

No. 608,098.

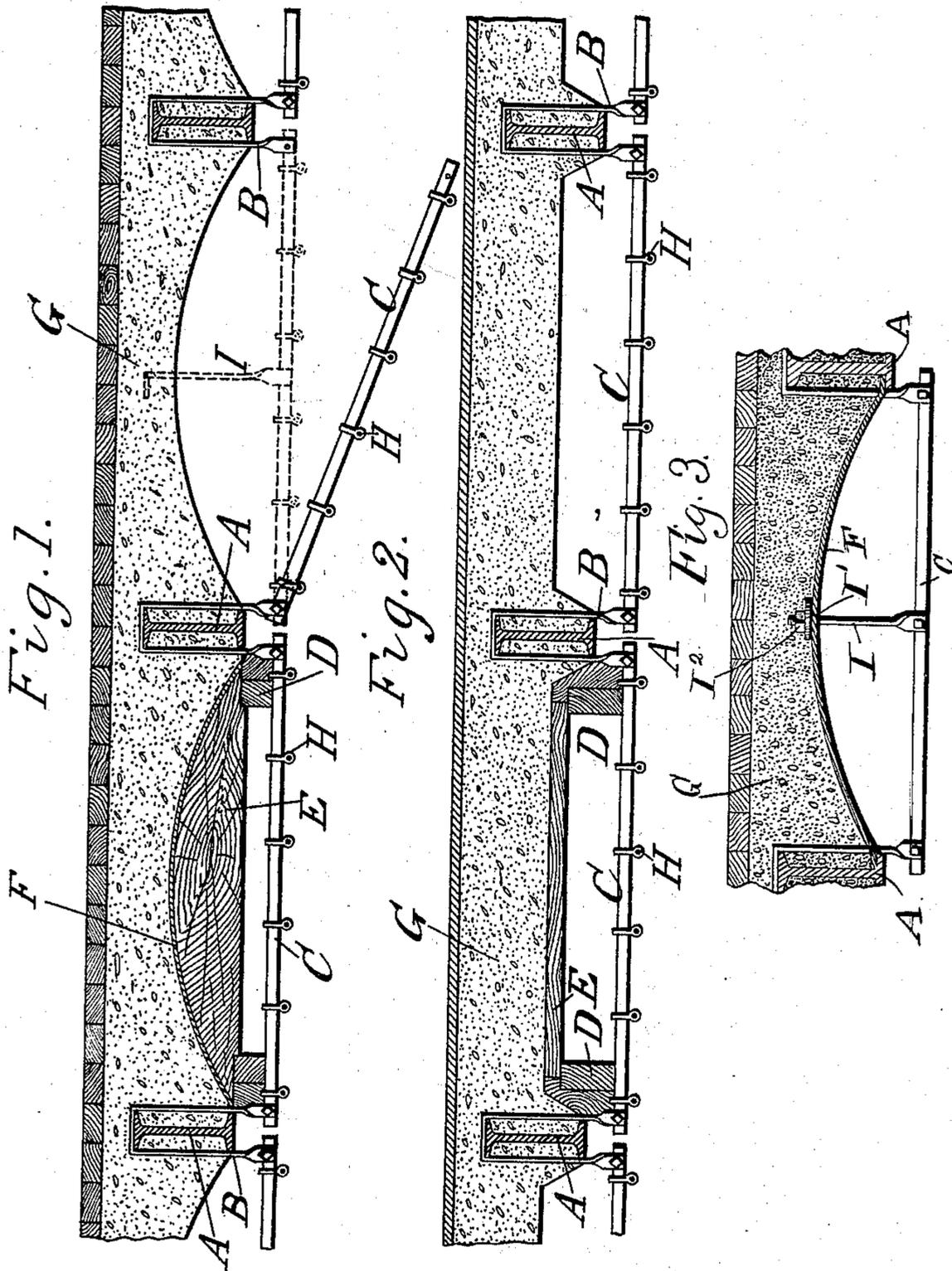
Patented July 26, 1898.

T. L. BANKS.

CONSTRUCTION OF FIREPROOF FLOORS.

(Application filed Dec. 24, 1897.)

(No Model.)



*Witness*  
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# UNITED STATES PATENT OFFICE.

THOMAS LEWIS BANKS, OF LONDON, ENGLAND.

## CONSTRUCTION OF FIREPROOF FLOORS.

SPECIFICATION forming part of Letters Patent No. 608,098, dated July 26, 1898.

