No. 678,335 Patented July 9, 1901.

M. L. FREEMAN & C. E. DOBBIN.

FIREPROOF FLOOR CONSTRUCTION.

(Application filed Aug. 22, 1900.)

(No Model.)

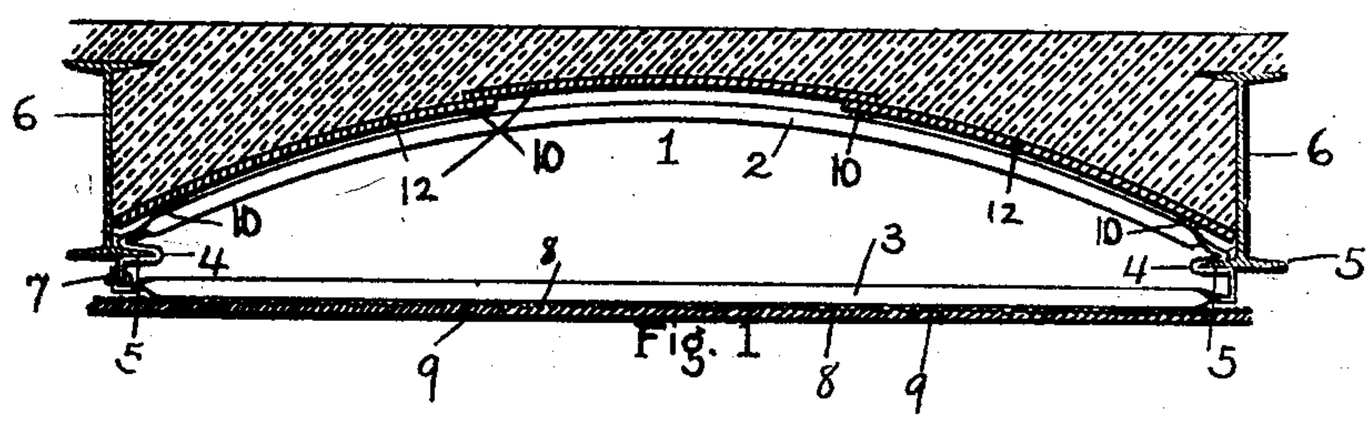

Fig. 1

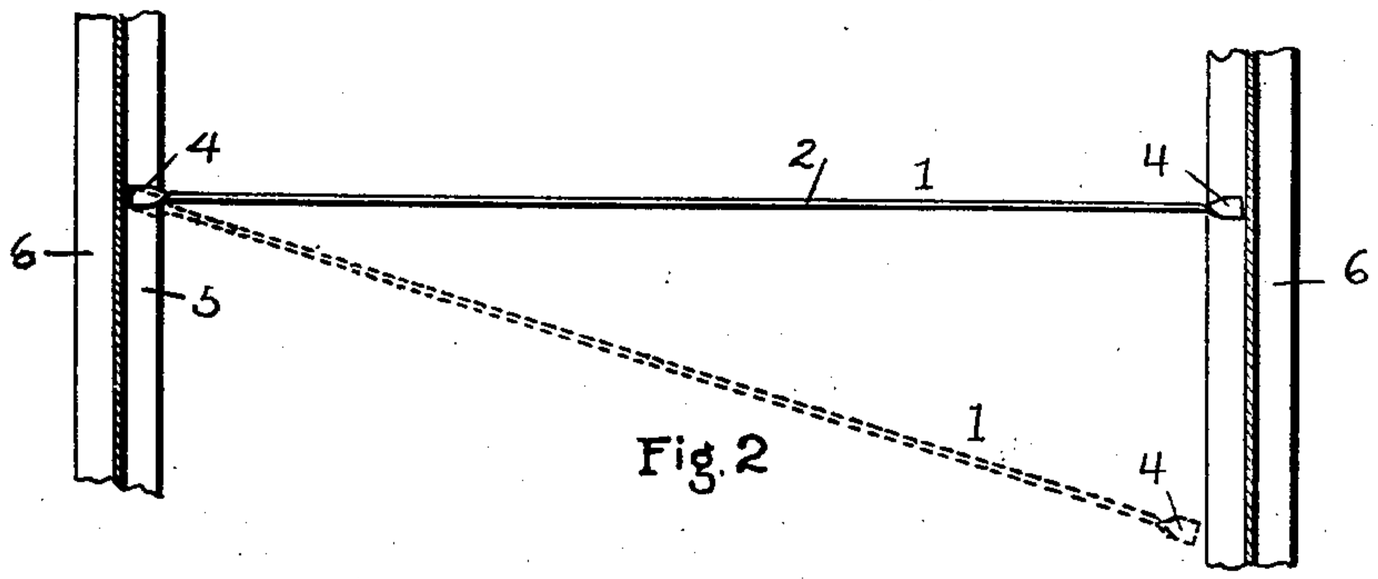

Fig. 2

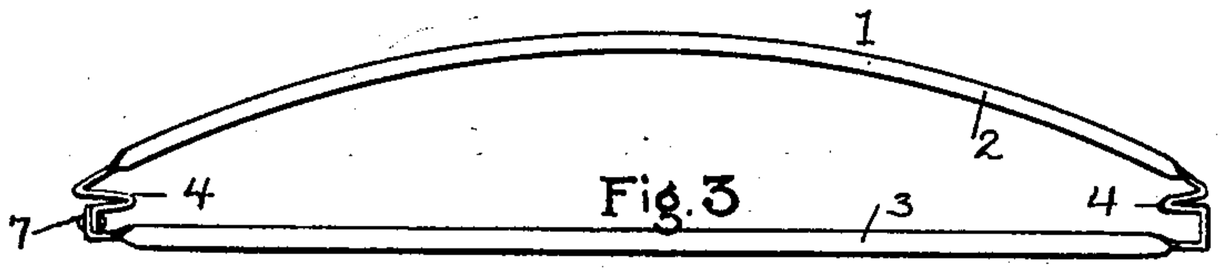

Fig. 3

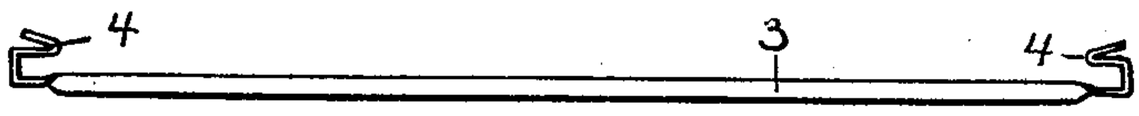

Fig. 4

Witnesses
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UNITED STATES PATENT OFFICE.

MARCUS L. FREEMAN AND CLARENCE E. DOBBIN, OF NEW YORK, N. Y., ASSIGNORS TO FREEMAN-DOBBIN FIREPROOFING COMPANY, OF SAME PLACE.

FIREPROOF FLOOR CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 678,335, dated July 9, 1901.

Application filed August 22, 1900. Serial No. 27,725. (No model.)

To all whom it may concern:

Be it known that we, MARCUS L. FREEMAN and CLARENCE E. DOBBIN, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fireproof Floor Construction; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to fireproof floor construction.

The primary object of the present improvements is to provide a simple and inexpensive frame which can be readily constructed and easily attached to the flanges of the floor-beams and which will itself form a rigid support for a floor-arch above and a ceiling below.

A further object is to provide economical covering for the frames, so that the whole will form a support or centering for a floor-arch of concrete or other plastic material while the latter is green.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a vertical sectional view showing our improvements, the frame being indicated in elevation. Fig. 2 is a plan view of the frame, which is also shown in dotted lines. Fig. 3 is an elevation of the frame detached. Fig. 4 is a view of a slight modification.

Referring to the drawings, 1 designates a frame having an upper arched member 2 and a lower horizontal member 3 formed at their points of union with engaging portions 4 for locking on the lower flanges 5 of construction-beams 6. The members 2 and 3 are preferably formed from one continuous flat bar set on edge or perpendicular, the free ends being united by a nutted bolt or rivet 7. The engaging portions 4 are carried horizontally beneath the beam-flanges and thence vertically downward. It is to these depending vertical portions that the lower member 3 is united, this union being shown as integral at one end and as being effected by the bolt or rivet 7 at the other. It is obvious, however, that the member 3 may be bolted at each end. Contiguous to the engaging portions 4 the bar is twisted at right angles and bent inwardly and outwardly to form spaces to accommodate the beam-flanges, the horizontal member 3 being thrown beneath the beams. By twisting the frame-bar its strength and stiffness are greatly increased at the points of engagement with the construction-beams, and the flattened surfaces engaging the beam-flanges insure the proper seating of the frames. In placing each frame in position across the space between the construction-beams one end is first placed against a flange of one beam, as shown in dotted lines, Fig. 2, and a blow against the other end of the frame will force it into proper engagement with the companion beam. In this way no special securing means is necessary.

