No. 671,679. Patented Apr. 9, 1901.

W. ORR.

FIREPROOF CONSTRUCTION.

(Application filed Aug. 23, 1900.)

(No Model.)

Fig. 1.

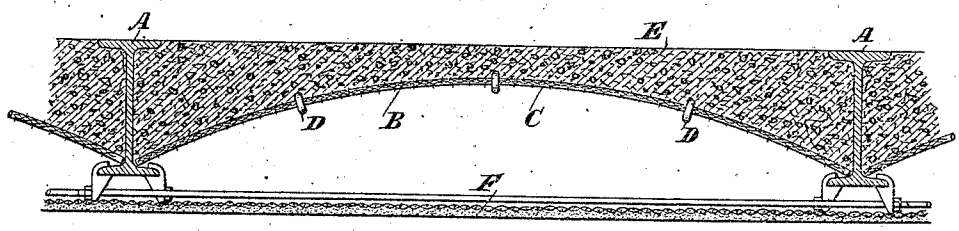


Fig. 2.

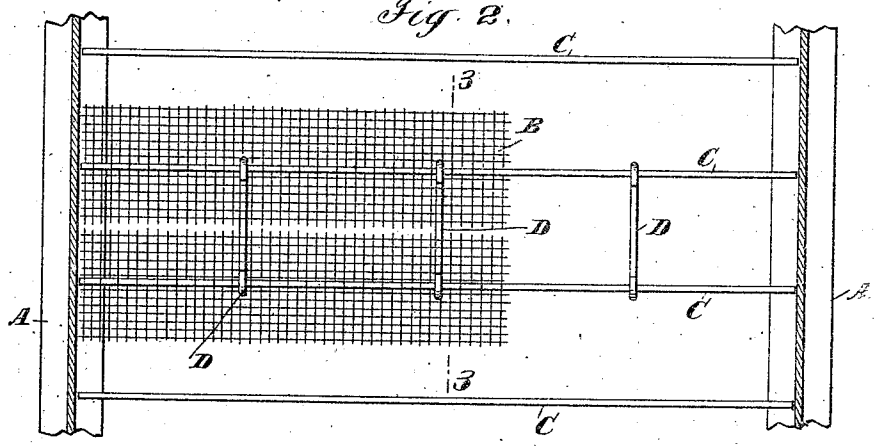


Fig. 3.

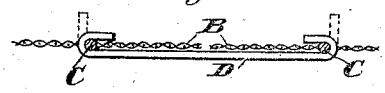
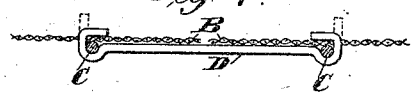


Fig. 4.



Attest:
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UNITED STATES PATENT OFFICE.

WILLIAM ORR, OF TRENTON, NEW JERSEY, ASSIGNOR TO THE NEW JERSEY WIRE CLOTH COMPANY, OF SAME PLACE.

FIREPROOF CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 671,679, dated April 9, 1901.

Application filed August 23, 1900. Serial No. 27,775. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ORR, a citizen of the United States, residing at Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in Fireproof Constructions, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to an improved fireproof floor, ceiling, or similar construction of that class in which a filling of concrete or similar plastic material is applied in connection with reticulated metal to form a web extending from beam to beam, and is especially intended for floor constructions curved in arch form from beam to beam, although it is applicable also in connection with horizontal or flat arch constructions.

In the production of curved-arch floor constructions, such as shown in prior Letters Patent Nos. 425,245, 582,307, and 644,913, in which arched rods are used to support the lathing and usually woven into the lathing so as to extend longitudinally of the lathing-sheets or from beam to beam, it has heretofore been usual to draw the successive sheets of lathing together, so as to tie the outer rods of adjacent sheets to each other. These rods are usually seven to nine inches apart, and this wastes a considerable amount of lathing, in some cases a total of several inches in two sheets. In connection with these arched rods also two or more stay-rods extending longitudinally of the arch are usually employed, these being tied to the lathing-rods, so as to hold the rods in place and prevent the arch being thrown out of form by the sheets tilting longitudinally of the arch under the weight of the concrete in making the construction. The present invention avoids this waste of lathing and use of the stay-rods running across the sheets of lathing, while at the same time providing a metal structure of increased strength for receiving the concrete, and, moreover, enables the structure to be built much more rapidly and with greater certainty of proper construction than by tying the lathing-rods together and applying the stay-rods as heretofore. I secure these results by the use of spanners, which are made of suitable length to embrace the outside rods of two adjacent sheets of lathing, and, secured to these rods, preferably by bending the ends of the spanners about the rods, so as to tie the rods together. These spanners are applied so that the body of the spanner is below the lathing, and the portions of the lathing at the edges of adjacent sheets between lathing-rods are thus supported by the spanners. If the lathing-rods are on the under side of the lathing, the spanners are preferably bent upward near their ends, so that the portions of the spanners between the lathing-rods will act to support the edges of the lathing-sheets without sagging of the latter.