Application filed December 24, 1897. Serial No. 663,333. (No model.) Patented in England March 17, 1894, No. 5,626.

*To all whom it may concern:*

Be it known that I, THOMAS LEWIS BANKS, F. R. I. B. A., a citizen of England, residing at Lindores, Kew Gardens, London, in the county of Surrey, England, have invented new and useful Improvements in the Construction of Fireproof Floors, (for which I have obtained Letters Patent in Great Britain, dated March 17, 1894, No. 5,626,) of which the following is a specification.

Fireproof floors are at present in some instances made by suspending a removable centering from the metal floor or ceiling joists and after the concrete or brick arch laid upon such centering has set removing the latter for further use. According to my present invention I employ in such an arrangement metal supports for the removable centering, which supports are suspended from the metal joists and which after the removal of the centering on the setting of the concrete filling or brick arch are made to constitute the supports for a ceiling, so that when this is formed there exists between its upper surface and the concrete filling an inclosed space that serves for ventilation. For this purpose I fix iron suspenders to the top or lower flanges of the iron or steel joists, and to these suspenders I attach at a suitable distance below the joists iron or steel bars of any section, extending from joist to joist and serving both for supporting the centering for the concrete, &c., and afterward for supporting the ceiling. These ceiling-bars may be attached to the suspenders either by bolts or pins, or the suspenders may be made of a hook shape or with slots for the bars to rest in the hooks or slots. Upon these bars I then place the centering, which may either be of wood or sheet-iron or corrugated iron or of wood framing covered with sheet-iron, the upper surface of the centering being either arched or flat. The concrete filling or brick arch is then formed, and after it has set the ceiling-bars are detached from the suspenders and the centering is removed for further use. The ceiling-bars are then again fixed in position and have the ceiling attached to them in any suitable manner.

Figure 1 of the accompanying drawings shows a section of one arrangement of fireproof floor constructed according to my above-described invention. The girders or joists A

have wrought iron or steel loop-shaped straps B hung over their upper flange, and to the lower ends of these straps are removably attached bars C. Upon these bars are laid longitudinal timbers D, that carry arched wood centers E, covered with sheet-iron F. Upon this centering the concrete filling G is laid. When this has set, the one end of the bars C are detached, so that the bars can be lowered, as shown at the right-hand side of Fig. 1, whereupon the centering D E F is removed. The bars C are then raised again and secured and serve for supporting the ceiling, which may be constructed in any suitable manner, but preferably as described in the specification to my British Patent No. 12,227 of 1893—namely, eyes H are hooked onto the bars, through which eyes rods are passed for carrying the metallic lathing that supports the plaster of the ceiling.

When the distance between the joists A exceeds from two feet six inches to three feet, I prefer to support the bar C at one or more intermediate points by suspending straps or rods which pass up through the centering and are embedded in the concrete, the upper ends being either bent or otherwise afforded effective hold on the concrete, as indicated at I; or in this case the arched sheet metal F, which may be corrugated and supported on the flanges of the joists A, may be allowed to remain and the upper ends of the said intermediate suspenders be attached in any suitable manner to such arched sheet metal, as shown in Fig. 3, where the arched sheet metal F is carried on the flanges of the joists A and the suspenders I pass with their threaded upper ends through the sheet metal F, above which they are fitted with washers I' and screw-nuts I<sup>2</sup>.

Fig. 2 shows another modification in which the removable centers are formed flat instead of arched, being either made entirely of wood, as shown, or of wood supports at distances apart, covered with sheet metal.

Having thus described the nature of this invention and the best means I know for carrying the same into practical effect, I claim—

1. In the construction of fireproof floors with removable centering, metal bars for supporting such centering suspended from the

joists in a detachable manner, which bars are adapted to be refixed after the removal of the centering and serve as the supports for the ceiling, substantially as described.

5 2. In combination with the detachable ceiling-bars intermediate suspension straps or rods having their upper ends secured either to the concrete filling of the floor or to arched sheet metal carried by the joists, substantially as described.

10 3. In the construction of fireproof floors with removable centering, the combination with the supporting-joists A of the metal strips B supported by said joists and having

their lower ends depending below the latter 15 and metal bars C detachably connected to the lower ends of the strips, said bars serving as supports for the centering during the construction of the floor, and as supports for the ceiling after the centering has been removed. 20

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 14th day of December, A. D. 1897.

THOMAS LEWIS BANKS.

Witnesses:

JNO. P. M. MILLARD,  
W. M. HARRIS.