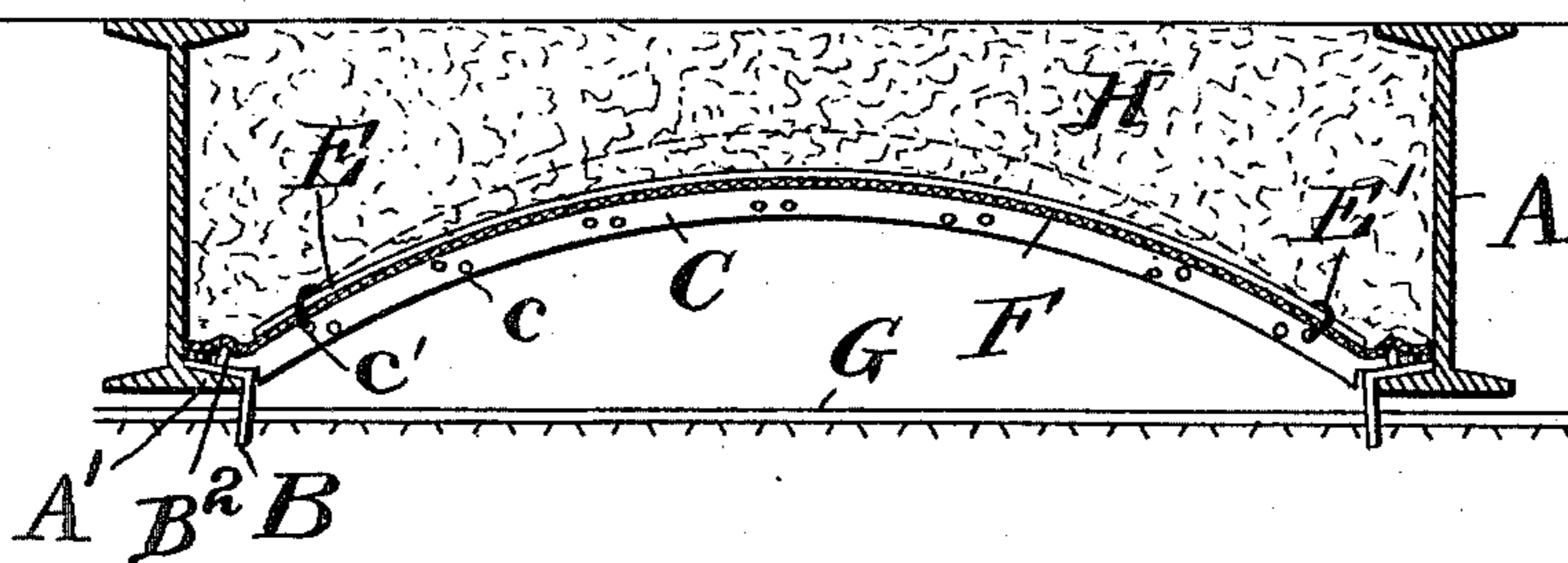
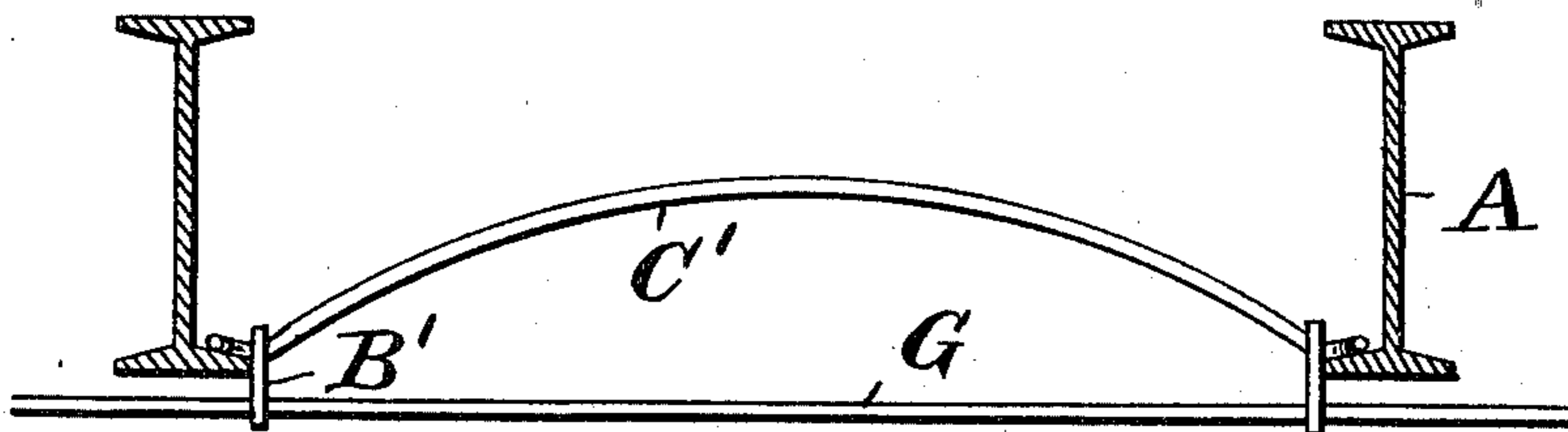


