

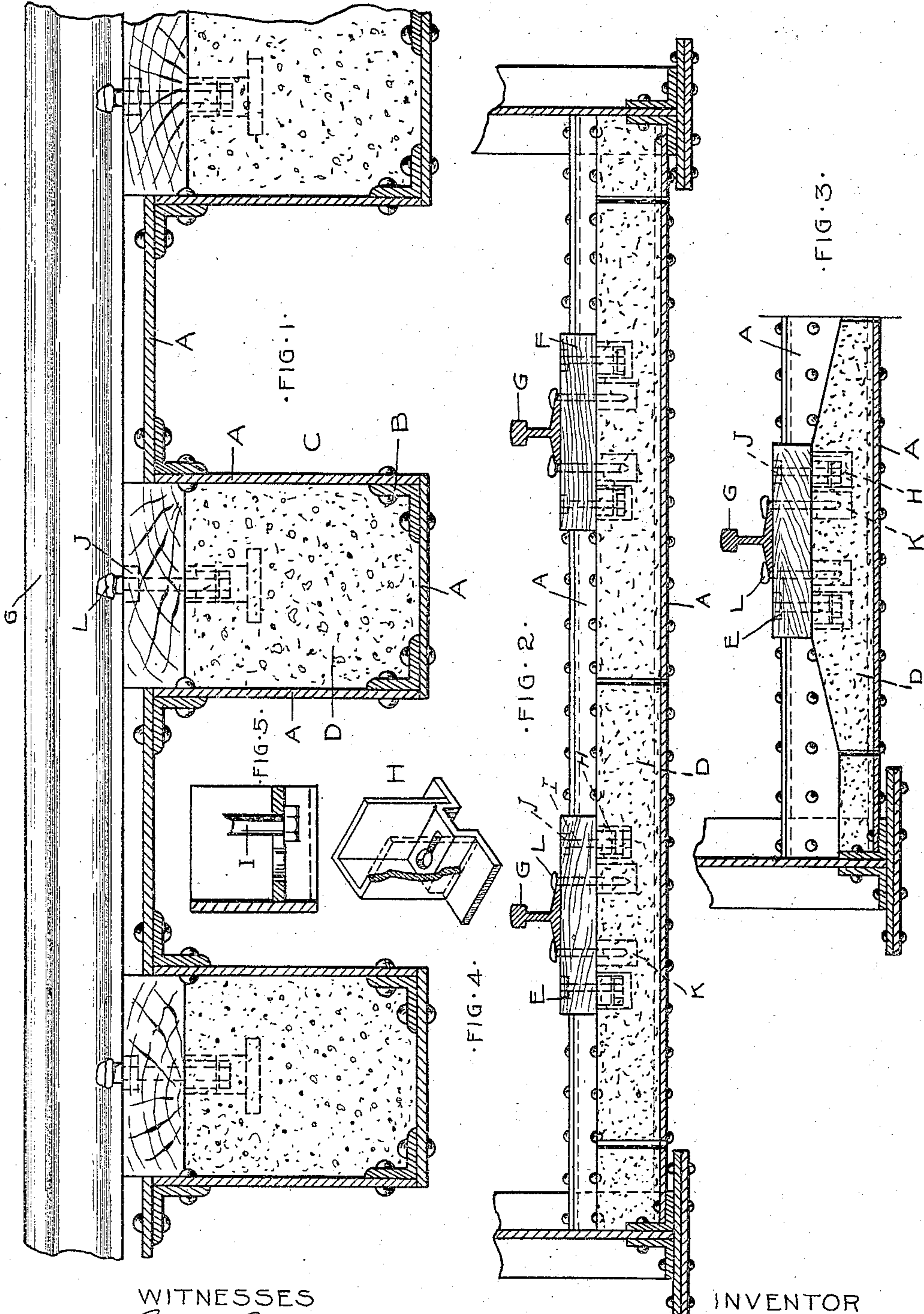
No. 767,288.

PATENTED AUG. 9, 1904.

G. H. KIMBALL.  
FLOORING.

APPLICATION FILED JULY 7, 1903.

NO MODEL.



WITNESSES

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# UNITED STATES PATENT OFFICE.

GEORGE H. KIMBALL, OF DETROIT, MICHIGAN.

## FLOORING.

SPECIFICATION forming part of Letters Patent No. 767,288, dated August 9, 1904.