For a full understanding of the invention a detailed description of a construction embodying the same as applied in its preferred form in connection with a curved floor construction similar to that shown in United States Letters Patent No. 644,913 will now be given, in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a section of a complete floor construction embodying the invention, a suspended ceiling of common form being shown in connection therewith. Fig. 2 is a plan view of the metal-work, showing the junction between adjacent sheets. Fig. 3 is a cross-section on the line 3 of Fig. 2. Fig. 4 is a section similar to Fig. 3, showing the preferred form of construction with heavy lathing-rods or rods on the under side of the lathing.

Referring to said drawings, A represents the floor-beams, shown as of the common I form; B, the lathing; C, the lathing-rods; D, the spanners, and E the filling of concrete or similar plastic material. A suspended ceiling F is shown supported by hangers from the bottom flanges of the beams, as common in such constructions; but this is immaterial so far as the present invention is concerned.

It will be seen from Figs. 2 and 3 that the spanners D embrace the ceiling-rods C next the edge of two adjacent sheets of lathing B,

and thus tie these rods together, and that the spanners extend along the under side of the lathing, and thus support the edges of the sheets of lathing as the concrete is filled in. These spanners are put in place from above by passing them down through the lathing and then upward around adjacent rods C, with the ends of the spanners extending upward through the lathing, as shown in dotted lines in Fig. 3. A suitable bender is then applied to the ends of the spanners, and these are bent down over the ceiling-rods, as shown in full lines in Fig. 3, this bending operation also drawing the sheets of lathing together, making a firm and rigid construction.

As shown in Fig. 3, the ceiling-rods are woven into the body of the lathing, so as to extend centrally of the lathing, and the spanners consist of straight bars, with their ends bent over about the lathing-rods, so that the edges of the lathing-sheets will sag slightly into position to be supported by the spanners.

In Fig. 4 I have shown a construction which will preferably be used where the thickness of the lathing-rods or the manner in which they are applied to or woven into the lathing is such that it is important to avoid the sagging of the edges of the lathing-sheets into position on the spanners. In this construction the spanners are formed with downward bends at their outer ends to receive the lathing-rods, so that the portions of the spanners that extend between the ceiling-rods are brought into position to support the edges of the lathing-sheets without sagging.

It will be understood that while the present invention is especially intended for curved floor and ceiling construction it may be used also in connection with horizontal or flat arch constructions. It will be understood also that the broader features of the invention may be applied in connection with any desired form of reticulated metal other than the wire lathing shown, whether the metal be provided with strengthening or supporting rods or not, although my construction is especially designed for use with sheets of wire or similar lathing having rods woven therein or secured thereto, as above described, and such constructions form specific features of the invention.

What I claim is—

1. In a floor, ceiling, arch or similar construction, the combination with beams or the like, of sheets of reticulated metal extending from beam to beam, and metal spanners extending across the edges of adjacent sheets with their ends extending through and secured to the metal, substantially as described.

2. In a floor, ceiling, arch or similar construction, the combination with beams or the like, of sheets of reticulated metal extending from beam to beam, supporting or strengthening rods for said metal extending from beam to beam, and metal spanners extending across the edges of adjacent sheets below the metal with their ends secured to rods of the adjacent sheets, substantially as described.

3. In a floor, ceiling, arch or similar construction, the combination with beams or the like, of sheets of reticulated metal extending from beam to beam, supporting or strengthening rods for said metal extending from beam to beam, and metal spanners extending across the edges of adjacent sheets below the metal with their ends looped about rods of the adjacent sheets, said spanners being formed with downward bends at their ends to embrace the rods with the body of the spanner lying along the under side of the reticulated metal to support the latter without sagging, substantially as described.

4. The combination with beams A or the like, of the lathing-sheets B and rods C extending from beam to beam, spanners D extending across the edges of adjacent sheets below the lathing, with their ends projecting upward through the lathing and bent downward to inclose and bind together adjacent rods of the two sheets and support the edges of the latter, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM ORR.

Witnesses:
EDWIN W. ARNOLD,
GEO. W. FELTY.