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

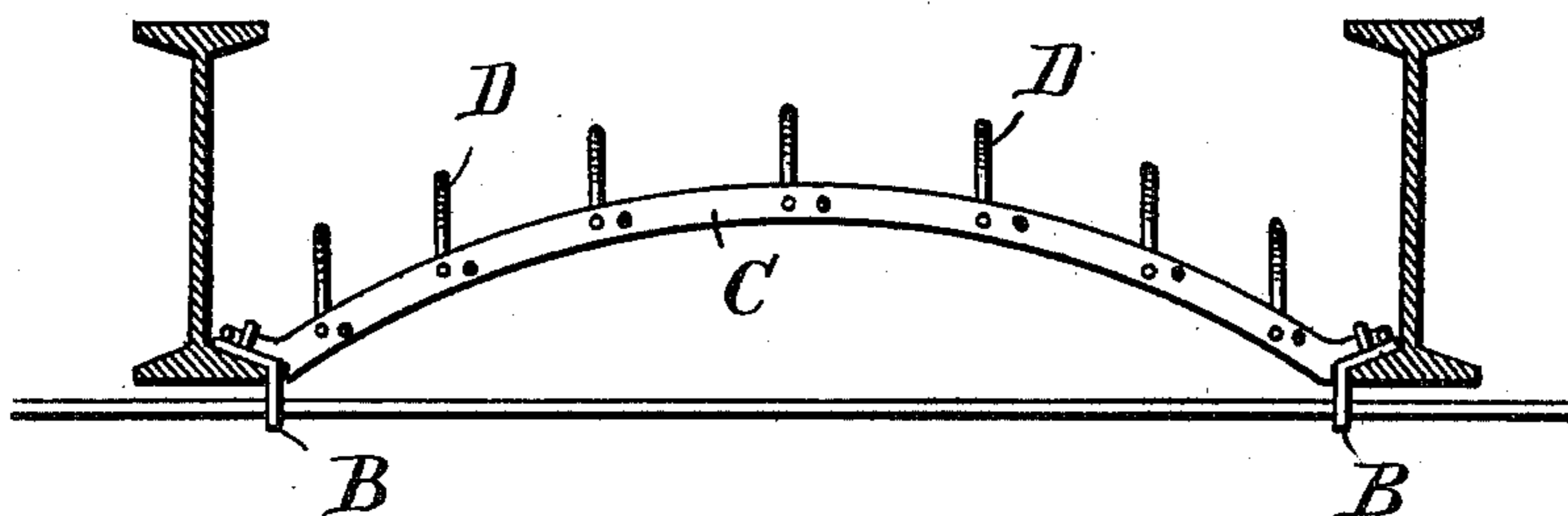


Fig. 5.