It will be noted that the horizontal member 3 being thrown below the construction-beams forms furring for the metal lathing, as 8, for plastering ceiling 9. Such member may be curved or bent into any desired shape which will best answer as furring, if the ceiling is to be paneled or constructed on any special line. In Fig. 4 we have indicated this furring member as independent of the arched member for use where the latter member is not required.

Thin metallic strips 10 may be extended transversely of the frames, upon which they rest, and longitudinally of the beams to form bearings for slabs 12. These slabs, which may be of any desired size and shape, are preferably composed of a mixture of plaster-of-paris, asbestos, and fiber. They constitute a continuous foundation or centering upon which to build up the arch of fireproof material. The edges of these slabs preferably overlap, and in this way the dripping of water and concrete material which usually occurs in the formation of fireproof flooring is prevented. While the longitudinal strips 10 may be held, if desired, to the frames by any suitable means, it is not necessary to secure the slabs to these strips. They are of such size and length that they will remain when once positioned.

The advantages of our invention are apparent to those skilled in the art. It will be observed that the frames may be readily con-

structed from a single bar and that the same are capable of being easily positioned between floor-beams and held in place without any securing means other than provided by their bent portions engaging the bottom flanges. It is obvious that changes may be made without departing from our invention. For instance, the frames may be composed of double steel rods in lieu of flat bars, the latter, however, being preferred. The two members need not be made from one continuous bar. Also the upper member may be set flat instead of on edge, and also the slabs may be made of sheet iron or steel instead of the composition hereinbefore specified.

We claim as our invention—

1. The combination with the construction-beams having lateral flanges, of a frame between such beams having an upper arched member, a lower horizontal member and means for locking it on said flanges, said frame being composed of a single continuous bar bent to form said members, the ends of said bar being united together, as set forth.

2. The combination with construction-beams having lateral flanges at or near their bottoms, of a frame between such beams having an upper member, a lower horizontal member, and engaging portions for locking on said beam-flanges, said engaging portions having vertical flanges depending beneath the beam-flange, said frame being composed of a narrow bar or bars bent or twisted to form said members and engaging portions, and said horizontal member being united to said flanges, as set forth.

3. The combination with construction-beams having lateral flanges at or near their bottoms, of a frame between such beams having an upper arched member, a lower horizontal member and engaging portions for locking on said beam-flanges, said frame being composed of a single continuous flat bar set on edge to form said arched and horizontal members and twisted at right angles to form said engaging portions, substantially as set forth.

4. The combination with construction-beams having lateral flanges at or near their bottoms, of a frame between such beams having a horizontal member forming furring for a ceiling, such member being composed of a flat bar set on edge and twisted and bent at its ends to form upper and lower portions for engaging the upper and lower surfaces of the beam-flanges, the latter fitting in spaces between said upper and lower portions, as set forth.

5. The combination with construction-beams having lateral flanges at or near their bottoms, of frames between said beams composed each of a single continuous bar having an upper member and engaging portions for locking on said beam-flanges, and slabs above said frames forming supports for the material composing the arch, substantially as set forth.

6. The combination with construction-beams having lateral flanges at or near their bottoms, of frames between said beams composed each of a single continuous bar having an arched member and engaging portions for locking on said beam-flanges, longitudinal strips resting on said frames, and slabs on said strips forming supports for the material composing the arch, substantially as set forth.

7. The combination with construction-beams having lateral flanges at or near their bottoms, of frames between said beams composed each of a single continuous bar having an arched member, a horizontal member and engaging portions for locking on said beam-flanges, longitudinal strips resting on said frames, and slabs on said strips forming supports for the material composing the arch, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

MARCUS L. FREEMAN.
CLARENCE E. DOBBIN.

Witnesses:
LOUIS GRAY,
JULES LEVEY.