Application filed July 7, 1903. Serial No. 164,536. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. KIMBALL, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Flooring, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to a metallic flooring especially designed for railway bridges or viaducts; and it consists in the construction of the flooring and in novel and simple means for supporting the rails thereon and securing the latter thereto whereby a rigid and durable structure is obtained.

The invention further consists in the peculiar arrangement and combination of the various parts of the flooring and in the rail connections, as will be fully hereinafter set forth, and shown in the drawings, in which—

Figure 1 is a view in elevation of a section of a bridge-floor embodying my improved construction. Fig. 2 is a longitudinal section. Fig. 3 is a sectional view similar to Fig. 2, illustrating a modification. Fig. 4 is a sectional perspective view of the socket-casting forming a portion of the cushion-block anchor; and Fig. 5 is a section through the socket, showing the anchor-bolt in place.

The main section or body of the flooring is preferably composed of metal plates A, connected by angles B in such manner as to form a series of transversely-extending trough-shaped girders C. Each of these hollow girders is filled or partially filled with a ballast D, preferably concrete, as shown in Fig. 1, is of uniform depth throughout the girder, and extends to a point near the top of the latter. Arranged within the upper portion of each girder are two cushion-blocks E and F of relatively short lengths resting upon the ballast and spaced apart to receive and support the rails G. These blocks are preferably made of sections of the usual wooden tie and are preferably fitted within the girders to contact with the sides of the latter, so as to be held against tipping movement and to project upwardly beyond the girder, so that the rails will clear the flooring-body.

To provide a rigid support for the rails,

each cushion-block is anchored to its foundation, the anchors being not less than two in number and arranged upon opposite sides of the rail, as shown. Preferably each anchor is composed of a socket-casting, as H, embedded within the concrete or other material of which the ballast is composed, and an inverted bolt I, extending through a suitable opening in the cushion-block and having its head detachably engaging the socket in the manner indicated in Fig. 5. By means of a nut, as J, the parts of the anchor are rigidly held in place in connection with the block, as illustrated. Wooden plugs K are embedded within the ballast beneath the cushion-block at a point beyond the rail-flanges in which spikes L are driven, securely holding the rails in place.

From the construction as set forth it will be obvious that a permanent and rigid foundation is provided for the rails, the blocks upon which the rails rest and to which they are connected being held against movement by their anchors and the flooring-body. It will also be apparent that this type of flooring can be manufactured at a minimum cost and that the objectionable noises occasioned by the passage of the cars over the bridge or viaduct will be materially lessened.

While I have shown and described the flooring as having two separate cushion-blocks for each girder, it will be obvious that a single tie will answer. The two-block construction, however, is satisfactory and may be produced at less cost. Furthermore, it is not essential that the concrete filling or ballast within the hollow girders should be of uniform depth throughout the girder length, although this is a desirable construction.

In Fig. 3 I have shown the concrete of a maximum depth beneath the rail or cushion-blocks, while between the blocks and the end portion of the girder of considerable less depth.

Various other modifications may be made in the construction described without in any manner departing from the spirit of my invention, and I do not, therefore, wish to be limited to the constructions I have illustrated.

What I claim as my invention is—

1. A bridge or viaduct flooring for rails

comprising a series of trough-shaped girders open at their tops and filled to a point near said tops with cementitious material, separated cushion-blocks within each girder resting  
5 upon the filling therein and held against rocking movement by the girder sides, and anchors for the blocks embedded within the filling.

2. A bridge or viaduct flooring for rails  
10 comprising a series of trough-shaped girders open at their tops and filled to a point near said tops with cementitious material, separated cushion-blocks within each girder resting upon the filling therein and held against rock-  
15 ing movement by the girder sides.

3. A hollow girder containing a ballast material, and a cushion-block the greater portion of which is embedded within said girder sup-

ported by the filling therein and held by the girder sides against rocking movement, said  
20 block projecting slightly over the said sides in combination with an anchor for said block embedded in said ballast material.

4. A hollow girder containing a ballast material, and a cushion-block the greater portion  
25 of which is embedded within said girder supported by the filling therein and held by the girder sides against rocking movement, said block projecting slightly above the said sides.

In testimony whereof I affix my signature in  
30 presence of two witnesses.

GEORGE H. KIMBALL.

Witnesses:

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I. T. McKNIGHT.