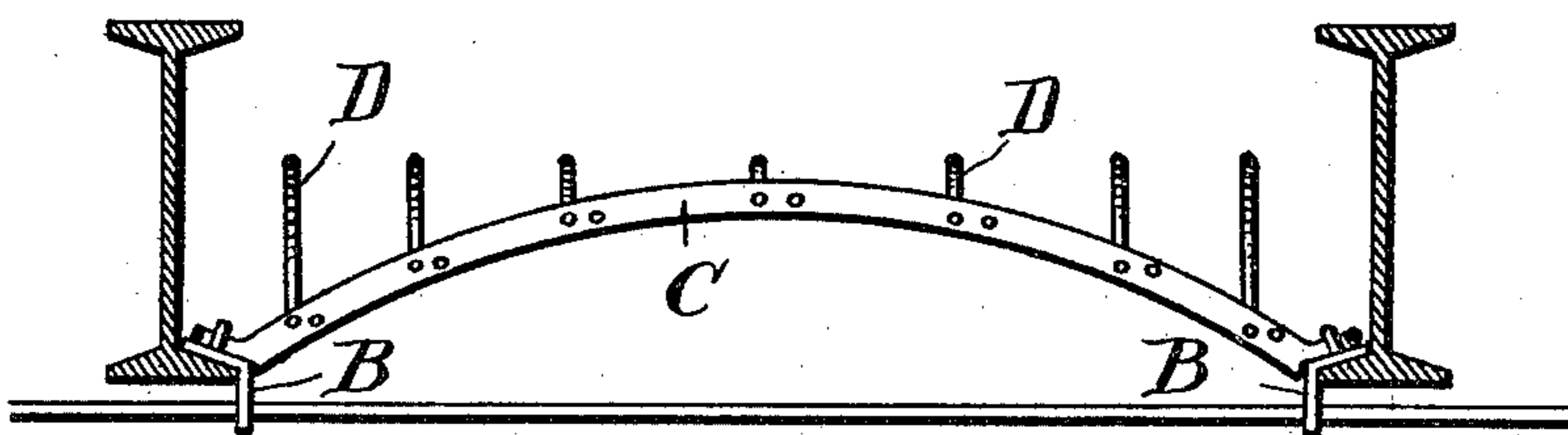
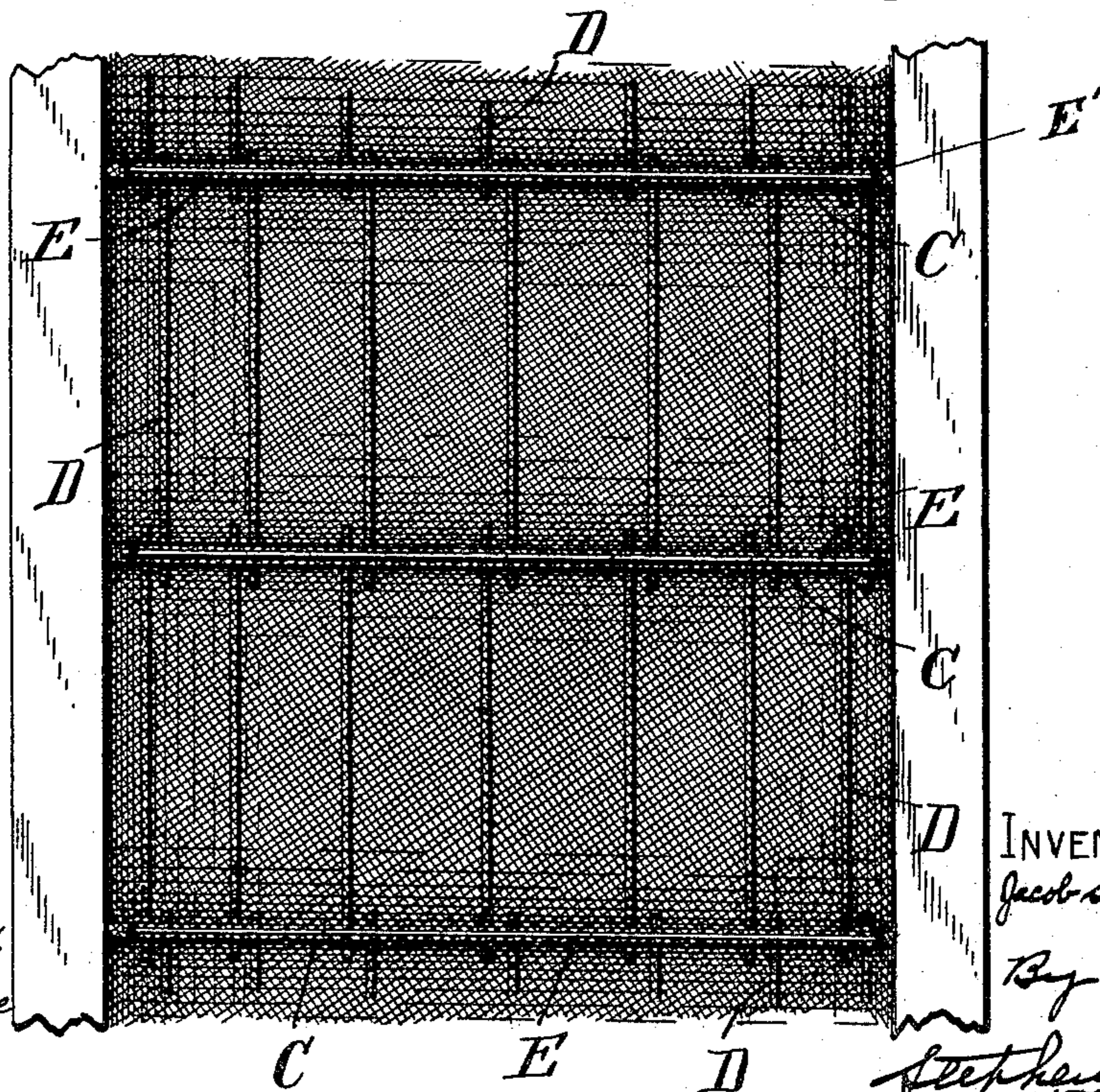


Fig. 6.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JACOB SCHRATWIESER, OF BROOKLYN, NEW YORK, ASSIGNOR TO SCHRATWIESER FIREPROOF CONSTRUCTION COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW JERSEY.

FLOOR AND CEILING CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 719,378, dated January 27, 1903.

Application filed February 4, 1902. Serial No. 92,577. (No model.)

To all whom it may concern:

Be it known that I, JACOB SCHRATWIESER, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Floor and Ceiling Constructions, of which the following is a specification.

My invention relates to the construction of that part of a building upon which the floors are supported and from which the ceilings are hung, and particularly to the portion intermediate the joists or I-beams forming the main frame for supporting said floors and ceilings. Its objects are, among others, to provide a more simple, inexpensive, and durable construction of this character and one which will require a comparatively small amount of labor in its application; and to this end it consists of the combination and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings.

In the said drawings, Figure 1 is a vertical section parallel with the I-beams of a construction embodying my improvements. Fig. 2 is a transverse section of the same, and Figs. 3, 4, and 5 are like views of certain modified parts. Fig. 6 is a plan view of the construction shown in Fig. 1.

The cross-pieces C are preferably made of strips of metal of comparatively small thickness and are in my preferred construction arched, extending from flange to flange of the I-beams A, having a mortise on their under sides at the ends which rest upon the said flanges of the beams and their said ends turned parallel therewith. These cross-pieces C are in turn connected by arched pieces D, running at substantially right angles thereto and parallel with the I-beams. The pieces D are preferably made of rods and have their ends secured to the cross-pieces C by passing through the perforations c. In my preferred construction the strips D are curved on gradually-increasing radii from the center of the cross-pieces C to the beams, the lengths of the strips being reduced to suit the curve, as indicated by dotted lines in Fig. 2. In Fig. 4 these pieces are all of equal length and curve,

giving the upper surface of the cross-arch the same curve as the cross-pieces C. In Fig. 5 they are lengthened as they near the beam and given a greater curve, so that the top of the cross-arch is level. By the use of this construction a double arch is obtained—viz., the one from beam to beam, supported by the cross-pieces C, and the one from cross-piece to cross-piece, supported by the strips or rods D—and in this manner a structure of the greatest strength is obtained.

Upon the cross-pieces C and intermediate strips D is spread a sheet F, of burlap, canvas, or netting or some other flexible material, in place of the sheet-metal lath usually applied to such structures. This is held in place by the rods E, passing over the upper edges of the cross-pieces C and secured thereto at either end by the tie-wires E' or other suitable means of attachment.

The ceiling is hung by the means of the angle-pieces B, having perforations b, through which rods may be passed to hang the ceiling. These angle-pieces B are also secured to the ends of the cross-pieces C by means of eyelets or tie-wires B², as shown in Fig. 2, or they may be secured thereto by having perforations in the upright portion thereof, through which the ends of said cross-pieces pass, as shown in Fig. 3, and in this construction the flange of the angle-pieces which rests upon the beam may be dispensed with, the ends of the cross-pieces serving in this instance the same purpose.

I have found that while the sheet-metal lath possesses when first applied to the construction of floors and ceilings a considerable weight-resisting strength its "life" as a material factor in the structure is exceedingly limited, owing to the fact that it is soon rendered worthless by the process of oxidation, which is greatly accelerated by the action of moisture and the substances usually employed in making up the filling which rests upon it. There is also another objection to the lath—namely, that being of considerable stiffness it does not conform to the contours of the parts upon which it is spread, and thus prevents the concrete from being formed

closely over these parts, so that when the lath has decayed and lost its serviceability there is practically a space left between the concrete or filling and the parts beneath the lath, which greatly weakens the structure and sometimes causes it to crack and settle.

By the use of canvas, burlap, or other flexible material the concrete is sufficiently supported until it has an opportunity to "set" and at the same time is allowed to form closely over the main parts of the structure, filling in the interstices and irregularities thereof and firmly uniting the whole into one common mass. After this has taken place, and especially with my improved double-arch construction, a strong and durable floor and ceiling supporting structure is assured.

What I claim is—

1. The combination of cross-pieces extending from flange to flange, of the beams and connecting-strips extending transversely of said cross-pieces and a layer of flexible non-metallic material, spread upon the cross-pieces and connecting-strips and conformed to the upper surfaces thereof.

2. The combination with the I-beams and a suitable filling between the same, of cross-pieces extending from beam to beam, a layer of flexible material spread upon said cross-pieces and supporting the said filling, and binding-strips, and tie-wires connecting said cross-pieces and strips through the said layer.

3. The combination of intermediate construction comprising cross-pieces extending from beam to beam, ends of said cross-pieces turned at an angle thereto, a concrete filling between the beams and hangers supported by said intermediate construction by having the ends of said cross-pieces passed there-through.

4. The combination of arched cross-pieces extending from beam to beam and supported thereby and arched connecting-pieces extending from cross-piece to cross-piece.

5. The combination of arched cross-pieces extending from beam to beam and supported thereby, arched connecting-pieces extending from cross-piece to cross-piece and secured to said cross-pieces by having their ends passed through perforations therein.

6. The combination of cross-pieces extending from beam to beam and arched connecting-pieces extending from cross-piece to cross-piece, the said connecting-pieces having a curve of smaller radius at the center of said cross-pieces than at the sides.

7. The combination of arched cross-pieces extending from beam to beam and arched connecting-pieces extending from cross-piece to cross-piece, the said connecting-pieces having a curve of smaller radius at the center of said arched cross-pieces than at the sides.

8. The combination of arched cross-pieces extending from beam to beam, arched connecting-pieces extending from cross-piece to cross-piece, a layer of flexible material spread upon the said cross-pieces and connecting-pieces, and a filling supported thereon.

9. The combination of arched cross-pieces extending from beam to beam, arched strips or rods connecting the said cross-pieces and a filling supported thereon.

Witness my hand, this 27th day of January, 1902, in the presence of two subscribing witnesses.

JACOB SCHRATWIESER.

Witnesses:

HERMAN MEYER,

ERNEST H. BOYCE.